TATA

Deputy Director General of Forests (C),
Ministry of Env., Forest and Climate Change,
Integrated Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar – 751023
Email: roez.bsr-mef@nic.in

MD/ENV/ 143 /104 / 2025
Date: 23.04.2025

Sub: Half-yearly compliance status report of Environmental Clearance conditions for the period October 2024 to March 2025 in respect of Katamati Iron Mine, M/s Tata Steel Limited.

Ref: 1. Environmental Clearance letter no. IA-J-11015/63/2008. IA. II(M) dated: 05.08.2021.
2. Environmental Clearance letter no. J-11015/63/2008-IA-II(M) dated: 18.01.2019.
3. Environmental Clearance letter no. J-11015/63/2008-IA-II(M) dated: 26.11.2010.
4. Environmental Clearance letter no. J-11015/120/2003-IA-II(M) dated: 06.05.2005.

Dear Sir,

Kindly find attached herewith the half-yearly compliance status report in respect of the stipulated Environmental Clearance conditions of Katamati Iron Mine, M/s Tata Steel Limited for the period from **October 2024 – March 2025.**
We trust that the measures taken towards environmental safeguards comply with the stipulated environmental conditions. We look forward to your further guidance which shall certainly help us in our endeavor for further improve upon our Environmental Management practices.

Thanking you,

Yours faithfully,
f: M/s Tata Steel Limited

Chief (Mine Planning & Projects), OMQ

Encl. : As above
Copy to : The Chairman, Central Pollution Control Board, Southern Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107 (W. B.)
: The Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012 (Odisha)
: The Regional Officer, SPCB, College Road, Baniapata, Keonjhar – 758001 (Odisha)

HALF-YEARLY EC COMPLIANCE REPORT FOR KATAMATI IRON MINE OF TATA STEEL LIMITED

ENVIRONMENTAL CLEARANCE NO. IA-J-11015/63/2018-IA-II(M) DATED 05.08.2021
(Period of Compliance: October 2024 to March 2025)

Sl	Specific Conditions	
i.	Environmental Clearance (EC) shall be valid up to the lease period only i.e. up to 31.03.2030.	Noted.
ii.	The budget of Rs. 7.36 Crores to address the concerns raised by the public including in the public hearing to be completed within 3 years from the date of start of mining operations. PP shall comply with all action plans made for public hearing concerns and make regular maintenance and record the progressive activity outcomes.	Complied. All the commitment made during PH are implemented. Details of PH commitments is attached as **Annexure-I**.
iii.	The Project Proponent shall undertake the adequate plantation in peripheral zone as well as gap plantation with the seedling of 6-8 ft height with at least 90% survival rate to control the dust at source and should be completed within 2 years from the date of commencement of mining operations. Causalities of the previous year should be replaced other than the saplings proposed to be planted every year	Complied. Adequate number of saplings have been planted in the safety zone. A total of 11276 nos. of saplings were planted during the period April 2024 to March 2025. Photographs of Plantation is attached as **Annexure-II**.
iv.	The Project Proponent shall make efforts for Sal plantation for restoring the mine lease area. PP shall provide tree guard to maintain the early stages of plant growth.	800 nos. of sal plantation was done during the FY 2023-24 and 400 nos. of sal plantation is done during the FY 2024-2025 along with maintenance activities and tree guard are provided to maintain early stages of plant growth.
v.	Geomats to be used as erosion control blanket which should be biodegradable and accordingly validated through testing from a recognized institution/ laboratory.	Geo-textile coir mat (bio-degradable) has been laid on the slope of sub grade dumps along with grass seeding to minimize soil erosion from the dump. Validation of the coir-mat has been done from "AHMEDABAD TEXTILE INDUSTRY'S RESEARCH ASSOCIATION" and the test report of the same is attached as **Annexure-III**.
vi.	The conservation plan in consultation with the Forest Department shall be implemented and compliance of the same shall be submitted to IRO of MoEF&CC before 1st July of every year.	The new conservation plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023. The compliance status of the activities to be executed by user agency is attached as **Annexure-IV.**
vii.	Project proponent shall furnish a certificate from DFO regarding satisfactory compliance of site specific wildlife conservation plan.	DFO while replying to an EDS raised by MoEF&CC, New Delhi has replied to a quarry regarding "Status of implementation of various scheme/plan (RWMP/SSWCP)" in his reply DFO has mentioned "The user agency has deposited, an amount of Rs. 301.968 lakh in CAMPA account through uonline vide UTR no. HDFCR52023081780432709 dated 17.08.2023 to take up the interventions by the Forest Department. The interventions earmarked to take up by the Forest Department, will be carried out component wise on receipt of required funds from the PCCF & HoFF, Odisha. The activities to be undertaken by

		Project proponent is being complied." The summery of the same of the letter by DFO is attached as **Annexure-V**.
viii.	The Project Proponent shall obtain the Renewal of NOC from CGWA for withdrawal of ground water before undertaking mining operations.	The mine has been granted renewal of CGWA NOC (381m³/day) issued vide no. CGWA/NOC/MIN/REN/3/2025/10892, dated 22.02.2025 which is valid till 09.10.2026.
ix.	The Project Proponent should undertake the soil conservation/ restoration activity in a way that the habitats can be restored.	Soil conservation/ restoration efforts such as soil amendments with cow-dung and manure, mulching, grass cover development, management of invasive species/ exotic species as well as selection of only native species for plantation, etc. are done so that habitats can be restored.
B. Recommendation of CSIR-NEERI Report on "Carrying Capacity Study for Environmentally Sustainable Iron and Manganese Ore Mining Activity in Keonjhar, Sundargarh and Mayurbhanj Districts of Odisha State:		
1)	Project Proponent and Department of Steel & Mines, Govt. of Odisha shall ensure the implementation of recommendations of carrying capacity study report conducted by CSIR-NEERI w.r.t. mining proposal of Iron Ore and/or manganese in the State of Odisha.	Noted and shall be complied.
2)	Department of Steel & Mines, Govt. of Odisha should prepare 5 years regional plan for annual iron ore requirement from the state, which in turn shall be met from different mines/zones (e.g. Joda, Koira.) in the state. Accordingly, sustainable annual production (SAP) for each zone/mine may be followed adopting necessary environmental protection measures.	TSL will adopt the necessary environmental protection measures and abide by the sustainable annual production limit mentioned in regional plan prepared by Department of Steel & Mines, Govt. of Odisha.
3)	Project Proponent shall construct the cement concrete road from mine entrance and exit to the main road with proper drainage system and green belt development along the roads and also construction of road with minimum 300 m inside the mine. This should be done within one year for existing mines and new mine should have since beginning. The Department of Steel & Mines, Govt. of Odisha should ensure the compliance and should not issue the Mining Permits, if mine lease holder has not constructed proper cement concrete road as suggested. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.	Construction of cement concrete road of length 400 meters within the mine near mine entrance is complete, Photographs is attached as **Annexure-VI**.
4)	The Committee observed that as per the recommendations of NEERI report the PP needs to do regular vacuum cleaning of all mineral carrying roads aiming at "zero dust re-suspension" within 3 months. This Environmental Clearance for the	Work order for deployment of mechanical sweeper has been placed and the mechanical sweeper has been deployed. Photograph of vacuum sweeping machine is attached as **Annexure-VII**.

	expansion project shall be operated only after the compliance of the above-mentioned specific condition.	
5)	Project Proponent shall monitor the environmental quality parameters as per EC and CTE/CTO conditions, and implementation of suggested measures for control of road dust and air pollution. Odisha State Pollution Control Board has to ensure the compliance of CTE/CTO. Regional office of the MoEF&CC, Bhubaneswar shall monitor the compliance of the EC conditions. Regional office of the Indian Bureau of Mines (IBM) shall monitor the compliance of mining plan and progressive mine closure plan. Any violation by mine lease holder may invite actions per the provisions of applicable Acts.	Mine is ensuring the strict compliance to monitoring of environmental quality parameters and implementation of air pollution control measures as per EC and CTE/CTO conditions. Katamati iron mine is regularly submitting the half-yearly EC and compliance reports to respective authorities. TSL will continue to furnish the required information and extend all support during the site visits by statutory agencies.
6)	Project Proponent shall ensure the compliance of Suggested Ore Transport Mode (SOTM) with association of the State Government of Odisha. All existing mines should ensure adoption of SOTM within next 5 years. New mines or mines seeking expansion should incorporate provision of SOTM in the beginning itself, and should have system in place within next 5 years.	Being Complied. Out of 13.5 MTPA total production, approximately 9.5 MTPA of ROM shall be processed in tandem with Noamundi ore in the processing plant located at Noamundi and conveyed through closed conveyor belts to the private railway siding at Noamundi. 11.5 MTPA of final product from Katamati is dispatched from the private railway siding and other public railway sidings. Approximately 4 MTPA ROM shall be processed at the processing plant located at Katamati. The finished product shall be continued to be sent to the steel plants through railway siding either through Noamundi or through public siding at Deojhar or by road directly to the steel plants. Currently around 2 MTPA processed ore (maximum) is dispatched by trucks due to a shortage of racks and wagon availability from Railway.
7)	The State Govt. of Odisha shall ensure dust free roads in mining areas wherever the road transportation of mineral is involved. The road shoulders shall be paved with fence besides compliance with IRC guidelines. All the roads should have proper drainage system and apart from paving of entire carriage width the remaining right of way should have native plantation (dust capturing species). Further, regular maintenance should also be ensured by the Govt. of Odisha. Progress on development of dust free roads, implementation of SOTM, increased use of existing rail network, development of additional railway network/conveyor belt/ pipelines etc. shall be submitted periodically to Regional office of the MoEF&CC.	Noted.

<table>
<tr><td>8)</td><td>Project Proponent shall develop the parking plazas for trucks with proper basic amenities/ facilities inside the mine. This should be done within one year for existing mines and new mines should have since beginning. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.</td><td>Parking area for outside trucks with all amenities like drinking water facility, rest shelter with urinal facility, illumination etc. has been provided.</td></tr>
<tr><td>9)</td><td>Department of Steel & Mines shall ensure the construction of NH 215 as minimum 4 lane road with proper drainage system and plantation and subsequent regular maintenance of the road as per IRC guidelines. Construction of other mineral carrying roads with proper width and drainage system along with road side plantation to be carried out. This shall be completed within 2 Years.</td><td>TSL will extend any support if desired by the State Government.</td></tr>
<tr><td>10)</td><td>Regular vacuum cleaning of all mineral carrying roads aiming at "Zero Dust Re suspension" shall be adopted by PWD / NHAI/ Mine Lease Holders within a time Period of 3 months for existing roads. This Environmental Clearance for the expansion project shall be operated only after the compliance of the above-mentioned specific condition.</td><td>Work order for deployment of mechanical sweeper has been placed and the mechanical sweeper has been deployed.
Photograph of vacuum sweeping machine is attached as Annexure-VII</td></tr>
<tr><td>11)</td><td>In case the total requirement of iron ore exceeds the suggested limit for that year, permission for annual production by an individual mine may be decided depending on approved EC capacity (for total actual dispatch) and actual production rate of individual mine during last year or any other criteria set by the State Govt., i.e. Dept. of Steel & Mines. Department of Steel and Mines in consultation with Indian Bureau of Mines-RO should prepare in advance mine-wise annual production scenario so that demand for iron ore can be anticipated, and actual production/dispatch does not exceed the suggested annual production.</td><td>TSL will abide by the guidelines issued by the Department of Steel & Mines, Govt of Odisha in this regard. The production for the last years are as follows
<table>
<tr><th>Year</th><th>ROM Production</th><th>OB Generation</th></tr>
<tr><td>2022-23</td><td>7581611 MT</td><td>599432.8 m³</td></tr>
<tr><td>2023-24</td><td>11682921 MT</td><td>622916 m³</td></tr>
<tr><td>2024-25</td><td>11270000 MT</td><td>523221 m³</td></tr>
</table></td></tr>
<tr><td>12)</td><td>R&D studies towards utilization of low-grade iron ore should be conducted through research/academic institutes like IMMT, Bhubaneswar, NML, Jamshedpur, and concerned metallurgical departments in IITs, NITs etc., targeting full utilization of low-grade iron ore (Fe content upto 45% by 2020 and upto 40% by 2025). In fact, life cycle assessment of whole process including environmental considerations should be done for techno-economic and environmental viability. R&D studies on utilization of mine wastewater having high concentration of Fe content for different commercial applications in industries such as cosmetics, pharmaceutical, paint industry should</td><td>R & D studies has been carried out like Selective flocculation, Dense media separation, Slime briquette, Haver hydroclean, high gradient magnetic separation through Tata steel's R & D department. As per the study Dense media separation plant is proposed to be installed. At present, low grade iron ore are being beneficiated using hydro-cyclone, jigging at neighboring Noamundi Iron mine.

There is no beneficiation plant present in Katamati Iron mine and there is no generation of mine wastewater containing high concentration of Fe.</td></tr>
</table>

	also be explored. Responsibility: IBM, Dept. of Steel & Mines, Individual Mine Lease Holders.	
13)	The mining activity in Joda-Koira sector is expected to continue for another 100 years, therefore, it will be desirable to develop proper rail network in the region. Rail transport shall not only be pollution free mode but also will be much economical option for iron ore transport. The rail network and/or conveyor belt system upto public railway siding needs to be created. The total length of the conveyor belt system/ rail network to be developed from mines to nearest railway sidings by 11 mines in Joda region is estimated to be about 64 km. Similarly, in Koira region, total length of rail network/ conveyor system for 8 mines (under SOTM 1 & 2) is estimated to be around 95 km. Further, it is suggested to develop a rail network connecting Banspani (Joda region) and Roxy railway sidings in Koira region. Responsibility: Dept. of Steel & Mines, Govt. of Odisha and Concerned Mines along with Indian Railways. Time Period: Maximum 7 years (by 2025). The Department of Steel & Mines, Govt. of Odisha should follow-up with the concerned Departments and railways so that proposed proper rail network is in place by 2025.	We will abide by the directions of Department of Steel & Mines, Govt of Odisha in this regard.
14)	State Govt. of Odisha shall make all efforts to ensure exhausting all the iron & manganese ore resources in the existing working mines and from disturbed mining leases/zones in Joda and Koira region. The criteria suggested shall be applicable while suggesting appropriate lease area and sustainable mining rate. Responsibility: Dept. of Steel & Mines, Govt. of Odisha.	We will work according to the instructions given by the Department of Steel & Mines, Govt of Odisha in this regard.
15)	Mining Operations/Process Related: Project Proponent shall implement the following mitigation measures: (i) Appropriate mining process and machinery (viz. right capacity, fuel efficient) should be selected to carry out various mining operations that generate minimal dust/air pollution, noise, wastewater and solid waste. e.g. drills should either be operated with dust extractors or equipped with water injection system. (ii) After commencement of mining operation, a study should be conducted to assess and quantify emission load generation (in terms of air pollution, noise, waste water and solid waste) from each of the mining activity (including transportation) on annual basis. Efforts should be made to further eliminate/ minimize generation of air pollution/dust, noise,	Being complied. (i) Mining activities are carried out as per IBM approved mining plan. Due diligence is exercised for machinery selection. All drilling machines are equipped with in-built dust extraction/ suppression system which has an interlock which prohibits drilling without water. The photographs of the drilling machine is attached as **Annexure-VIII**. (ii) The fleet of dumpers has been continually upgraded and currently we only have 100T L&T Komatsu make HD785 dumpers which are fuel-efficient, generate very less noise and contribute to less GHG emissions. Timely maintenance schedule is maintained, and records are maintained. Dust load calculation is being done as per the method

	wastewater, solid waste generation in successive years through use of better technology. This shall be ensured by the respective mine lease holders. (iii) Various machineries/equipment selected (viz. dumpers, excavators, crushers, screen plants etc.) and transport means should have optimum fuel/power consumption, and their fuel/power consumption should be recorded on monthly basis. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles should be followed as per manufacturer's instructions/ recommended time schedule and record should be maintained by the respective mine lease holders. (iv) Digital processing of the entire lease area using remote sensing technique should be carried out regularly once in 3 years for monitoring land use pattern and mining activity taken place. Further, the extent of pit area excavated should also be demarcated based on remote sensing analysis. This should be done by ORSAC (Odisha Space Applications Centre, Bhubaneswar) or an agency of national repute or if done by a private agency, the report shall be vetted/ authenticated by ORSAC, Bhubaneswar. Expenses towards the same shall be borne by the respective mine lease holders. Responsibility: Individual Mine Lease Holders.	formulated by OSPCB. The dust load calculation sheet is attached as **Annexure-IX**. (iii) A state of the art Fleet Management System has been adopted which gives a real-time information of fuel consumption, productivity and health of the machinery (dumpers, excavators, drills, dozers, etc). This digitalization initiative contributes significantly to monitor and reduce fuel consumption and increase productivity. Further, inspection and maintenance of all the machineries/ equipment/ transport vehicles are being done as per manufacturer's instructions/ recommended time schedule and record is maintained. Record of fuel consumption is maintained of monthly basis. (iv) The digital processing of entire lease area is being carried out regularly. The current land use pattern is made by M/s Digital Cartography and Services Pvt. Ltd. the authorized agency by ORSAC, Bhubaneshwar. And the LULC report is attached as **Annexure-X**.
16)	Air Environment Related: Project Proponent shall implement the following mitigation measures: (i) Fugitive dust emissions from all the sources should be controlled regularly on daily basis. Water spraying arrangement on haul roads, loading and unloading and at other transfer points should be provided and properly maintained. Further, it will be desirable to use water fogging system to minimize water consumption. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the CPCB in this regard. (ii) The core zone of mining activity should be monitored on daily basis. Minimum four ambient air quality monitoring stations should be established in the core zone for SPM, PM_{10}, $PM_{2.5}$, $S0_2$, NOx and CO monitoring. Location of air quality monitoring 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 (based on Emission Load Assessment Study). The number of monitoring locations may be more for larger capacity mines	i) Fugitive dust emissions from all the sources are being controlled regularly on daily basis. The fugitive dust monitoring report is attached as **Annexure-XI**. A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. The photographs of same are attached as **Annexure-XII**. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms. ii) 2 nos. Continuous Ambient Air Quality monitoring system installed inside Mining Lease area for monitoring PM_{10}, $PM_{2.5}$, SO_2, NOx and CO in the core zone on daily basis. Four manual ambient air quality monitoring stations have been established in the core zone for PM_{10}, $PM_{2.5}$, SO_2, NOx and CO monitoring on daily basis. Monitoring is done by NABL accredited lab and the reports are submitted to Board regularly. AAQ Monitoring report is attached as **Annexure-XIII**.

	and working in larger area. Out of four stations, one should be online monitoring station in the mines having more than 3 MTPA EC Capacity. (iii) Monitoring in buffer zone should be carried out by SPCB or through NABET accredited agency. In addition, air quality parameters (SPM, PM_{10}, $PM_{2.5}$, SO_2, NOx and CO) shall be regularly monitored at locations of nearest human habitation including schools and other public amenities located nearest to source of the dust generation as applicable. (iv) Emissions from vehicles as well as heavy machinery should be kept under control and regularly monitored. Measures should be taken for regular maintenance of vehicles used in mining operations and in transportation of mineral. (v) The vehicles shall be covered with a tarpaulin and should not be overloaded. Further, possibility of closed container trucks should be explored for direct to destination movement of iron ore. Air quality monitoring at one location should also be carried out along the transport route within the mine (periodically, near truck entry and exit gate), Responsibility: Individual Mine Lease Holders and SPCB.	(iii) We have one CAAQMS station in the buffer zone and the data is transmitted to SPCB server. Manual Ambient Air Quality monitoring at 4 locations (PM_{10}, $PM_{2.5}$, SO_2, NOx and CO) is carried out on bi-weekly basis. (iv) Vehicular emission checks of all the wheel mounted HEMMs are done at regular intervals. Maintenance of mining equipment is done on regular basis. It is mandatory for any vehicle entering the mine premises to have a valid fitness certificate. PUC certificates of HEMMs is attached as **Annexure-XIV**. (v) It is ensured that all the vehicles exiting the mine gate are checked and ensured for tarpaulin cover and are not overloaded. Air quality monitoring is carried out at one location (near Murga gate) along the transport route within the mine lease area.
17)	Noise and Vibration Related: Project Proponent shall implement the following mitigation measures: (i) Blasting operation should be carried out only during daytime. Controlled blasting such as Nonel, should be practiced. The mitigation measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs. (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone. Further, date, time and distance of measurement should also be indicated with the noise levels in the report. The data should be used to map the noise generation from different activities and efforts should be made to maintain the noise levels with the acceptable limits of CPCB (CPCB, 2000) (iv) Similarly, vibration at various sensitive locations should be monitored at least once in month, and mapped for any significant changes due to successive mining operations. Responsibility: Individual Mine Lease Holders.	i) Blasting operation are being carried out during day time only. Blasting is done using the controlled blasting technique. In this regard, one study has been made by CIMFR (Central Mining & Fuel Research Institute), Dhanbad and recommendations therein are being followed. Initiation system is through either NONEL/electronic detonation system so as to ensure minimal ground vibration. Sample blasting vibration monitoring report is attached as **Annexure-XV**. ii) Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs. (iii) Monitoring of Noise level are being done regularly at the identified major sources of noise generation within core zone. Noise mapping has been done for different mineral processing plants. Noise monitoring report is attached as **Annexure-XVI**. Necessary efforts are made to maintain the noise level with in the acceptable limits of CPCB (CPCB, 2000). iv) All efforts are taken to ensure that blast-induced ground vibrations remain within safe limits by using NONEL/ electronic detonation system. Vibration

		monitoring is done for every blast and records maintained thereof and their recommendations are strictly followed. CIMFR also studies the ground-vibration and suggests the mine management best blasting practices. Sample blasting vibration monitoring report is attached as **Annexure-XV**.
18)	Water/Wastewater Related: Project Proponent shall implement the following mitigation measures: (i) In general, the mining operations should be restricted to above ground water table and it should not intersect groundwater table. However, if enough resources are estimated below the ground water table, the same may be explored after conducting detailed geological studies by GSI and hydro geological studies by CGWB or NIH or institute of national repute, and ensuring that no damage to the land stability/ water aquifer system shall happen. The details/ outcome of such study may be reflected/incorporated in the EIA-EMP report of the mine appropriately. (ii) Natural watercourse and/or water resources should not be obstructed due to any mining operations. Regular monitoring of the flow rate of the springs and perennial nallas should be carried out and records should be maintained. Further, regular monitoring of water quality of nallas and river passing thorough the mine lease area (upstream and downstream locations) should be carried out on monthly basis. (iii) Regular monitoring of ground water level and its quality should be carried out within the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out on monthly basis. (iv) In order to optimize water requirement, suitable conservation measures to augment ground water resources in the area should be undertaken in consultation with Central Ground Water Board (CGWB). (v) Suitable rainwater harvesting measures on long term basis should be planned and implemented in consultation with CGWB, to recharge the ground water source. Further, CGWB can prepare a comprehensive plan for the whole region. (vi) Appropriate mitigation measures (viz. ETP, STP, garland drains, retaining walls, collection of runoffs etc.) should be taken to prevent pollution of nearby river/other water bodies. Water quality monitoring study should be conducted by State Pollution Control Board to ensure quality of surface and ground water sources on regular basis. The study can be conducted	i) Based on observations from nearby wells and water bodies, the water table in the area is about 519 mRL. Whereas, the maximum depth at conceptual stage is considered to be 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed and the mining operation will not intersect ground water table. ii) No perennial nala / stream passes through the mining lease area. Regular monitoring of the flow rate of the Jojo nalla & Mahadeo nalla in the surrounding area is being carried out and records are maintained on monthly basis. The water quality report is attached as **Annexure-XVII**. iii) Regular monitoring of ground water level on monthly basis and its quality on quarterly basis is being carried out within the mine lease area and surrounding areas. A network of dug wells and borewells with piezometers already exists for this purpose. Water quality & Level monitoring report & Piezometer photographs is attached as **Annexure-XVIII A & B respectively**. iv) During monsoon run-off from mine is directed towards the mines pit and the water is collected in mine pit for recharge and the water stored at mine pit is being used for dust suppression. v) Due to area constraint inside the mine lease area ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment ground water table. The photographs of rain water harvesting ponds constructed in surrounding villages is attached as **Annexure-XIX**. vi) Appropriate mitigative measures like CETP in adjacent Noamundi has been constructed, retaining walls, garland drains, settling pits has been constructed to prevent pollution of nearby water bodies. photographs are attached as **Annexure-XX**. The water quality monitoring of surface water & ground water is being carried out regularly by NABL accredited laboratory.

	through NABL/ NABET approved water testing laboratory. However, the report should be vetted by SPCB. (vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated in ETP so as to conform to the discharge standards applicable. (viii) Oil and grease trap should be installed before discharge of workshop effluents. Further, sewage treatment plant should be installed for the employees/colony, wherever applicable. (ix) Mine lease holder should ensure that no silt originating due to mining activity is transported in the surface water course or any other water body. Appropriate measures for prevention and control of soil erosion and management of silt should be undertaken. Quantity of silt/soil generated should be measured on regular basis for its better utilization. (x) Erosion from dumps site should be protected by providing geo-textile matting or other suitable material, and thick plantation of native trees and shrubs should be carried out at the dump slopes. Further, dumps should be protected by retaining walls. (xi) Trenches / garland drain should be constructed at the foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams should be constructed across seasonal/perennial nallas (if any) flowing through the mine lease areas and silt be arrested. De-silting at regular intervals should be carried out and quantity should be recorded for its better utilization, after proper soil quality analysis. (xii) The water so collected in the reservoir within the mine should be utilized for the sprinkling on hauls roads, green belt development etc. (xiii) There should be zero waste water discharge from the mine. Based on actual water withdrawal and consumption/ utilization in different activities, water balance diagram should be prepared on monthly basis, and efforts should be made to optimize consumption of water per ton of ore production in successive years. Responsibility: Individual Mine Lease Holders, SPCB and CGWB.	vii) There is no industrial wastewater being generated at Katamati. Maintenance of HEMMs is done centrally at Noamundi Workshop. viii) A 30 KLD CETP along with Oil and Grease trap is installed to treat all the effluent generated from washing of HEMM's in workshop at Noamundi. This caters to Katamati mine as well. STPs have been installed in the township located in Noamundi mine lease areas. There is no separate colony in the Katamati mine lease area. ix) Through a series of retention wall, garland drain, settling pits and check dams, it is ensured that no silt originating due to mining activity is transported in the surface water course or any other water body. Majority of the run-off generated is diverted into the mining pit. x) Adequate measures to prevent soil erosion like grass plantation/ coir matting on dump slopes are practiced. Further plantation with native species is done on all dump slopes. Dumps are protected by retaining walls. xi) Garland drains are constructed at the foot of the dumps to arrest silt. Check dams have been constructed for retention of suspended solids and allowing flow of clear water. This prevents contamination of outside water bodies from the wash-offs of the lease area. The check dams are periodically de-silted to keep them efficient. xii) The rain water collected in the mine pit is utilized for water sprinkling on haul roads and for plantation activities. xiii) There is zero waste-water discharge by the mine and it will be maintained in the future as well. The specific water consumption is in decreasing trend as the specific water consumption during the year 2022-23 was 19.62 liters/ton of iron produced and the specific water consumption during the year 2023-24 is 10.33 liters/ton of iron produced.
19)	Land/ Soil/ Overburden Related: Project Proponent shall implement the following mitigation measures: (i) The top soil should temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long (not more than 3 years or as per provisions mentioned in the mine plan/ scheme). The topsoil should be used for land reclamation and plantation appropriately. (ii) Fodder plots should be	i) Preservation of topsoil: No topsoil generated during the reporting period. Previously generated topsoil has been utilized for the purpose of green belt development, dump stabilization & horticulture activities. ii) Its being followed. iii) OB/ low grade Ore are stacked at earmarked dump sites as per the approved Mining Plan.

	developed in the non-mineralized area in lieu of use of grazing land, if any. (iii) Over burden/ low grade ore should be stacked at earmarked dump site (s) only and should not be kept active for long period. The dump height should be decided on case-to-case basis, depending on the size of mine and quantity of waste material generated. However, slope stability study should be conducted for larger heights, as per IBM approved mine plan and DGMS guidelines. The OB dump should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles should be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Proper records should be maintained regarding species, their growth, area coverage etc. (iv) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine operation, soil, OB and mineral dumps. The water so collected can be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly de-silted, particularly after monsoon and should be maintained properly. Appropriate documents should be maintained. Garland drain of appropriate size, gradient and length should be constructed for mine pit, soil. OB and mineral dumps and sump capacity should be designed with appropriate safety margin based on long term rainfall data. Sump capacity should be provided for adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and de-silted at regular intervals. (v) Backfilling should be done as per approved mining plan/scheme. There should be no OB dumps outside the mine lease area. The backfilled area should be afforested, aiming to restore the normal ground level. Monitoring and management of rehabilitated areas should continue till the vegetation is established and becomes self-generating. (vi) Hazardous waste such as, waste oil, lubricants, resin, and coal tar etc. should be disposed off as per provisions of Hazardous Waste Management Rules, 2016, as amended from time to time. Responsibility: Individual Mine Lease Holders.	Dump stability studies have been conducted by CIMFR, Dhanbad scientists and as per the recommendation of their experts, the height of the dump are being maintained. The measures for dump management as suggested are already being implemented to take care of any erosion and for its stabilization. The plantation is monitored and maintained till it becomes self-sustaining. The records pertaining to plantation – species name, growth, area coverage is maintained at the mine. iv) Garland drains, Check dams and settling pits have been provided at appropriate places to arrest silt and sediment flows to ensure that only clear water will leave from lease boundary. The water rain water collected in mine pit is used for dust suppression and green belt development. The settling ponds & check dam structures are regularly de-silted and maintained properly. Garland drains has been already constructed for the dumps as per the approved mine plan. Settling pits of adequate capacity has already been provided. v) Back filling of mined out area over an area of 12.56 ha. is being carried out as per the approved mining Plan. The afforestation over the OB dump is being done accordingly. vi) Hazardous wastes management is being done as per the provisions of Hazardous Waste Management Rules, 2016. As the maintenance of HEMM is being done at Noamundi Workshop the hazardous waste such as waste oil, lubricants etc. are generated and disposed off at Noamundi Iron mine. The copy of HW Annual Return in Form-IV is attached as **Annexure-XXI**.
20)	Ecology/Biodiversity (Flora-Fauna) Related: Project Proponent shall implement the following mitigation measures: (i) All precautionary	i) A detailed Site-Specific Wildlife Conservation Plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023. And the activities

	measures should be taken during mining operation for conservation and protection of endangered fauna namely elephant, sloth bear etc. spotted in the study area. Action plan for conservation of flora and fauna should be prepared and implemented in consultation with the State Forest and Wildlife Department within the mine lease area, whereas outside the mine lease area, the same should be maintained by State Forest Department. (ii) Afforestation is to be done by using local and mixed species saplings within and outside the mining lease area. The reclamation and afforestation is to be done in such a manner like exploring the growth of fruit bearing trees which will attract the fauna and thus maintaining the biodiversity of the area. As afforestation done so far is very less, forest department needs to identify adequate land and do afforestation by involving local people in a time bound manner. (iii) Green belt development carried out by mines should be monitored regularly in every season and parameters like area under vegetation/plantation, type of plantation, type of tree species /grass species/scrubs etc., distance between the plants and survival rate should be recorded. (iv) Green belt is an important sink of air pollutants including noise. Development of green cover in mining area will not only help reducing air and noise pollution but also will improve the ecological conditions and prevent soil erosion to a greater extent. Further, selection of tree species for green belt should constitute dust removal/dust capturing plants since plants can act as efficient biological filters removing significant amounts of particulate pollution. Thus, the identified native trees in the mine area may be encouraged for plantation. Tree species having small leaf area, dense hair on leaf surface (rough surface), deep channels on leaves should be included for plantation. (v) Vetiver plantation on inactive dumps may be encouraged as the grass species has high strength of anchoring besides medicinal value. (vi) Details of compensatory afforestation done should be recorded and documented by respective forest divisions, and State Forest Department should present mine-wise annual status, along with expenditure details. Responsibility: Individual Mine Lease Holders and State Forest & Wildlife Department.	proposed are being complied. The detailed implementation status of SSWLCP is attached as **Annexure-IV.** ii) We are taking all the suggested measures like selection of the correct local species mix, fruit-species plantation, etc. to enhance the biodiversity of the region. iii) Green belt development done is monitored till it becomes self-sustaining. Relevant records as mentioned are being maintained by the horticultural specialist. The details of plantation & species carried out is attached as **Annexure-XXII.** iv) We have a Biodiversity Management Plan prepared by IUCN experts. It contains the list of native species suited for plantation in all conditions including for dust removal/ dust capturing plants. v) Tata Steel has undertaken vetiver plantation in order to stabilize OB dumps. vi) It is in the scope of State Forest Department.

21)	Socio-Economic Related: Project Proponent shall implement the following mitigation measures: (i) Public interaction should be done on regular basis and social welfare activities should be done to meet the requirements of the local communities. Further, basic amenities and infrastructure facilities like education, medical, roads, safe drinking water, sanitation, employment, skill development, training institute etc. should be developed to alleviate the quality of life of the people of the region. (ii) Land outees and land losers/affected people, if any, should be compensated and rehabilitated as per the national/state policy on Resettlement and Rehabilitation. (iii) The socio-economic development in the region should be focused and aligned with the guidelines/initiatives of Govt. of India/ NITI Aayog around prosperity, equality, justice, cleanliness, transparency, employment, respect to women, hope etc. This can be achieved by providing adequate and quality facilities for education, medical and developing skills in the people of the region. District administration in association with mine lease holders should plan for "Samagra Vikas" of these blocks well as other blocks of the district. While planning for different schemes in the region, the activities should be prioritized as per Pradhan Mantri Khanij Kshetra Kalyan Yojna (PMKKKY), notified by Ministry of Mines, Govt. of India, vide letter no. 16/7/2017-M.VI (Part), dated September 16, 2015. Responsibility: District Administration and Individual Mine Lease Holders.	i) We have a separate wing named Tata Steel Foundation who take care of the social welfare activities and for the well-being and upliftment of the people residing near the project. They interact regularly with the local communities to identify their needs and requirement and accordingly plan the yearly activities in all the listed themes. The documents related to public interaction is attached as **Annexure-XXIII**. ii) There is no case of displacement of people due to the project. iii) TSL is already supporting the State Government in facilitating the development of schools, conducting health camps, construction of medical facilities, provision of training and skill development programs, etc. and will continue to extend support in future too.
22)	Road Transport Related: Project Proponent shall implement the following mitigation measures: (i) All the mine lease holders should follow the suggested ore transport mode (SOTM), based on its EC capacity within next 5 years. (ii) The mine lease holders should ensure construction of cement road of appropriate width from and to the entry and exit gate of the mine. Further, maintenance of all the roads should be carried out as per the requirement to ensure dust free road transport. (iii) Transportation of ore should be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore/dust takes place. Further, air quality in terms of dust, PM10 should be monitored near the roads towards entry & exit gate on regular basis, and be maintained within the acceptable limits. Responsibility: Individual Mine Lease Holders and Dept. of Steel & Mines.	i) Katamati mine will abide by the SOTM system as and when the guidelines are formed by the Department of Steel & Mines, Govt of Odisha in this regard. ii) 400 meters of concrete road within the mine lease area is completed. Maintenance of all roads under TSL control is being done regularly to ensure dust-free road transport. iii) Transportation of final product by trucks, outside mine to the end-use steel plants, is being done by covering the trucks with tarpaulin so that no spillage takes place. Air quality monitoring (PM10) is being done near the exit point.

23)	1) Occupational Health Related: Project Proponent shall implement the following mitigation measures: (i) 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 periodically. (ii) Occupational health surveillance program for all the employees/workers (including casual workers) should be undertaken periodically (on annual basis) to observe any changes due to exposure to dust, and corrective measures should be taken immediately, if needed. (iii) Occupational health and safety measures related awareness programs including identification of work-related health hazard, training on malaria eradication, HIV and health effects on exposure to mineral dust etc., should be carried out for all the workers on regular basis. A full-time qualified doctor should be engaged for the purpose. Periodic monitoring (on 6 monthly basis) for exposure to respirable minerals dust on the workers should be conducted, and record should be maintained including health record of all the workers. Review of impact of various health measures undertaken (at an interval of 3 years or less) should be conducted followed by follow-up of actions, wherever required. Occupational health center should be established near mine site itself. Responsibility: Individual Mine Lease Holders and District Administration (District Medical Officer).	i) Personal Protective Equipment for working in dusty areas are provided to all personnel. Periodic training on safety and health aspects is carried out at the training center. ii) Initial Medical Examination & Periodic Medical Examinations are conducted for all employees at the TSL health facility periodically and records are maintained. This is being carried in compliance to Mines Act, 1952 & Rules 1956 and amendments thereto. During the period April 2024 to March 2025 a total of 142 nos. of IMEs were conducted & 44 nos. of PMEs were conducted. The occupational health surveillance shows that there is no occurrence of any kind of occupational health diseases. iii) Awareness programs on Occupational Health and Safety are being done regularly by our central medical team located at Jamshedpur. Similar programs are arranged at site level to include all the contract workers as well. A Central Hospital located at Noamundi caters to both Noamundi and Katamati mine. A full-time Occupational Health Specialist has been appointed in the hospital for periodic health check-up of employees and contractual workers. A program called Wellness-at-Workplace is being conducted at the mine and health of all mine workers is checked and monitored every month. All the health records are maintained. We will follow and implement the additional suggestions as provided.
C. STANDARD CONDITIONS		
I. Statutory Compliance		
1	This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.	Noted.
2	The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.

3)	The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.
4	The Project Proponent shall follow the mitigation measures provided in MoEFCC's 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".	All the conditions mentioned in the MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014 are being followed. The compliance of same is attached as **Annexure-XXIV.**
5	A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.	A copy of EC letter is sent to Deojhar panchayat and Anseikala panchayat with letter no. MD/ENV/173/110/2021 and MD/ENV/174/110/2021 dated 10.08.2021. Copy of same is attached as **Annexure-XXV**.
6	State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.	Noted.
7	The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.	Details of Environment Clearance with regard to Katamati Iron Mine were published both in English (Orissa Post) and Odiya (Prameya) in local newspapers on 11.08.2021. The copy of the newspaper advertisement was sent to the Regional Office, MoEF&CC, Bhubaneswar with letter no: MD/ENV/187-A/98/2021 dated 16.08.2021. Copy of same is attached as **Annexure-XXVI.**
8	The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred, PP need to apply for transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.	Noted.
II. Air quality monitoring and preservation		

9)	The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.	Three continuous ambient air quality monitoring stations are installed in the core zone(two) and buffer zone(one) of mine lease area. Various parameters such as PM_{10}, $PM_{2.5}$, SOx, NOx & CO are being monitored as per guidelines. Eight manual ambient air quality monitoring stations are installed at prominent places such as pit office, viewpoint, surrounding villages etc. and monitoring is done on regular basis. The data is also been displayed using electronic display board in public domain. Average air quality data is enclosed as **Annexure- XIII.**
10)	Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.	Fugitive dust emissions from all the sources are being controlled regularly on daily basis. A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. Chemical is used for better effectiveness of dust control by water sprinkling. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
III. Water quality monitoring and preservation		
11)	In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.	Based on observations from nearby wells and water bodies, the water table in the area is about 519 mRL. Whereas, the maximum depth at conceptual stage is considered to be 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed and the mining operation will not intersect ground water table. Currently, the mining operation is restricted above the ground water table and shall not intersect the ground water table, in case of working below prior approval from MoEF&CC & CGWA shall be obtained. For domestic use and other purposes, the mine has been granted renewal of CGWA NOC (381m3/day) issued vide no. CGWA/NOC/MIN/REN/3/2025/10892, dated 22.02.2025 which is valid till 09.10.2026.

12)	Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.	Ground water quality and Ground water level are being monitored periodically in and around the lease areas. All the monitoring results are being submitted to regulatory agencies. The copy of ground water quality & level is attached as **Annexure-XVIII A & B** respectively.
13)	The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease including upstream and downstream. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. The parameters to be monitored shall include their water quality vis-a-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data 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, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.	No perennial nallah/stream present in the mine lease area. Water quality monitoring of nallahs present outside the mine lease area is done regularly and the reports are submitted to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. SW Quality & flow rate is attached as **Annexure-XVII & XXVII** respectively.
14)	Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off, acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued	As there is no workshop present in the mine lease area, there is no generation of wastewater. All the surface runoff is allowed to pass through garland drains, check dams and then settling pit. The surface run-off quality report is attached as **Annexure-XXVIII.** The monitored data is displayed on an electric display board. The photograph of the display board is attached as **Annexure-XXIX**. The monitoring reports are uploaded on the company website as a part of this six monthly EC compliance report.

	by Ministry of Environment, Forest and Climate Change may also be referred in this regard.	
15)	Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.	Due to area constraint inside the mine lease area 96 nos. of ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment ground water table.
16)	Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.	No industrial wastewater is being generated as there is no workshop present in Katamati Iron Mine. A CETP is of 30KLD capacity with Oil and grease trap facility is installed for treating the effluent generated from common workshop at Noamundi.
17)	The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.	There is zero waste-water discharge by the mine and it will be maintained in the future as well. Water audit is carried out by an accredited consultant from CGWA and the improvements suggested are being carried out to reduce consumption of water. The specific water consumption is in decreasing trend as the specific water consumption during the year 2022-23 was 19.62 liters/ton of iron produced and the specific water consumption during the year 2023-24 is 10.33 liters/ton of iron produced.
IV. Noise and vibration monitoring and prevention		
18)	The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.	Monitoring of peak particle velocity is done during every blast and the reports are being maintained. Copy of vibration monitoring is attached as **Annexure-XV.**
19)	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.	The illumination & sound has been done in such a way that the villagers are not disturbed. The copy of Noise Monitoring report is attached as **Annexure-XVI.**
20)	The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective	Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs.

<table>
<tr><td></td><td>respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.</td><td></td></tr>
<tr><td colspan="3">V. Mining plan</td></tr>
<tr><td>21)</td><td>The Project Proponent shall adhere to approved mining plan, inter alia, including, total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life; etc.).</td><td>Total excavation (quantum of mineral, waste, over burden, inter burden and top soil etc.); mining technology; lease area; scope of working (method of mining, overburden & dump management, O.B& dump mining, mineral transportation mode, ultimate depth of mining, concurrent reclamation and reclamation at mine closure; land-use of the mine lease area at various stages of mining etc. are as per the approved Mine Plan. The details of production for the last 3 years are as follows:
<table>
<tr><td>Year</td><td>ROM Production</td><td>OB Generation</td></tr>
<tr><td>2022-23</td><td>7581611 MT</td><td>599432.8 m³</td></tr>
<tr><td>2023-24</td><td>11682921 MT</td><td>622916 m³</td></tr>
<tr><td>2024-25</td><td>11270000 MT</td><td>523221 m³</td></tr>
</table></td></tr>
<tr><td>22)</td><td>The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-a-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.</td><td>Noted. Land-use of the mine lease area are governed as per the approved mining plan.
Excavation, backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area are governed as per approved mining plan. Report on plantation activities is being submitted regularly to the state pollution control Board along with monthly reports.</td></tr>
<tr><td colspan="3">VI. Land Reclamation</td></tr>
<tr><td>23)</td><td>The Overburden (O.B.), waste and topsoil generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB / waste dumps / topsoil dump like height, width and angle of slope shall be governed as per the approved Mining Plan and the guidelines/circulars issued by D.G.M.S. The topsoil shall be used for land reclamation and plantation.</td><td>Over burden is stacked at the earmarked places only. The slopes of the OB dumps are terraced, and the overall slope angle is maintained.
Generation of topsoil is very minimal because no fresh area is being broken for mining and the top soil generated, is being kept at the earmarked site(s) only inside the mining lease area and is being used for plantation & other vegetation & grassing activities.
The inactive dump slopes are covered with geo-textile coir-mat and vegetated with native species, grass seeds and vetiver grass for better slope stabilization.</td></tr>
<tr><td>24)</td><td>The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on</td><td>Slope of the dumps are being stabilized by coir matting and vetiver grassing etc.,</td></tr>
</table>

	slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes I clay liners/ Bentonite etc. shall be undertaken for stabilization of the dump.	
25)	Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.	There is no discharge of any industrial effluent outside the mine lease. All the garland drains, settling pits and check dams of appropriate size, gradient and length been constructed both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into water bodies. Photographs of toe wall, garland drain and settling pits are attached as **Annexure-XX**.
26)	Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.	All the garland drains, settling pits and check dams of appropriate size, gradient and length been constructed as per progressive mine closure plan both around the mine pit and over burden dump(s) to prevent run off of water and flow of sediments directly into water bodies.
VII. Transportation		
27)	No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated.	Being Complied. Out of 13.5 MTPA total production, approximately 9.5 MTPA of ROM shall be processed in tandem with Noamundi ore in the processing plant located at Noamundi and conveyed through closed conveyor belts to the private railway siding at Noamundi. 11.5 MTPA

	All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers. [If applicable in case of road transport].	of final product from Katamati is dispatched from the private railway siding and other public railway sidings. Approximately 4 MTPA ROM shall be processed at the processing plant located at Katamati. The finished product shall be continued to be sent to the steel plants through railway siding either through Noamundi or through public siding at Deojhar or by road directly to the steel plants. Currently around 2 MTPA processed ore (maximum) is dispatched by trucks due to a shortage of racks and wagon availability from Railway.
28)	The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
VIII. Green Belt		
29)	The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.	The green belt has been developed with native species on all along the safety zone and other area.

30)	The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.	Saplings planted apart from local grass plantation on dumps with various species. The species include Calotropis gigantean, ficus species, *Pedilanthus, Cynodon dactylon, Saccharum spontaneum, Bougainvilleas, Yellow durenta, etc.* are planted. *Saccharum spontaneum* planted on slime pond, shown encouraging results, which control the erosion bind the material and adequately covers the ground vegetation.
31)	The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.	No grazing land has been acquired.
IX. Public hearing and human health issues		
32)	Project Proponent shall make provision for the housing for workers labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.	Township has been developed at Noamundi (adjacent to Katamati mine) for workers with all the adequate facilities such as hospital, schools, STP etc.
X. Corporate Environment Responsibility (CER)		
33)	The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the activities committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office	Time bound action plan for undertaking the activities during Public Consultation has already been followed and submitted.

	Memorandum No.22-65/2017-IA.11I dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.	
XI. Misecellaneous		
34)	The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.	The digital processing of entire lease area is being carried out regularly. The current land use pattern is made by M/s Digital Cartography and Services Pvt. Ltd. the authorized agency by ORSAC, Bhubaneshwar. And the LULC report is attached as **Annexure-X**.
35)	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.	Not applicable. Katamati is an operational Iron mine of Tata Steel Ltd from last several decades. Thus financial closure & it's approval is not applicable.
36)	The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MOEFCC &its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.	Six monthly compliance reports are being submitted regularly on the status of implementation of the stipulated environmental safeguards to the MoEF&CC, its Regional Office Bhubaneswar, Central Pollution Control Board and State Pollution Control Board. The submission confirmation of last submitted EC compliance report is attached as **Annexure-XXX**.
37)	A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.	A separate environmental management cell is in place with people having relevant qualification on environmental science. Organization has adequate environmental reporting system for adequate decision making. The formation details is attach as **Annexure-XXXI**.
38)	The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEFCC officer(s) by furnishing the requisite data/ information/ monitoring reports.	Full cooperation shall be extended to the officers in furnishing the requisite data/ information/ monitoring reports.
39)	In pursuant to Ministry's O.M No 22-34/2018-IA.III dated 16.01.2020 to comply with the direction made by Hon'ble Supreme Court on 8.01.2020 in W.P. (Civil) No 114/2014 in the matter Common Cause Vs Union of India, the mining lease holder shall after ceasing mining operations, undertake regrassing the mining area and any other area which may have been disturbed due to other mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	Shall be complied after ceasing of mining operations. Although concurrent grassing of the area is undertaken which has been already explained earlier.

40)	The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted.
41)	Concealing factual data failure to comply with any or submission of false/ fabricated data and of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Noted.
AMENDMENT OF ENVIRONMENTAL CLEARANCE NO. J-11015/63/2008-IA-II(M) DATED 18.01.2019		
	Specific Condition	
i	This Environmental Clearance will not be operational till such time the Project Proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.
ii	Department of Mining & Geology, State Government shall ensure that mining operation shall not commence till the entire compensation levied, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of judgment of Hon'ble Supreme Court dated the 2nd August 2017 in Writ Petition (Civil) No. 114 of 2014 in the matter of Common Cause versus Union of India and Ors.	A payment of Rs 82,70,48,782.00/- is made as per demand notice no. 4140/ mines dated 02.09.2017. The Project Proponent is complying with all the statutory requirements and judgements of Hon. Supreme Court dated the 2nd August 2017 in writ petition (civil) no. 114 of 2014 in the matter of common cause vs union of India and Ors.
iii	Monitoring of Ambient Air Quality to be carried out based on the 2009 Notification, as amended from time to time by the Central Pollution Control Board.	Ambient Air Quality monitoring is being carried out at 8 locations covering both core zone and buffer zone areas. And the Ambient air monitoring report for the period October 2024 to March 2025 is attached as **Annexure-XIII**.
iv	The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUCC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate for all the vehicles from authorized pollution testing centre; Washing of all transport vehicle should be done inside the mining lease.	The pollution due to transportation is being controlled by sprinkling water on the transportation road outside the mining lease area. Vacuum sweeping machine is also deployed on the mineral haul roads both within and outside the mining lease area. And all the transport trucks are covered with tarpaulin sheets and the same is being ensured at the mines exit gate. Vehicles with valid PUC certificates are allowed into the mines for mineral transportation. The mineral transported trucks are not overloaded. All the tyre mounted HEMMs plying within the mines are having valid PUC certificate from authorized pollution testing centre. Washing of HEMM is being done at Vehicle washing ramp & ETP installed at adjacent Noamundi Iron Mine and the treated water is being recycled for vehicle washing purpose.

v	The activities and budget earmarked for Corporate Environment Responsibility (CER) shall be as per Ministry's O.M No. 22-65/2017-IA. II (M) dated 01.05.2018 and the action plan on the activities proposed under CER shall be submitted to the Regional Office of the Ministry and State Pollution Control Board.	All the activities committed during PH compliance has been implemented. The details of PH commitments & compliance status is attached as **Annexure-I**.

ENVIRONMENTAL CLEARANCE NO. J-11015/63/2008-IA-II(M) DATED 26.11.2010		
Sl	**Specific Conditions**	
i.	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.	Consent to Establish has been obtained vide letter no. 12850/IND-II-NOC-5109, dated: 04.08.2010. And subsequently Consent to Operate for 8.00 MTPA (ROM) has been obtained vide letter no. 1202/IND-I-CON-185, dated: 24.01.2011. The front page of the CTE & CTO are attached as **Annexure-XXXII & XXXIII** respectively.
ii.	Environmental clearance is subject to grant of forestry clearance. Necessary forestry clearance under the Forest (Conservation) Act, 1980 for an area of 199.172ha forestland Involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken In the forest area without obtaining requisite prior forestry clearance.	The forest diversion proposal was submitted on 17.04.2007 over an area of 196.9719 ha (165.7928 ha fresh diversion and 31.1791 ha forest land broken prior to 1980) leaving a safety zone of 2.2001 ha. Then mining operation was restricted within the non-forest land. And subsequently the Forest clearance has been granted for 360.01 ha. Vide letter no. 8-1/1018-FC dated: 09.06.2021.
iii.	Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.	Noted. There is no National Park, Sanctuaries, elephant corridor and tiger reserves within 10 KM radius of lease area.
iv.	Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.	No specific clearance under the Wildlife (Protection) Act, 1972 is required for the project.
v.	The mining operations shall be restricted to above ground water table and it should not intersect the groundwater table. In case of working below the ground water table, prior approval of the Ministry of Environment and Forests and the Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.	The water table in the area is about 519 mRL. Whereas the maximum depth at conceptual stage is 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed, and the mining operation will not intersect ground water table.
vi.	The project proponent shall ensure that no natural watercourse and/or water resources shall be obstructed due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and	No natural watercourse or water resources are obstructed due to mining operation. Further, there are no first order or second order streams emanating from mining lease area.

	the second order streams, If any, emanating from the mine lease area during the course of mining operation.	
vii.	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.	No topsoil generated during the reporting period 2024-25. Previously generated topsoil has been utilized for the purpose of green belt development, dump stabilization and horticulture activities.
viii.	The subgrade material, if any shall be stacked at the earmarked sites.	Sub-grade material is being stacked at earmarked area within the mining lease area as per the approved mining plan.
ix.	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 and Its phase-wise stabilization shall be carried out. Partial backfilling proposed after cessation of mining. The maximum height of the OB dump(s) shall not exceed 30m having three terraces of 10m each and the overall slope of the dumps shall not exceed 27°. It shall be ensured that the OB dump(s) shall have a factor of safety not less than 1.3. The OB dump(s) should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. Monitoring and management of rehabilitated areas shall 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.	Over burden material is being stacked at earmarked area within the mining lease area as per the approved mining plan. Backfilling activities are also in progress. The dump height is being maintained as per the slope stability study report submitted by CIMFR, Dump stabilization by laying of coir-mat, vegetation of native species, sal plantation, vetiver plantation is being carryout. The compliance status is being regularly sent to the Regional office, MoEF&CC, Bhubaneswar & SPCB Odisha on six monthly basis.
x.	Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, sub-grade, over burden and mineral dump(s) to prevent run off of water and flow of sediments directly into the Mahadev Nallah, Betlata Nallah, Baitarni River and other water bodies. The water so collected should be utilized for watering the mine area, Toads, 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, over burden dumps and sub-grade and mineral dump(s) to prevent run off of water and flow of sediments directly into the Mahadev Nallah, Betlata Nallah,	Garland drains with settling pits have been made all along the OB & sub-grade dumps. 4 nos. of settling pits have been constructed at the end of garland rains to take care of run-off water and sediments. The majority of the run-off generated from mines is diverted to the mining pit. There is no effluent discharge outside the mining lease area.

	Baitarni 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.	
xi.	Dimension of the retaining wall at the toe of the over burden dump(s) and the OB benches within the mine to check run-off and siltation shall be based on the rain fall data.	Retaining wall and garland drains have been constructed around the OB dump to check mines run-off.
xii.	Trace Metals such as Ni, Co, As, and Hg should be analysed in dust fall and soil samples for at least one year during summer, monsoon and winter monsoon. If concentrations of these metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.	We are monitoring trace metals in dust fall and soil samples.
xiii.	Plantation shall be raised in an area of 370,1555ha including a 7.5m wide green belt In the safety zone around the mining lease, over burden dump(s), backfilled and reclaimed area, mine benches, around water body, roads etc. In consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.	Plantation over 370.1555 ha shall be raised at the end of the mines life. Plantation over 7.5 m wide green belt in the safety zone area all around the mines boundary is complete. We have maintained tree density of 2500 plant per hectare.
xiv.	The void left unfilled in an area of 11.2ha shall be converted into water body. The higher benches of excavated void/mining pit shall be terraced and plantation done to stabilize the slopes. The slope of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out all along the excavated area.	Shall be complied at the end of the mines life.
xv.	Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system.

	to the norms prescribed by the Central Pollution Control Board in this regard.	Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
xvi.	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.	Water quality monitoring & flow rate monitoring of nallahs present outside the mine lease area is being done regularly and the records are being maintained. The surface water quality report & surface water flow rate is attached as **Annexure-XVII & XXVII** respectively.
xvii.	The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.	Due to area constraint inside the mine lease area ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment ground water table.
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 installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)) shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubneswar, the Central Ground Water Authority and the Regional Director, Central Ground Water Board, If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.	Regular monitoring of ground water level on monthly basis and its quality on quarterly basis is being carried out within the mine lease area and surrounding areas. A network of dug wells and borewells with piezometers already exists for this purpose. The report of the same is being shared 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 on six monthly basis. The ground water quality & level report is attached as **Annexure-XVIII A & B** respectively.
xix.	Appropriate mitigative measures should be taken to prevent pollution of the Baitarni River in consultation with the State Pollution Control Board.	Being complied.
xx.	The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water required for the project. The ground water shall not be used for mining operations. Prior approval of Central Ground Water Authority shall be obtained for using ground water.	We have obtained NOC from CGWA, New Delhi for drawl of ground water vide NOC no. CGWA/NOC/MIN/REN/3/2025/10892 dated: 22.02.2025. Additionally, surface water is being sourced from Noamundi Iron Mine for which surface water permission from Water resource department has been taken.
xxi.	Suitable rainwater harvesting measures on long term basis shall be planned and Implemented in consultation with the Regional Director, Central Ground Water Board.	Due to area constraint inside the mine lease area ponds have been constructed in the buffer zone for ground water recharge. Further all the surface runoff generated is directed to mine pit where it is allowed to settle and augment 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. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.	Vehicular emission checks of all the wheel mounted HEMMs are done at regular intervals. Maintenance of mining equipment is done on regular basis. It is mandatory for any vehicle entering the mine premises to have a valid fitness certificate. The mineral transported trucks are not overloaded.
xxiii.	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 operation are being carried out during day time only. Blasting is done using the controlled blasting technique. In this regard, one study has been made by CIMFR (Central Mining and Fuel Research Institute), Dhanbad and recommendations therein are being followed. Initiation system is through either NONEL/electronic detonation system so as to ensure minimal ground vibration
xxiv.	Drills shall either be operated with the dust extractors or equipped with water injection system.	All drilling machines are equipped with in-built dust extraction/ suppression system which has an interlock which prohibits drilling without water.
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.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission.
xxvi.	Sewage treatment plant shall be installed for the colony. ETP shall also be provided for the workshop and wastewater generated during the mining operation.	A 30 KLD CETP along with Oil and Grease trap is installed to treat all the effluent generated from washing of HEMM's in workshop at Noamundi. This caters to Katamati mine as well.
xxvii.	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.	Initial Medical Examination and Periodic Medical Examinations are conducted for all employees at the TSL health facility periodically and records are maintained. This is being carried in compliance to Mines Act, 1952 and Rules 1956 and amendments thereto. During the period April to September 2024 a total of 103 nos. of IMEs were conducted and 44 nos. of PMEs were conducted.
xxviii.	Effective safeguard measure shall be taken to ensure that the RSPM levels in the area are well below the prescribed standards.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system.

		Mist cannons have placed at strategic points to prevent and control of fugitive dust emission. Ambient air quality conforms to the CPCB norms.
xxix.	The height of stack shall be as per the prescribed standards / guidelines.	No stacks present within the mine lease area.
xxx.	Trace metals such as Fe, Cr +6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits.	Trace metals are monitored for both ground water & surface water. The reports are shared to OSPCB on quarterly basis. The monitoring report of Surface water & Ground water qualities are attached as **Annexure-XVII & VXIII A** respectively.
xxxi.	Occupational health programme encompassing identification of hazards, ranking of the risks, plan to handle such risk should be prepared and implemented effectively.	Awareness programs on Occupational Health and Safety are being done regularly by our central medical team located at Jamshedpur. Similar programs are arranged at site level to include all the contract workers as well. A Central Hospital located at Noamundi caters to both Noamundi and Katamati mine. A full-time Occupational Health Specialist has been appointed in the hospital for periodic health check-up of employees and contractual workers. A program called Wellness-at-Workplace is being conducted at the mine and health of all mine workers is checked and monitored every month. All the health records are maintained. We will follow and implement the additional suggestions as provided.
xxxii.	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora and endangered fauna namely elephant, sloth bear etc. found in the study area. Action plan for conservation of flora and fauna prepared shall be implemented in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan prepared specific to this project site shall be effectively Implemented. 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. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar.	The new conservation plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023.

xxxiii.	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.	Not applicable. As no separate colony for Katamati iron mine.
xxxiv.	Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to MOEF and Its regional office	The digital processing of entire lease area is being carried out regularly. The current land use pattern is made by M/s Digital Cartography and Services Pvt. Ltd. the authorized agency by ORSAC, Bhubaneshwar. And the LULC report is attached as **Annexure-X**.
xxxv.	The critical parameters such as RSPM (Particulate matter with size less than 10micron 1.e., PM10) and NOx In the ambient air within 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. J-20012/1/2006-JA.II(M) dated 27.05.2009 Issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.	All the parameters are being monitored and the monitoring data is being uploaded on the company's website as part of six monthly EC compliance. All the monitoring parameters are digitally displayed on the digital display board installed at the mines main gate.
xxxvi.	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Progressive mine closure plan has been approved by IBM. As per the MCDR, 2017 the Final Mine closure plan shall be submitted to competent authority for approval two years prior to the proposed closure of the mine.
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.	We are operating the mines as per the mining plan approved by IBM.
ii.	No change in the calendar plan including excavation, quantum of mineral iron ore and waste should be made.	No change in calendar plan as approved by IBM.
iii.	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10micron i.e., PM10)	Eight manual ambient air quality monitoring stations are installed at prominent places such as pit office, viewpoint & surrounding villages etc. and monitoring is

	and 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.	done on regular basis as per the NEERI recommendation.
iv.	Data on ambient air quality [(RSPM(Particulate matter with size less than 10micron i.e., PM10) and NOx) should be regularly submitted to the Ministry including its Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.	RSPM(Particulate matter with size less than 10micron i.e., PM10) and NOx monitoring is being carryout on daily basis at 4 locations within the mines lease area and the report are submitted to the Regional office located at Bhubaneswar and the State Pollution Control Board / Central Pollution Control Board once in six months.
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.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system. Mist cannons have placed at strategic points to prevent and control of fugitive dust emission.
vi.	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.	Monitoring of Noise level are being done regularly at the identified major sources of noise generation within core zone. People working at high noise areas are provided with ear plugs and ear muffs.
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 30 KLD CETP along with Oil and Grease trap is installed to treat all the effluent generated from washing of HEMM's in workshop at Noamundi. This caters to Katamati mine as well.
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 for working in dusty areas are provided to all personnel. Periodic training on safety and health aspects is carried out at the training centre.
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 is in place with people having relevant qualification on environmental science. Organization has adequate environmental reporting system for adequate decision making.

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 and its Regional Office located at Bhubaneswar.	Funds allocated for environment management are spent only for environment related purposes and not diverted for any other use. The detailed Environment expenditure made during the period April 2024 to March 2025 is attached as **Annexure-XXXIV**.
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.	We shall abide by the said condition.
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.	Full cooperation shall be extended to the officers in furnishing the requisite data/ information/ monitoring reports.
xiii.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions Including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	Six monthly compliance report both hard copy and soft copy is being submitted on regular basis. And the same is being uploaded on TSL website.
xiv.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, If any, from whom suggestions/ representations, If any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	A copy of Environment Clearance has been sent to the nearby Panchayats. The copy of letters is attached as **Annexure-XXXV.** Further, copy of EC letter has also been uploaded on the Tata Steel website www.tatasteel.com.
xv.	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/ Tehsildar's Office for 30 days.	Complied with.

xvi.	The environmental statement for each financial year ending 31st March in Form-V as Is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.	Environment statement is being submitted on annual basis before 30th September of every year and the same has been hosted on Company's website www.tatasteel.com.
xvii.	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 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.	Details of Environment Clearance with regard to Katamati Iron Mine were published both in English (New Indian Express) and Odiya (Pragatibadi) in local newspapers on 02.12.2010. The copy of the same is attached as **Annexure-XXXVIII**.

ENVIRONMENTAL CLEARANCE NO. J-11015/120/2003-IA-II(M) DATED 06.05.2005		
Sl.	**Specific Conditions**	
i	Mining shall not be undertaken in forestland without the necessary approvals/ forestry clearance.	At the time prior to grant of Forest clearance the mining activities were restricted within the non-forest area. Subsequently the Forest clearance has been granted for 360.01 ha. Vide letter no. 8-1/1018-FC dated: 09.06.2021.
ii	OB should be stacked at the two earmarked dump site(s) only, stabilised and reclaimed. The maximum overall slope of dump even if single stage shall not exceed 28°.	OB is being stacked at one dump. The dump is stabilized with coir-mat, plantation, vetiver etc.
iii	Mineral rejects shall be stacked separately at earmarked site/dump-only.	Sub-grade material is being stacked at earmarked area within the mining lease area as per the approved mining plan.
iv	Mineral rejects shall be stacked separately at earmarked site/dump-only. Garland drains (size, gradient & length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall 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. Storm water return system should be provided. Storm water should not be allowed to	Over burden material is being stacked at earmarked area within the mining lease area as per the approved mining plan. Dump stabilization by laying of coir-mat, vegetation of native species, sal plantation, vetiver plantation is being carryout. Retaining wall and garland drains have been constructed around the OB dump to check mines run-off. Storm water is not allowed to mix with the effluent generated from vehicle washing. Majority of the run-off generated within the mines is being diverted into the mines pit.

	go to the effluent treatment plant during high rainfall/super cyclone period. A separate storm water sump for this purpose should be created.	
v	Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data.	Retaining wall and garland drains have been constructed around the OB dump to check mines run-off.
vi	Trace Metals such as Ni, Co, As, and Hg should be analysed in dust fall and soil samples for at least one year during summer, monsoon and winter seasons. If concentrations ofthese metals are found below the standards then with prior approval of MOEF this specific monitoring could be discontinued.	We are monitoring trace metals in dust fall and soil samples.
vii	Road network shall be developed within the lease area before expansion for transport of the mineral form the quarry area.	Road network has been developed within the mining lease area for transport of mineral from quarry area.
viii	Mineral and OB transportation shall be in trucks/dumpers covered with tarpaulins. Vehicular emissions should be kept under control and regularly monitored. Suitable measures should be taken to check fugitive emissions from haulage roads, transfer points, etc.	It is ensured that all the vehicles exiting the mine gate are checked for use of tarpaulin cover and are not overloaded. Vehicular emission checks of all the wheel mounted HEMMs are done at regular intervals. Maintenance of mining equipment is done on regular basis. A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system.
ix	A green belt of adequate width should be raised by planting the native species around ML area. Plantation should also be carried out along roads, OB dump sites etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2500 plants per ha.	Adequate number of saplings have been planted in the safety zone. A total of 11276 nos. of saplings were planted during the period April to September 2024. The tree density is maintained around 2500 plants per ha.
x	Groundwater shall not be used for mine operations. Prior approval of CGWA shall be obtained for using groundwater.	NOC has been accorded by CGWA vide NOC No. CGWA/NOC/MIN/REN/3/2025/10892 dated: 22.02.2025 which is valid till 09.10.2026
xi	Mining will not intersect groundwater. Prior permission of the MOEF and CGWA shall be taken to mine below water table.	The water table in the area is about 519 mRL. Whereas the maximum depth at conceptual stage is 564 mRL. Hence, throughout the course of mining operations, the ground water table will remain undisturbed, and the mining operation will not intersect ground water table.
xii	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring should be done for quantity four times a year in pre-monsoon (April /May), monsoon (August), post-monsoon (November) and winter (January) seasons and for	Ground water quality and Ground water level are being monitored periodically in and around the lease areas. All the monitoring results are being submitted to regulatory agencies.

	quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and the Central Ground Water Authority quarterly.	
xiii	Trace metals such as Fe, Cr +6, Cu, Se, As, Cd, Hg, Pb, Zn and Mn shall be periodically monitored at specific locations in both surface water downstream and in ground water at lower elevations from mine area, in consultation with the OSPCB and State Ground Water Board. Suitable treatment measures shall be undertaken in case levels are found to be higher than permissible limits	Trace metals are monitored for both ground water & surface water. The reports are shared to OSPCB on quarterly basis.
xiv	"Consent to Operate" should be obtained from SPCB before expanding mining activities.	Consent to Operate for 2.0 MTPA (ROM) was obtained vide letter no. 6845/SPCB/BBSR-I-IND(CON)-185, dated: 30.03.2006. Copy of the same is attached as **Annexure-XXXVI**.
xv	Specific conservation measures shall be taken up for conservation of endangered fauna, if found within the lease area, in consultation with the State Government.	The new conservation plan has been approved vide letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023.
xvi	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	Progressive mine closure plan has been approved by IBM is in place. As per the MCDR, 2017 the Final Mine closure plan shall be submitted to competent authority for approval two years prior to the proposed closure of the mine.
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.	We are operating the mines as per the mining plan approved by IBM.
ii	No change in the calendar plan including excavation, quantum of iron ore and waste should be made.	No change in calendar plan as approved by IBM.
iii	Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO2, NOx & CO monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Data on ambient air quality (RPM, SPM, SO2, NOx & CO) should be regularly submitted to the Ministry including its Regional office at Bhubaneshwar and the State Pollution Control Board / Central Pollution Control Board once in six months.	Eight manual ambient air quality monitoring stations are installed at prominent places such as pit office, viewpoint & surrounding villages etc. and monitoring is done on regular basis as per the NEERI recommendation.
iv	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	All drilling machines are equipped with in-built dust extraction/ suppression system which has an interlock which prohibits drilling without water. Blasting is done

		using the controlled blasting technique. In this regard, one study has been made by CIMFR (Central Mining and Fuel Research Institute), Dhanbad and recommendations therein are being followed. Initiation system is through either NONEL/electronic detonation system so as to ensure minimal ground vibration.
v	Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/ trucks, loading & unloading points should be provided and properly maintained.	A network of fixed water sprinklers has been laid on permanent haul roads. Mobile water tankers of large capacity namely 50 KL which can cover the entire the entire width of the haul road has been commissioned. All feed hoppers where ore is unloaded and all transfer chutes have been provided with dry-fog dust suppression system.
vi	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs / muffs.	Adequate measures are taken for control of work noise levels such as all HEMMs have acoustic cabins with air conditioners and the exhaust manifold have silencers. Noisy operations have been identified and persons engaged in such operations are provided with ear plugs/muffs.
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 30 KLD CETP along with Oil and Grease trap is installed to treat all the effluent generated from washing of HEMM's in workshop at Noamundi. This caters to Katamati mine as well.
viii	Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	An environment lab has been setup at Noamundi.
ix	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 for working in dusty areas are provided to all personnel. Periodic training on safety and health aspects is carried out at the training centre.
x	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 is in place with people having relevant qualification on environmental science. Organization has adequate environmental reporting system for adequate decision making.
xi	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	Funds allocated for environment management are spent only for environment related purposes and not diverted for any other use. The detailed Environment

	reported to the Ministry and its Regional Office located at Bhubaneshwar.	Expenditure for the period April 2024 to March 2025 is attached as **Annexure-XXXIV**.
xii	The Regional Office of this Ministry located at Bhubaneshwar 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.	Full cooperation shall be extended to the officers in furnishing the requisite data/ information/ monitoring reports.
xiii	A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.	A copy of Environment Clearance has been sent to the nearby Panchayats. The copy of letters is attached as **Annexure-XXXVII.**
xiv	The 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 with.
xv	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Web Site of the Ministry of Environment & Forests at http://envfor.nic.in. and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneshwar.	Details of Environment Clearance with regard to Katamati Iron Mine were published both in English (Sambad) and Odiya (Pragatibadi) in local newspapers on 12.05.2005. The copy of the same is attached as **Annexure-XXXIX**.

Public Hearing Commitments

SL.No	Activities	Particulars/ PH Requirements	Quantity	Status	Expenditure Made (in Lakhs)
1	Education	Construction of additional classrooms & boundary wall at Belaipada High School	1 no	Work completed	74.58
2		Provision of computer equipment at Saraswati Sishu Mandir School	5 nos.	Work completed	2.42
3	Livelihood	Construction of Goatery sheds	100 nos.	Work completed	28.16
4		Support for Entrepreneurship development		Work completed	27.43
5	Swachh Bharat	Providing toilets to individual households	200 nos.	Work completed	55.16
6		Providing toilet facility with water arrangements in two schools	2 units	Work completed	53.23
7	Agriculture	Construction of vermicompost pit	100 nos.	Work completed.	18.80
8	Infrastructure Development	Construction of Kalyan Mandap	1 no	Work completed.	151.0
9		Revamping of Temples (Murga Mahadev & Budha Temple)		Work completed	72.09
10		Construction of boundary wall, stage, platform, shed at playground.		Work completed	30.83
11	Health care	Setting up of Dispensaries at Deojhar GP & Anseikela GP	2 nos.	Work completed	227.0
12		Provision of Ambulance at Deojhar GP & Ansaikela GP	2 nos.	Work completed	49.0

Public Hearing Commitment (Education)

Photograph of Constructed Additional Classroom & boundary wall

Public Hearing Commitment(Livelihood)

Photograph of Goatery Shed at Surrounding Village

Public Hearing Commitment(Livelihood)

Photographs of Mushroom cultivation at Surrounding Village

Public Hearing Commitment(Livelihood)

Photographs of Entrepreneurship development/Skill development

Public Hearing Commitment(Livelihood)

Photographs of Entrepreneurship Support to agriculture

Public Hearing Commitment(Swachh Bharat)

Photograph of toilet facility to individual household

Public Hearing Commitment(Swachh Bharat)

Photographs of toilet constructed in surrounding schools

Public Hearing Commitment(Agriculture)

Photographs of constructed Vermicompost Pit

Public Hearing Commitment (Infrastructure Development)

Photograph of Revamping of Murgamahadev Temple

Public Hearing Commitment (Infrastructure Development)

Photograph of Stage , platform shed at playground

Public Hearing Commitment (Health Care)

Photograph of dispensary at Deojhar GP

Photograph of Ambulance at Deojhar GP

ANNEXURE-II

Photographs of plantation carriedout at Katamati Mines

AHMEDABAD TEXTILE INDUSTRY'S RESEARCH ASSOCIATION

P .O. Ambawadi Vistar, Ahmedabad-380 015. India.
Ph. : (079) 26305131-7921-7922-7923 (Extn. No. : 346)
Sample Collection : 7990590718, Marketing : 9313541439
E-mail : ttl@atira.in Website : www.atira.in

TC-5097

TEST REPORT

Format No.: ATIRA/TT/24/001

ULR NUMBER TC 5097 25 2 00000530F	
Test Report No: A/T/1913 2024-25	**Date: 07.02.2025**
Mill/Company/Customer:	**VEL EXPORTS**
Address & Contact Details:	No. 2-833/2, Royal Avenue, Marudu Pandiyar Street, Thasildar Nagar, Madurai-625020, Tamilnadu Email : info@velexports.com
Sample forwarding Letter No. & Date:	Nil dated 23.01.2025
Date of receipt of Sample:	24.01.2025
Lab Sample Code No. :	**TTCT-4074**

Number of Samples : 01

Date of Performance of test(s): 24.01.2025 to 06.02.2025

Sample Description : Coir Woven Geotextiles

Discipline / Group : Mechanical Testing / Textile

Sr. No.	Test Parameter	Unit	Test Method	Test Results
1.	Break Load **(Dry Test)** Machine Direction Cross Direction	kN/m	IS 13162-5	20.19 15.25
	Elongation at break Machine Direction Cross Direction	%		43.7 39.5
2.	Break Load **(Wet Test)** Machine Direction Cross Direction	kN/m	IS 13162-5 (Clause no 7.2) Immersion 24hrs	15.45 11.04
	Elongation at break Machine Direction Cross Direction	%		47.3 44.6
3.	Peak Load **(Dry Test)** Machine Direction Cross Direction	kN/m	IS 13162-5	23.06 16.94
	Elongation at break Machine Direction Cross Direction	%		51.0 49.1
4.	Peak Load **(Wet Test)** Machine Direction Cross Direction	kN/m	IS 13162-5 (Clause no 7.2) Immersion 24hrs	17.43 12.43
	Elongation at break Machine Direction Cross Direction	%		47.3 44.6

AUTHORISED SIGNATORY
Textile Testing Laboratory
ATIRA, Ahmedabad

Samples are not drawn by ATIRA. Result relates to the samples tested. The report shall not be reproduced except in full, without written approval of the laboratory. The report is strictly confidential and for technical information of customer only. Not for Advertisement, Promotion, Publicity or Litigation. Please write Test Report number and date for all future correspondence.

AHMEDABAD TEXTILE INDUSTRY'S RESEARCH ASSOCIATION

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Sample Collection : 7990590718, Marketing : 9313541439
E-mail : ttl@atira.in Website : www.atira.in

TC-5097

TEST REPORT

Format No.: ATIRA/TT/24/001

ULR NUMBER TC 5097 25 2 00000530F	
Test Report No: A/T/1913 2024-25	**Date: 07.02.2025**
Mill/Company/Customer:	**VEL EXPORTS**
Address & Contact Details:	No. 2-833/2, Royal Avenue, Marudu Pandiyar Street, Thasildar Nagar, Madurai-625020, Tamilnadu Email : info@velexports.com
Sample forwarding Letter No. & Date:	Nil dated 23.01.2025
Date of receipt of Sample:	24.01.2025
Lab Sample Code No. :	**TTCT-4074**

Number of Samples : 01
Date of Performance of test(s): 24.01.2025 to 06.02.2025
Sample Description : Coir Woven Geotextiles
Discipline / Group : Mechanical Testing / Textile

Sr. No.	Test Parameter	Unit	Test Method	Test Results
1.	Determination of Mass Per Unit area	g/m²	IS 15868	872.50
2.	Measurement of Nominal Thickness of Geosynthetics	mm	IS 15868	8.12
3.	Dimension Length Width	 m cm	IS 12503	 2.05 200.0
4.	Mesh Size Machine Direction Cross Direction	cm	IS 15868	 1.7 2.0

Discipline / Group : Chemical Testing / Textile

Sr. No.	Test Parameter	Unit	Test Method	Test Results
1.	Blend Analysis	%	IS 3416 Part-1 (On dry Basis)	100% Natural Cellulose Fiber

AUTHORISED SIGNATORY
Textile Testing Laboratory
ATIRA, Ahmedabad

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		Financial Implicationc and Monitoring Out side Project Area		
Sl. No.		Description of interventions	Status	
1		Nandankanan Forest Training Institute, Chandaka is one of the few Training institute which imparts training to the frontline forest staffs of the State. Upgradation of its physical infrastructures is critical for strengthening human capacity & capability to prevent and mitigate Human-Wildlife Conflict as well as protection of Wildlife. This training institute not only caters to Keonjhar but to whole Odisha. Upgradation of the Institute will help in more focused training that will help in creation of skilled trainees for conservation of wildlife of State in general and Keonjhar in particular.		
	i.	Construction of Auditorium	Tree felling has been completed and construction work is under progress.	
	ii.	Construction of Gymnasium		
	iii.	Construction of Library Building		
	iv.	Upgradation of facilities at Hostel		
	v.	Upgradation of Furnitures and teaching aids at Classrooms		
	vi.	Repair of pathway, boundary wall and landscape		
	vii.	Maintenance of the Training Institute complex for 5 years		
	viii.	Establishment of Firing Ranga for training of Forest Guards and Forester trainees of keonjhar Division in particular and State in general for better protection of forest and wildlife	Site to be provided by the Forst Department for Establishment of Firing Ranga.	
		a. Land clearance and levelling if required and fencing of firing range	To be done after Establishment of Firing Range.	
		b. Ammunition and Arms required for training		
		c. Arms Training Instructor (Retired Army or Armed force personnel for training and maintenance.	To be provided after Establishment of Firing Ranga.	
2		Jana Surakshya Gaja Rakshya - Solar fencing (2 Km in one village) to be taken up either on Community mode or VSS mode or private farmers land as per Socio-economic — political dynamics of the village. The Subsidy component in either case to be borne by user Agency	To be done by the User Agency	
3		Provision of Hired Vehicle with Driver and POL for Anti — depredation cum- anti-poaching squad. The proposed cost is: Vehicle:- @31, 000/per month = 31000 x 12 x 5 = Rs. 18,60,000; POL:- @15,000/- per month = 15,000 x 12 x5= Rs. 9,00,000/-	We have been providing vehicle to the local forest officials for anti-depredation cum anti-poaching	
4		Provision of Vehicle: One vehicle as per requirement of forest department will be provided by the User Agency for use in the Wildlife Head Office	We have provided Yodha vehicles to the forest Department for the purpose mentioned.	

Nicholson Forest Training School Champua

Badminton Court of NFTS

Auditorium Building

Multipurpose Building (Gym, Library and Office)

Training Hall of NFTS

OFFICE OF THE DIVISIONAL FOREST OFFICER, KEONJHAR DIVISION

Phone No- 06766-254315, email ID- dfo.keonjhar@odisha.gov.in

Memo No. 3449 /6F-Mining-73/2020
Dated, Keonjhar the 27th April, 2024

To

The Regional Chief Conservator of Forests,
Rourkela Circle, Rourkela.

Sub: Re-drawing of Safety Zone consideration Katamati Iron Ore Mines of Keonjhar District, Odisha and Noamundi Iron Ore Mines of Jharkhand State of both M/s Tata Steel Ltd.

X-Sub **Submission of compliance on EDS raised by the MoEF&CC, GoI, New Delhi though online.**

This is to inform you that, the user agency i.e. the Chief Joda, M/s Tata Steel Ltd. has submitted the compliance on the above EDS through online. After scrutiny of the aforesaid EDS vis-à-vis the compliance submitted by the user agency, the detail compliance report in this regard is sent herewith for favour of your kind information and onwards transmission to the proper quarter.

Encl: As above.

27/04/24

Divisional Forest Officer,
Keonjhar Division.

26/4

Memo No. 3450 **/Dated** 27.04.2024

Copy along with copy of compliance report submitted to the Principal Chief Conservator of Forests, FD&NO, FC Act, O/o-the PCCF, Odisha, Bhubaneswar for favour of kind information and necessary action.

27/04/24

Divisional Forest Officer,
Keonjhar Division.

26/4

Memo No. 3451 **/Dated** 27.04.2024

Copy forwarded to the Chief Joda, M/s Tata Steel Ltd., At/PO- Joda, Keonjhar for favour of kind information and necessary action.

27/04/24

Divisional Forest Officer,
Keonjhar Division.

26/4

5. **Status of reclamation measures undertaken by the user agency in their lease area as per provisions provided in the Progressive Mine Closure Plan may be provided.**

The User Agency has submitted the compliance mentioning that afforestation measures inside the lease area have been taken involving the local community as per approved progressive mine closure plan. Further the PMCP returns for 2020-21, 2021-22 submitted by the User Agency are enclosed herewith as **Annexure-V**. The photographs of afforestation measures submitted by the User Agency are also enclosed as **Annexure-VI.** But no reclamation of mine has been taken up by the User Agency as the User Agency has obtained the Stage-II approval during the year 2021 for the above mine.

6. **The state government shall ensure that no further proposal will be submitted in respect of the mine for land use required vis-a-vis mineable reserve in the area.**

Noamundi Iron Mine and Katamati Iron Mine are a part of the same Iron Ore deposit but are under two different leases on two States i.e. Jharkhand & Odisha State of M/s Tata Steel Ltd. because of the interstate boundary intersecting the deposits. This common boundary separates mine workings in Hill 5&6 of Noamundi (Sarbil-498 PF and Mahudi-744 PF) and Pit I of Katamati Iron Mine as shown in Map Annexed **(Annexure-I).** Since the deposit in both of these mines has been worked for a long time now, mining pit in Hill 5&6 of Noamundi and Pit-1 of Katamati, have progressed significantly within respective leases where necessary clearances were already available. But it is noteworthy that the common boundary which separates these two pits has now turned in to an island. As huge quantity of iron ore is locked under the common boundary, the User agency wants to carry mining operation in the said iron ore locked area. So, the User Agency has submitted the proposal for diversion of forest land over 0.9113 ha. for re-drawing the safety zone.

Further, the User Agency has intimated that the G1 exploration has been carried out over an area of 127.92 ha. out of total area 403.3238 ha. In the approved mining plan , exploration has been proposed in the remaining area i.e.,44 boreholes (1620mts with grid of 100m) to bring the entire mineralised area in to G1 level. The mineable area will be ascertained, after all mineralised area is brought to G1 level exploration, Accordingly, the area for mining and other components of land use patten may be required to change. Hence, a new proposal of change in land use pattern would be required to be submitted for further approval.

7. **Status of implementation of various scheme/Plan (RWMP/SSWCP) and reasons/justification for non-compliance, if any, be furnished by the state government.**

The User Agency has deposited an amount of Rs 1,73,42,923.00 towards the Regional Wildlife Management Plan (RWMP in Compensatory Afforestation Fund (CAF), Orissa.). The funds under Regional Wildlife Management Plan are not allotted project wise. Rather it is allotted in whole and as per the interventions prescribed in the Regional Wildlife Management Plan of Bonai Division and Keonjhar Division.

The Site-Specific Wildlife Conservation Plan (SSWCP) for Katamati Iron Mine has been approved by PCCF(Wildlife) & Chief Wildlife Warden, Odisha vide his letter no. 5842/1WL(C)SSP/306/2011 dated 29.08.2011, in compliance to the Terms of Reference (ToR) for seeking Environmental Clearance (EC) for expansion to 8 million tonnes per Annum. The User Agency has deposited an amount of Rs 122 Lakhs to take up the interventions as mentioned in the

aforesaid Site Specific Wildlife Conservation Plan. Against the demand letter issued for carrying out activities by the State Forest Department, has been deposited to Compensatory Afforestation Fund (CAF), Orissa on 16.08.2013. The interventions as specified in the above Site specific Wildlife Conservation Plan has not been carried out due to non-receipt of funds. The fund has not been allotted as the Stage-II approval was accorded during the year 2021.

The current Site-Specific Wildlife Conservation Plan (SSWCP) for Katamati Iron Mine has been approved by PCCF(Wildlife) & Chief Wildlife Warden, Odisha vide his letter no. 7924/CWLW-FDWC-FD-0021-2021 dated 14th July 2023. in compliance to the Terms of Reference (ToR) for seeking Environmental Clearance (EC) for expansion from 8.00 to 13.5 million tonnes per Annum.

The User Agency has deposited, an amount of Rs.301.968 lakh in CAMPA account through online vide UTR no. HDFCR52023081780432709 dated 17.08.2023 to take up the interventions by the Forest Department. The interventions earmarked to take up by the Forest Department, will be carried out component wise on receipt of required funds from the PCCF & HoFF, Odisha. The activities to be undertaken by Project Proponent is being complied. The fire fighting blowers, Air cooler petrol engines, spotlights etc. are handed over to the forest dept as a part of compliance to the SSWLCP. The letter of handing over is enclosed as **Annexure-VIIA**. The photographs of the same is enclosed as **Annexure-VIIB.**

8. **It is observed that the proposal for change in land use is not only limited to area located in the safety zone, as proposed by the State; the proposal for change in land use extends to almost all project components. Therefore, proposal in its present form cannot be considered for approval and accordingly requested that State Government may submit a revised proposal recasting details of all land uses proposed to be changed in the proposal, as per the land use envisaged in the approved Mining Plan of the mining lease.**

As intimated by the User Agency, initially, based on the Guideline No. F. No:11-125/2014-FC issued by MoEF&CC dated 2nd Feb 2018 and para 7.9 (ii) of Handbook issued by MoEF&CC dated 28th March 2019, the user agency has applied offline application to redraw the safety zone in the letter format vide their letter No.GM/PL/186/105-A dated 28.06.2022(**Annexure-VIII**). An alternative equivalent area of width 7.5m kept as safety zone in southern side of mining lease of Katamati iron mine over an area of 0.98 ha to compensate the area proposed for mining within the safety zone area of 0.9113 ha. The map of the same is enclosed as **Annexure-IX**. The proposal recommended for redrawing of safety zone to Regional Chief Conservator of Forests, Rourkela vide this office letter no 10225/Mining-103/2021 dated 26.12.2022 after document verification and site inspection. The detailed report is enclosed as **Annexure-X**. The Regional Chief Conservator of Forests, Rourkela recommended the above proposal to the Principal Chief Conservator of Forests (Forest Diversion & Nodal Officer, FC Act) vide his letter no 65/3F-184/2023 dated 09.01.2023 which is enclosed as **Annexure -XI**. The Principal Chief Conservator of Forests and HOFF, returned the offline application for redrawing safety zone over 0.9113ha and advised us submit the proposal through online mode in Form-E(part-I) of Parivesh 2.0 vide letter no.9189/9F(MG)51/2021 dated 11.05.2023.Subsequently, online application for redrawing of safety zone and change in land use of safety zone over 0.9113ha was submitted in Form E vide our proposal no. FP/OR/REDIV/429499/2023.

Hence, it may be noted that as per the facts and chronology of the proposal stated above, the process of offline submission had started before the approval of current mining plan for period 2023-24 to 2027-28. Therefore, proposal in its present form is specific to change in land use of safety zone for mining along common boundary in compliance to above observations.

ANNEXURE-V

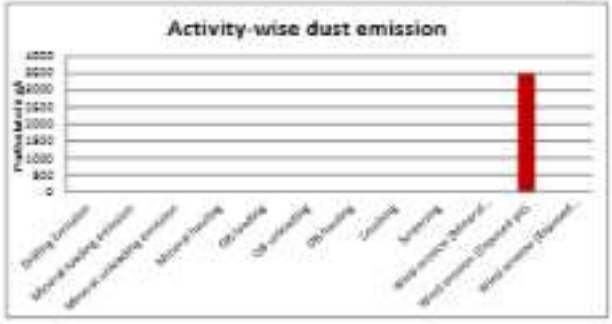
Concrete Road constructed within the Mining lease area

Vacuum Sweeping Machine in Operation

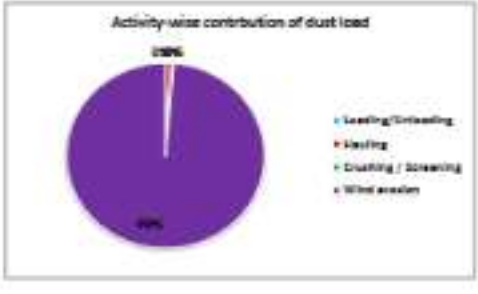
Drilling Machine Operation with water injection system

RESULTS OF DUST LOAD CALCULATIONS

	Particulate matter in (g/s)	Particulate matter in (kg/d)	Particulate matter (kg per ton of ore)
Drilling Emission	0.074791275	4.597926399	0.000145449
Mineral loading emission	0.38619687	23.18488161	0.000875088
Mineral unloading emission	0.68080708	38.84211648	0.000930833
Mineral hauling	38.5486894	2184.316144	0.088888048
OB loading	0.80783788	48.3871428	0.001101888
OB unloading	0.51088881	30.34670814	0.000987347
OB hauling	17.3888888	1088.800888	0.044887288
Crushing	5.38720559	322	0.000011771
Screening	8.08080808	480	0.018317388
Wind erosion (Mineral stock)	0	0	0
Wind erosion (Exposed pit)	5478.31808	328828.8288	0.992888888
Wind erosion (Exposed OB dump)	14.4388728	1247.322811	0.028802872
Total	3562.976	305969.72	9.7638484



Major Activity	Dust load (kg/day)
Loading/Unloading	118.750000
Hauling	3185.8208
Crushing / Screening	800
Wind erosion	301851.800



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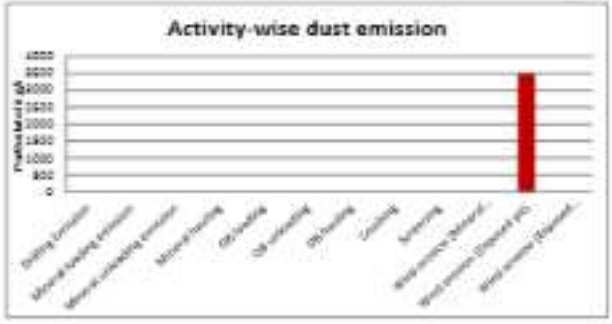

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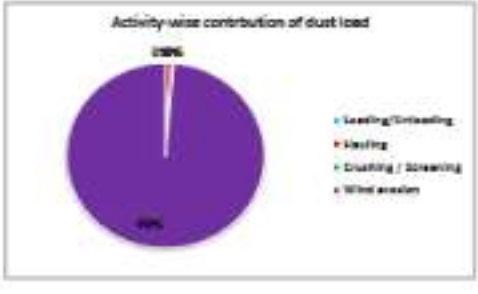

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TATA STEEL

LAND USE/ LAND COVER MAPPING FOR KATAMATI IRON MINE OF M/s. TATA STEEL LTD. AT-BARBIL, DIST-KEONJHAR, ODISHA.

September 2024

LAND USE / LAND COVER MAPPING OF MINE AND 5 K.M BUFFER ZONE OF KATAMATI IRON MINE OF M/s. TATA STEEL LTD. AT-BARBIL DIST- KEONJHAR, ODISHA.

Prepared for:

M/S TATA STEEL LTD.

OMQ DIVISION
NOAMUNDI, WEST SINGHBHUM
JHARKHAND

Prepared by:

M/s- Digital Cartography and Services Pvt. Ltd.

Authorized By ORSAC
1015, Bhagabat Sandhan, GGP Canal Road, Bhubaneswar – 751025

SEPTEMBER-2024

1. BACKGROUND

Tata Steel Limited holds the Katamati Iron Mine lease over an area of 403.3238 ha located in Keonjhar district of Odisha state and is being worked for winning of iron ore. The Katamati Iron Mine lease was originally granted on 17.01.1933 for 30 years over an area of 12.17 sq. miles (3152.018 ha) including Joda West and Khondbond Blocks. It was renewed on 17.01.1963 for a period of 20 years over the same area. During the second renewal, Katamati formed an independent lease over an area of 403.3238 ha and renewed for a period of 20 years with effect from 17.01.1983. The third renewal of the mining lease was applied on 05.09.2001 for a period of 20 years with effect from 17.01.2003. However, in view of the Mines and Minerals (Development & Regulation) Amendment Act 2015, the lease period has been extended upto 31.03.2030 by Steel & Mines Department, Govt. of Odisha.

Katamati iron deposit lies in the western portion of Singhbhum-Orissa craton. The Iron Ore Group (IOG) surrounds the batholithic complex and consists of low-grade meta-sediments, acid-intermediate and mafic volcanic and sills. The IOG rocks are exposed in three major basins around the Singhbhum granite batholiths. The eastern basin extends from south of Jamshedpur through Gorumahisani-Badampahar and extends southward up to near Nausahi. The southern basin lies between Daitari–Tomka, while the northern-western basin is represented by the western Singhbhum-Bonai-Keonjhargarh Iron Ore basin which extends for about 100km in length and 20 to 30km width in NNE-SSW direction from Chakradharpur to south of Koira.

The mine was initially worked manually by open cast method and subsequently operation was discontinued in 1966. The mine was restarted in 1974 with semi-mechanized operation and during 2000-02 it became fully mechanized. Currently, the mine has production capacity (Run Of Mine) of 8 MTPA for which Environment Clearance has already been obtained ROM is being sent to the processing plant (Both Wet and Dry plant) of Noamundi (It is located in the adjoining of Katamati) in which the ore of both the mine is fed simultaneously. The finished product is being sent to the steel plant through company's own railway siding located at Bottom bin area of Noamundi. The slime generated is kept in the slime dam located at Noamundi only. Rest ROM is fed to the Dry Crushing and Screening Plant located at Katamati. The finished product is being sent to the steel plant through railway siding either through Noamundi or through public siding. Katamati Iron Mine lease is captive and the ore mainly feeds to its steel plant at Jamshedpur, Meramandali and Kalinganagar along with sister concern company like Tata Sponge Iron Limited, TAYO Rolls.

2. OBJCTIVE

- Interpretation of the satellite Image and identification of the present land use pattern in surrounding area (5 km buffer area from the Project area)
- Integration of the topographical features from ortho-rectified Satellite Image
- Generation of Land use / Land cover maps for the Project area and its 5km Buffer Zone

3. SCOPE OF WORK

a. Procurement of High resolution Latest Satellite image for the Project area
b. Satellite image interpretation, digital image analysis and pre-field map generation
c. Generation of Base Map for the study area
d. Generation of land use / land cover map for the study area
e. Post field processing and incorporation of ground truth information on maps
f. Finalization of land use/ land cover map
g. Generation of land use statistics
h. Preparation of final maps and reports

4. METHODOLOGY

Selection & Procurement of Satellite Data

High-resolution satellite images of multispectral sensors were selected for the Project area. Selection of the cloud free satellite images were executed through browsing of the available satellite images in the utility provided by the National Remote Sensing Centre (NRSC), Hyderabad. The details of the satellite images procured for the study area are as follows:-

a. Satellite Image: Resourcesat-II , Multispectral LISS IV FX (5.0 meter resolution)
Path/Row : 105 / 56-D
Date of Pass: 10 May 2024

b. Satellite Image : Cartosat-II-E. Multispectral (1.65meter resolution)

Path/ Row: 36743/63
Date of Pass: 07 FEB 2024

Path/ Row: 36743/64
Date of Pass: 07 FEB 2024

Path/ Row: 36743/65
Date of Pass: 07 FEB 2024

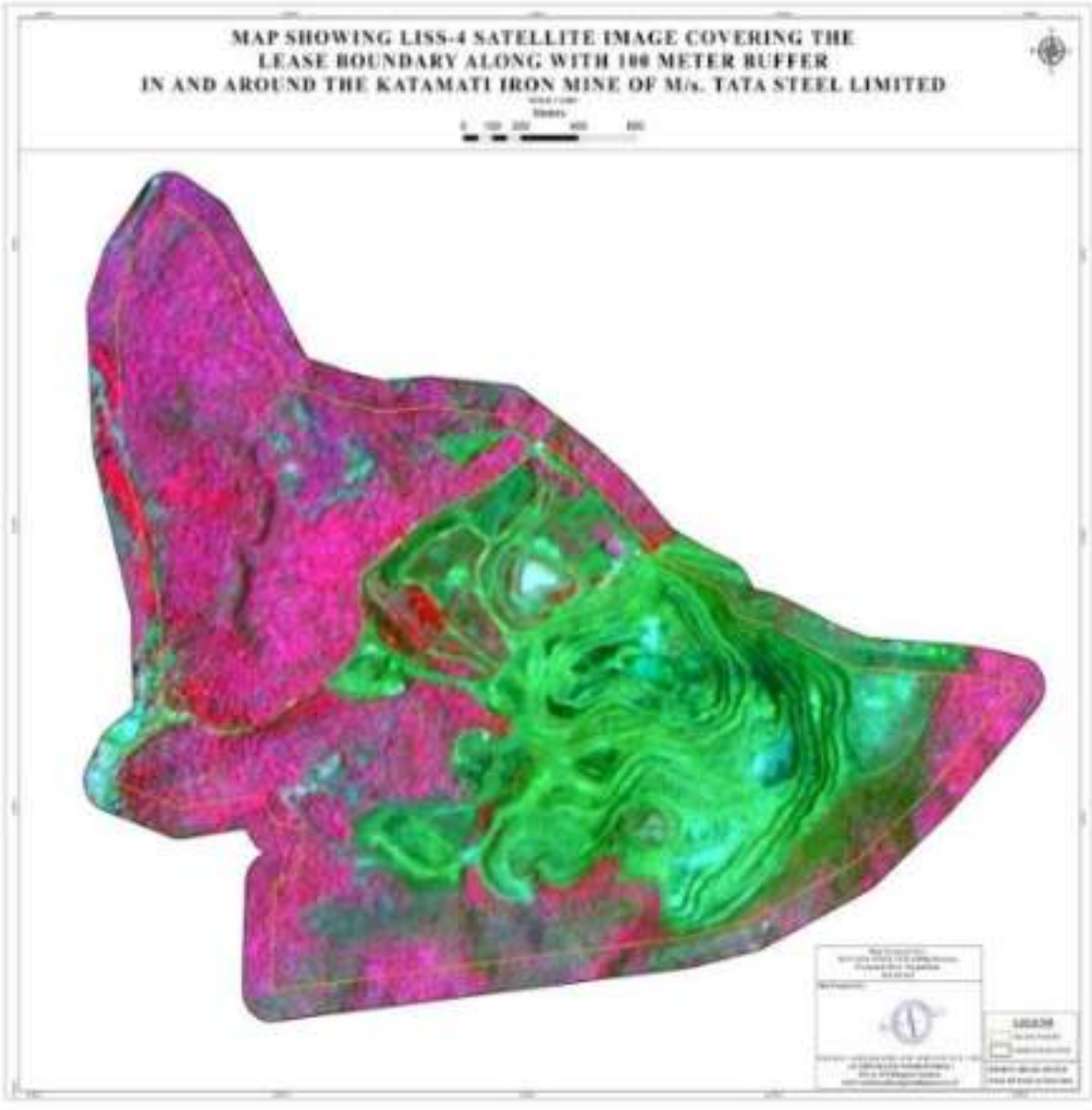


Fig-1: LISS-IV Satellite Image of Katamati Iron Mine

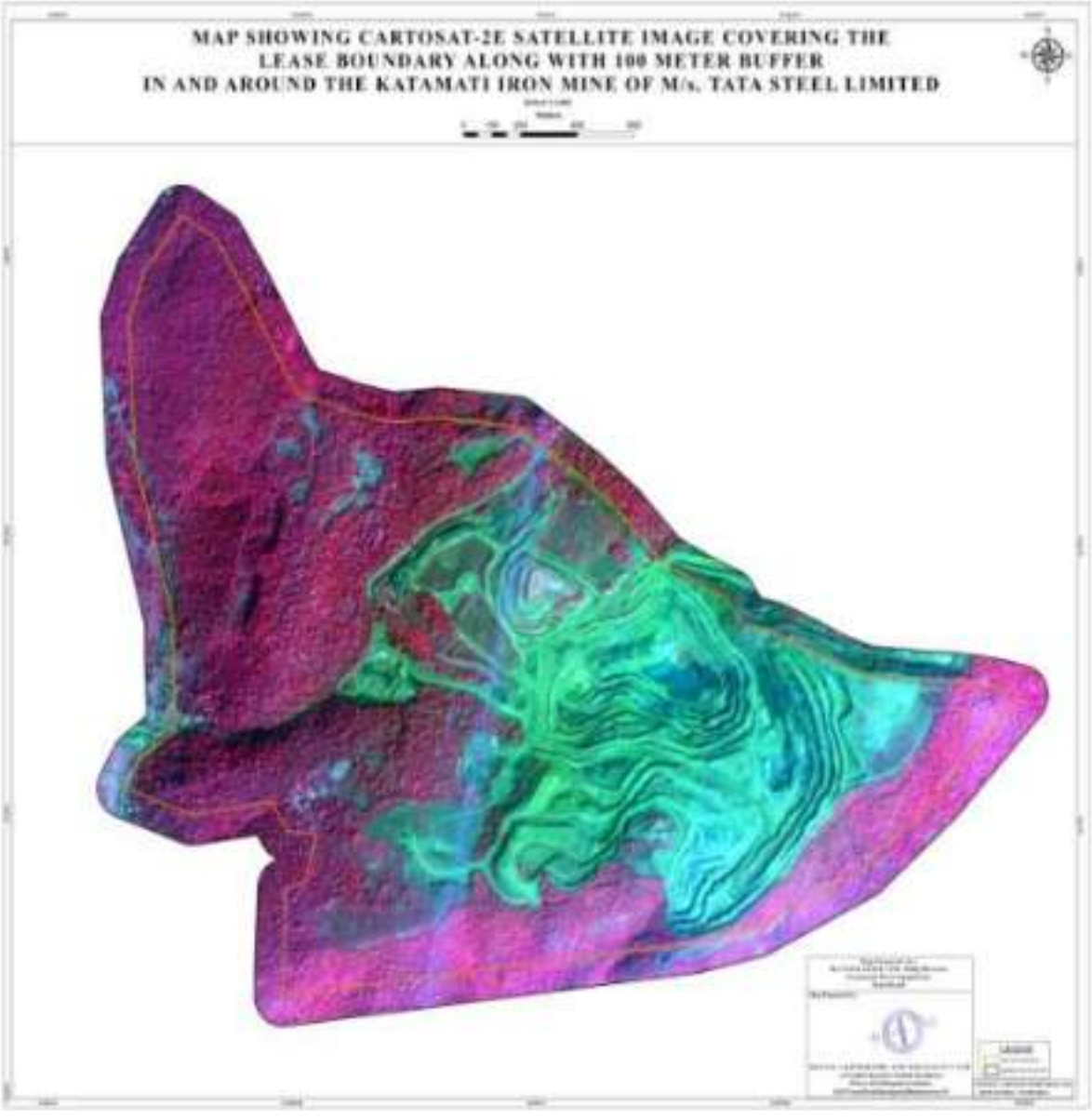


Fig-2: Cartosat Image of Katamati Iron Mine

LEVEL I	LEVEL II	LEVEL III
BUILT-UP LAND	SETTLEMENT	URBAN SETTLEMENT
		RURAL SETTELMENT
	TRANSPORT	NATIONAL HIGHWAY
		ROAD
		RAILWAYLINE RAILWAY SLIDING
AGRICULTURAL LAND	CROP LAND	CROP LAND
FOREST & VEGETATION	FOREST	OPEN FOREST
		SCRUB FOREST
		FOREST AREA
	NON FOREST	TREE COVER AREA
	FOREST	DENSE FOREST
		VEGETATION AREA
	NON FOREST	PLANTATION AREA
WASTELAND	WASTELAND	LAND WITH SCRUB
		AREA UNTOUCHED
		LAND WITHOUT SCRUB
MINES & INDUSTRY	QUARRY	QUARRY
	INFRASTRUCTURE	CW PLANT SCREEN PLANT
		EQUIPMENT MAINTENANCE
	STOCK	ROM STOCK
		STOCK
		ORE STOCK
	DUMP	DUMP
		SUB GRADE DUMP
		WASTE DUMP
		MINERAL REJECT DUMP
	SLIME DAM	SLIME DAM
	INFRASTRUCTURE	MAGAZINE
		VIEW POINT
		INFRASTRUCTURE
	ADMINISTRATIVE	OFFICE INFRASTRUCTURE
	INFRASTRUCTURE	POWER HOUSE
		PARKING
		THICKNER
		WEIGH BRIDGE
	INDUSTRIAL	SOLAR PLANT
	SAFETY ZONE	7.5 METER SAFETY ZONE ALONG WITH MINES BOUNDARY
BUILT-UP-LAND	TRANSPORT	HAUL ROAD
		OTHER ROAD
	MINES SETTLEMENT	COLONY INFRASTRUCTURE
		CLUB HOUSE
	EDUCATIONAL	SCHOOL
	RECREATIONAL AREA	STADIUM
		PLAYGROUND
		PARK
WATERBODY	WATERBODY	WATER HARVESTING
		WATER RESERVOIR
		NALA
		POND
MINING AREA	MINING	OTHER MINING
	CRUSHER	CRUSHER
	PLANT	INDUSTRY

Table-1: Land Use / Land Cover classification

Pre-field Interpretation of Satellite Image

The satellite images were enhanced through application of image processing techniques to facilitate better interpretation through use of appropriate image processing software. The geo-rectified Multispectral Cartosat satellite image and the multispectral Resourcesat LISS IV Satellite images were merged together to obtain high-resolution multispectral satellite image having the characteristics of both the images in-terms of sharp features and vegetation signatures. The False Color Composition (FCC) of the merged satellite image along with the topographic sheet was used to identify the land features and delineate the land feature boundaries. The land features were identified on the image through their image characteristics such as tone, texture, color, shape, size, pattern and association.

Preparation of Pre-field Maps

The spatial datasets generated through interpretation of the satellite images, data extraction from the survey of India topographic maps were assembled with the help of a GIS software to generate map based thematic datasets. The thematic data sets were logically organized on the GIS base to generate the pre-field base maps as well as the land use/ land cover maps. The classification used for preparation of the map is depicted below:-

Ground Truth Collection

The Pre-field maps generated in the above process were subjected to a detailed study along with the satellite images and the survey of India topographic map sheets to access the accuracy of the pre-field identification of land features and also identification of doubtful interpretations. About 35 numbers of uniformly distributed locations within the study area were identified on the maps for the purpose of site visit and Collection of ground truth. A detailed traverse plan was prepared using the existing road network to cover as many representative sample areas as possible to observe the broad land use features and field conditions. Detailed field observations and investigations for the identified sites were carried out and suitably marked on the maps.

Generation of Final Map

The results obtained in the ground Survey exercise were applied to the pre-field maps for carrying out the required modifications. The modified thematic data layers were used to generate the base maps as well as the land use map. The final interpreted and classified maps were subjected to cartography for generation of maps. The map features were colored with the standard map color code and were provided with appropriate symbols to represent the map features. Each of the land classes were provided with identification colors and suitably represented with map legend.

5. RESULTS

Mine area:

The land use statistics for the mine area of the Iron lease area was calculated as per the level-III land classification standards and is tabulated as follows the distribution of different land use/ land cover classes of the core area is depicted below:-

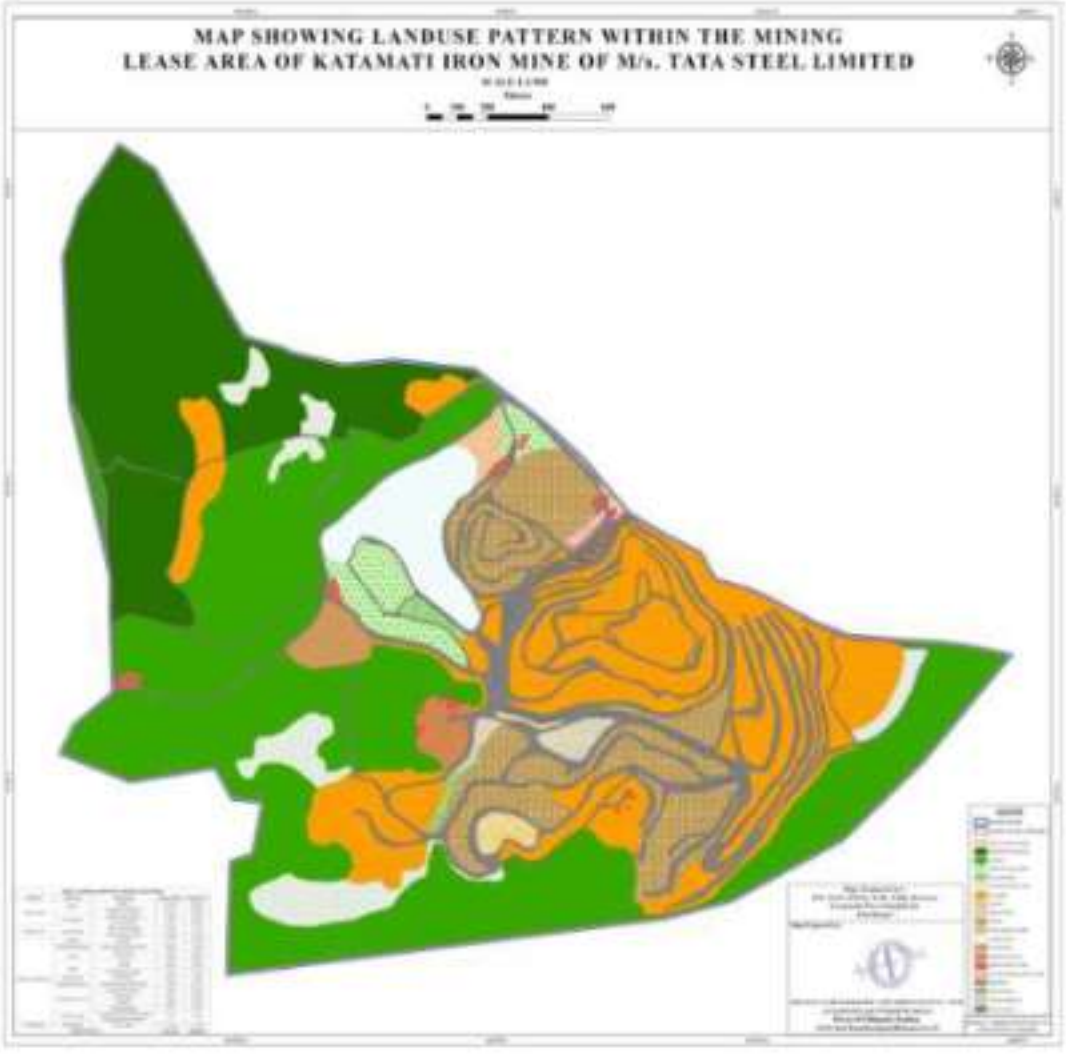


Fig-3: Landuse/ Landcover Map of Mine Area

AREA CLASSIFICATION OF LANDUSE/ LAND COVER				
LEVEL I	**LEVEL II**	**LEVEL III**	**AREA IN HA.**	**AREA IN %**
VEGETATION	FOREST	FOREST	123.6861	30.667%
		RESERVED FOREST	64.6770	16.036%
	NON FOREST	TREE COVER AREA	8.1680	2.025%
		PLANTATION	1.6750	0.415%
WASTELAND	WASTELAND	AREA UNTOUCHED	0.7140	0.177%
		LAND WITH SCURB	15.8360	3.926%
MINES & INDUSTRY	QUARRY	QUARRY	72.1593	17.891%
	INFRASTRUCTURE	CW PLANT/SCREEN PLANT	6.6020	1.637%
	STOCK	ORE STOCK	2.6870	0.666%
		STOCK	1.6480	0.409%
	DUMP	DUMP	33.3540	8.270%
		SUB GRADE DUMP	1.8446	0.457%
	SLIME DAM	SLIME DAM	12.9480	3.210%
	ADMINISTRATIVE	OFFICE INFRASTRUCTURE	0.5030	0.125%
	INFRASTRUCTURE	INFRASTRUCTURE	1.4630	0.363%
		VIEW POINT	0.0517	0.013%
		PARKING	0.4860	0.120%
		WEIGH BRIDGE	0.0120	0.003%
	SAFETY ZONE	7.5 METER SAFETY ZONE ALONG WITH MINES BOUNDARY	7.3641	1.826%
TRANSPORT	TRANSPORT	HAUL ROAD	47.4450	11.764%
GRAND TOTAL			**403.3238**	**100.000%**

Table-2: Land Use/ Land cover distribution in Mine Area

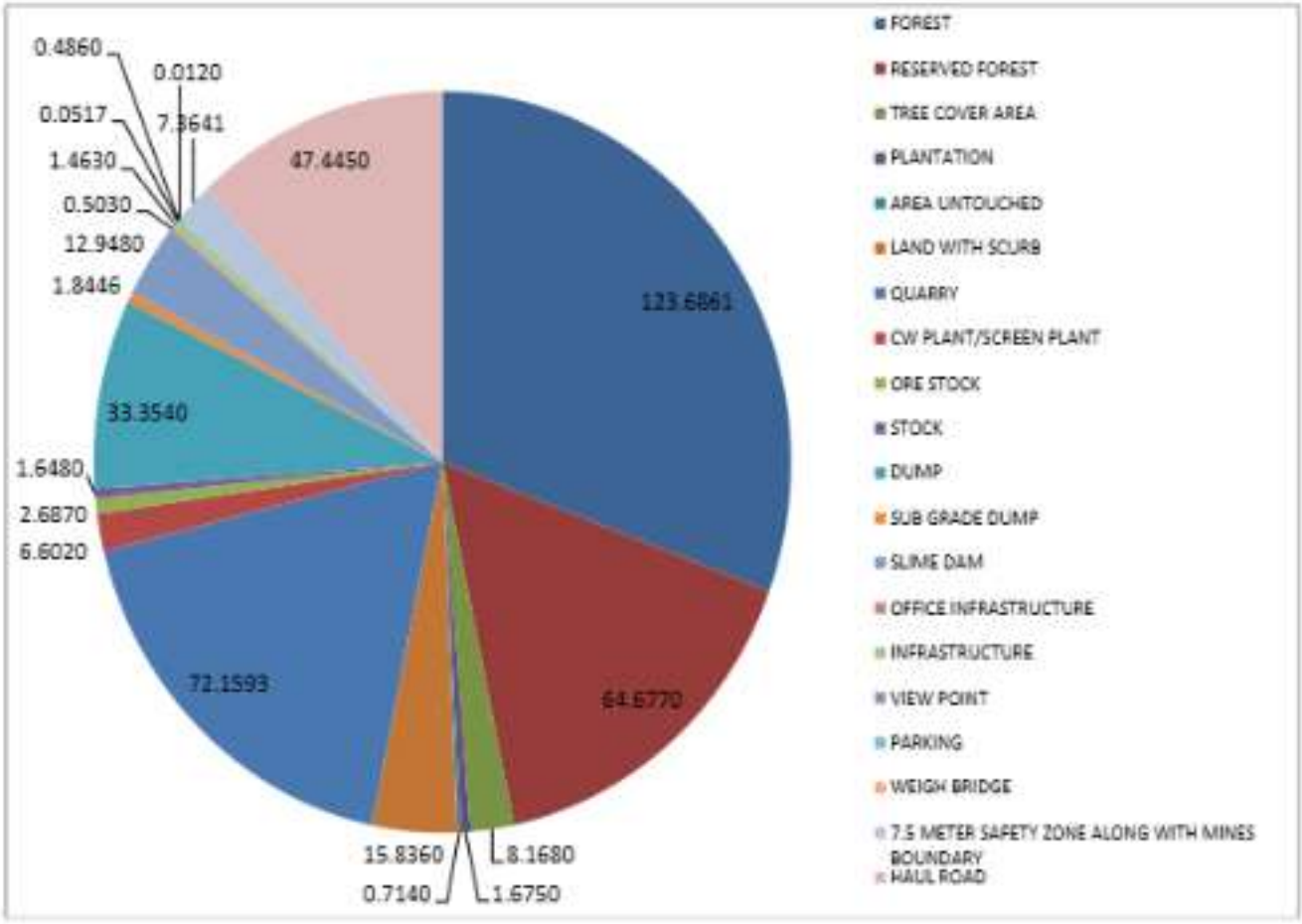


Fig-4: Distribution of Land Use / Land Cover in Mine Area

Buffer area:

The land use statistics for the 5 km buffer area from the periphery of the Iron or lease area was calculated as per the level-III land classification standards and is tabulated as follows. The distribution of different land use/ land cover of the buffer area is depicted below:-

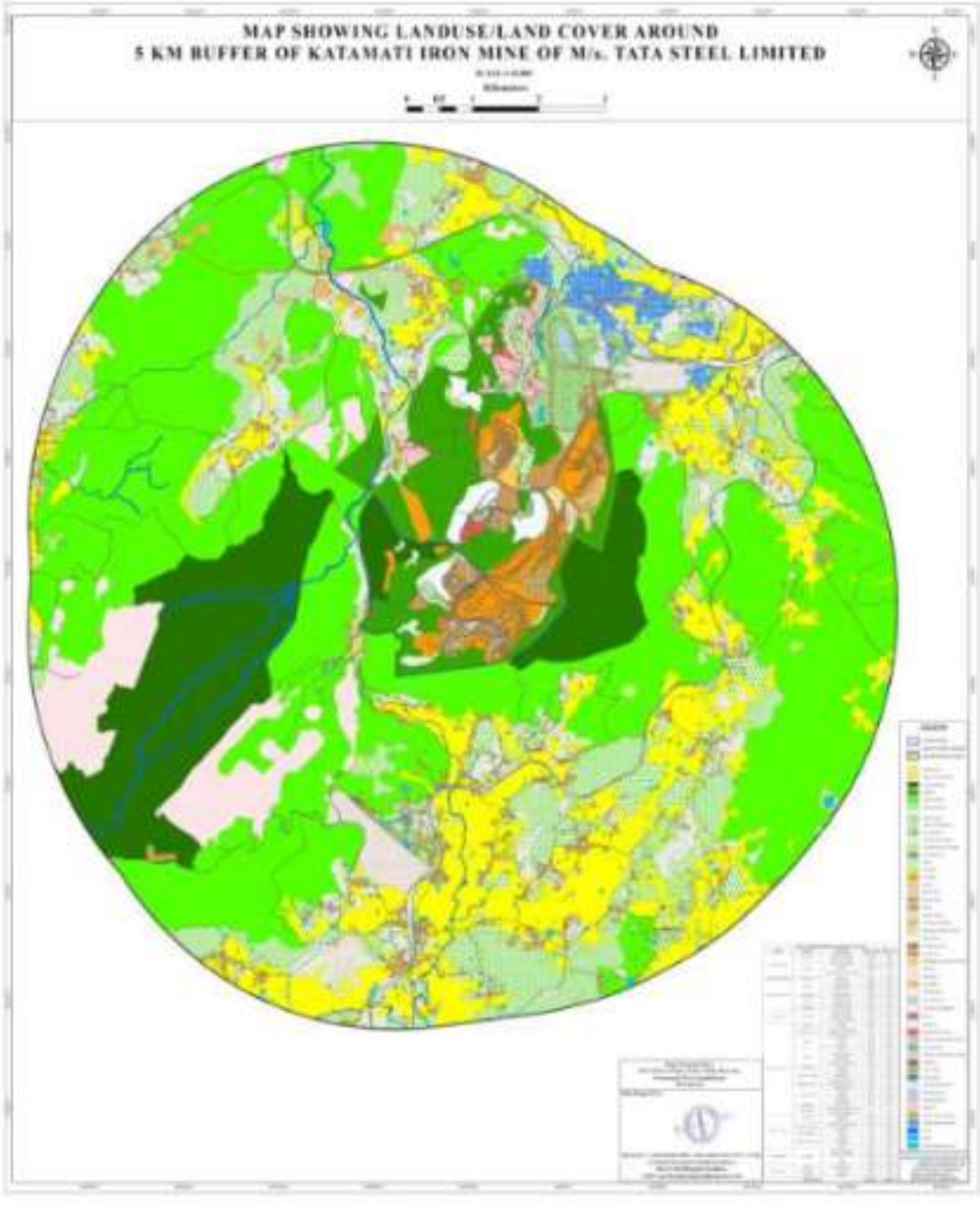


Fig-5: Land Use / Land Cover Map of Buffer Area

AREA CLASSIFICATION OF LAND USE/LAND COVER				
LEVEL I	**LEVEL II**	**LEVEL III**	**AREA IN HA.**	**AREA IN %**
BUILT-UP LAND	SETTLEMENT	URBAN SETTLEMENT	125.6170	0.977%
		RURAL SETTLEMENT	321.5040	2.499%
	TRANSPORT	NATIONAL HIGHWAY	10.2800	0.080%
		ROAD	165.0080	1.267%
		RAILWAYLINE/RAILWAY SLIDING	49.3450	0.384%
AGRICULTURAL LAND	CROP LAND	CROP LAND	1638.2810	12.735%
FOREST & VEGETATION	FOREST	OPEN FOREST	4478.8231	34.817%
		SCRUB FOREST	892.6880	6.939%
		FOREST AREA	610.5730	4.746%
	NON FOREST	TREE COVER AREA	571.7850	4.445%
	FOREST	DENSE FOREST	1114.1800	8.661%
		VEGETATION AREA	31.4310	0.244%
	NON FOREST	PLANTATION AREA	144.8270	1.126%
WASTELAND	WASTELAND	LAND WITH SCRUB	736.8870	5.728%
		AREA UNTOUCHED	0.7130	0.006%
		LAND WITHOUT SCRUB	336.8750	2.619%
MINES & INDUSTRY	QUARRY	QUARRY	198.8460	1.546%
	INFRASTRUCTURE	CW PLANT/SCREEN PLANT	47.3550	0.368%
		EQUIPMENT MAINTENANCE	7.3140	0.057%
	STOCK	ROM STOCK	2.7562	0.021%
		STOCK	4.0980	0.032%
		ORE STOCK	2.6870	0.021%
	DUMP	DUMP	66.2240	0.515%
		SUB GRADE DUMP	18.8230	0.146%
		WASTE DUMP	6.0390	0.047%
		MINERAL REJECT DUMP	6.8790	0.053%
	SLIME DAM	SLIME DAM	74.5720	0.580%
	INFRASTRUCTURE	MAGAZINE	0.3677	0.003%
		VIEW POINT	1.5160	0.012%
		INFRASTRUCTURE	20.8480	0.162%
	ADMINISTRATIVE	OFFICE INFRASTRUCTURE	3.7700	0.029%
	INFRASTRUCTURE	POWER HOUSE	0.2960	0.002%
		PARKING	0.8720	0.007%
		THICKNER	1.1360	0.009%
		WEIGH BRIDGE	0.0120	0.000%
	INDUSTRIAL	SOLAR PLANT	8.2924	0.064%
	SAFETY ZONE	7.5 METER SAFETY ZONE ALONG WITH MINES BOUNDARY	26.3760	0.205%
BUILT-UP-LAND	TRANSPORT	HAUL ROAD	126.8610	0.986%
		OTHER ROAD	21.5910	0.168%
	MINES SETTLEMENT	COLONY INFRASTRUCTURE	52.7270	0.410%
		CLUB HOUSE	1.2780	0.010%
	EDUCATIONAL	SCHOOL	0.6873	0.005%
	RECREATIONAL AREA	STADIUM	2.5313	0.020%
		PLAYGROUND	2.1638	0.017%
		PARK	0.6169	0.005%
WATERBODY	WATERBODY	WATER HARVESTING	2.9440	0.023%
		WATER RESERVOIR	2.6500	0.021%
		NALA	104.2300	0.810%
		POND	52.9550	0.412%
MINING AREA	MINING	OTHER MINING	578.2370	4.495%
	CRUSHER	CRUSHER	39.0540	0.304%
	PLANT	INDUSTRY	149.5170	1.162%
GRAND TOTAL			**12863.9197**	**100.000%**

Table-3: Land Use / Land Cover distribution in Buffer Area

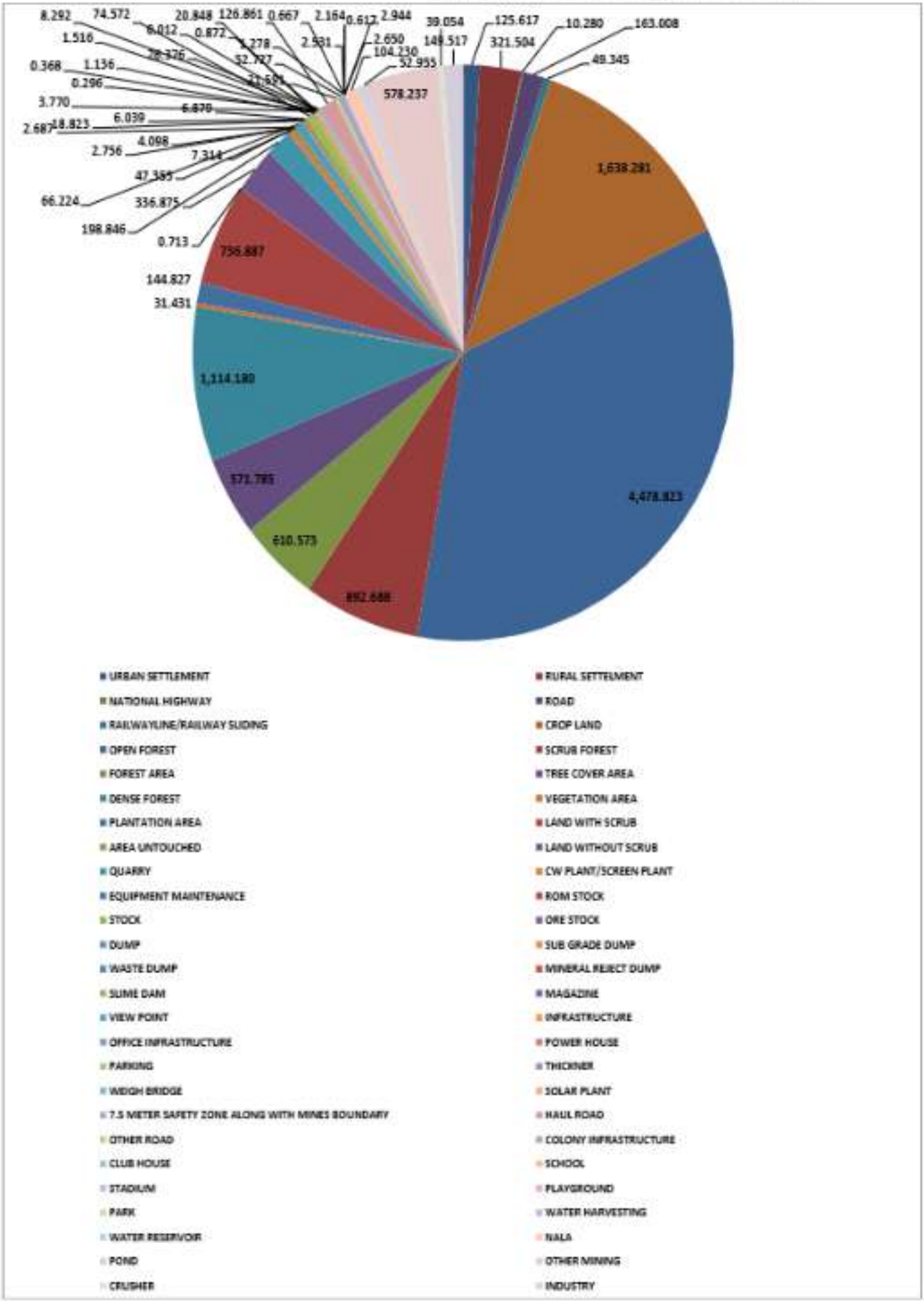


Fig-6: Distribution of Land Use/ Land Cover in Buffer Area

ANNEXURE-XI

Summarised Fugitive Dust Monitoring Report					
Katamati Iron Ore Mine of M/s Tata Steel Limited					
Period: October 2024 to March 2025					
Mine Location	**Sampling Location**	**Month**	**Unit**	**Results**	**Norms**
Katamati Iron Ore Mine	Crushing & Screening Plant	October 2024	µg/m3	551.13	1200
		November 2024	µg/m3	527.00	1200
		December 2024	µg/m3	522.00	1200
		January 2025	µg/m3	551.00	1200
		February 2025	µg/m3	514.00	1200
		March 2025	µg/m3	510.00	1200
	Loading & Stacking	October 2024	µg/m3	448.00	1200
		November 2024	µg/m3	409.63	1200
		December 2024	µg/m3	464.00	1200
		January 2025	µg/m3	439.00	1200
		February 2025	µg/m3	465.00	1200
		March 2025	µg/m3	572.13	1200
	Haul Road	October 2024	µg/m3	644.00	1200
		November 2024	µg/m3	613.75	1200
		December 2024	µg/m3	553.00	1200
		January 2025	µg/m3	586.00	1200
		February 2025	µg/m3	543.00	1200
		March 2025	µg/m3	675.13	1200
	Waste Dump Site	October 2024	µg/m3	428.88	1200
		November 2024	µg/m3	393.63	1200
		December 2024	µg/m3	391.00	1200
		January 2025	µg/m3	424.00	1200
		February 2025	µg/m3	425.00	1200
		March 2025	µg/m3	458.50	1200
	Mining Face (Near Drill)	October 2024	µg/m3	458.00	1200
		November 2024	µg/m3	472.13	1200
		December 2024	µg/m3	546.00	1200
		January 2025	µg/m3	452.00	1200
		February 2025	µg/m3	477.00	1200
		March 2025	µg/m3	628.00	1200

ANNEXURE-XI

Dry-fog system installed at Crushing & Screening Plant

ANNEXURE-XII

Summarised Ambient Air Quality Monitoring Report								
Katamati Iron Ore Mine of M/s Tata Steel Limited								
Period: October 2024 to March 2025								
Mine location	Sampling location	Month	Range	Results in µg/m3				
				PM10	PM2.5	SO2	NOx	CO
Katamati Iron Ore Mine	Murga Gate	Oct 24	Avg.	63.4	27.2	12.4	25.4	BLQ (LOQ-0.5)
		Nov 24	Avg.	65.3	24.0	11.7	22.8	BLQ (LOQ-0.5)
		Dec 24	Avg.	62.9	22.3	11.3	23.5	BLQ (LOQ-0.5)
		Jan 25	Avg.	62.1	21.3	11.8	22.0	BLQ (LOQ-0.5)
		Feb 25	Avg.	63.3	22.9	11.5	23.1	BLQ (LOQ-0.5)
		Mar 25	Avg.	65.3	22.1	11.6	22.0	BLQ (LOQ-0.5)
	Metso Plant	Oct 24	Avg.	61.7	24.9	12.8	22.0	BLQ (LOQ-0.5)
		Nov 24	Avg.	61.5	25.4	10.2	22.8	BLQ (LOQ-0.5)
		Dec 24	Avg.	61.7	24.2	11.9	24.2	BLQ (LOQ-0.5)
		Jan 25	Avg.	60.9	20.5	10.6	20.4	BLQ (LOQ-0.5)
		Feb 25	Avg.	64.0	21.8	11.3	21.4	BLQ (LOQ-0.5)
		Mar 25	Avg.	62.0	21.7	11.9	23.4	BLQ (LOQ-0.5)
	Viewpoint	Oct 24	Avg.	62.4	22.6	12.6	22.7	BLQ (LOQ-0.5)
		Nov 24	Avg.	59.8	28.1	9.1	35.6	BLQ (LOQ-0.5)
		Dec 24	Avg.	56.7	21.6	10.6	20.4	BLQ (LOQ-0.5)
		Jan 25	Avg.	55.9	20.3	9.9	19.3	BLQ (LOQ-0.5)
		Feb 25	Avg.	61.2	27.3	11.7	23.4	BLQ (LOQ-0.5)
		Mar 25	Avg.	60.0	21.7	11.4	23.8	BLQ (LOQ-0.5)
	Pit Office	Oct 24	Avg.	58.5	24.7	12.2	20.9	BLQ (LOQ-0.5)
		Nov 24	Avg.	62.7	28.5	10.1	29.0	BLQ (LOQ-0.5)
		Dec 24	Avg.	57.9	24.7	9.3	21.7	BLQ (LOQ-0.5)
		Jan 25	Avg.	56.6	20.7	10.8	20.6	BLQ (LOQ-0.5)
		Feb 25	Avg.	59.9	22.5	10.8	18.9	BLQ (LOQ-0.5)
		Mar 25	Avg.	58.8	20.8	10.3	22.5	BLQ (LOQ-0.5)

#Note: BLQ= Below Limit of Quantification

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

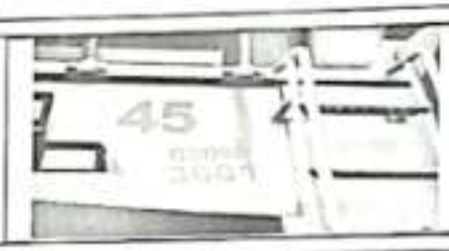
Government of Odisha

Date	:	**27/02/2025**
Time	:	**16:07:40 PM**
Validity upto	:	**26/08/2025**

Certificate SL No	:	OR90100040021911
Registration No	:	OD09P3681
Date of Registration	:	07/Aug/2021
Month & Year of Manufacturing	:	February-2021
Valid Mobile Number	:	******8701
Emission Norms	:	Bharat Stage III (CEV)
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate

60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.87

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator

60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**14:04:31 PM**
Validity upto	:	**25/08/2025**

Certificate SL No	:	OR90100040021903
Registration No	:	OD09A9813
Date of Registration	:	25/Jun/2015
Month & Year of Manufacturing	:	August-2014
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.17

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**14:07:35 PM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021904
Registration No.	:	OR09M8150
Date of Registration	:	08/Jan/2010
Month & Year of Manufacturing	:	December-2009
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE II
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.32

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:49:32 PM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021899
Registration No.	:	OD09V7021
Date of Registration	:	10/Jun/2024
Month & Year of Manufacturing	:	July-2023
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate

60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.32

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator

60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:37:15 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021884
Registration No.	:	OD09V3504
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	December-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.38

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:54:26 PM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021901
Registration No.	:	OD09V3594
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	December-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.25

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:34:48 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021882
Registration No.	:	OD09V3510
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	February-2022
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.31

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:41:11 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021887
Registration No.	:	OD09V3591
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	February-2022
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.3

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MAA LAXMI MOBILE POLLUTION TESTING UNIT

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:44:22 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021888
Registration No.	:	OD09V3529
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	December-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.24

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**10:24:31 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021876
Registration No.	:	OD09V3593
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	December-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.18

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**09:46:55 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021874
Registration No.	:	OD09V3597
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	December-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.34

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:38:39 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021885
Registration No.	:	OO09V3554
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	November-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.35

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:33:07 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR901000400218B1
Registration No.	:	OD09V3589
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	November-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.17

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:36:07 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021883
Registration No.	:	OD09V3586
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	November-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.35

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**12:52:08 PM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021893
Registration No.	:	OD09V3537
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	October-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.38

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:48:29 PM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021898
Registration No.	:	OD09V3567
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	January-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.27

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MAA LAXMI MOBILE POLLUTION TESTING UNIT

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**12:43:18 PM**
Validity upto	:	**25/02/2026**

Certificate SL No.	:	OR90100040021892
Registration No.	:	OD09V3575
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	November-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.33

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

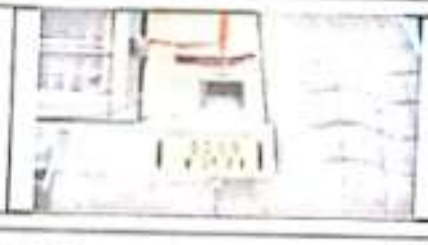
Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**10:00:54 AM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021875
Registration No.	:	OD09V3571
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	October-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.24

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MAA LAXMI MOBILE POLLUTION STATION

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**12:12:34 PM**
Validity upto	:	**25/02/2026**

Certificate SL. No.	:	OR90100040021891
Registration No.	:	OD09V3517
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	September-2021
Valid Mobile Number	:	******8701
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.34

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MAA LAXMI MOBILE
COLLECTION TESTING UNIT
[illegible]
[illegible] 03717051

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:47:22 PM**
Validity upto	:	**25/02/2026**

Certificate Sl. No.	:	OR9010004021897
Registration No.	:	OD09V3505
Date of Registration	:	12/Oct/2023
Month & Year of Manufacturing	:	September-2021
Valid Mobile Number	:	******8791
Emission Norms	:	EURO 6
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
lling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
oke Density	Light absorption coefficient	1/metre	0.7	0.33

is PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

sed Signature with stamp of PUC Operator
20 mm

MAA LAXMI MOBILE
PO[illegible]
[illegible], BARGIL
[illegible]

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	26/02/2025
Time	:	13:58:36 PM
Validity upto	:	25/08/2025

Certificate SL. No.	:	OR9010004002190Z
Registration No.	:	OD09P3650
Date of Registration	:	07/Aug/2021
Month & Year of Manufacturing	:	December-2020
Valid Mobile Number	:	******8701
Emission Norms	:	Bharat Stage III (CEV)
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High Idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.31

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Issued Signature with stamp of PUC Operator
30 x 20 mm

MAA LAXMI MOTORS
PUC CENTRE UNIT
[illegible]

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:52:32 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021890
Registration No.	:	OD09P3697
Date of Registration	:	07/Aug/2021
Month & Year of Manufacturing	:	January-2021
Valid Mobile Number	:	******8701
Emission Norms	:	Bharat Stage III (CEV)
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
dling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
noke Density	Light absorption coefficient	1/metre	2.45	2.25

his PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

: 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

rised Signature with stamp of PUC Operator
x 20 mm

MAA LAXMI MOBILE

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:34:15 PM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021894
Registration No.	:	OD09P3659
Date of Registration	:	07/Aug/2021
Month & Year of Manufacturing	:	July-2020
Valid Mobile Number	:	******8701
Emission Norms	:	Bharat Stage III (CEV)
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.118.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
moke Density	Light absorption coefficient	1/metre	2.45	2.04

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

: 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

rised Signature with stamp of PUC Operator
x 20 mm

MAA LAXMI MOBILE POLLUTION UNIT

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

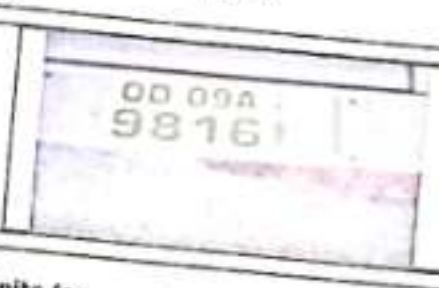
Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:36:05 PM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	ORS0100040021895
Registration No.	:	OD09A9816
Date of Registration	:	25/Jun/2015
Month & Year of Manufacturing	:	August-2014
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High Idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.07

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

: 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

orised Signature with stamp of PUC Operator
x 20 mm

MAA LAXMI MOBILE
POLLUTION TESTING UNIT
BHADRAK, HARIPUR
Mob: 9337717631

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

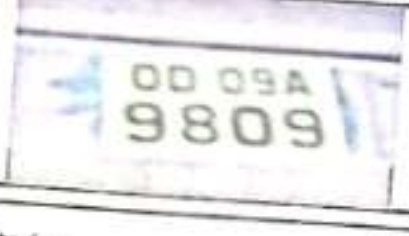
Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	26/02/2025
Time	:	13:46:07 PM
Validity upto	:	25/08/2025

Certificate SL. No.	:	ORS010004001218955
Registration No.	:	OD09A9809
Date of Registration	:	25/Jun/2015
Month & Year of Manufacturing	:	September-2014
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	ORS010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.02

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
30mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**13:50:49 PM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021900
Registration No.	:	OD09A9807
Date of Registration	:	25/Jun/2015
Month & Year of Manufacturing	:	September-2014
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.74

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

te : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

horised Signature with stamp of PUC Operator
m x 20 mm

MAA LAXMI MOBILE

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**09:37:59 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR901000400218?3
Registration No.	:	OR09N9560
Date of Registration	:	18/Feb/2011
Month & Year of Manufacturing	:	January-2010
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE II
Fuel	:	DIESEL
PUC Code	:	ORS010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.73

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
30mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :

Government of Odisha

Date	:	**26/02/2025**
Time	:	**10:34:43 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR0210004002218*8
Registration No.	:	OR09N9559
Date of Registration	:	18/Feb/2011
Month & Year of Manufacturing	:	January-2010
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE II
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1ZF
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate 60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.73

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator

mm x 20 mm

MAA LAXMI MOBILE

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:30:46 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021880
Registration No.	:	OR09N9558
Date of Registration	:	18/Feb/2011
Month & Year of Manufacturing	:	January-2010
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE II
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.77

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

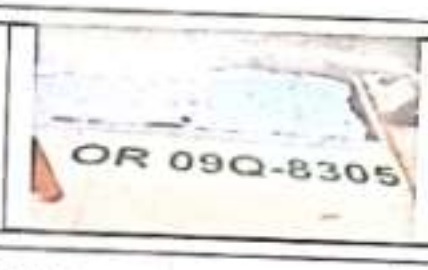
Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:39:55 AM**
Validity upto	:	**25/08/2025**

Certificate SL No.	:	OR90100040021886
Registration No.	:	OR09Q8305
Date of Registration	:	10/Feb/2012
Month & Year of Manufacturing	:	January-2011
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.09

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

MAA LAXMI MOBILE
TESTING UNIT
BARBIL

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**10:28:25 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021877
Registration No.	:	OR09Q8304
Date of Registration	:	10/Feb/2012
Month & Year of Manufacturing	:	January-2011
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.82

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**11:48:35 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021889
Registration No.	:	OR09Q8306
Date of Registration	:	10/Feb/2012
Month & Year of Manufacturing	:	October-2010
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High Idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.72

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**10:36:27 AM**
Validity upto	:	**25/08/2025**

Certificate SL. No.	:	OR90100040021879
Registration No.	:	OR09Q8303
Date of Registration	:	10/Feb/2012
Month & Year of Manufacturing	:	June-2010
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.13

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
Government of Odisha

Date	:	**26/02/2025**
Time	:	**15:03:11 PM**
Validity upto	:	**25/08/2025**

Certificate SL No.	:	OR90100040021905
Registration No.	:	OD09C7288
Date of Registration	:	03/Dec/2016
Month & Year of Manufacturing	:	January-2014
Valid Mobile Number	:	******8701
Emission Norms	:	BHARAT STAGE III
Fuel	:	DIESEL
PUC Code	:	OR9010004
GSTIN	:	21BEHPD1932E1Z9
Fees	:	Rs.177.00(Including GST)
MIL observation	:	No

Vehicle Photo with Registration plate
60 mm x 30 mm

Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	2.28

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to https://puc.parivahan.gov.in

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Scanned with OKEN Scanner

Instantel

Event Report

Date/Time	Long at 13:40:12 March 13, 2026
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL_MMB

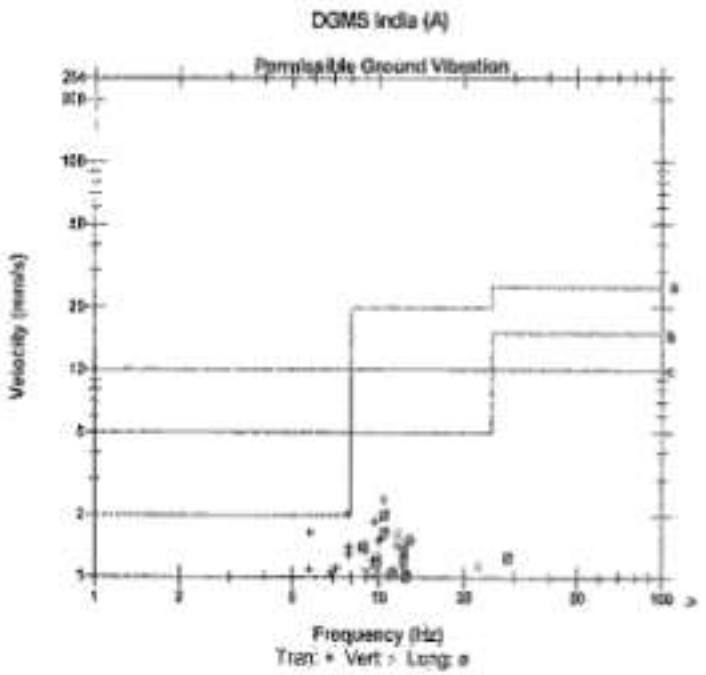
Serial Number	UM21129 V 10-90GC Micromate IBSE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINE

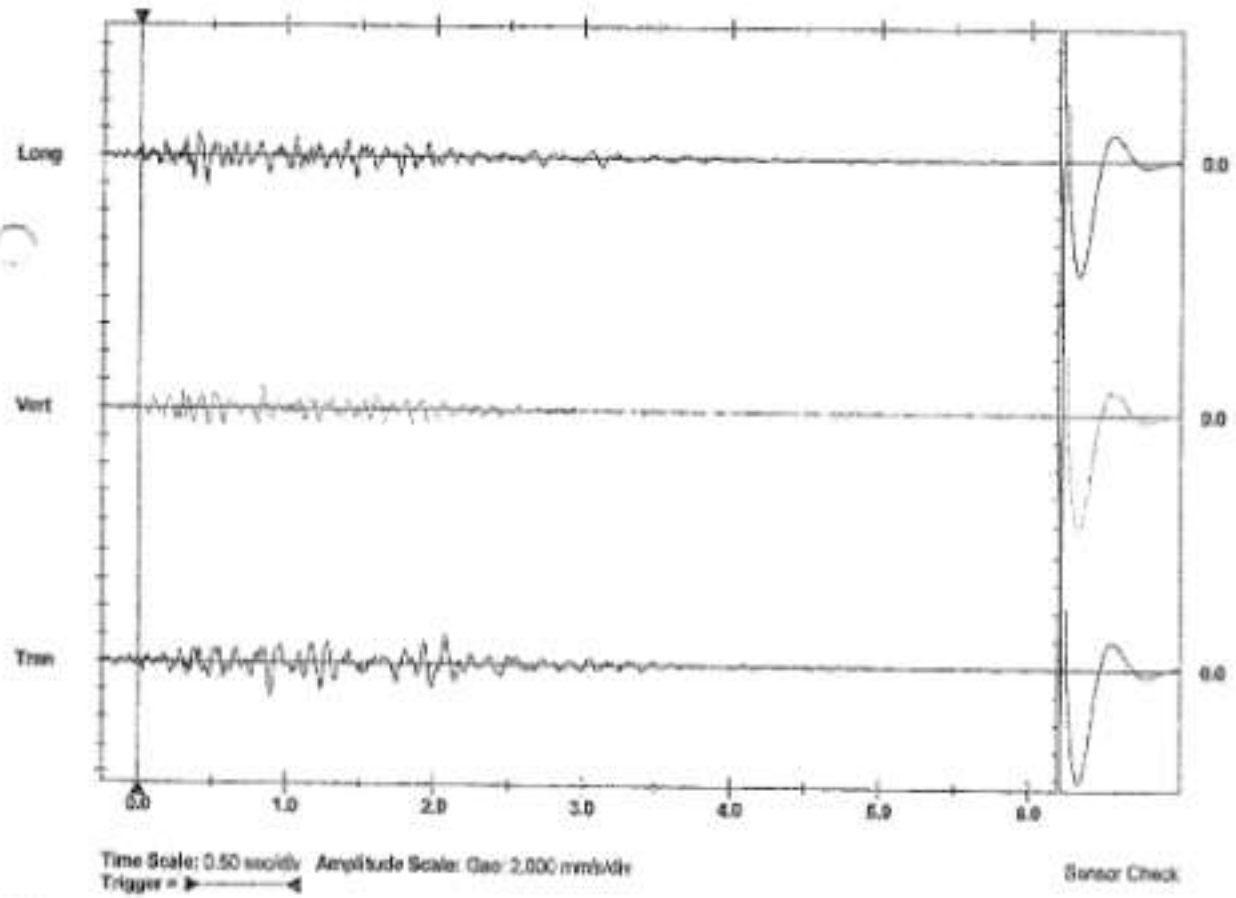
Extended Notes
Recorded at 150 meter back side of the blasting face.

	Tran	Vert	Long	
PPV	2.404	1.663	2.049	mm/s
ZC Freq	10	12	10	Hz
Time (Rel. to Trig)	0.697	0.845	0.454	sec
Peak Acceleration	0.031	0.026	0.026	g
Peak Displacement	0.037	0.021	0.024	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.2	4.8	4.5	

Peak Vector Sum 2.524 mm/s at 0.697 sec



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger =

Sensor Check

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Instantel

FFT Report

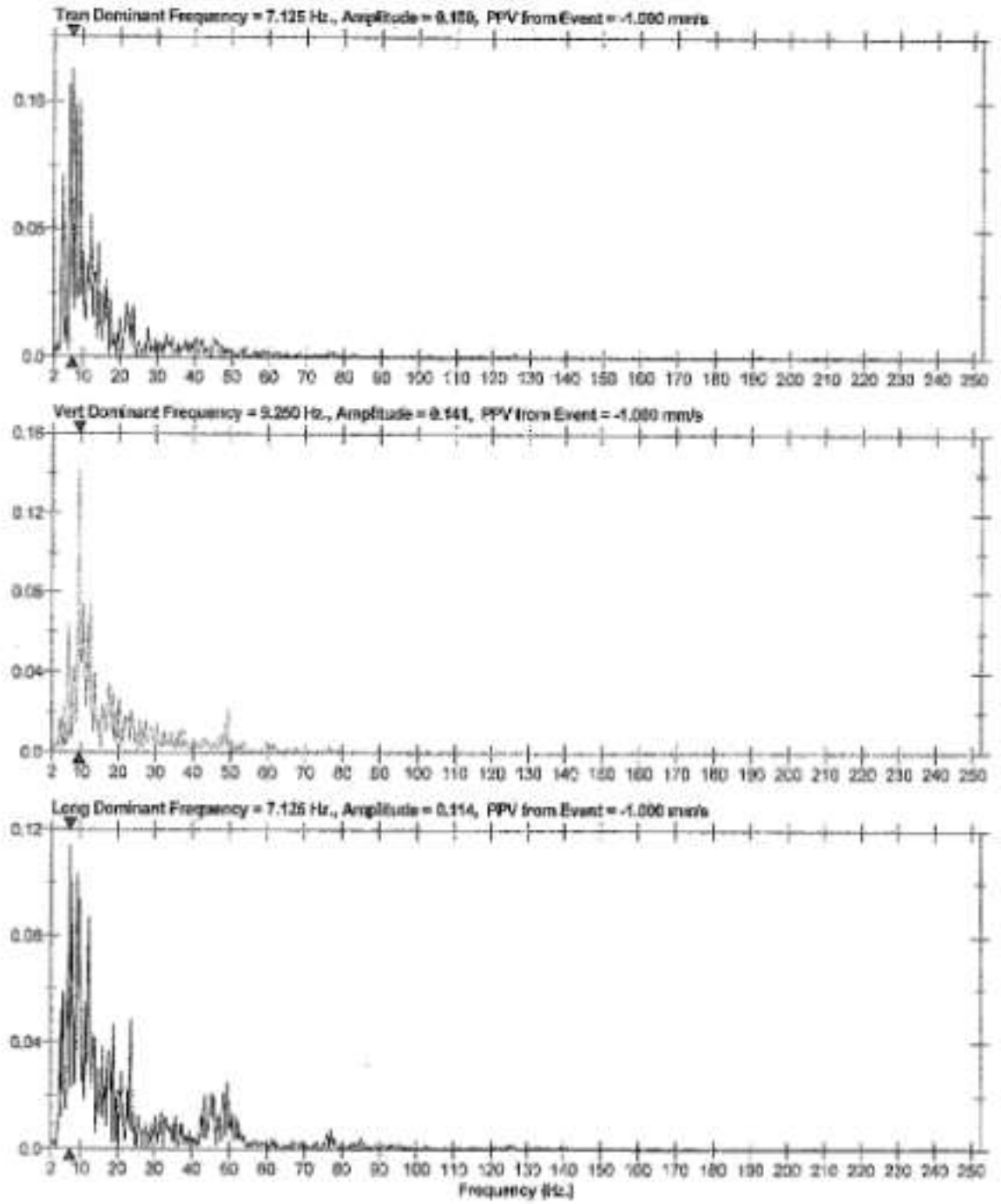
Date/Time	Long at 13:46:12 March 13, 2025
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	8.0 sec at 1024 sps
Operator/Setup:	Operator/TSL_MMR

Serial Number	UM21129 V IC-900C Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	_TEMP EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face



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Event Report

Date/Time	Tran at 13:44:56 March 13, 2025
Trigger Source	Geo: 0.500 in/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator:factory MMB

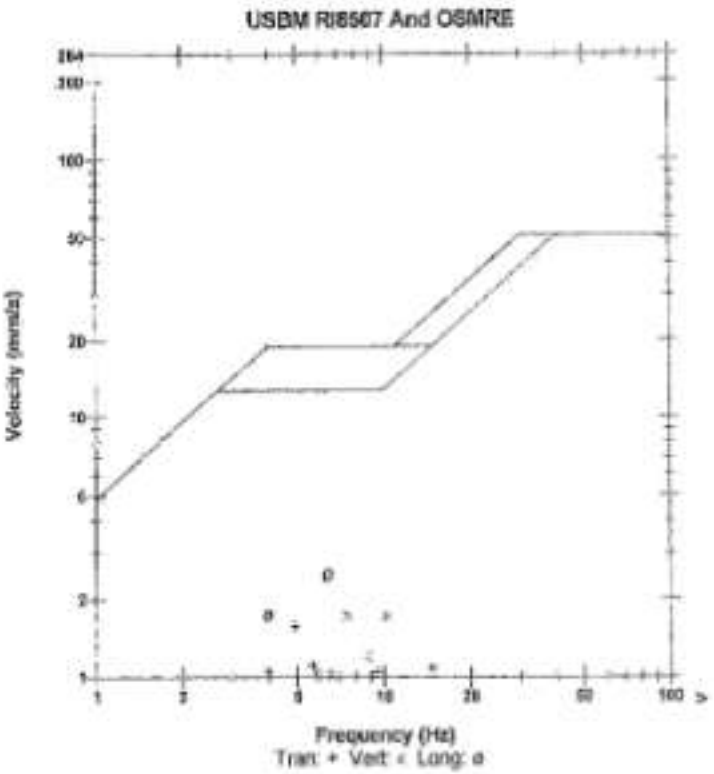
Serial Number	UM21106 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	_TEMP.EVT

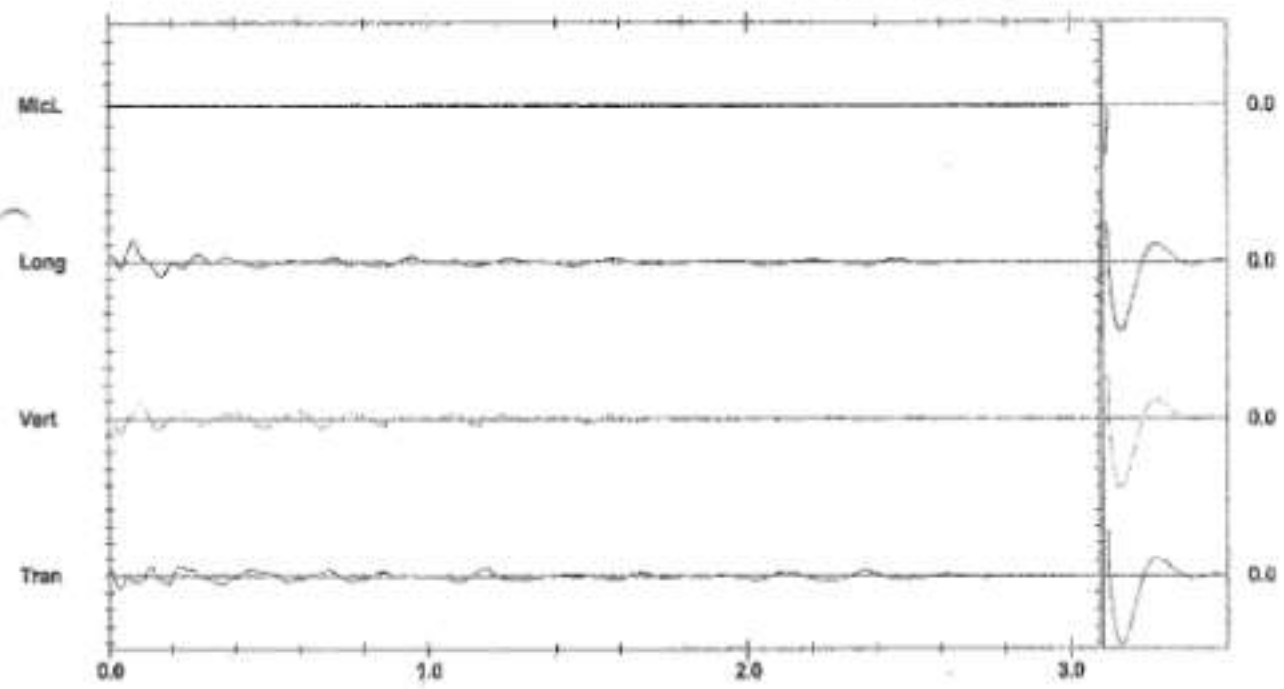
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	<0.500 psi.(L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.588	1.760	2.514	mm/s
ZC Freq	4.9	7.4	6.4	Hz
Time (Rel. to Trig)	0.033	0.099	0.077	sec
Peak Acceleration	0.023	0.020	0.030	g
Peak Displacement	0.037	0.035	0.046	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.6	Hz
Overswing Ratio	3.9	3.9	4.0	

Peak Vector Sum 2.740 mm/s at 0.080 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 psi.(L)/div

Sensor Check

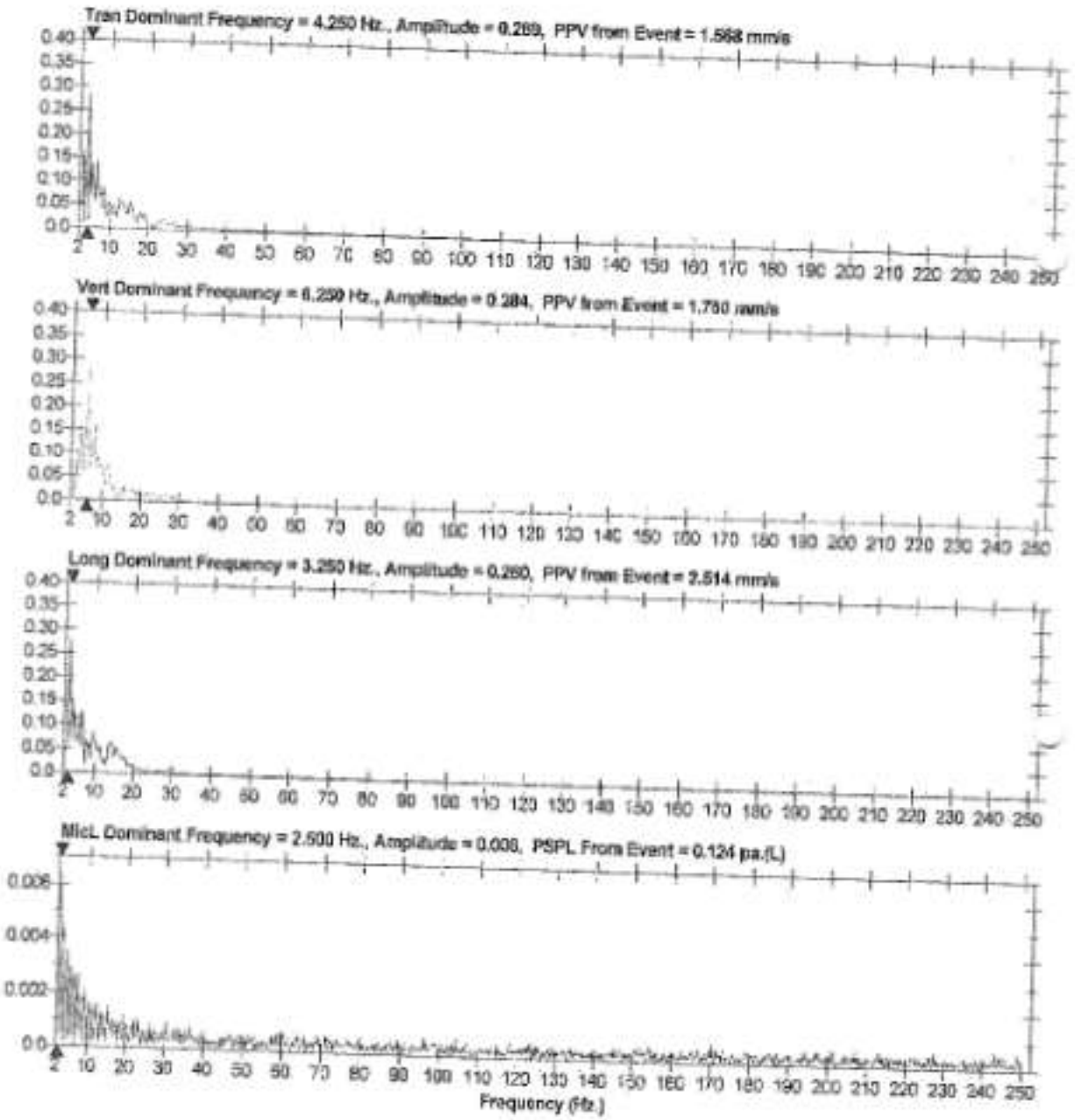
Instantel

FFT Report

Date/Time	Tran at 13:44:56 March 13, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM21109 V 10-60GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	...TEMP EVT

Notes
Location:
Client:
User Name:
General:



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Event Report

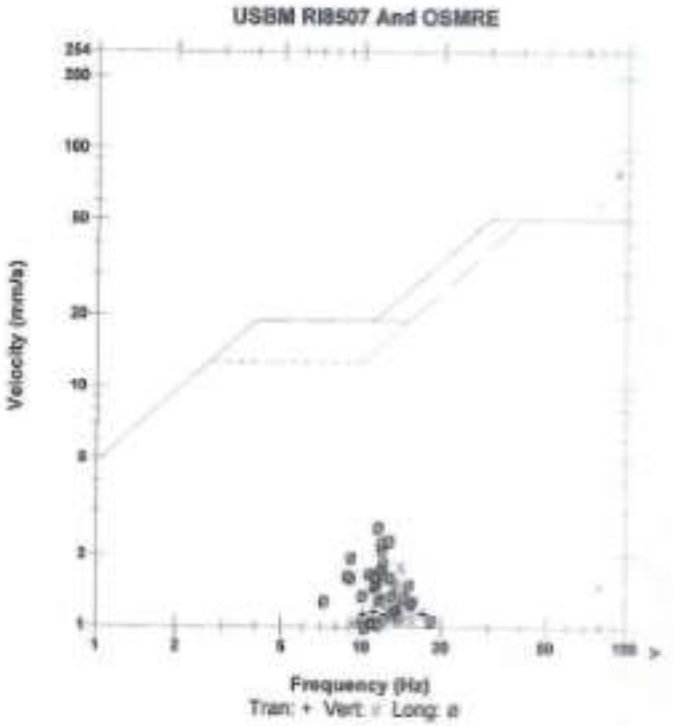
Date/Time	Vert at 13:52:54 March 13, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

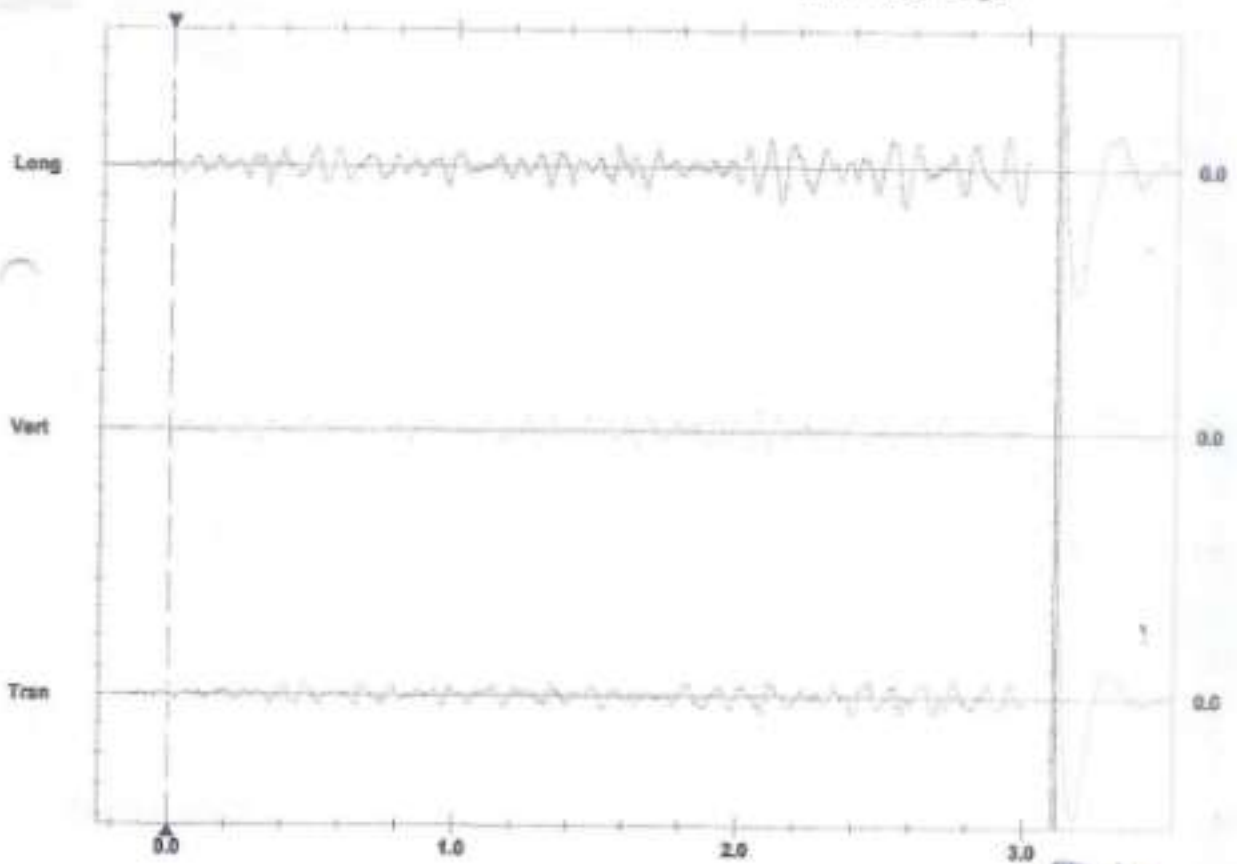
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250313135254.IDFW

Notes
Location: NMD / KTM
Client: TATA STEEL LTD .
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.332	1.797	2.609	mm/s
ZC Freq	11.9	14.0	11.5	Hz
Time (Rel. to Trig)	2.758	2.028	2.571	sec
Peak Acceleration	0.021	0.031	0.036	g
Peak Displacement	0.017	0.020	0.035	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.1	6.7	Hz
Overswing Ratio	3.9	4.2	3.3	

Peak Vector Sum 2.848 mm/s at 2.571 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

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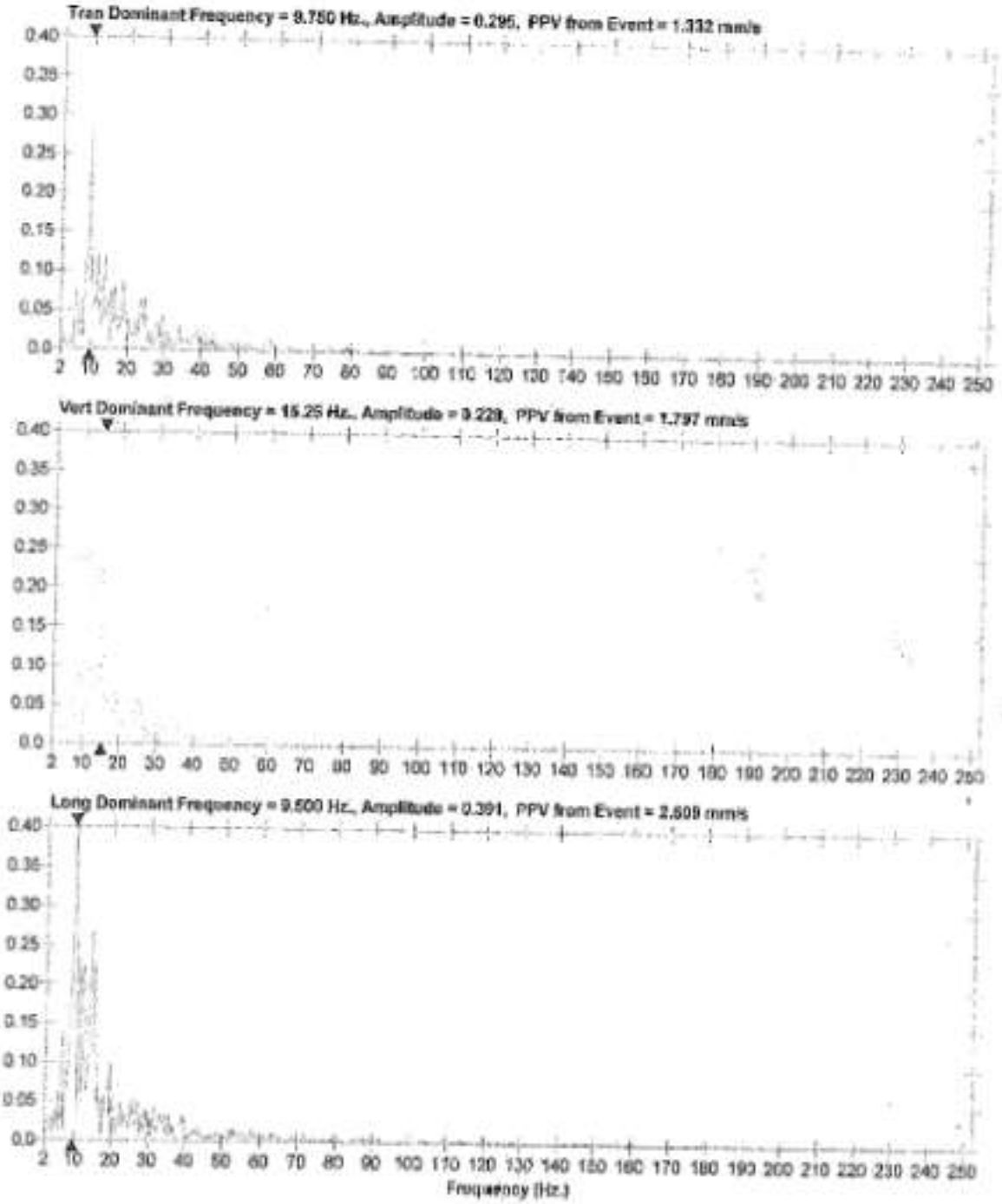
Instantel

FFT Report

Date/Time	Vert at 13:52:54 March 13, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250313135254.IDFW

Notes
Location: NMD / KTM
Client: TATA STEEL LTD.
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 13:42:43 March 11, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory,MMB

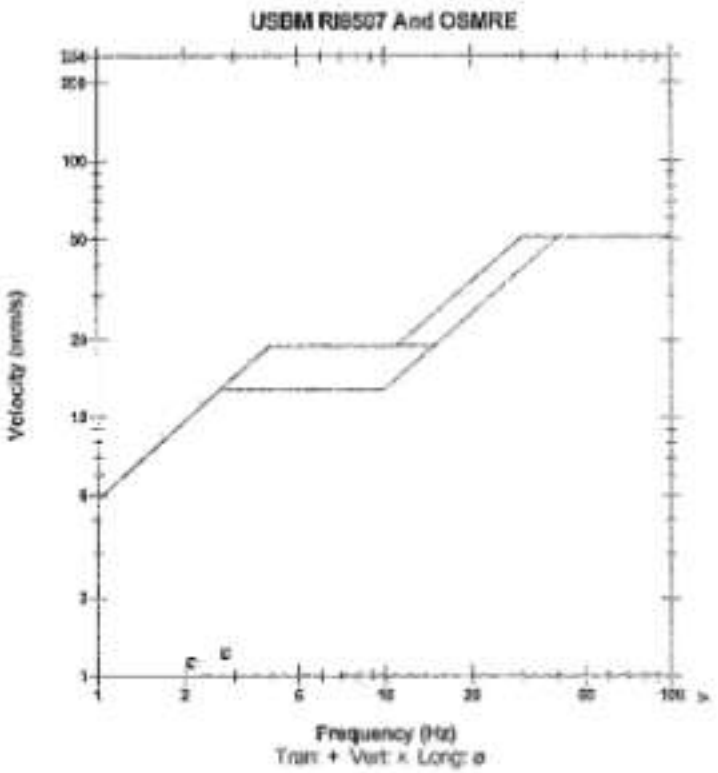
Serial Number	UM21108 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	__TEMP.EVT

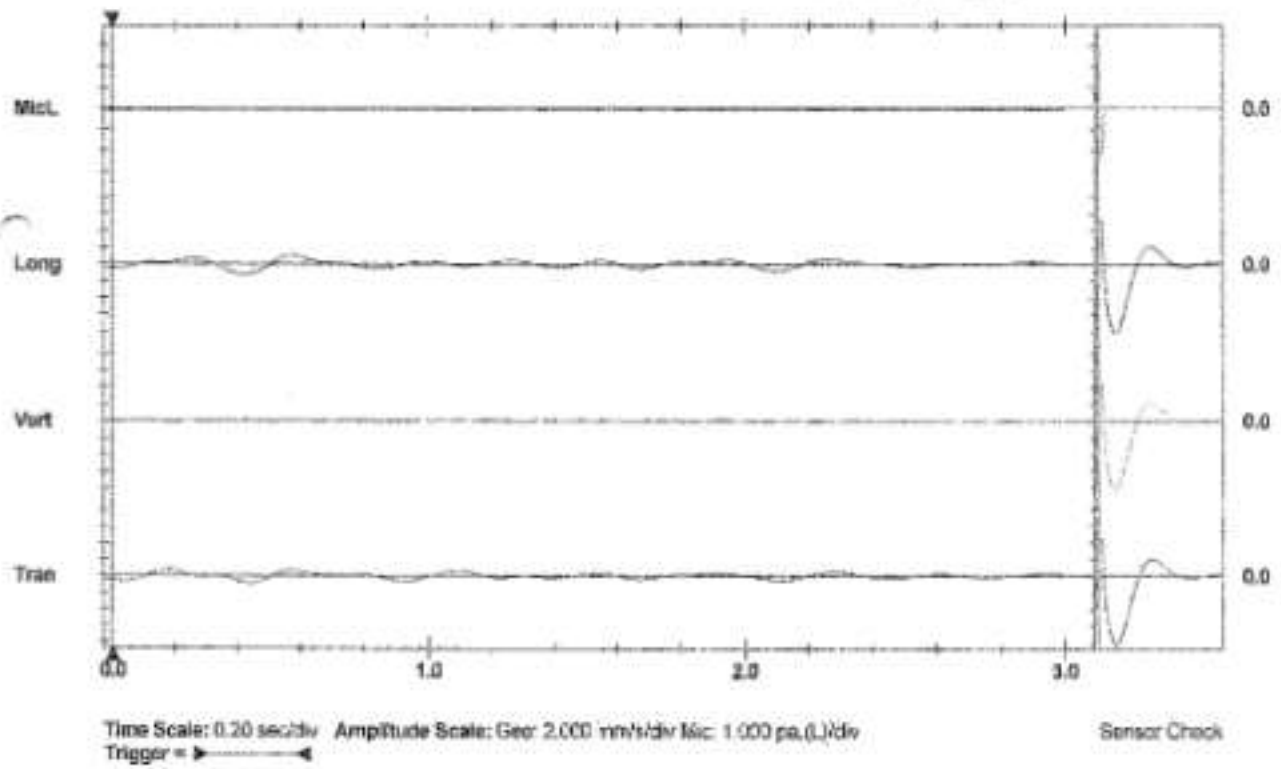
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	<1.0 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.891	0.378	1.237	mm/s
ZC Freq	2.9	5.1	2.5	Hz
Time (Rel. to Trig)	0.436	0.105	0.421	sec
Peak Acceleration	0.020	0.016	0.023	g
Peak Displacement	0.041	0.011	0.059	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	4.1	3.9	3.8	

Peak Vector Sum 1.509 mm/s at 0.429 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger =

Sensor Check

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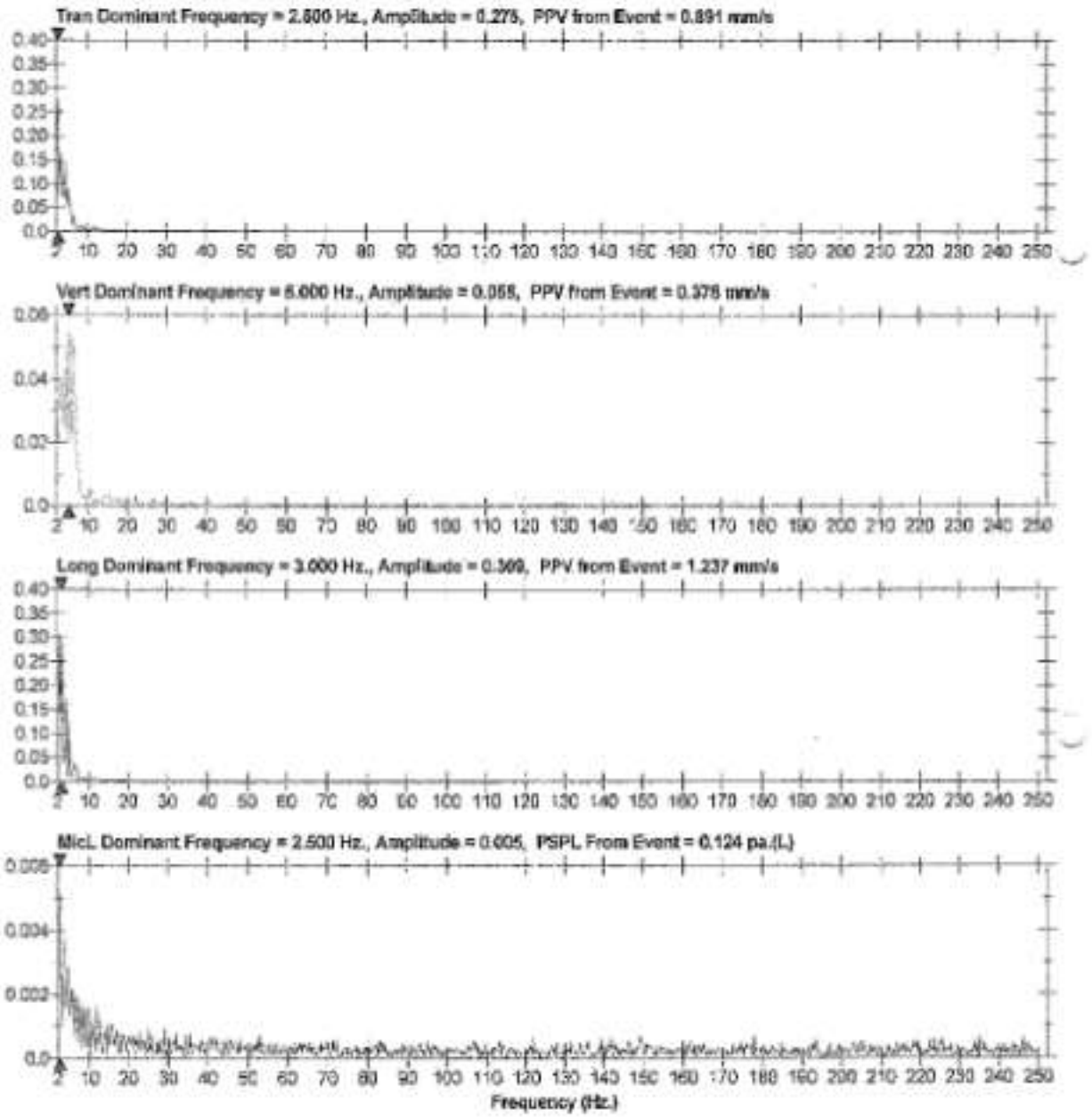
Instantel

FFT Report

Date/Time	Tran at 13:42:43 March 11, 2025	**Serial Number**	UM21105 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa.(L)	**Battery Level**	3.5 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	September 7, 2024 by UES New Delhi
Record Time	3.0 sec at 4096 sps	**File Name**	__TEMP.EVT
Operator/Setup:	Operator/factory.IMS		

Notes
Location:
Client:
User Name:
General:



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Event Report

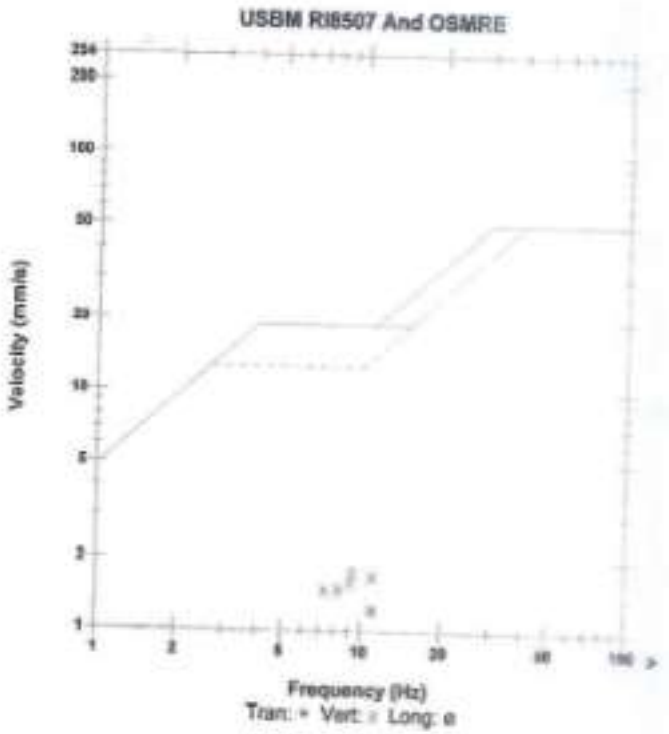
Date/Time	Long at 13:54:40 March 11, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

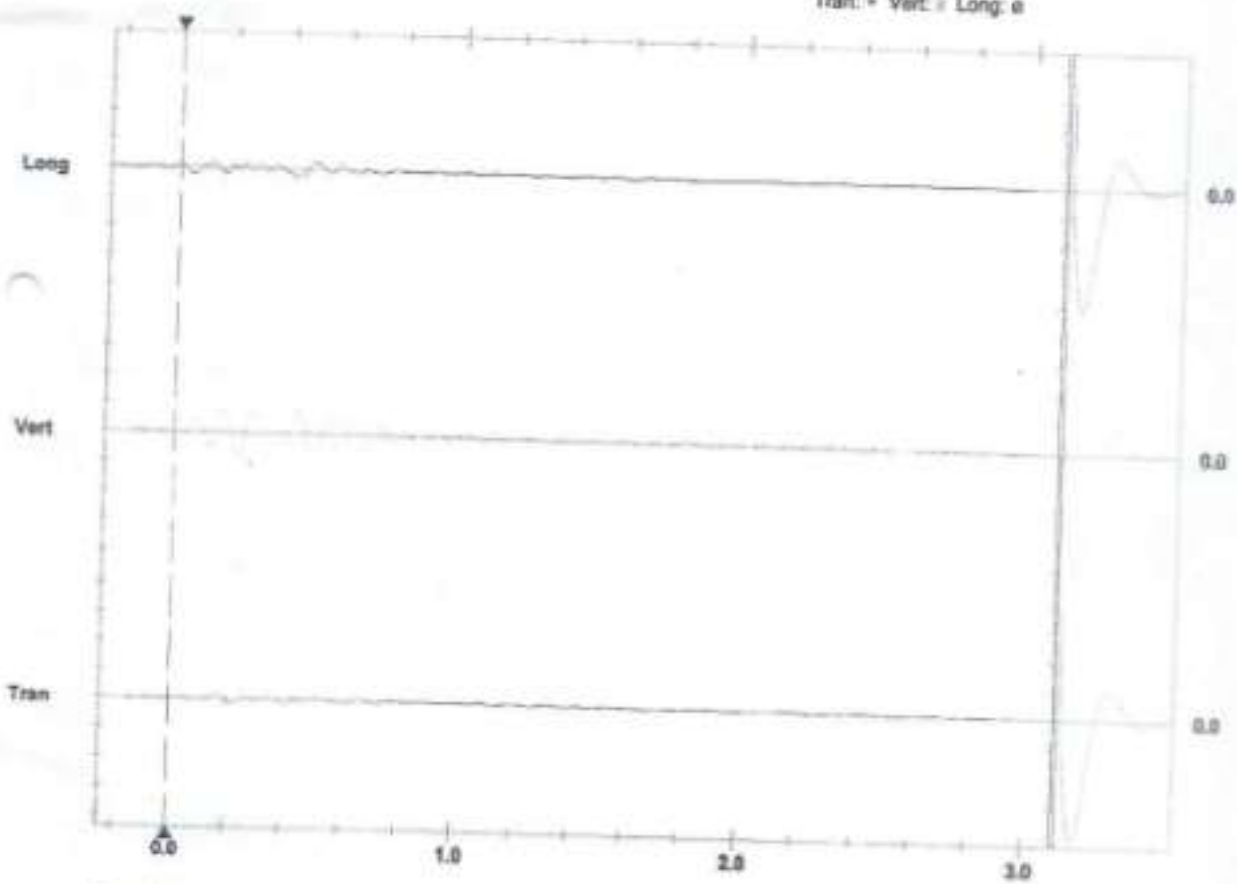
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250311135440.IDFW

Notes
Location: NMD / KTM
Client: TATA STEEL LTD .
User Name: IDL EXPLOSIVES LTD
General

	Tran	Vert	Long	
PPV	0.347	1.781	0.599	mm/s
ZC Freq	8.8	9.3	6.0	Hz
Time (Rel. to Trig)	0.216	0.230	0.416	sec
Peak Acceleration	0.008	0.023	0.012	g
Peak Displacement	0.006	0.029	0.014	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.3	Hz
Overswing Ratio	3.9	4.0	3.9	

Peak Vector Sum 1.827 mm/s at 0.230 sec





Sensor Check

For IDL Explosives Limited

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Instantel

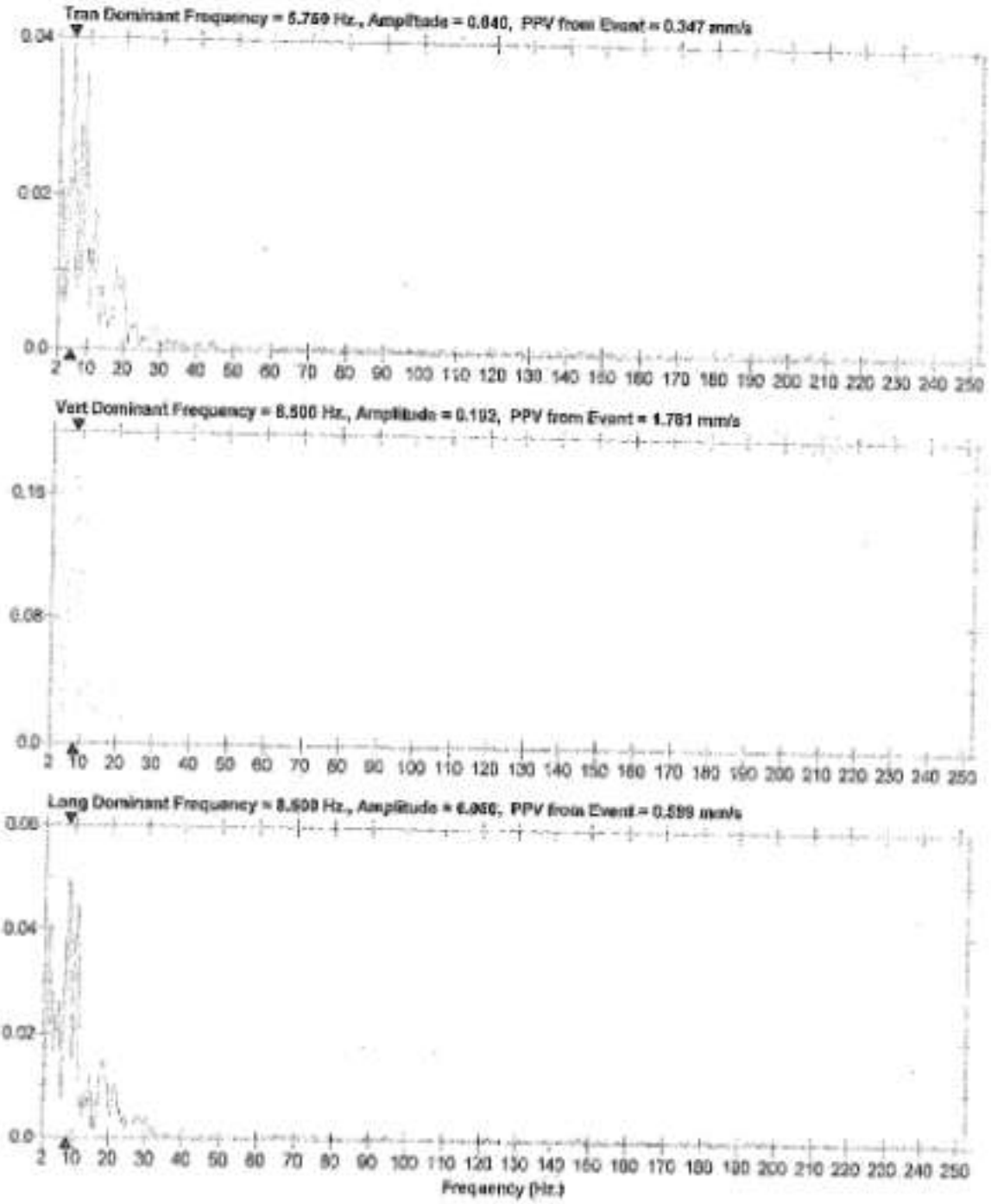
FFT Report

Date/Time	Long at 13:54:40 March 11, 2026
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory,MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250311135440.IDFW

Notes

Location:	NMD / KTM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Instantel

Event Report

Date/Time	Vert at 13:42:26 March 4, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MMB

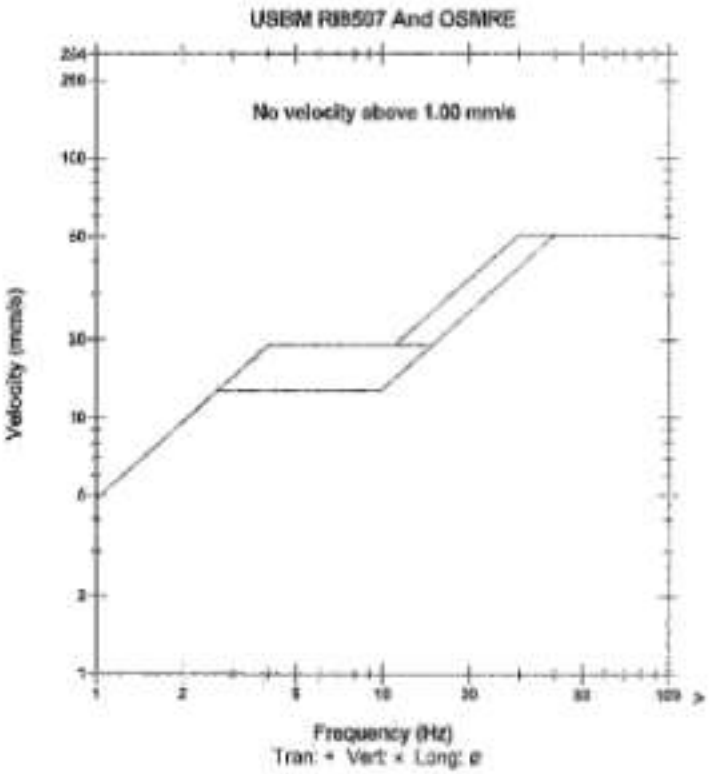
Serial Number	UM21108 V 10-90QC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	_TEMP.EVT

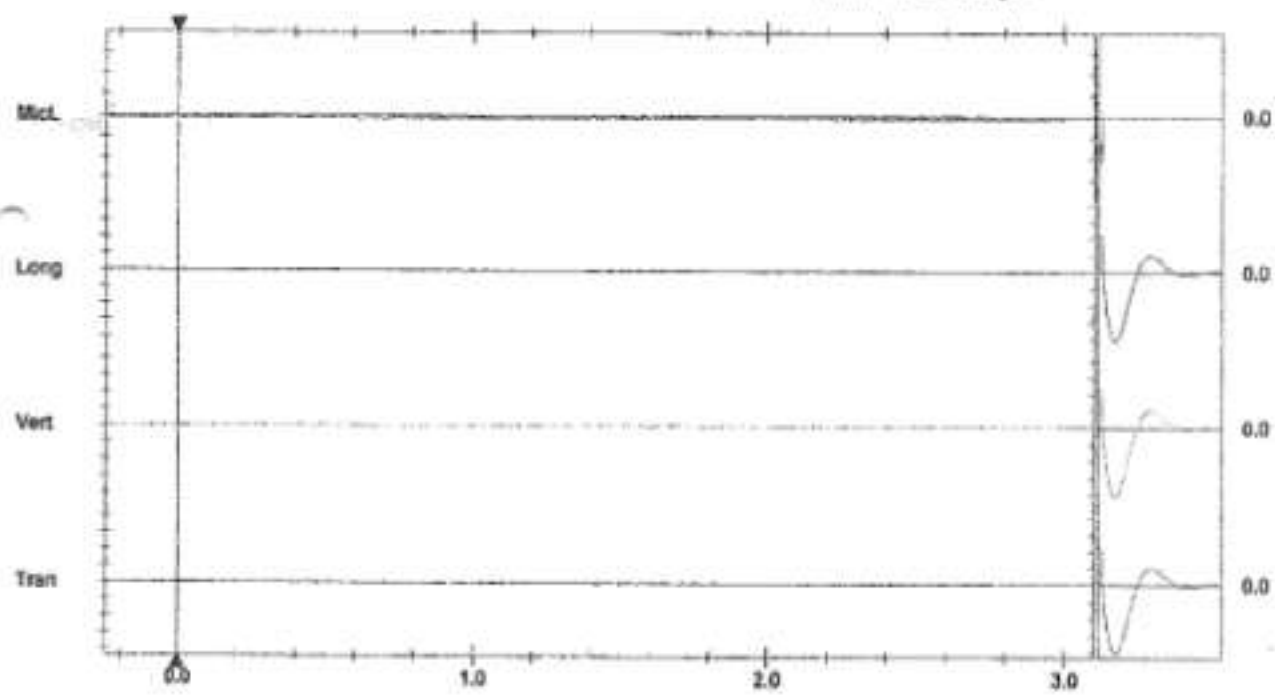
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.168	0.660	0.150	mm/s
ZC Freq	226	256	46	Hz
Time (Rel. to Trig)	0.003	0.000	2.417	sec
Peak Acceleration	0.030	0.092	0.020	g
Peak Displacement	0.000	0.000	0.000	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	4.1	4.0	4.0	

Peak Vector Sum 0.666 mm/s at 0.000 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa (L)/div

Trigger =

Sensor Check

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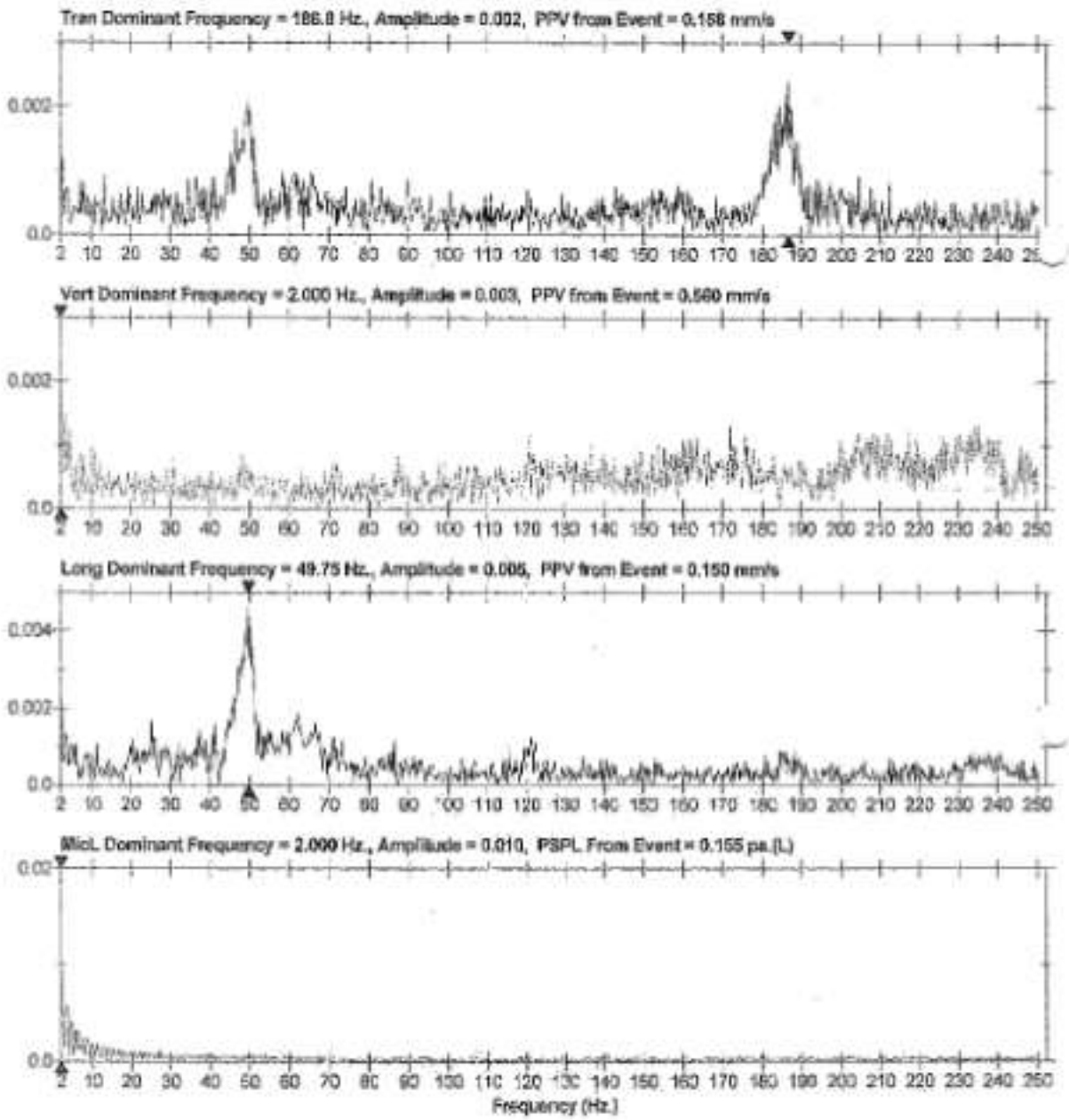
FFT Report

Date/Time	Vert at 13:42:25 March 4, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup	Operator/factory.MMB

Serial Number	UM21108 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes
Location:
Client:
User Name:
General:



Format © 1995-2014 Xtrark Corporation

Instantel

Event Report

Date/Time	Vert at 13:42:10 March 4, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MM8

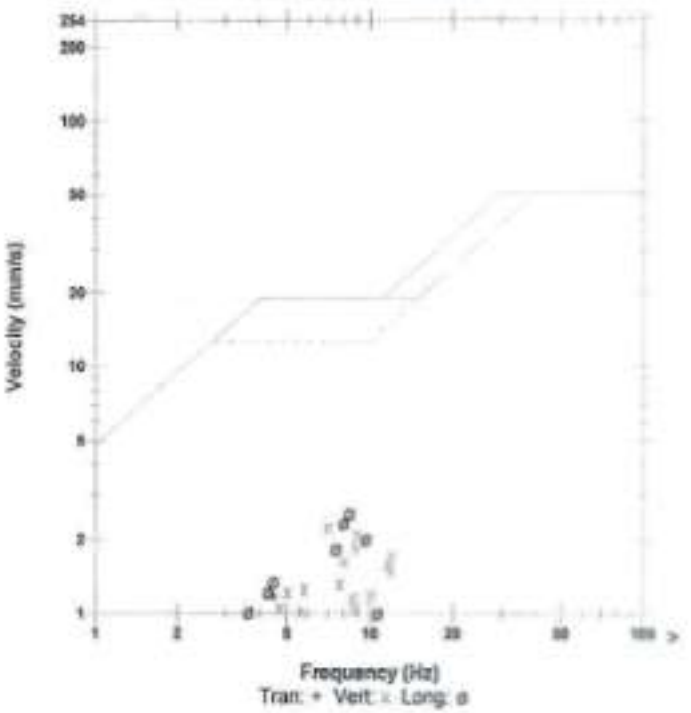
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 20, 2025 by UES New Delhi
File Name	UM6253_20250304134210.IDFW

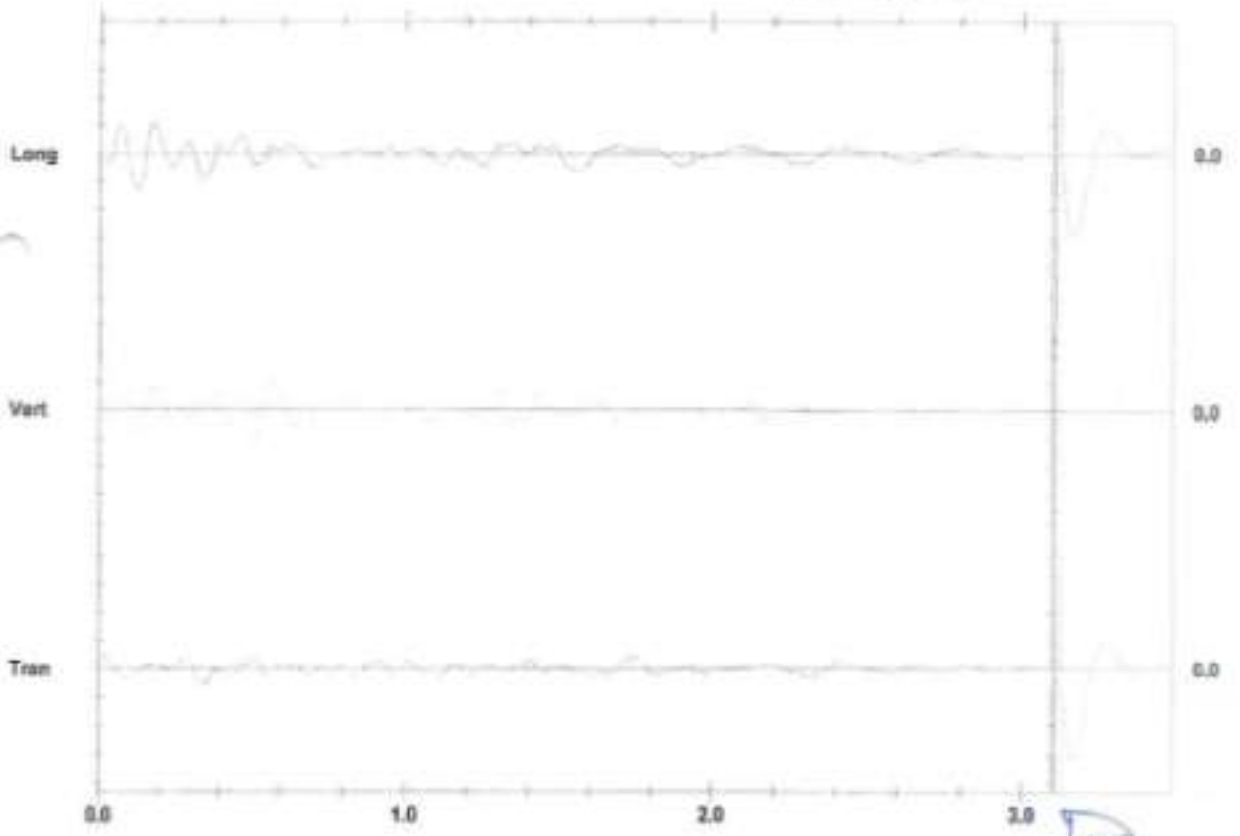
Notes
Location: RL-65B
Client: TATA STEEL LTD.
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.174	2.270	2.554	mm/s
ZC Freq	4.5	7.0	8.4	Hz
Time (Rel. to Trig)	0.346	0.568	0.125	sec
Peak Acceleration	0.012	0.032	0.020	g
Peak Displacement	0.029	0.042	0.048	mm
Sensor Check	Check	Passed	Check	
Frequency	7.5	7.7	7.5	Hz
Overswing Ratio	3.2	3.0	3.2	

Peak Vector Sum 3.036 mm/s at 0.131 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div

Sensor Check

Printed: March 5, 2025 (V 10.72 - 10.72.1)

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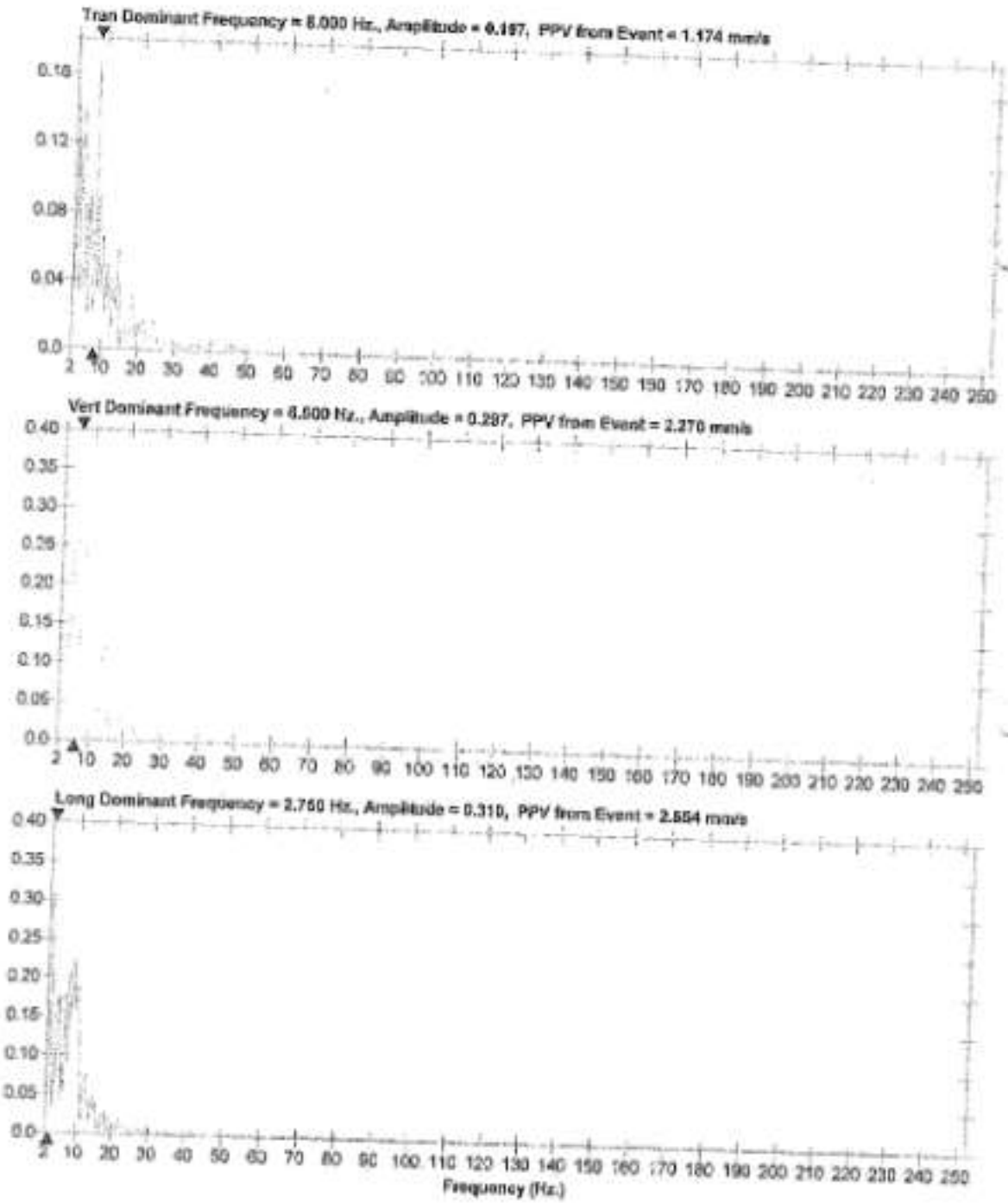
FFT Report

Date/Time	Vert at 13:42:10 March 4, 2026
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory:MMB

Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 20, 2025 by UES New Delhi
File Name	UM6253_20250304134210.IDFW

Notes

Location: RL-570
Client: DJR PATTNAIK MINES
User Name: IDL EXPLOSIVES LTD
General:



Instantel

Event Report

Date/Time	Long at 13:27:39 March 1, 2025
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL.MMB

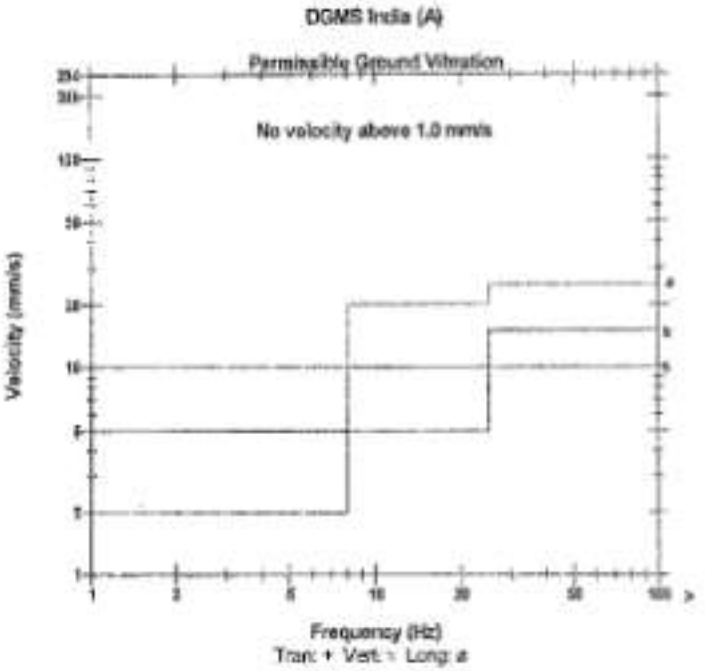
Serial Number	UM21129 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.SVT

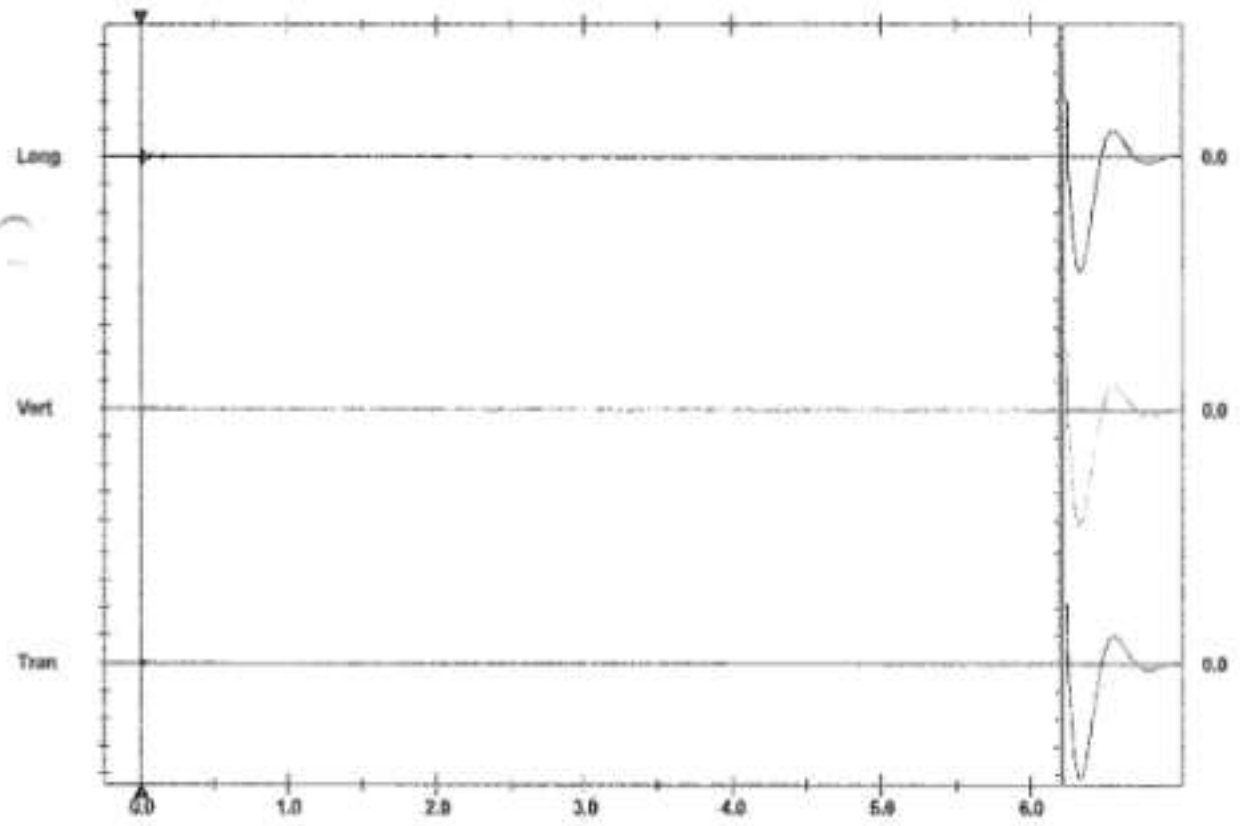
Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face.

	Tran	Vert	Long	
PPV	0.426	0.457	0.725	mm/s
ZC Freq	>100	85	73	Hz
Time (Rel. to Trig)	0.001	0.001	0.037	sec
Peak Acceleration	0.045	0.033	0.043	g
Peak Displacement	0.001	0.001	0.002	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	4.2	4.5	4.5	

Peak Vector Sum 0.951 mm/s at 0.001 sec





Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Sensor Check
Trigger =

Instantel

Event Report

PT-4 - RL-658

Date/Time	Long at 13:52:23 March 1, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

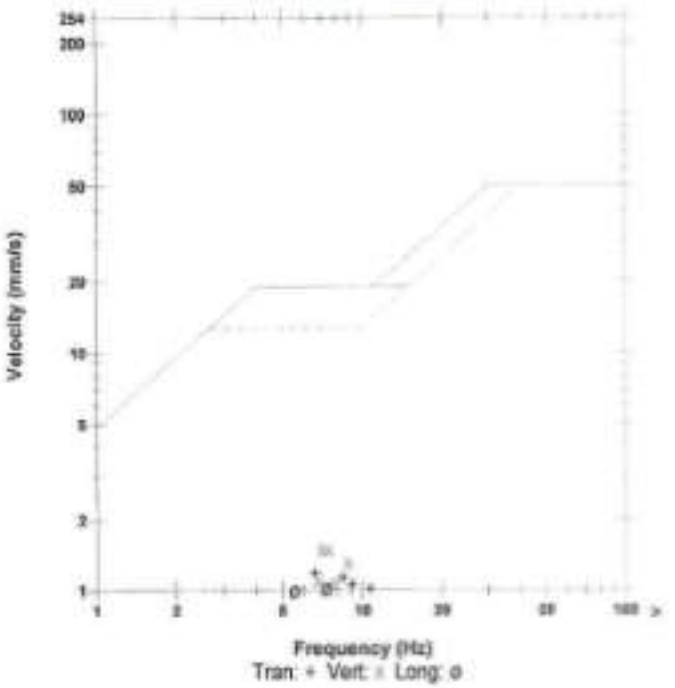
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 20, 2025 by UES New Delhi
File Name	UM6253_20250301135223.IDFW

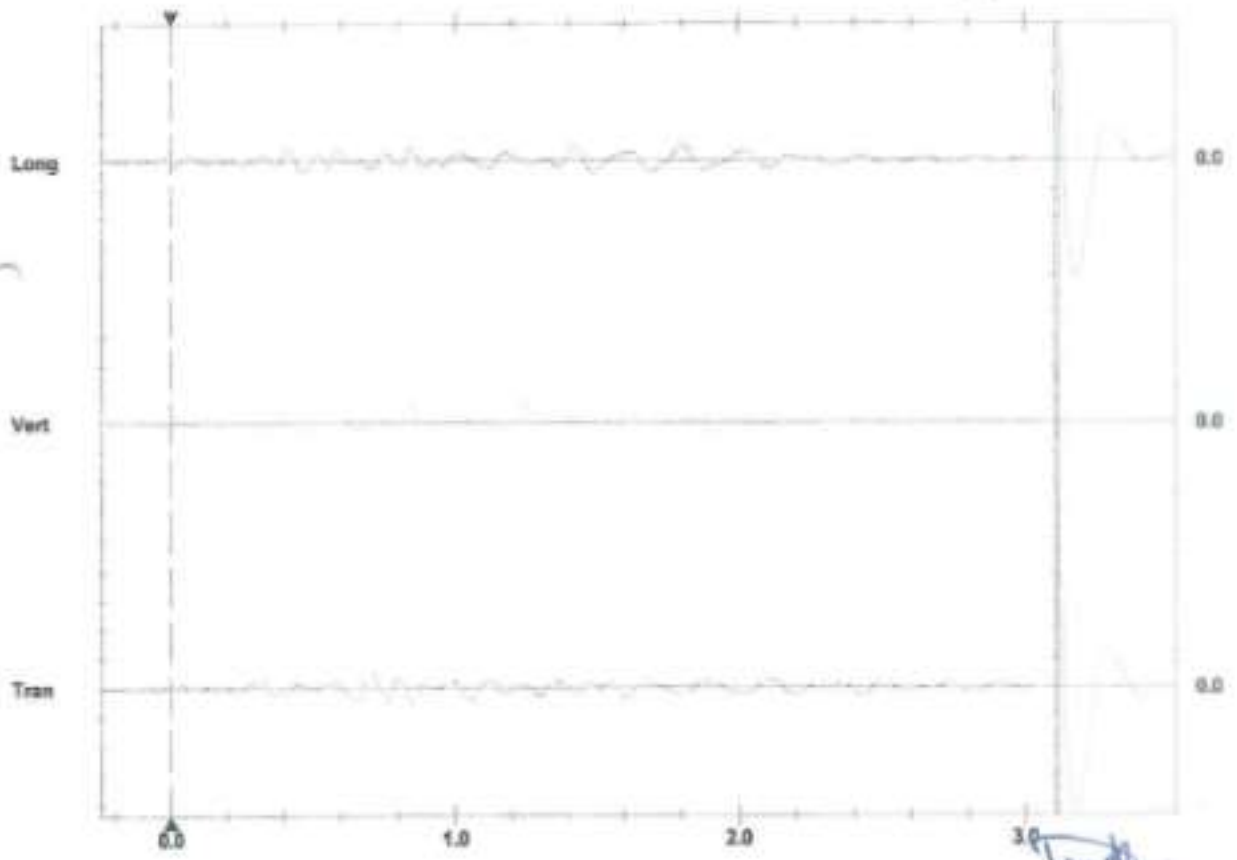
Notes
Location: Kushmahi iron mine.
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.182	1.490	1.025	mm/s
ZC Freq	6.8	7.0	7.3	Hz
Time (Rel. to Trig)	0.646	1.242	1.418	sec
Peak Acceleration	0.016	0.018	0.012	g
Peak Displacement	0.022	0.029	0.026	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.3	Hz
Oversweing Ratio	3.3	3.0	3.4	

Peak Vector Sum 1.793 mm/s at 0.645 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Ltd.

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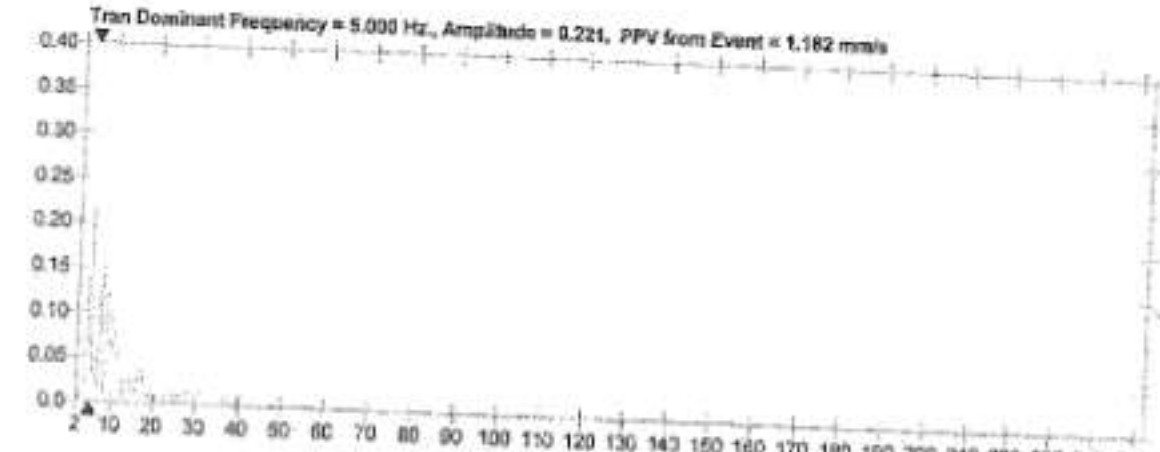
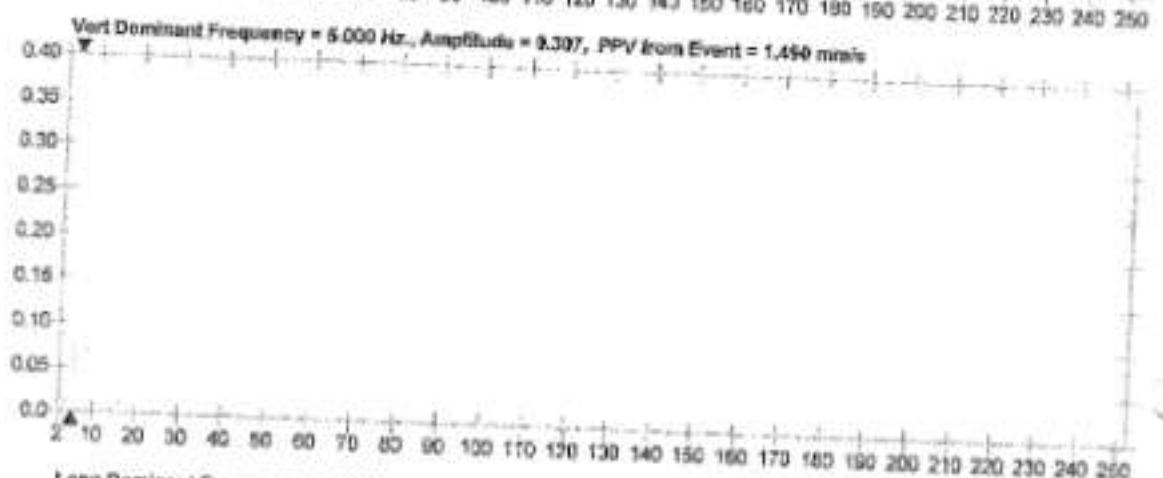
FFT Report

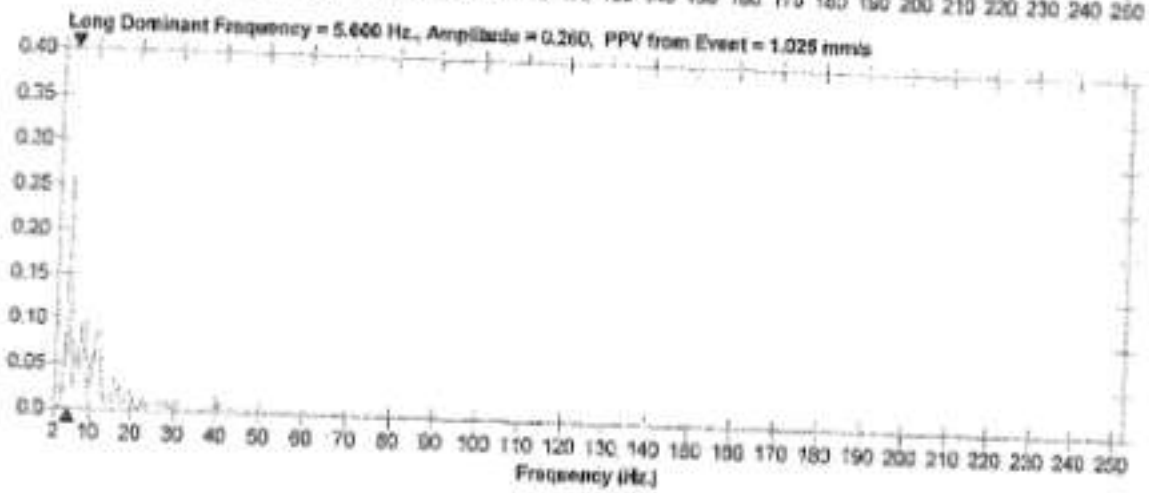
Date/Time	Long at 13:52:23 March 1, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MAB

Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 20, 2026 by UES New Delhi
File Name	UM6253_20250301135223.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:







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FFT Report

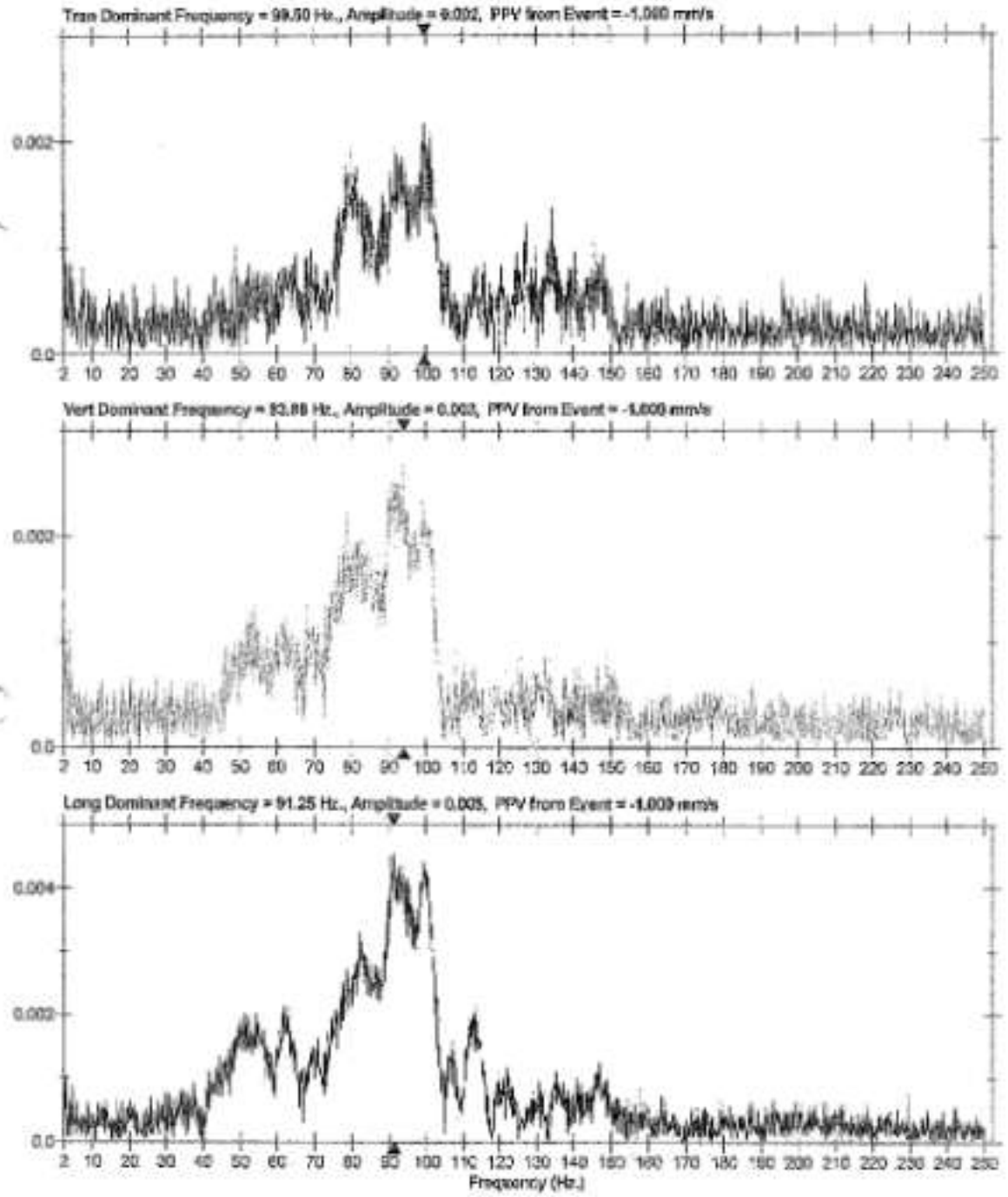
Date/Time	Long at 13:27:39 March 1, 2025
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	5.0 sec at 1024 sps
Operator/Setup:	Operator/TSL MMB

Serial Number	UM21129 V 10-92QC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (I) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face.



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Event Report

Date/Time	Long at 13:48:59 February 25, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory.VMB

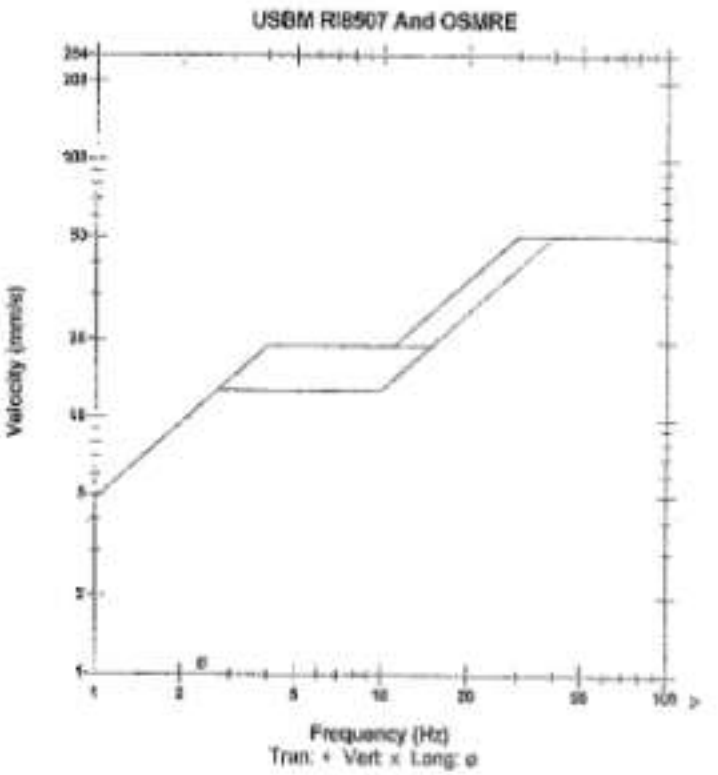
Serial Number	UM21108 V 10-60GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	__TEMP.EVT

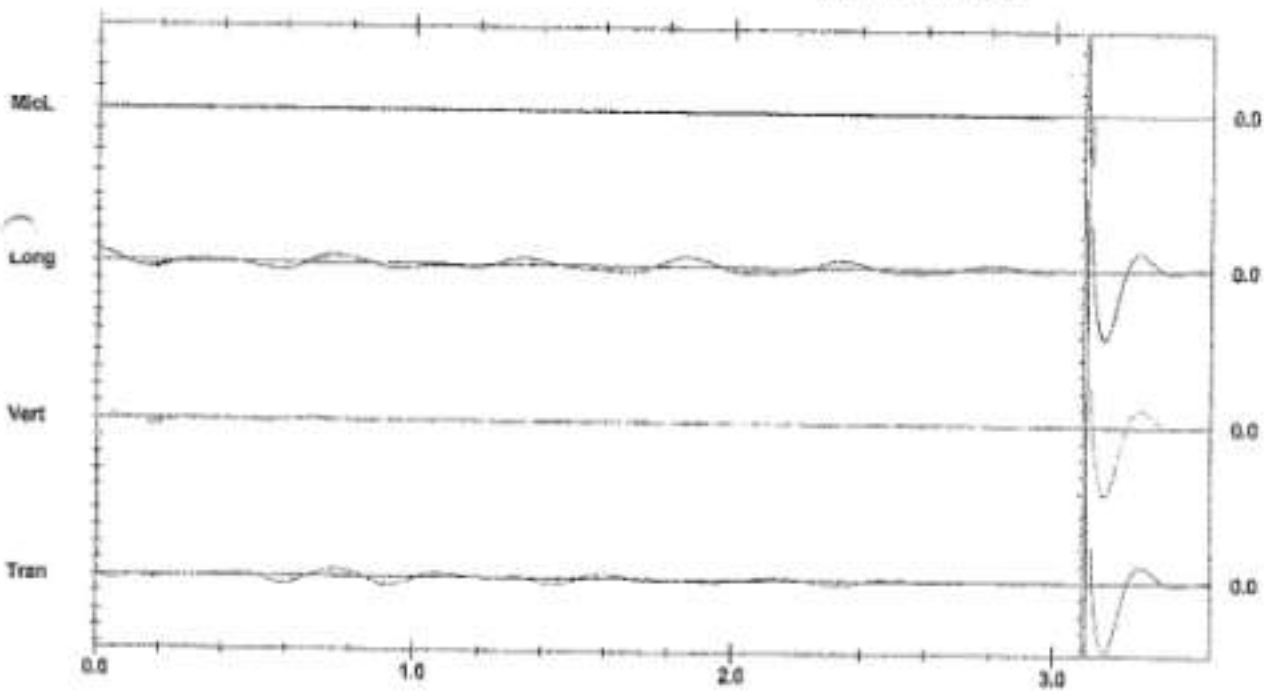
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	<1.0 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.930	0.985	1.332	mm/s
ZC Freq	3.0	8.0	N/A	Hz
Time (Rel. to Trig)	0.920	0.173	0.005	sec
Peak Acceleration	0.023	0.059	0.030	g
Peak Displacement	0.048	0.019	0.072	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.7	Hz
Overswing Ratio	4.1	4.0	3.8	

Peak Vector Sum 1.341 mm/s at 0.005 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa (L)/div

Sensor Check

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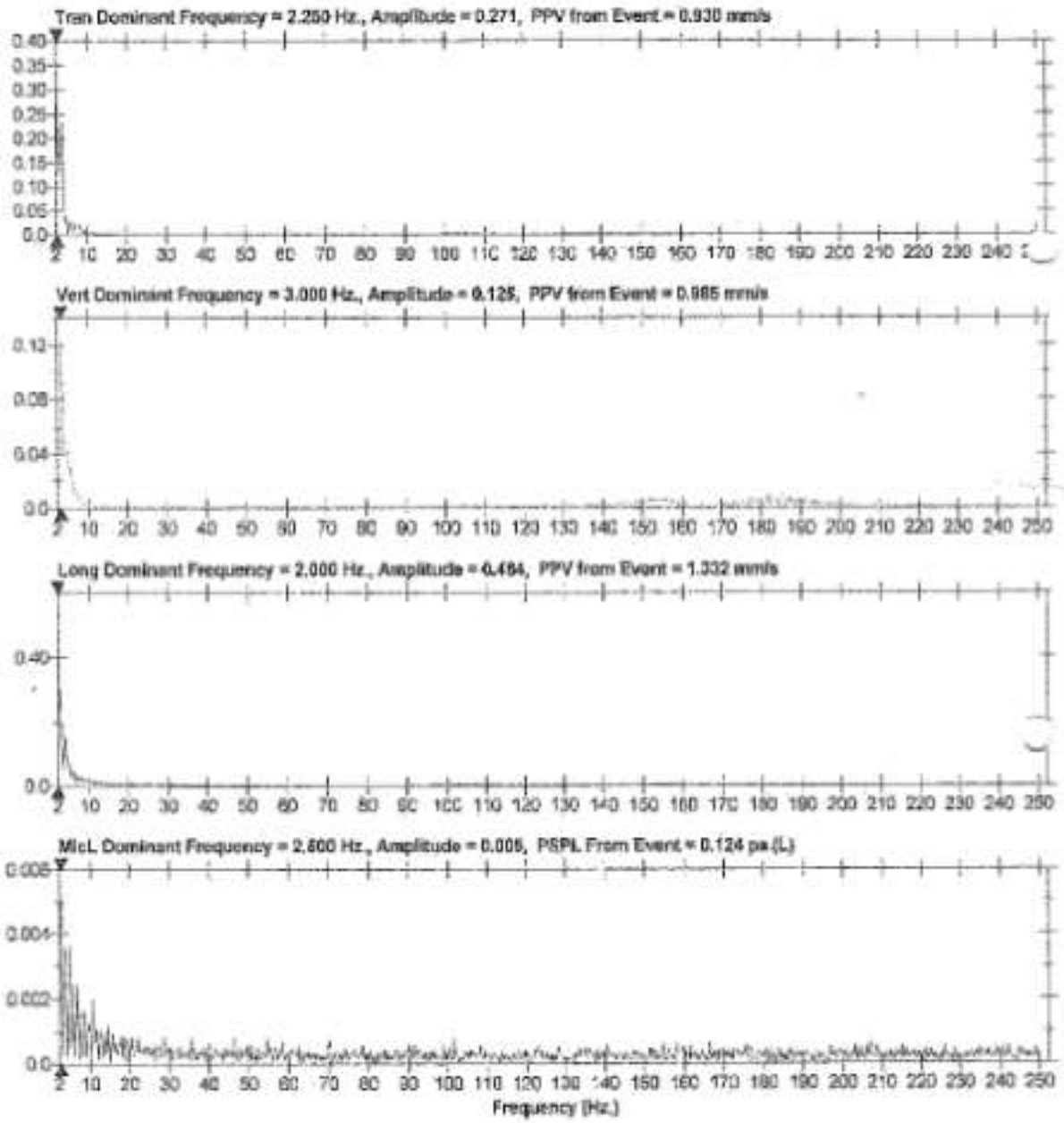
Instantel

FFT Report

Date/Time	Long at 13:48:59 February 26, 2026	**Serial Number**	UM21103 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa(L)	**Battery Level**	3.5 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	September 7, 2024 by UES New Delhi
Record Time	3.0 sec at 4096 sps	**File Name**	__TEMP.EVT
Operator/Setup:	Operator/factory MMB		

Notes
Location:
Client:
User Name:
General:



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Event Report

Date/Time	Trgn at 13:45:27 February 19, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/default,MMB

Serial Number	UM19505 V 10.90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	__TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

Notes
Location: On Ground Surfa
Client: KATAMATI IRON MINES
User Name: BDEPL
General:

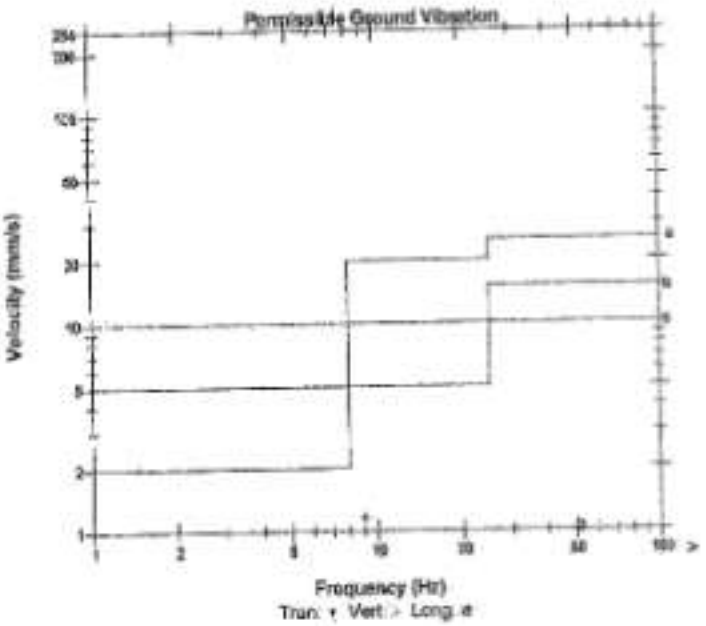
Extended Notes
100 mtrs backside from blasting face

Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

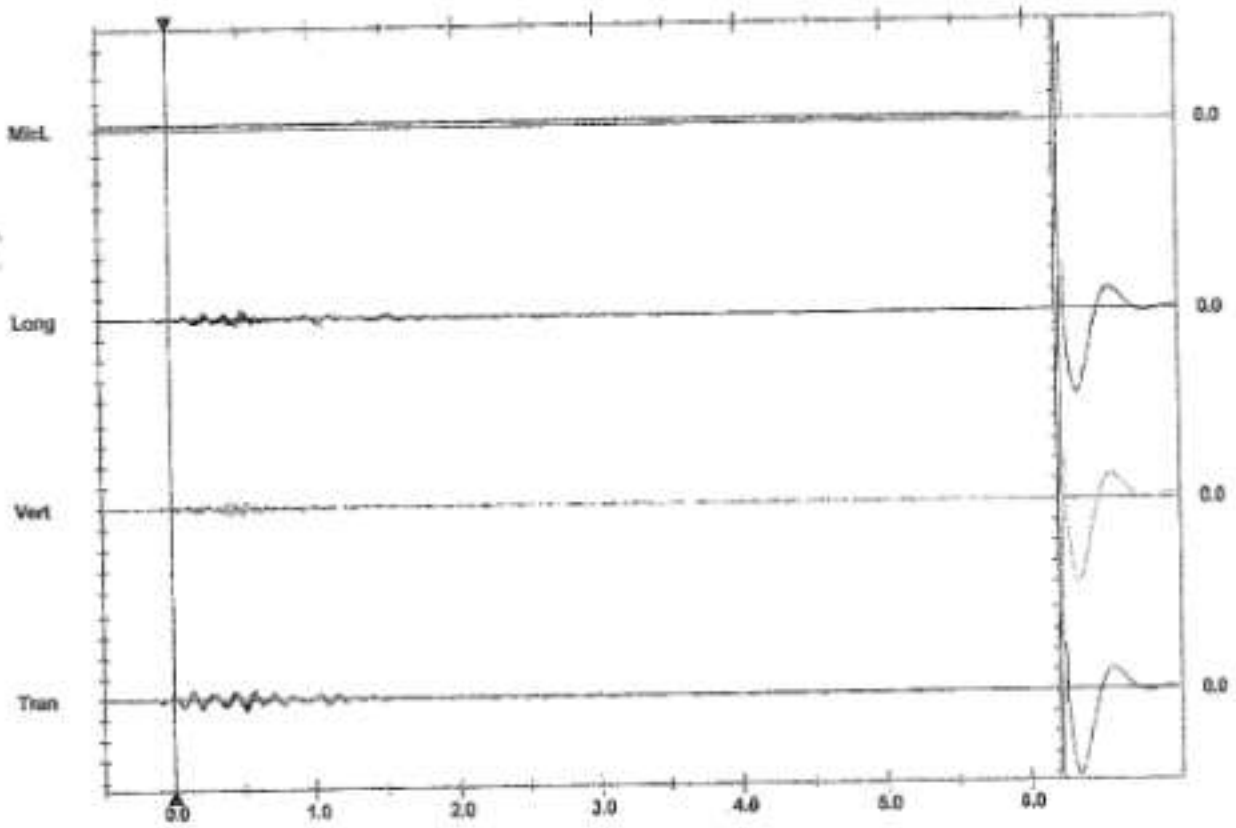
	Tran	Vert	Long	
PPV	1.167	0.733	1.048	mm/s
ZC Freq	9.0	8.5	9.1	Hz
Time (Rel. to Trig)	0.503	0.512	0.505	sec
Peak Acceleration	0.082	0.055	0.049	g
Peak Displacement	0.018	0.006	0.013	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.5	Hz
Overswing Ratio	4.2	3.7	4.1	

Peak Vector Sum 1.464 mm/s at 0.505 sec
N/A: Not Applicable

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



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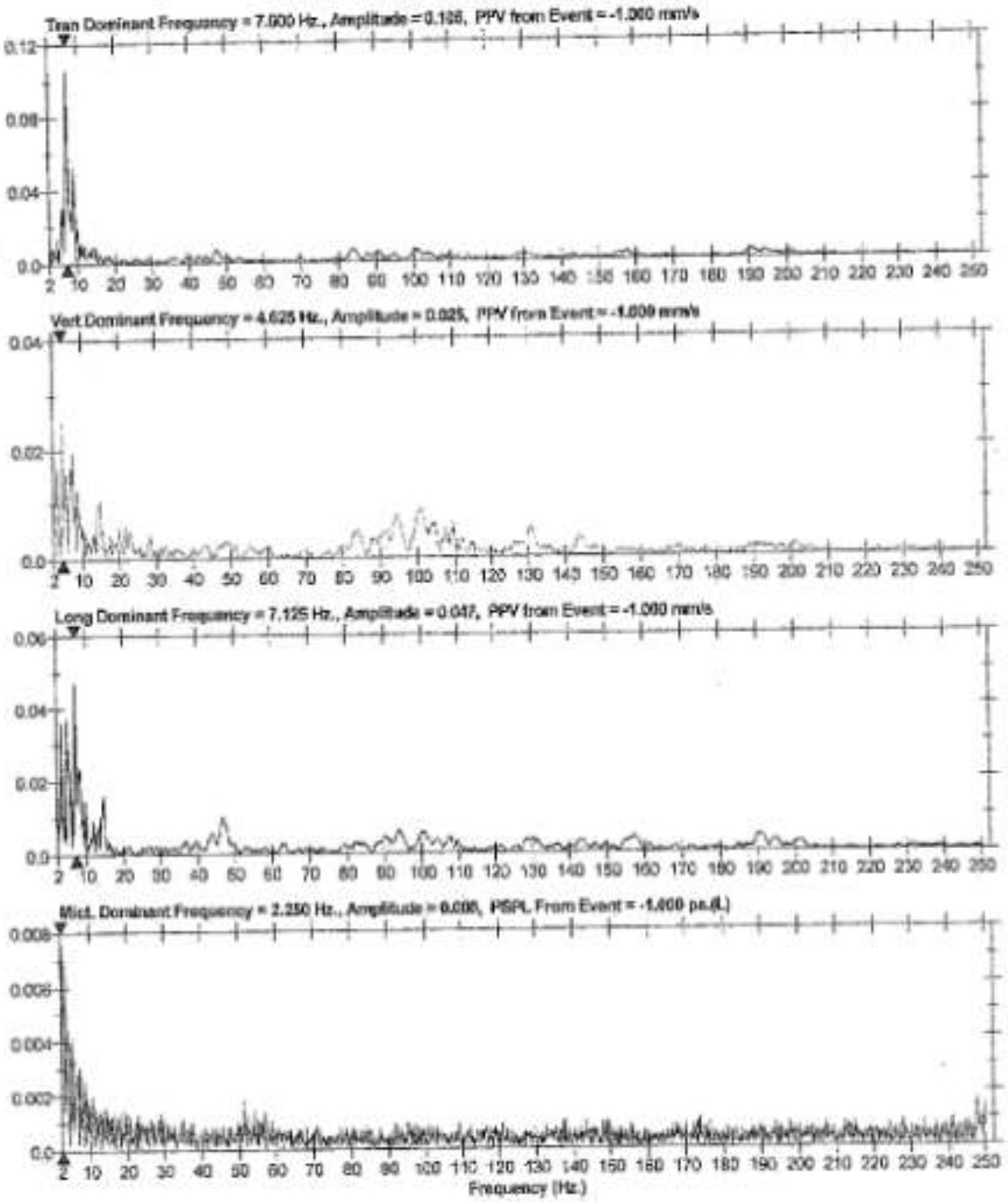
FFT Report

Date/Time	Tran at 13:45:27 February 19, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/default.MMB

Serial Number	UM19508 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	_TEMP.EVT
Scaled Distance	25.6 (100.0 m, 15.0 kg)

Notes
Location:
Client: KATAMATI IRON MINES
User Name: SDSPL
General:

Extended Notes
100 mm backside from blasting face



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Event Report

Date/Time	Tran at 13:44:16 February 19, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/Factory MMB

Serial Number	UM21108 V 10-90GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	__TEMP.EVT

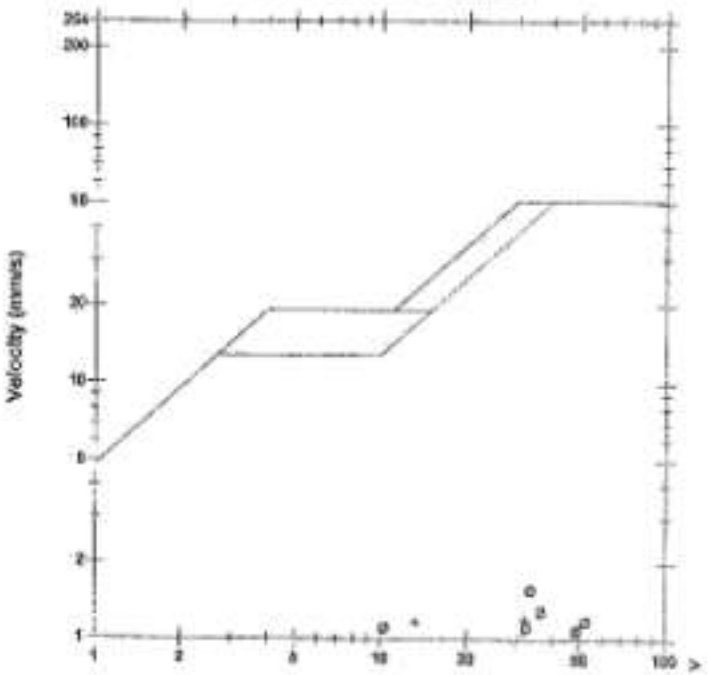
Notes
Location:
Client:
User Name:
General:

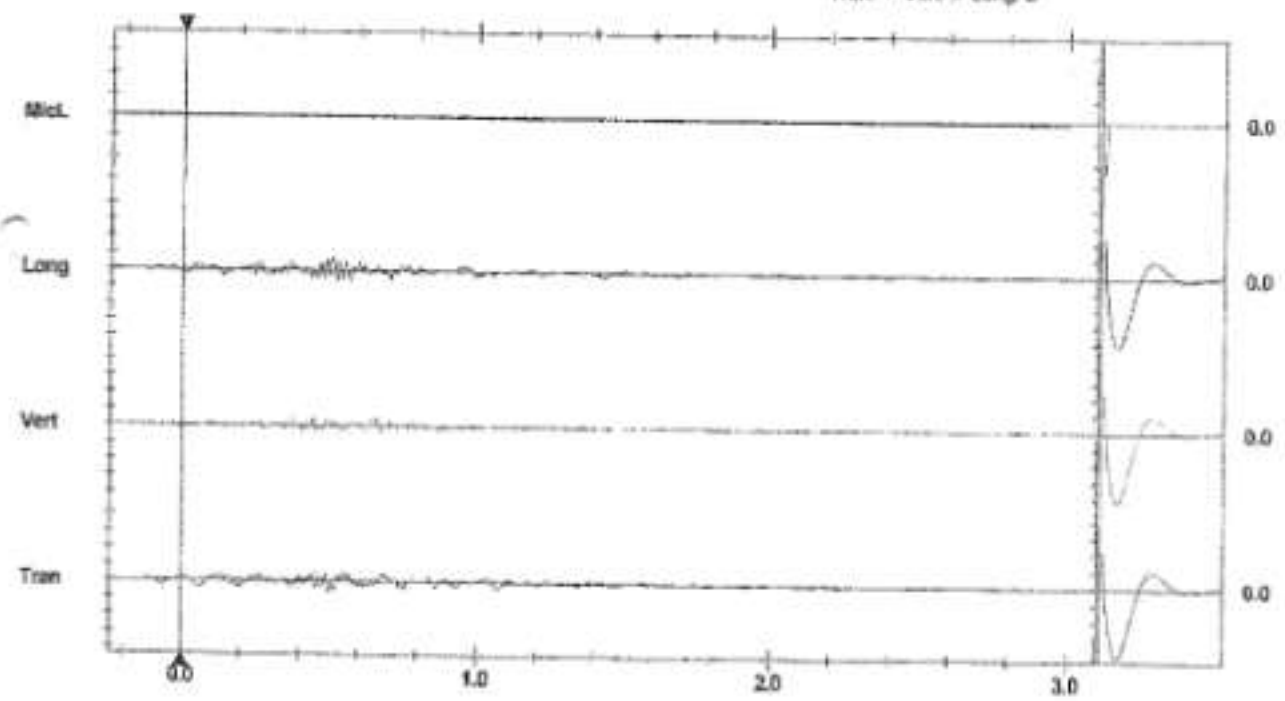
Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	<1.0 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.190	0.914	1.584	mm/s
ZC Freq	32.0	28.3	33.5	Hz
Time (Rel. to Trig)	0.500	0.859	0.515	sec
Peak Acceleration	0.039	0.055	0.059	g
Peak Displacement	0.014	0.007	0.011	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	4.1	3.9	4.0	

Peak Vector Sum 1.607 mm/s at 0.515 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 psi (L)/div
Trigger =

Sensor Check

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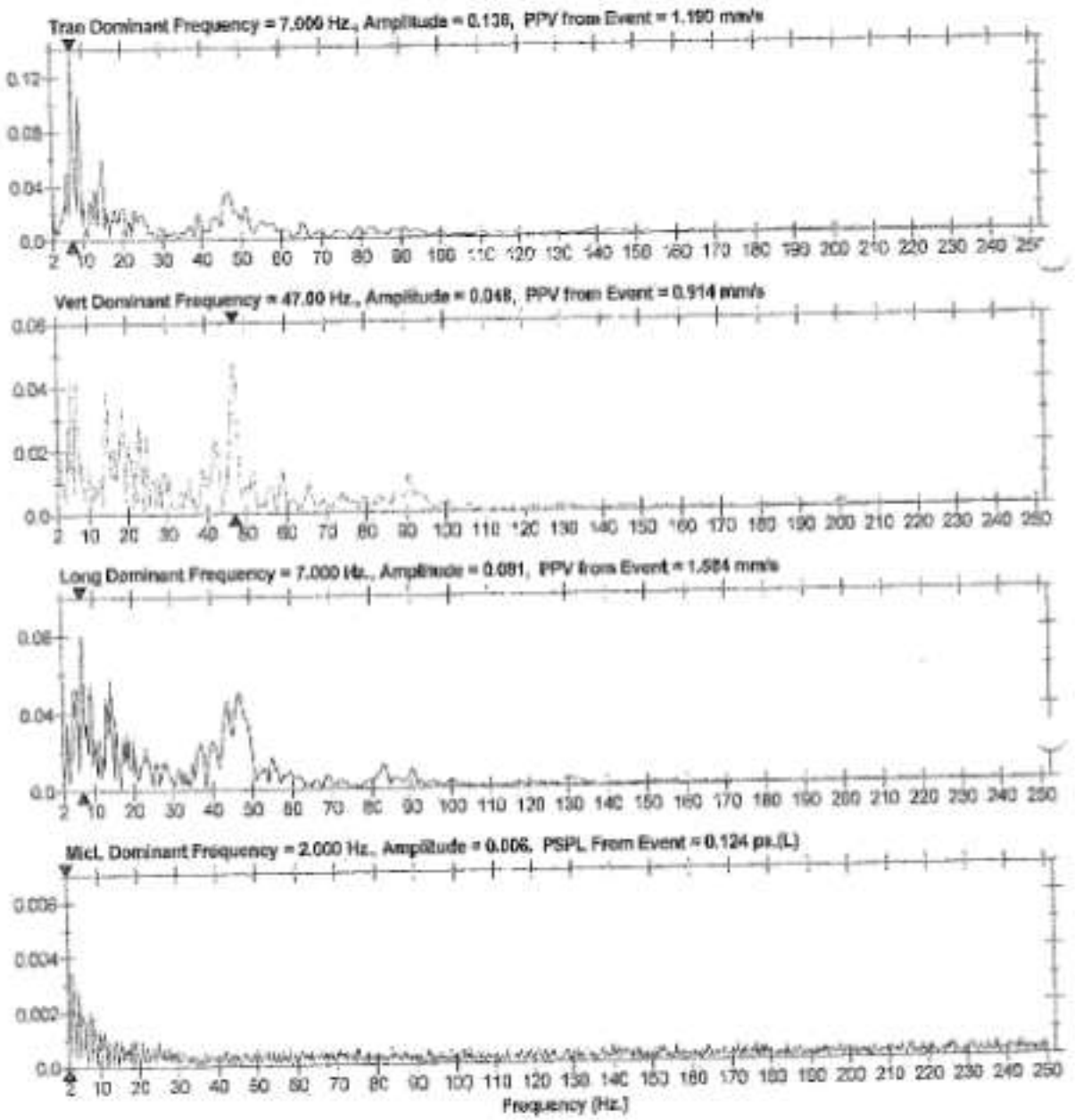
FFT Report

Date/Time	Tran at 13:44:18 February 19, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MWB

Serial Number	UM21106 V 13-00GC Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	_TEMP.EVT

Notes
Location:
Client:
User Name:
General:



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Event Report

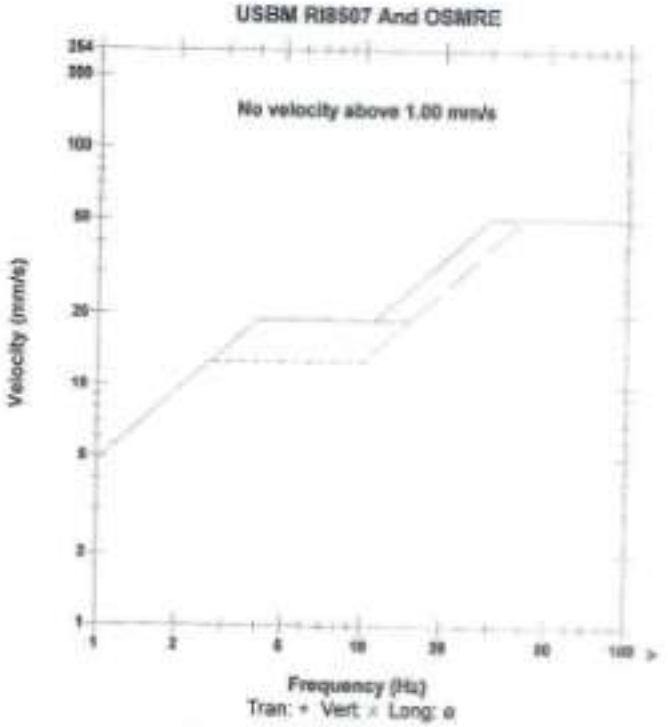
Date/Time	Long at 13:43:39 February 8, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

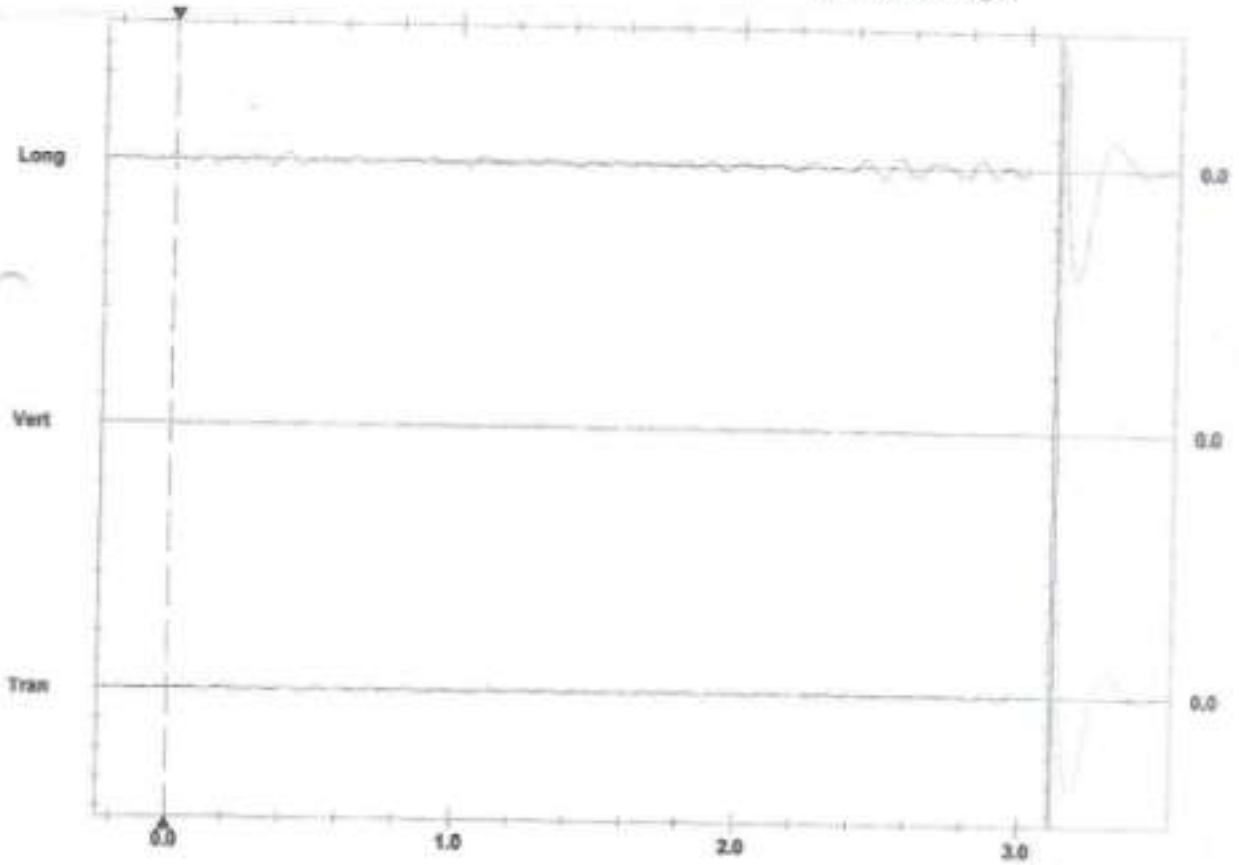
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250208134339.IDFW

Notes
Location: KTM/NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.394	0.284	0.749	mm/s
ZC Freq	8.0	6.5	8.7	Hz
Time (Rel. to Trig)	0.472	2.459	2.556	sec
Peak Acceleration	0.007	0.007	0.009	g
Peak Displacement	0.006	0.006	0.013	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	3.8	3.7	3.9	

Peak Vector Sum 0.765 mm/s at 2.832 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger =

Sensor Check

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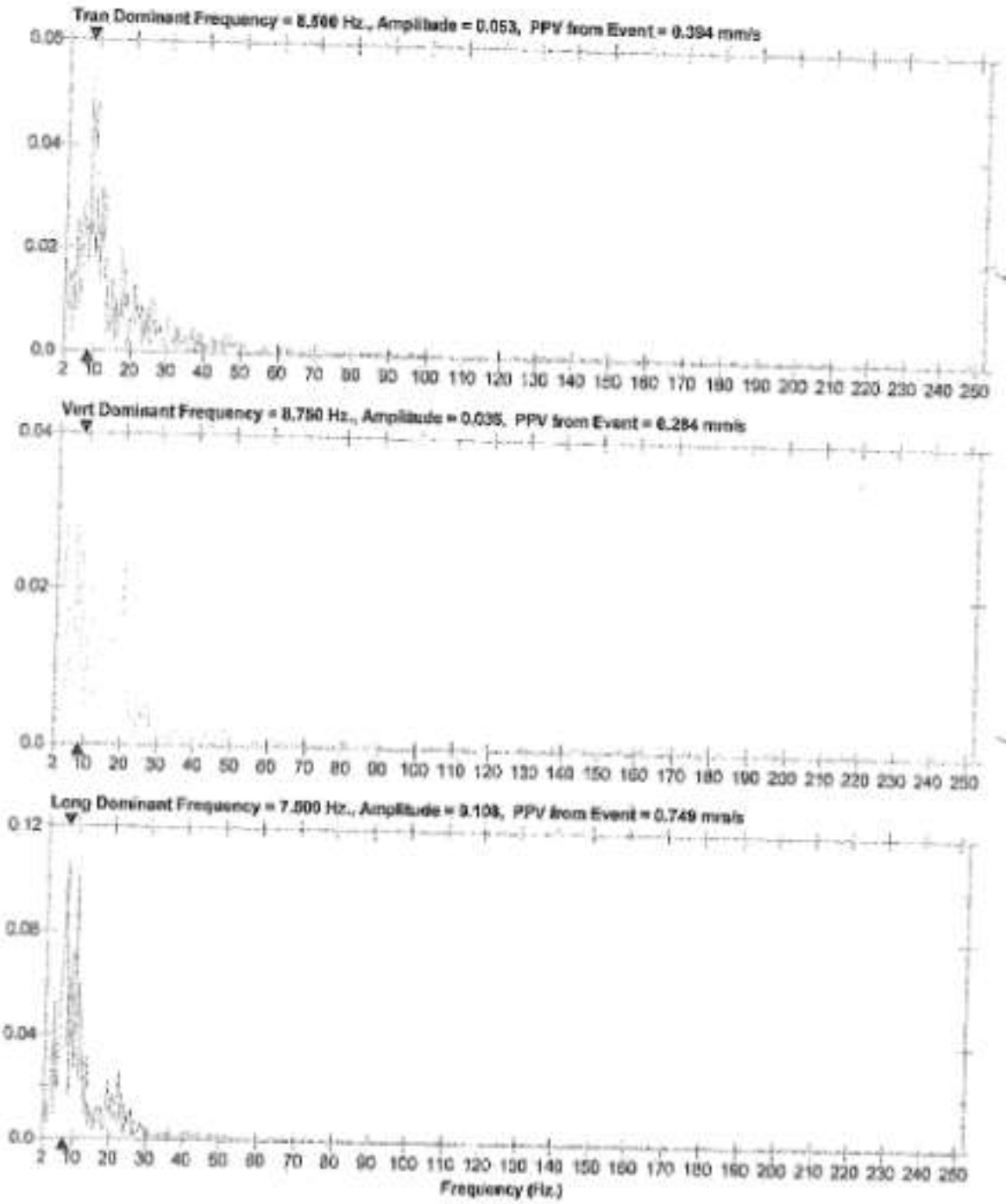
FFT Report

Date/Time	Long at 13:43:39 February 8, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250208134339.IDFW

Notes

Location:	KTM/NIM
Client:	TATA STEEL LTD
User Name	IDL EXPLOSIVES LTD
General:	



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Event Report PT-2 (Kalamati formation)

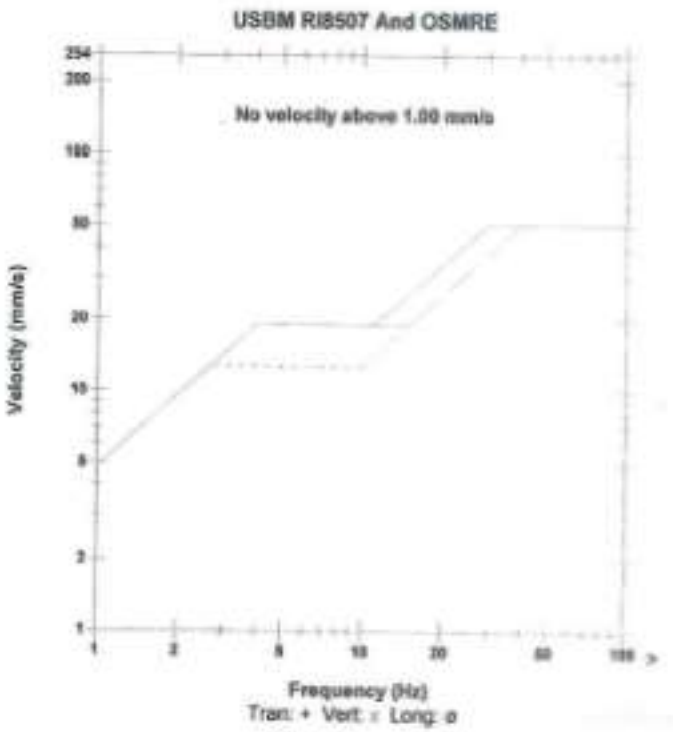
Date/Time	Long at 13:38:49 February 3, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

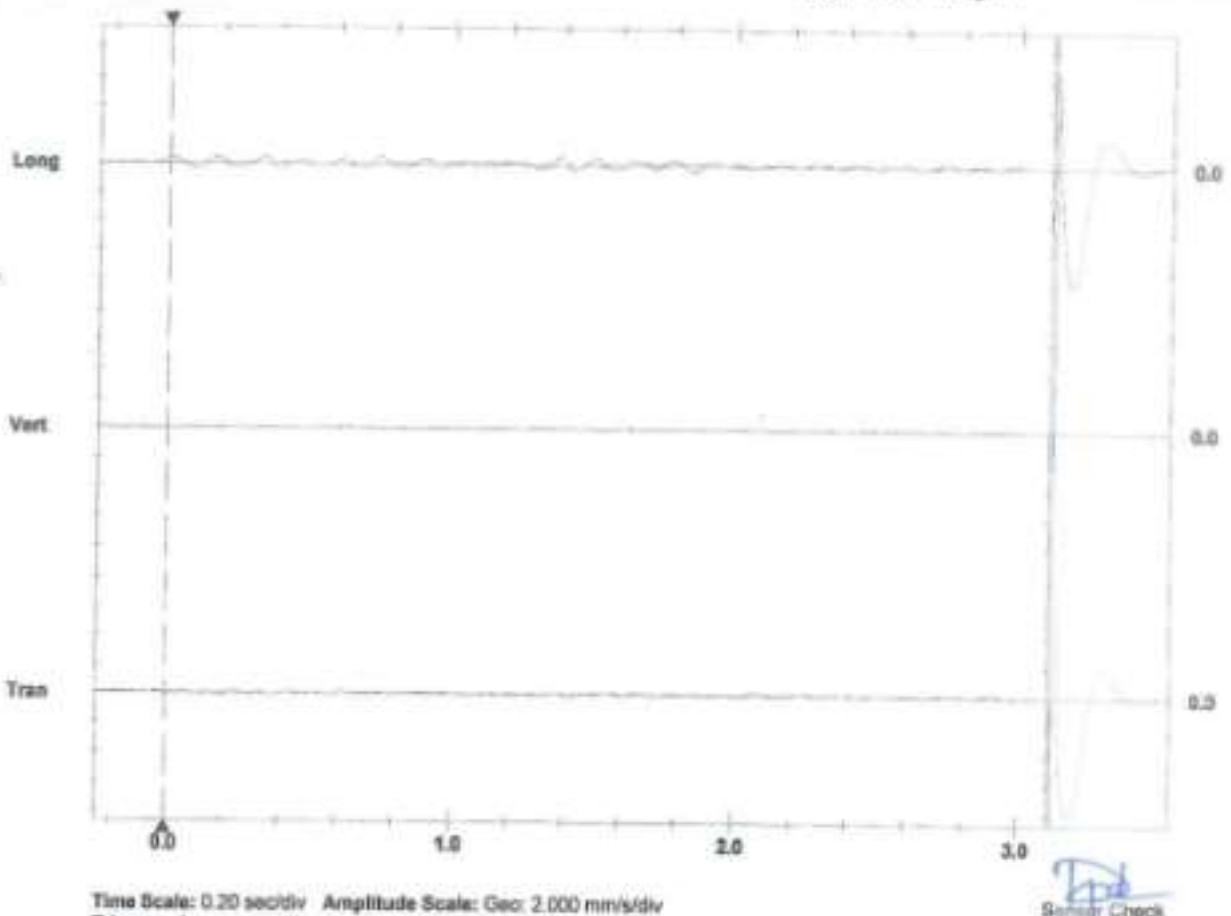
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250203133849.IDFW

Notes
Location: KTM/MM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.307	0.449	0.536	mm/s
ZC Freq	9.5	11	8.4	Hz
Time (Rel. to Trig)	1.616	0.257	1.373	sec
Peak Acceleration	0.007	0.007	0.007	g
Peak Displacement	0.006	0.006	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.0	4.0	

Peak Vector Sum 0.605 mm/s at 1.379 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger = ▶——◀

Sensor Check

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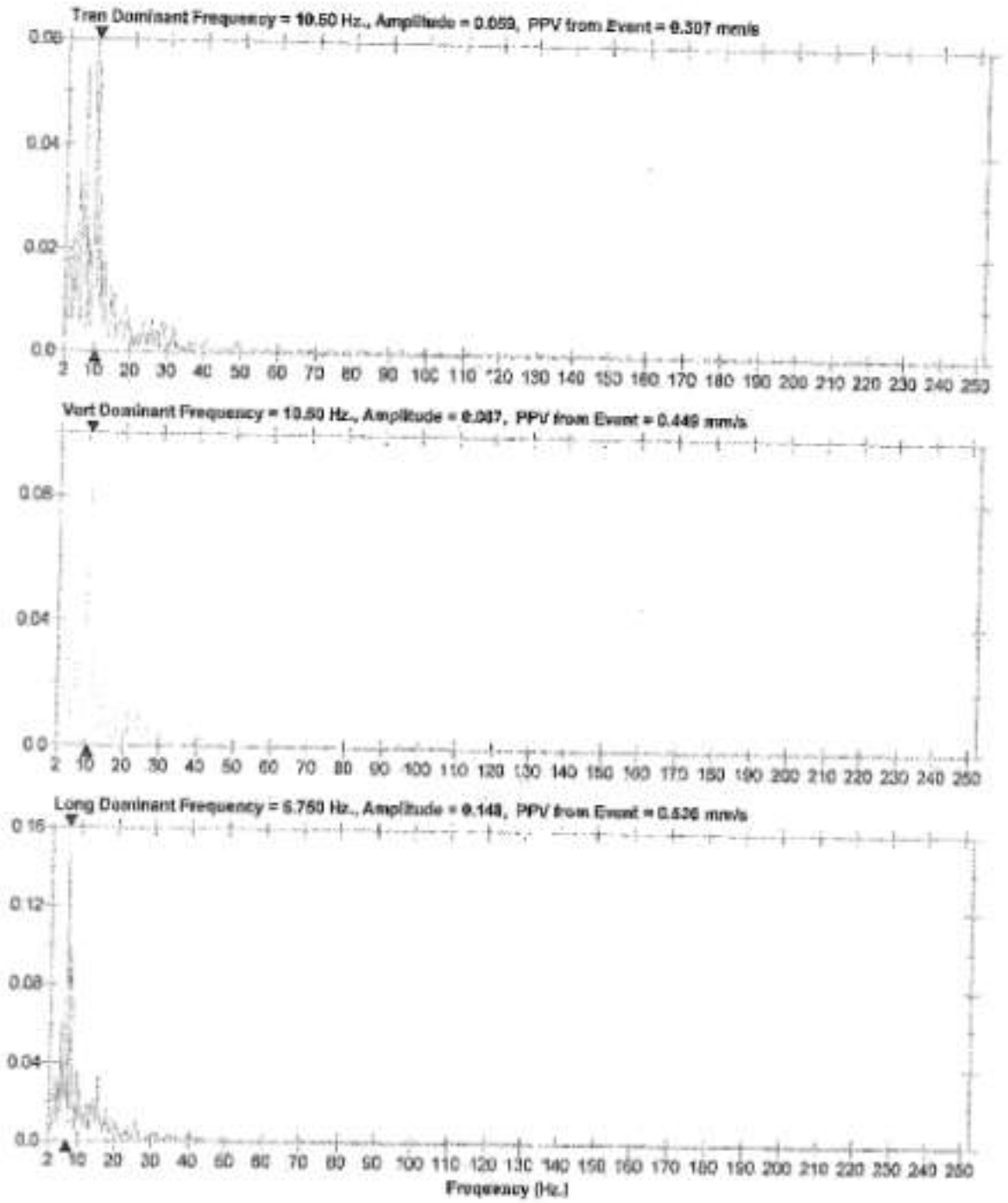
FFT Report

Date/Time	Long at 13:38:49 February 3, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FD Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250203133849.IDFW

Notes
Location: KTM/NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Instantel **Event Report** PT-1 (Katamati Iron Mines.

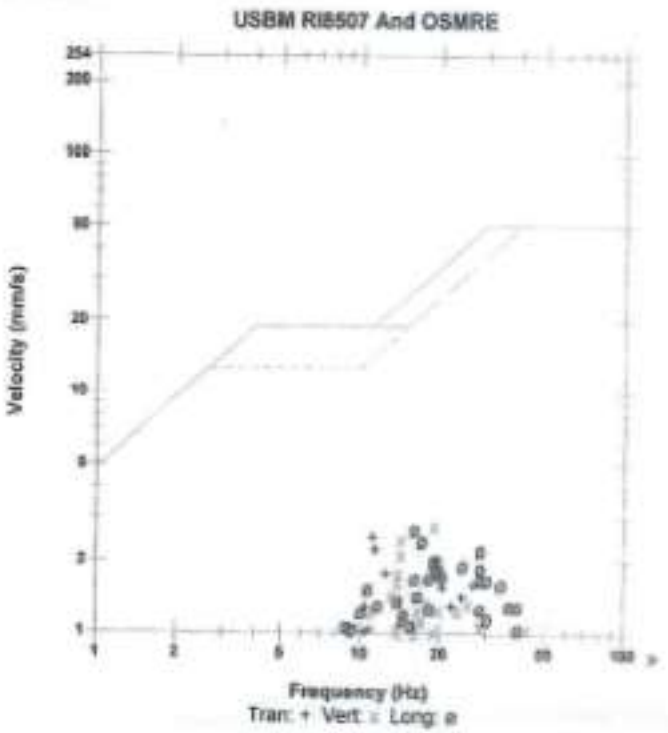
Date/Time	Long at 13:35:17 February 1, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MWB

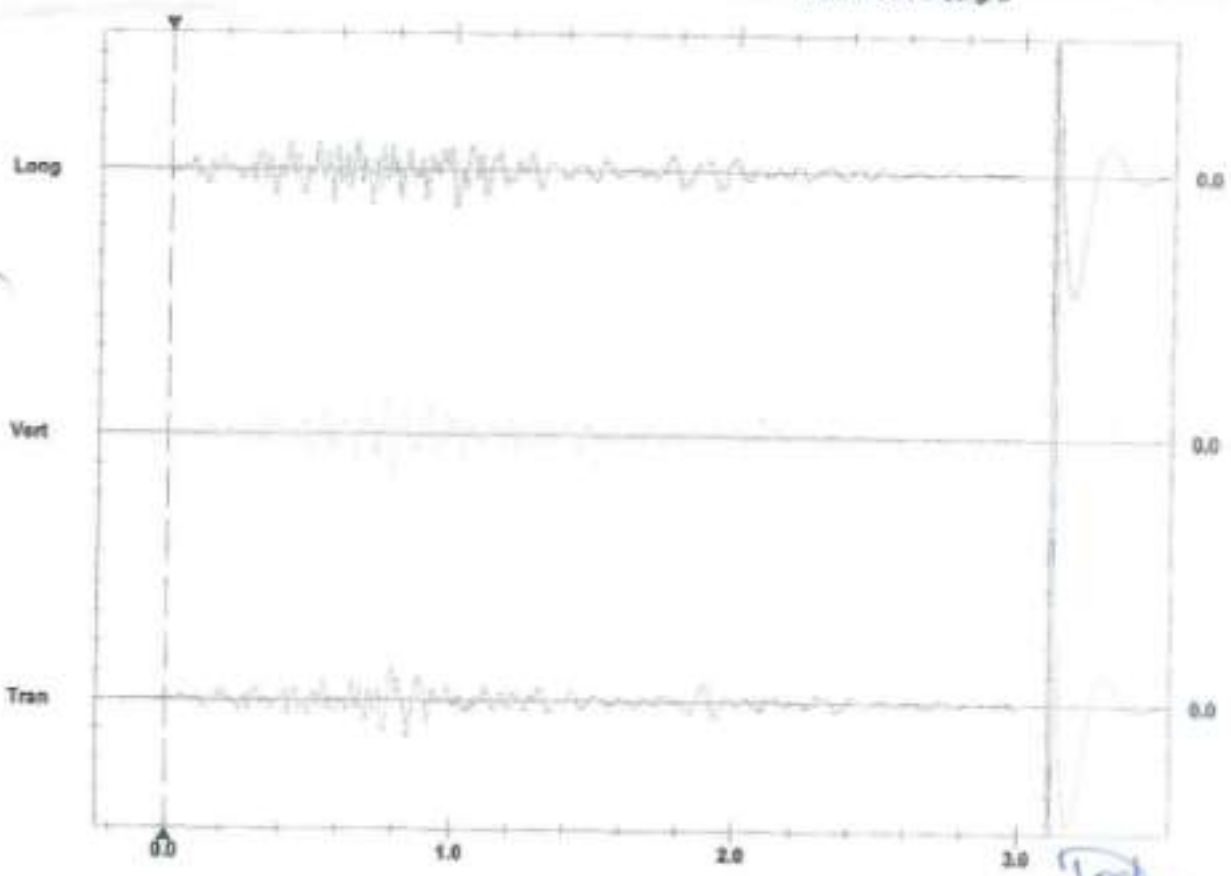
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250201133517.IDFW

Notes
Location: KTM/NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	2.514	2.790	2.696	mm/s
ZC Freq	11	19	16	Hz
Time (Rel. to Trig)	0.849	0.792	1.002	sec
Peak Acceleration	0.063	0.059	0.060	g
Peak Displacement	0.027	0.022	0.024	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 3.579 mm/s at 0.792 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

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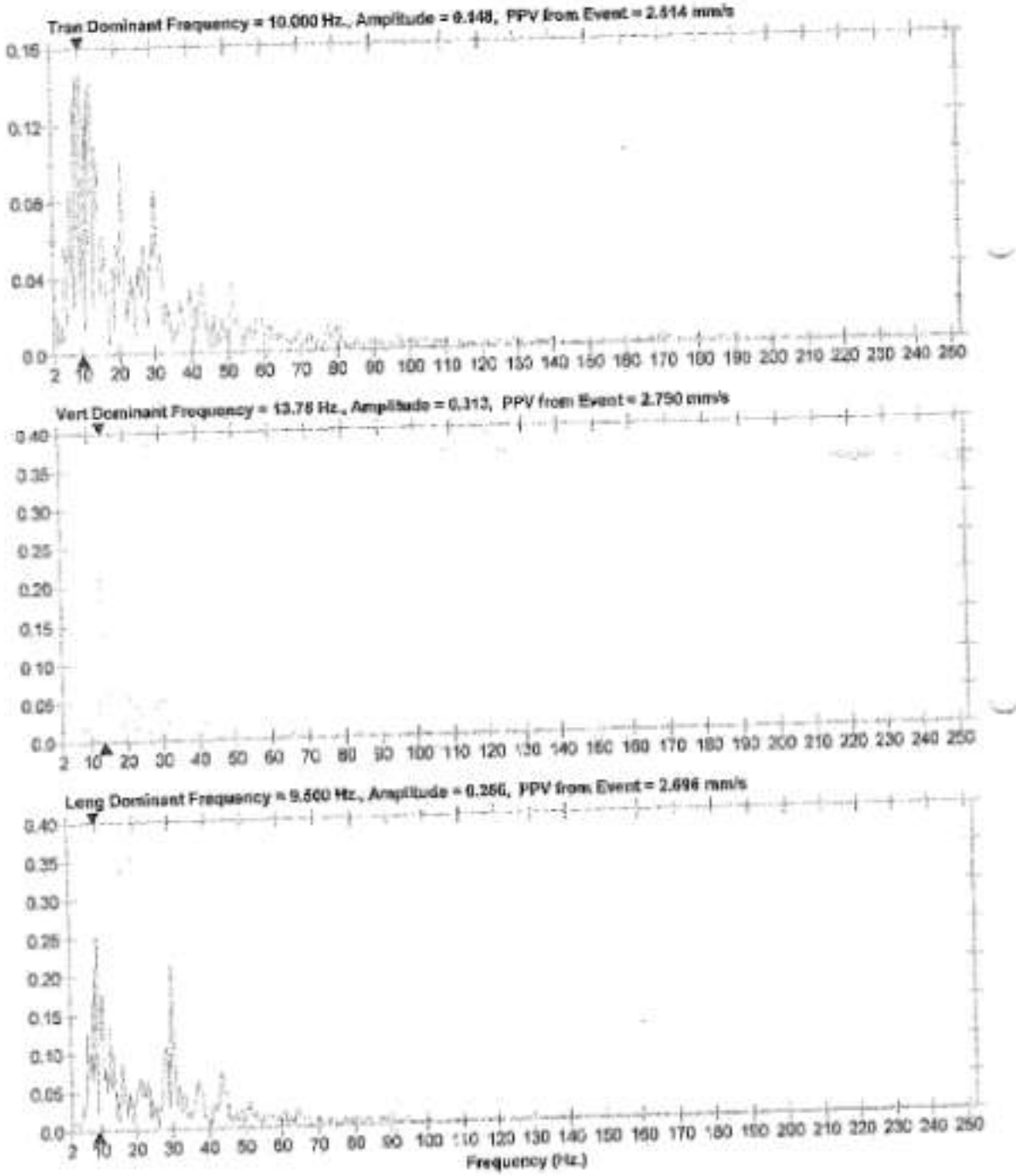
FFT Report

Date/Time	Long at 13:35:17 February 1, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.IMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250201133517.IDFW

Notes
Location: KTM/NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 13:41:41 Jan 25, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL 3M/B

Serial Number	UM21129 V 10-90GC Micromate ISEE
Battery Level	5.7 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

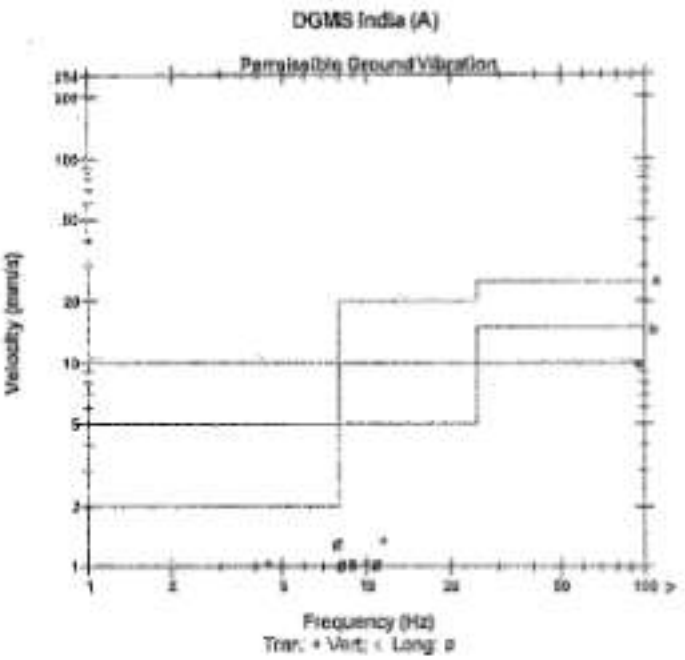
Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINES

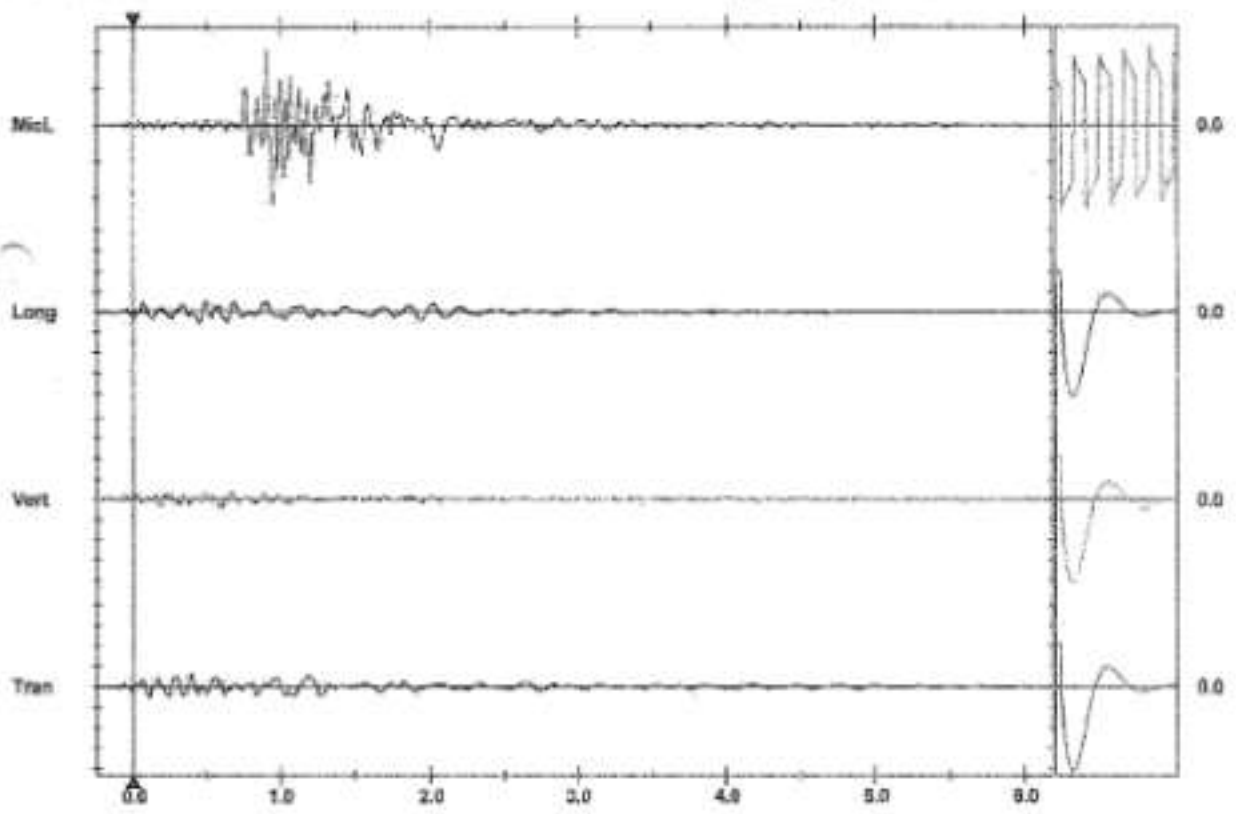
Extended Notes
Recorded at 153 meter back side of the blasting face.

Microphone Linear Weighting
PSPL 11.05 pa.(L) at 0.952 sec
ZC Freq 12 Hz
Channel Test Passed (Freq = 20.6 Hz Amp = 1254 mv)

	Tran	Vert	Long	
PPV	1.316	0.788	1.156	mm/s
ZC Freq	11	7.2	7.6	Hz
Time (Rel. to Trig)	0.400	0.595	0.452	sec
Peak Acceleration	0.025	0.014	0.015	g
Peak Displacement	0.037	0.016	0.027	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.3	4.9	4.8	

Peak Vector Sum 1.328 mm/s at 0.400 sec





Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa (L)/div Sensor Check
Trigger = ▶ ◀

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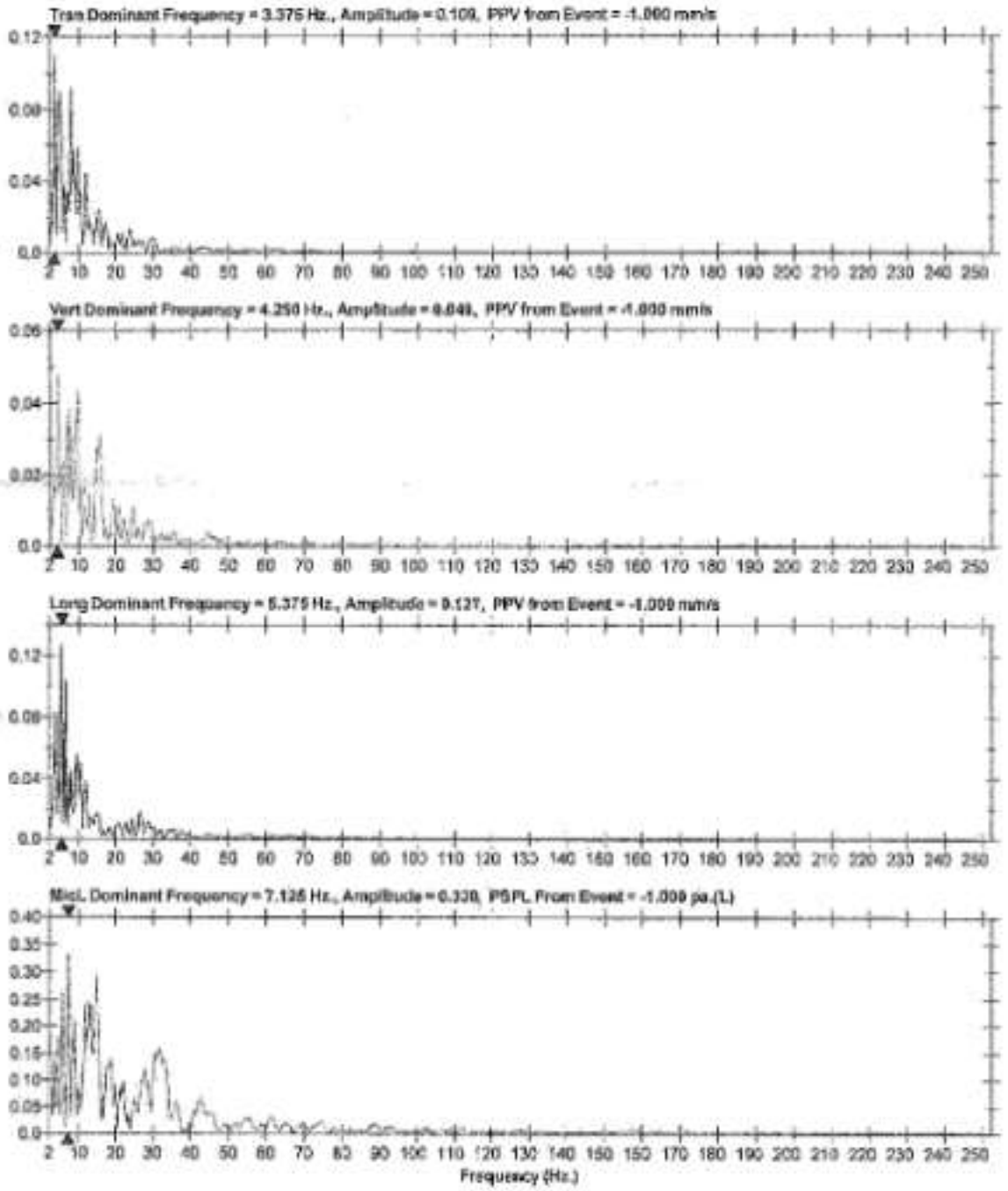
FFT Report

Date/Time	Long at 13:41:41 Jan 25, 2005
Trigger Source	Geo: 0.500 mm/s, Mic: 70.98 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TBL_MME

Serial Number	UM21129 V 10-00QC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINES

Extended Notes
Recorded at 150 meter back side of the blasting face.



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Event Report

Date/Time	Long at 13:47:38 January 23, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

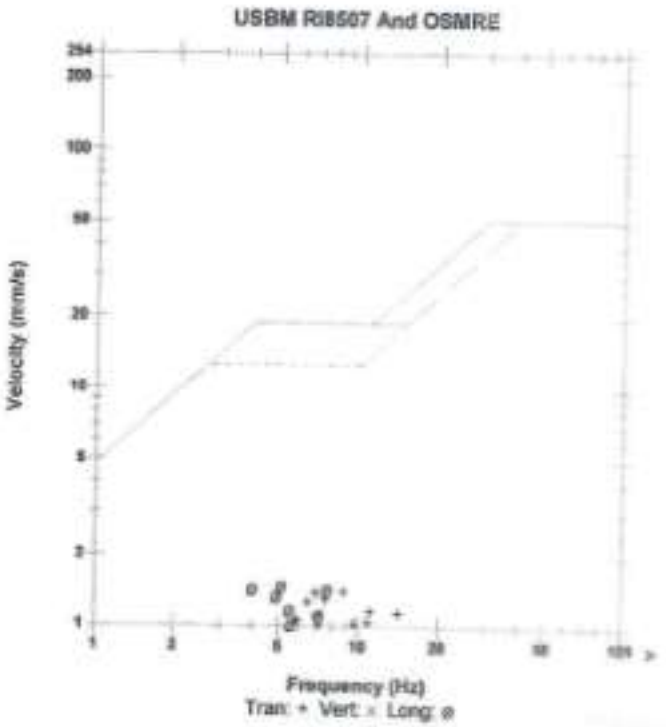
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250123134738.IDFW

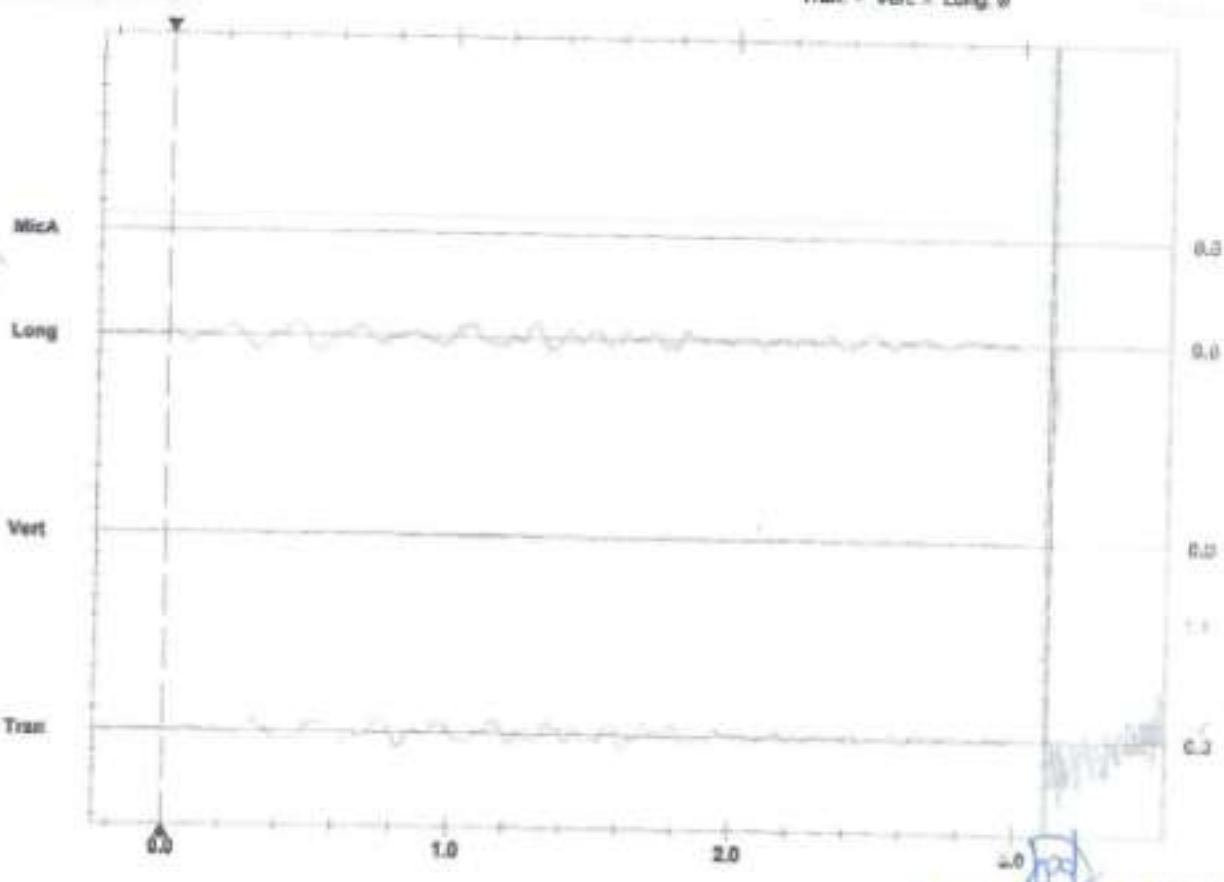
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.403	0.717	1.474	mm/s
ZC Freq	8.8	10	5.1	Hz
Time (Rel. to Trig)	0.825	1.568	0.532	sec
Peak Acceleration	0.021	0.008	0.014	g
Peak Displacement	0.031	0.011	0.045	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 1.718 mm/s at 0.317 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

For IDL Explosives Limited
Senior Chemist

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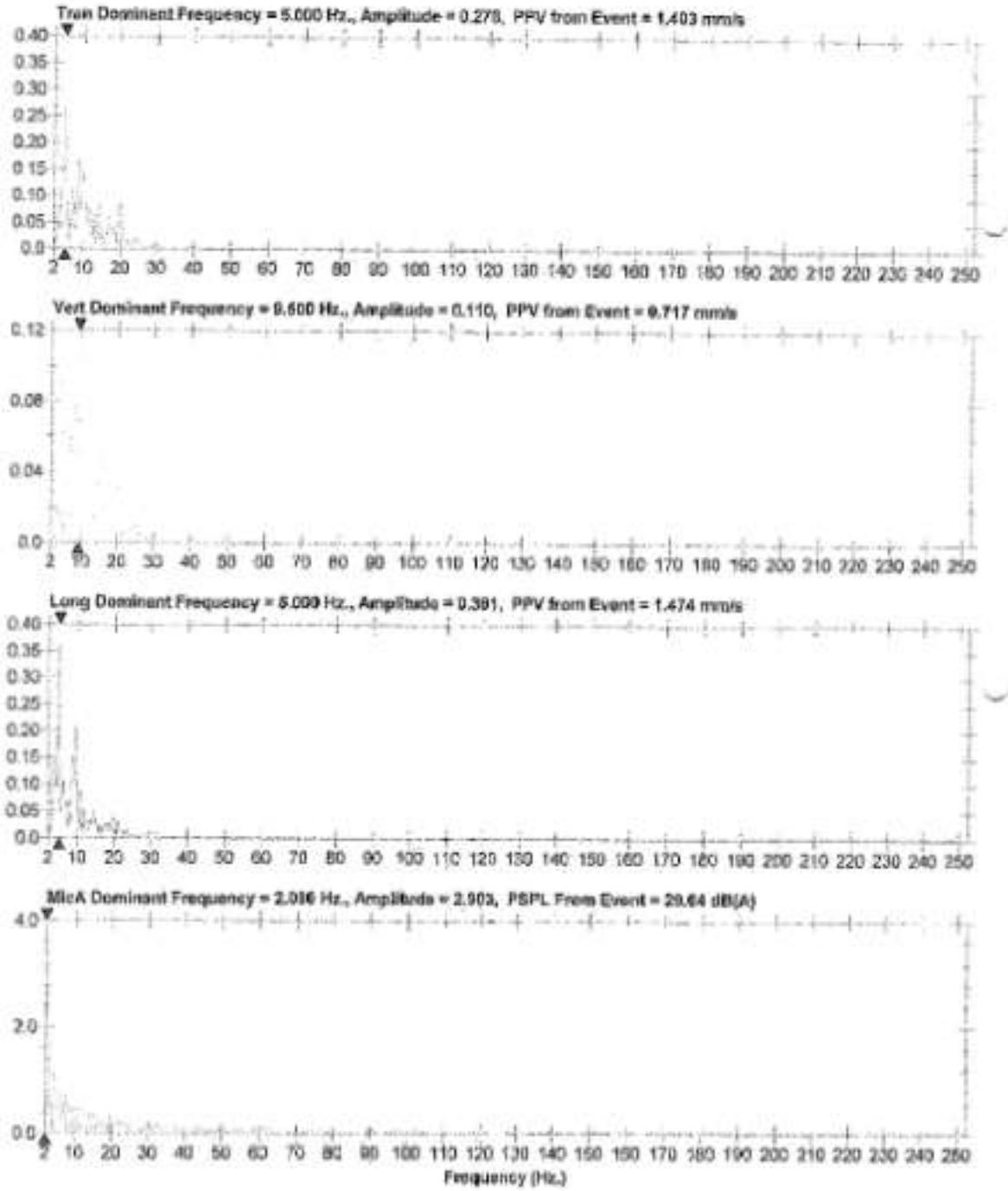
FFT Report

Date/Time	Long at 10:47:38 January 23, 2025	**Serial Number**	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)	**Battery Level**	3.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM15576_20250123134738.IDFW
Operator/Setup:	Operator/factory.MWB		

Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 14:05:37 January 20, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

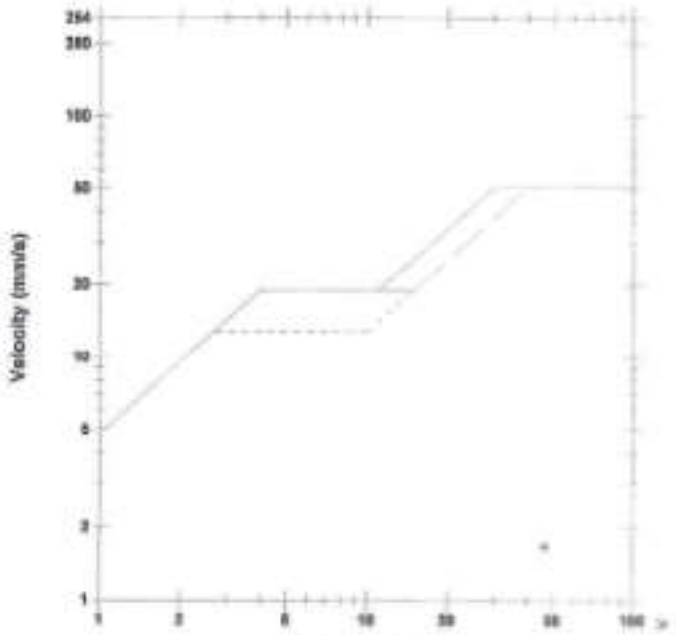
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20250120140537.IDFW

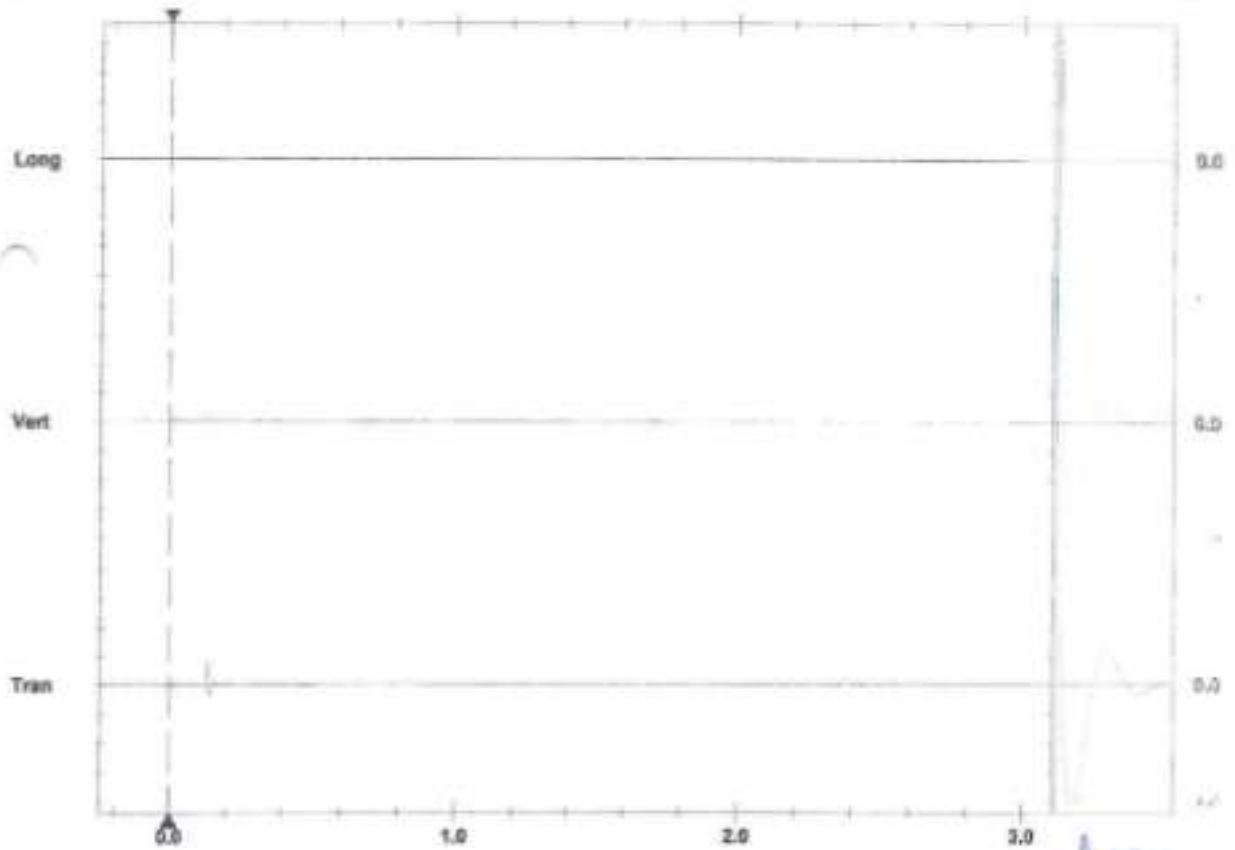
Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.663	0.938	0.071	mm/s
ZC Freq	47	39	1.6	Hz
Time (Rel. to Trig)	0.138	0.006	0.894	sec
Peak Acceleration	0.107	0.065	0.005	g
Peak Displacement	0.003	0.035	0.005	mm
Sensor Check	Passed	Passed	Check	
Frequency	7.3	7.7	1024.0	Hz
Overswing Ratio	3.4	3.1	0.0	

Peak Vector Sum 1.750 mm/s at 0.139 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Authorised Signatory
For IDL Explosives Limited

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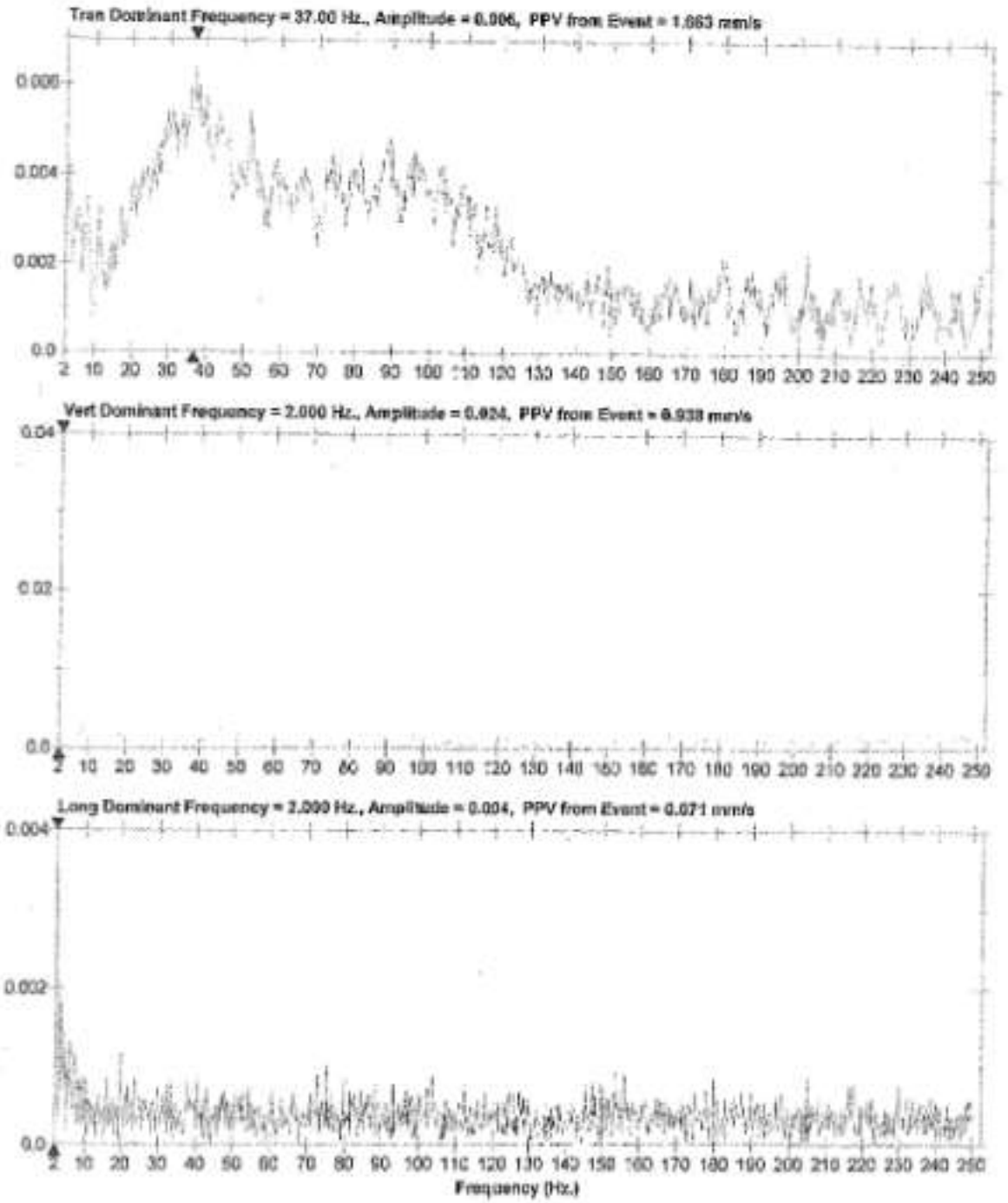
FFT Report

Date/Time	Vert at 14:05:37 January 20, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM6253 V 10-76 Micromate iSEE
Battery Level	3.5 Volts
Unit Calibration	February 28, 2024 by UES New Delhi
File Name	UM6253_20250120140537.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General



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Event Report

Date/Time	Vert at 14:03:06 January 20, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250120140306.IDFW

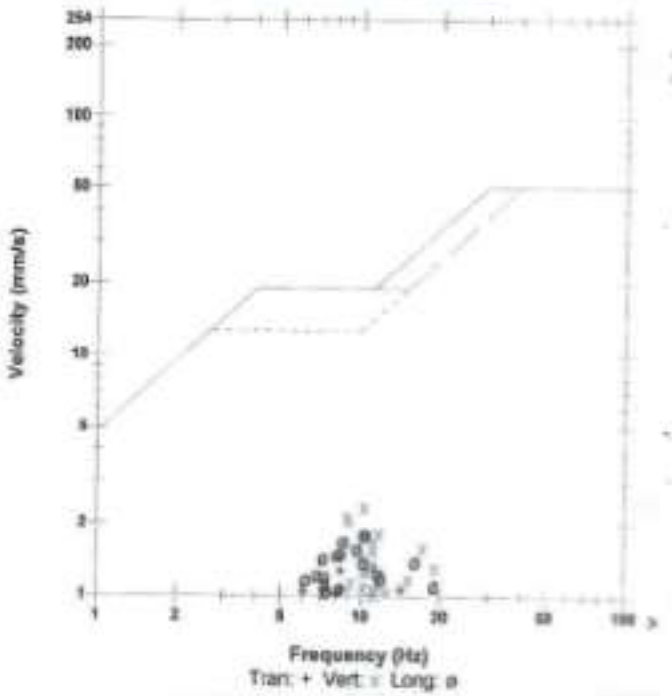
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

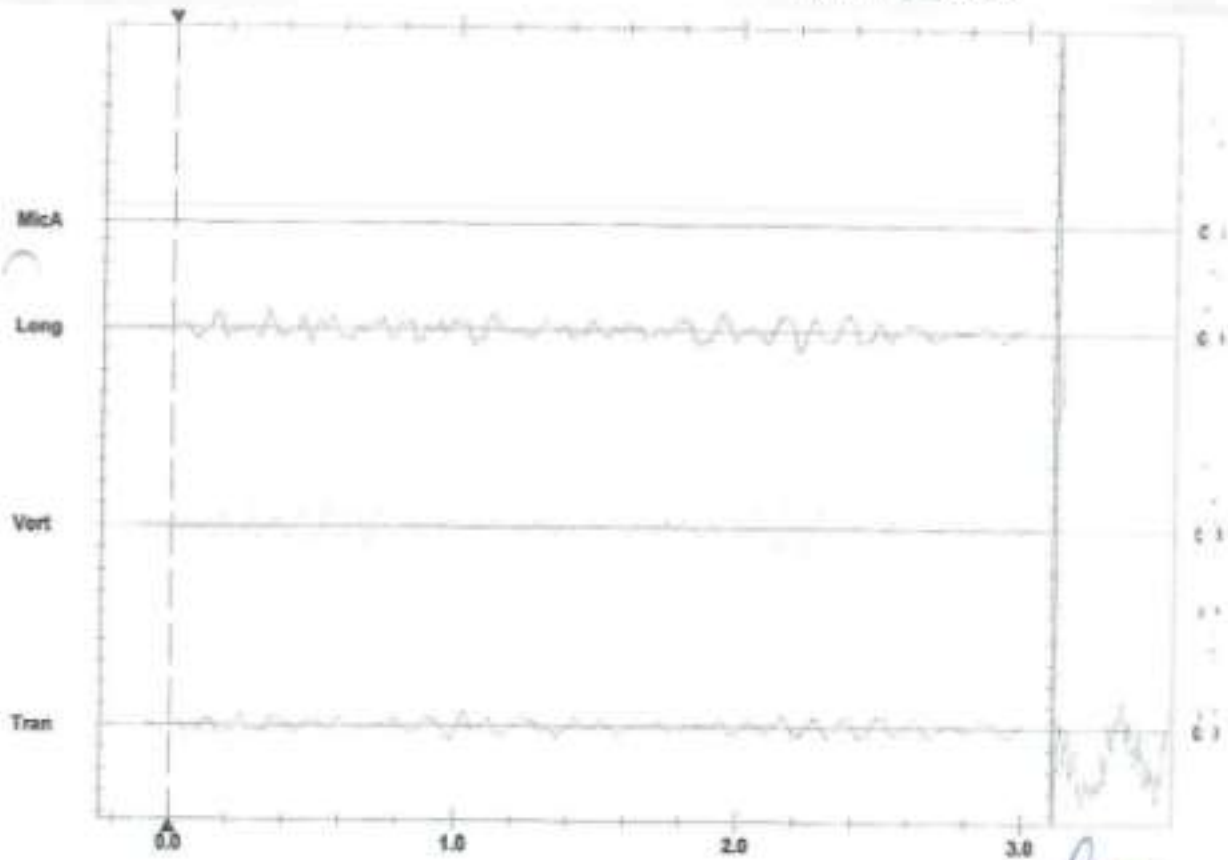
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.308	2.357	1.605	mm/s
ZC Freq	11	10	10	Hz
Time (Rel. to Trig)	1.030	2.233	2.210	sec
Peak Acceleration	0.021	0.030	0.030	g
Peak Displacement	0.023	0.039	0.035	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.1	

Peak Vector Sum 2.537 mm/s at 2.175 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

FOR IDL EXPLOSIVES LIMITED

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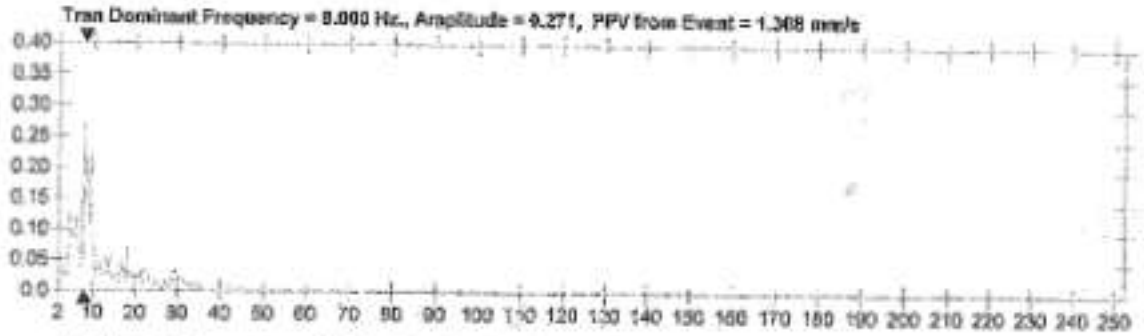
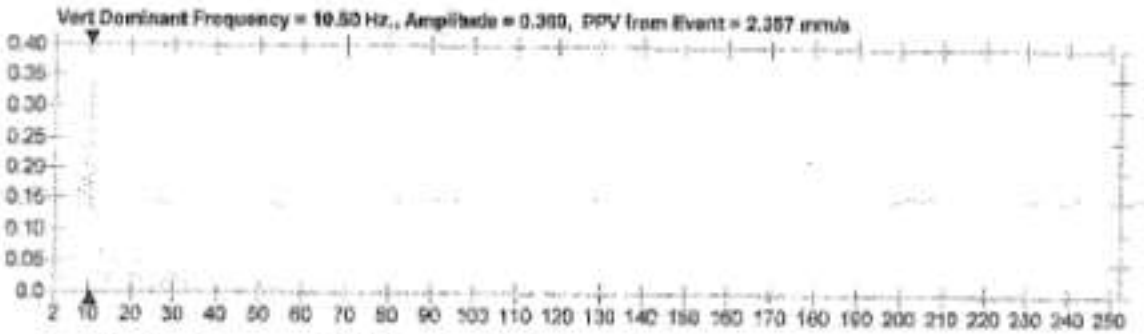
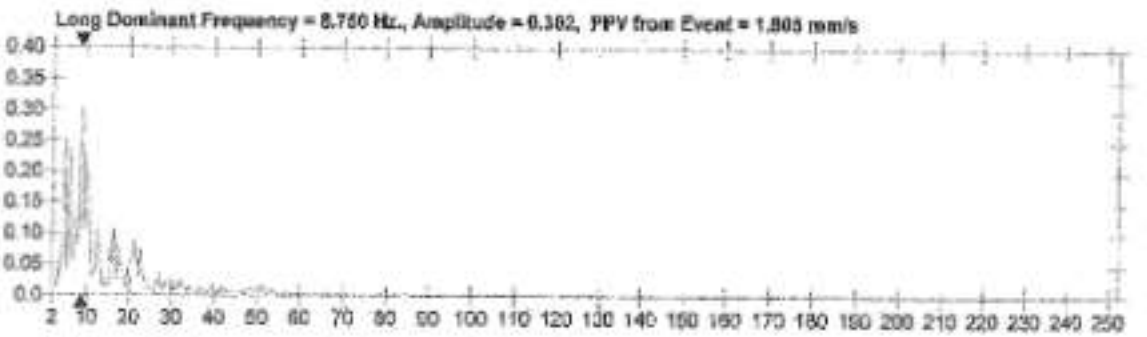
FFT Report

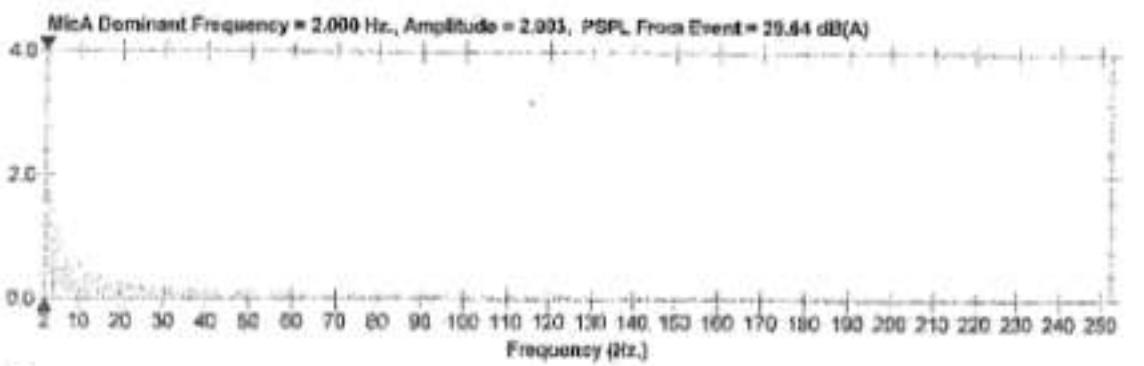
Date/Time	Vert at 14:03:06 January 20, 2025	**Serial Number**	UM15576 V 10.90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM15576_20250120140306.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General









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Event Report

Date/Time	Long at 13:45:07 January 15, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
OperatorSetup:	OperatorJODA.MM3

Serial Number	UM10508 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	_TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

Notes
Location: On Ground Berm
Client: KATAMATI IRON MINES
User Name: RDEPL
General:

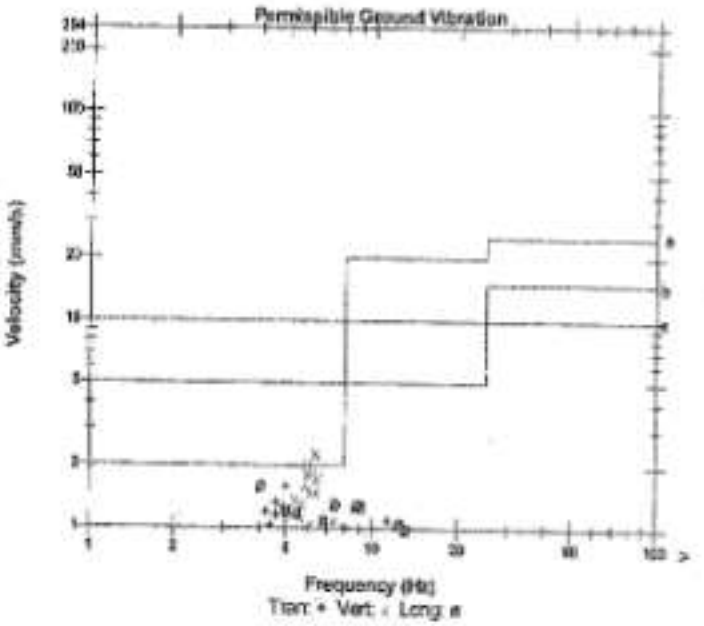
Extended Notes
100 mtrs backside from blasting face.

Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

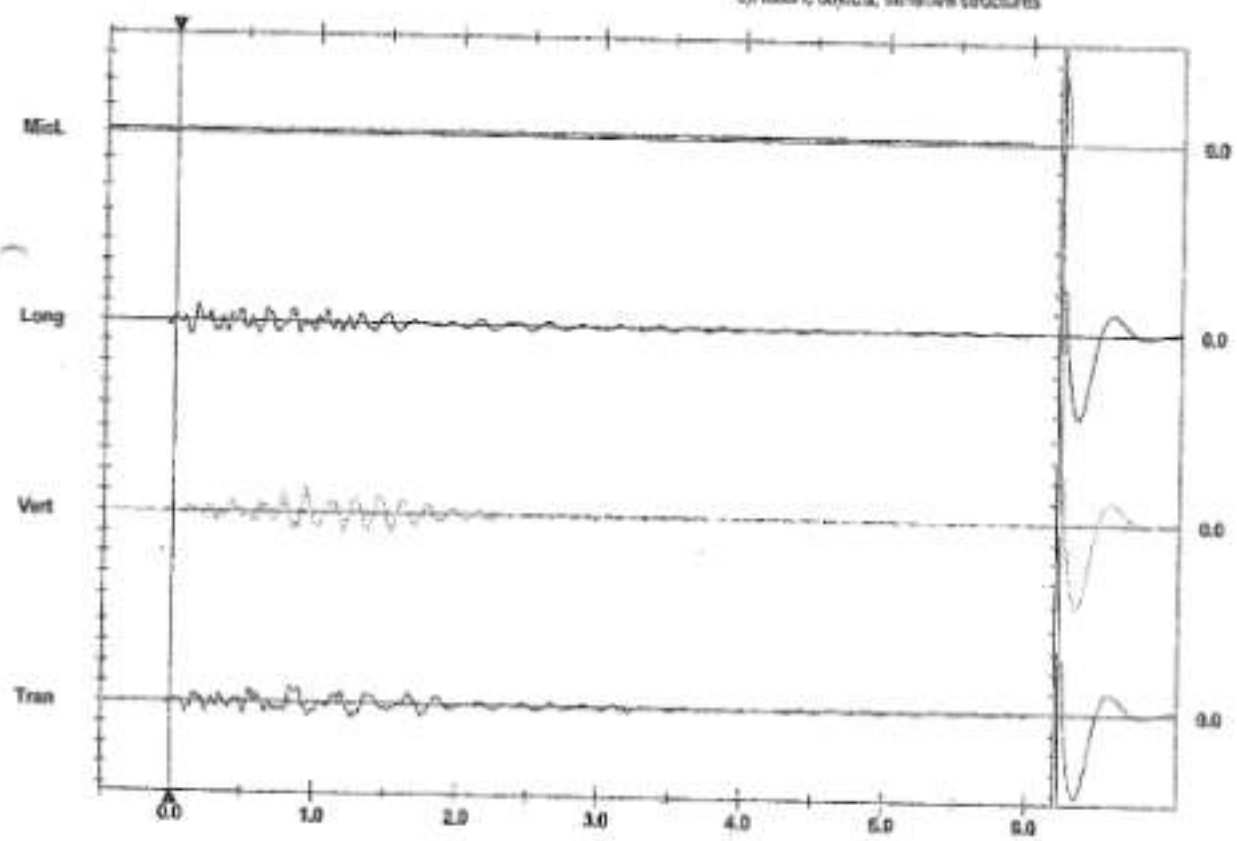
	Tran	Vert	Long	
PPV	1.600	2.369	1.624	mm/s
ZC Freq	5.0	6.3	4.1	Hz
Time (Rel. to Trig)	0.635	0.634	0.163	sec
Peak Acceleration	0.200	0.026	0.023	g
Peak Displacement	0.055	0.051	0.034	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.5	Hz
Overswing Ratio	4.0	3.7	4.2	

Peak Vector Sum 2.578 mm/s at 0.638 sec
N/A: Not Applicable

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa (L)/div
Trigger =

Sensor Check

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Instantel

FFT Report

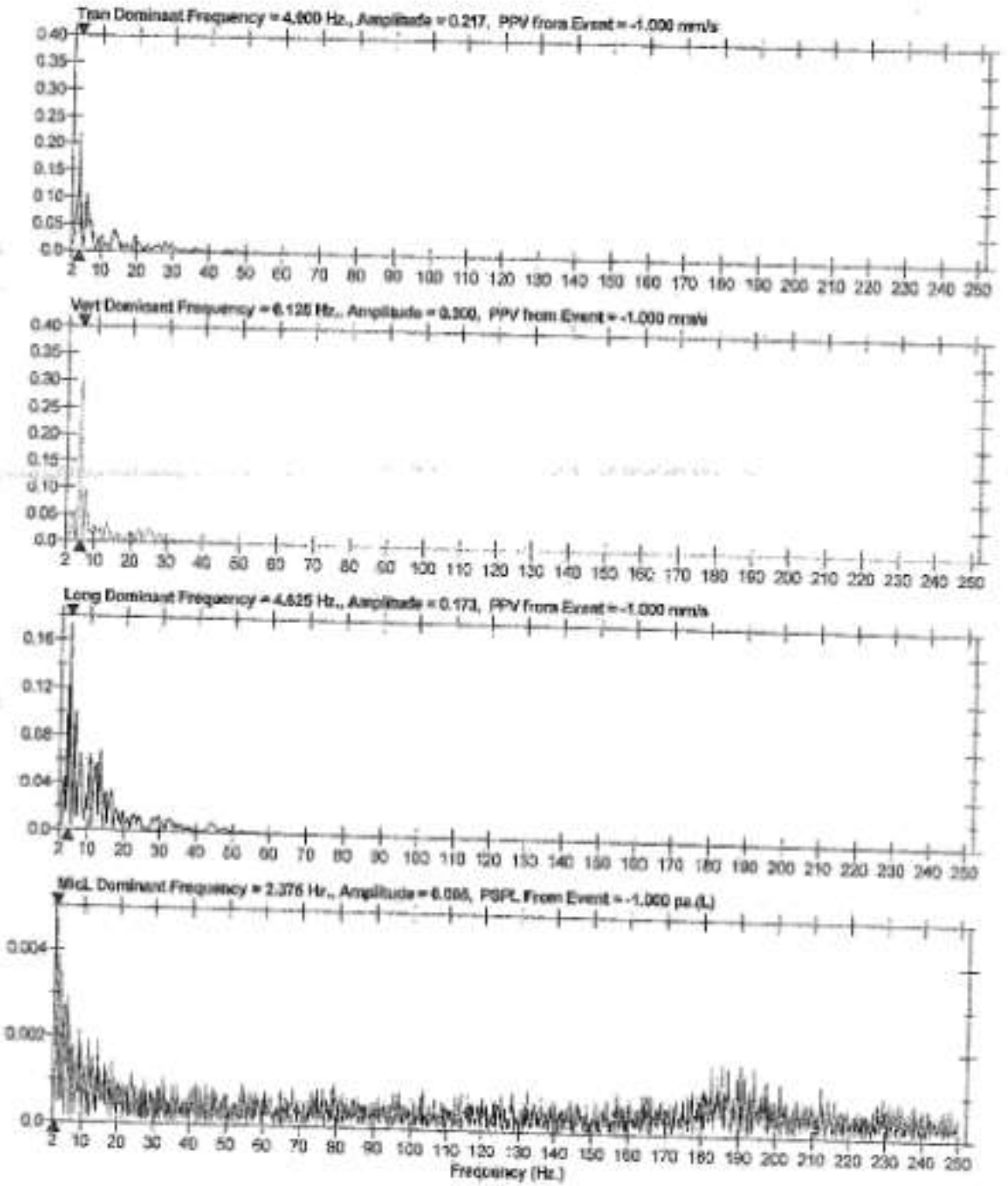
Date/Time	Long at 13:46:07 January 15, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/ODDA,MMB

Notes

Location:	On Ground Surfa
Client:	KATANATI IRON MINES
User Name:	BDEPL
General:	

Serial Number	UM19606 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	__TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

Extended Notes
100 mtrs backside from blasting face



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Event Report

Date/Time	Tran at 13:50:27 January 10, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 2048 sps
Operator/Setup:	Operator/TSL MM8

Serial Number	UM21129 V 10-60GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	_TEMP.SVT

Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON ORE MINES

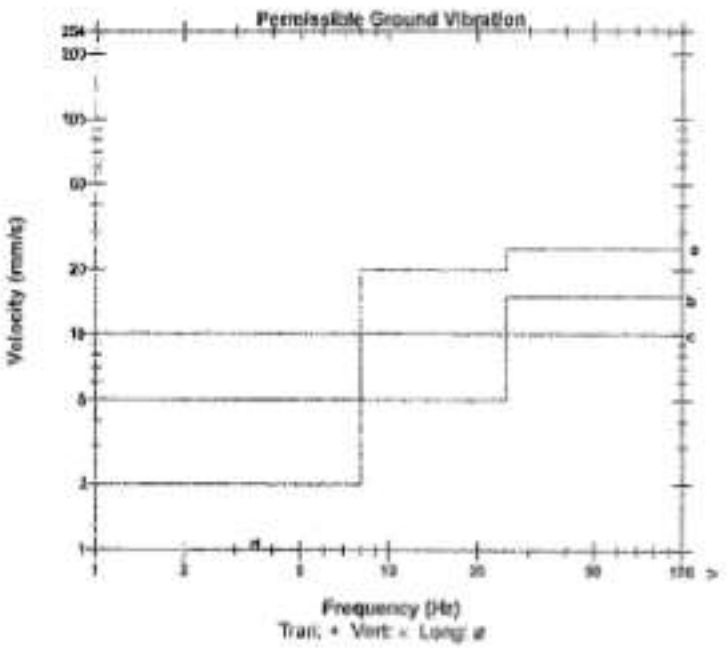
Extended Notes
Recorded at 150 meter back side of the blasting face.

Microphone	Linear Weighting
PSPL	4.143 pa (L) at 0.890 sec
ZC Freq	4.1 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1151 mv)

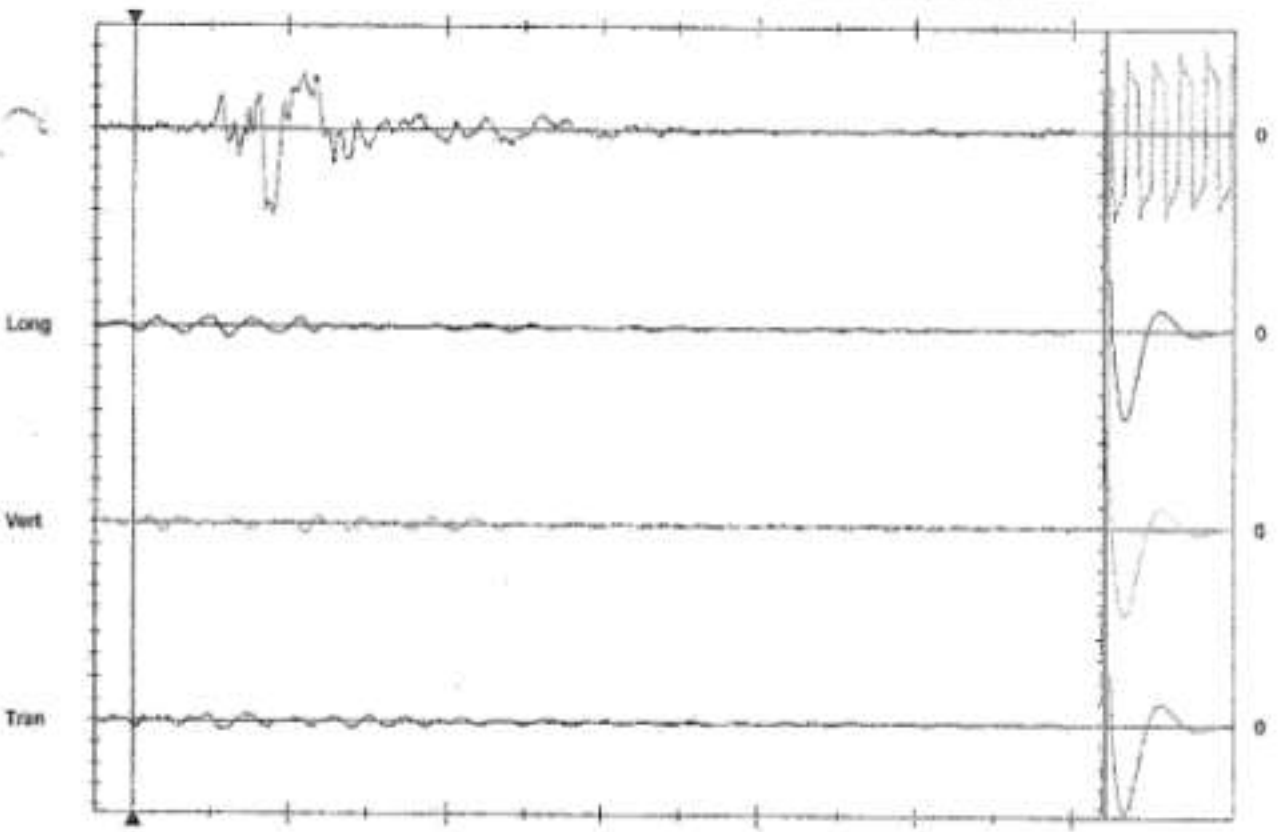
	Tran	Vert	Long	
PPV	0.662	0.851	1.072	mm/s
ZC Freq	3.6	5.3	3.5	Hz
Time (Rel. to Trig)	0.560	1.111	0.610	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.032	0.025	0.039	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.2	4.7	4.3	

Peak Vector Sum 1.296 mm/s at 0.916 sec

DGMS India (A)



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



0.0

Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div

Sensor Check

Trigger =

Instantel

FFT Report

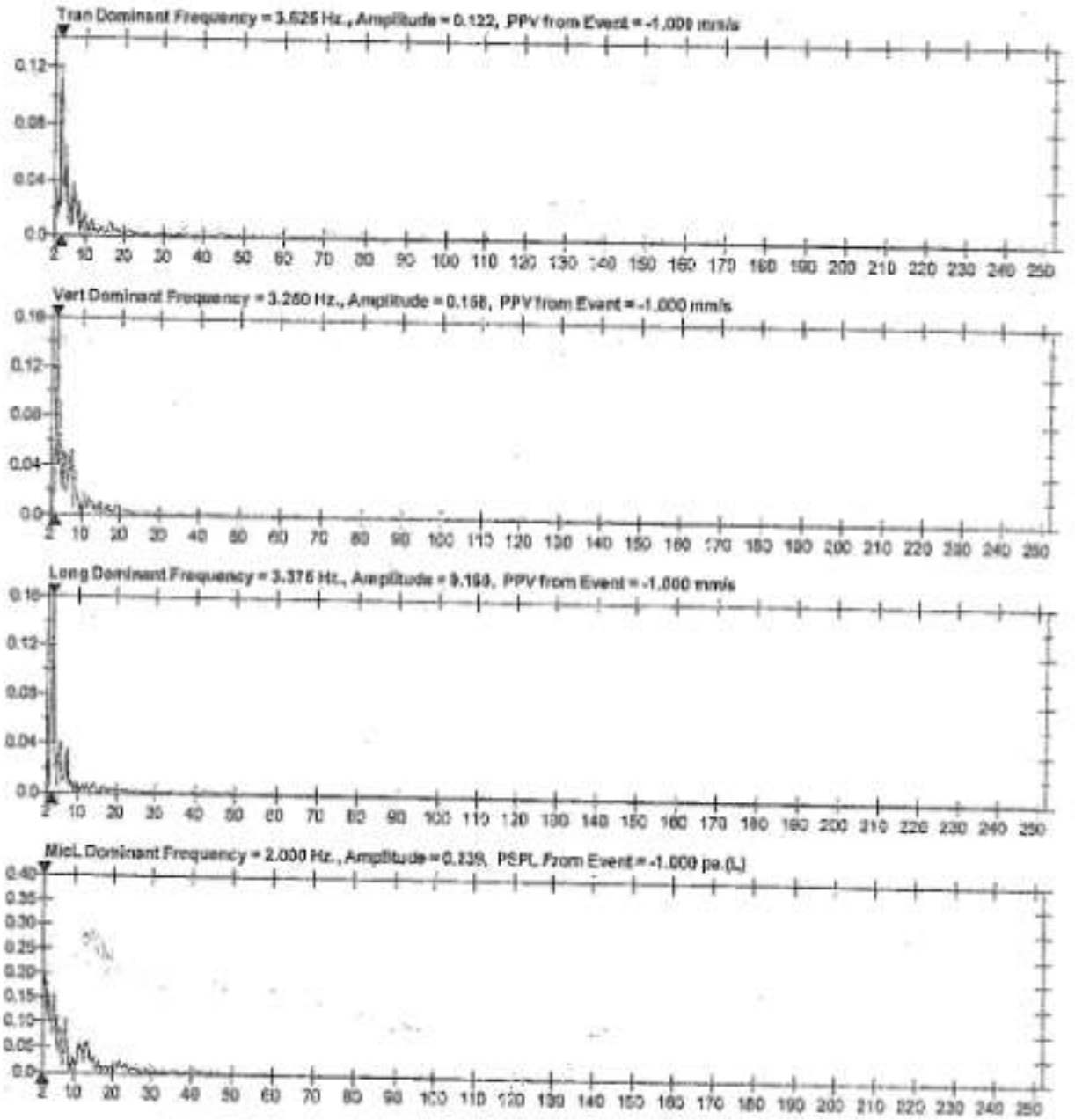
Date/Time	Tran at 13:50:27 Jan 10, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 70.95 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 2048 sps
Operator/Setup:	Operator/T3L MM3

Serial Number	UM21129 V 10-800C Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 21, 2023 by UEE New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON ORE MINES

Extended Notes
Recorded at 150 meter back side of the blasting face.



Instantel

Event Report

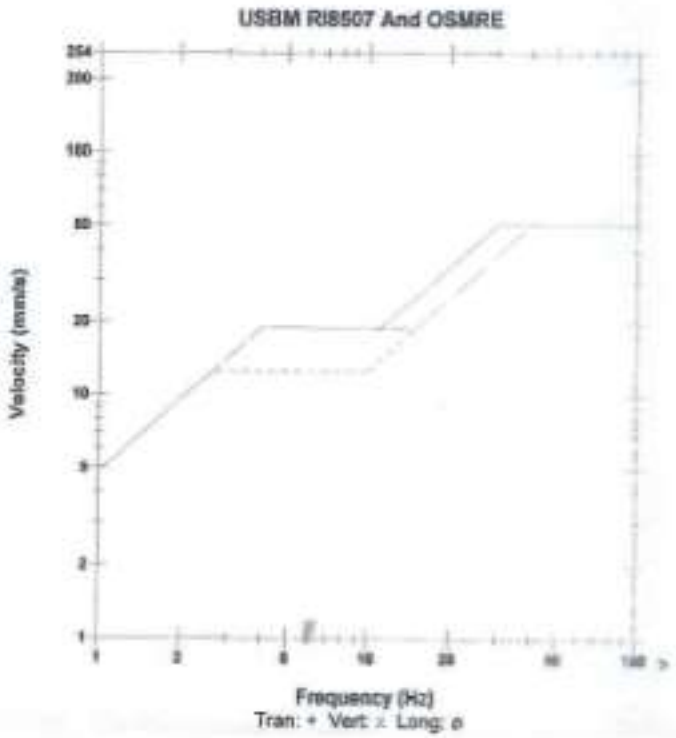
Date/Time	Vert at 14:54:38 January 10, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

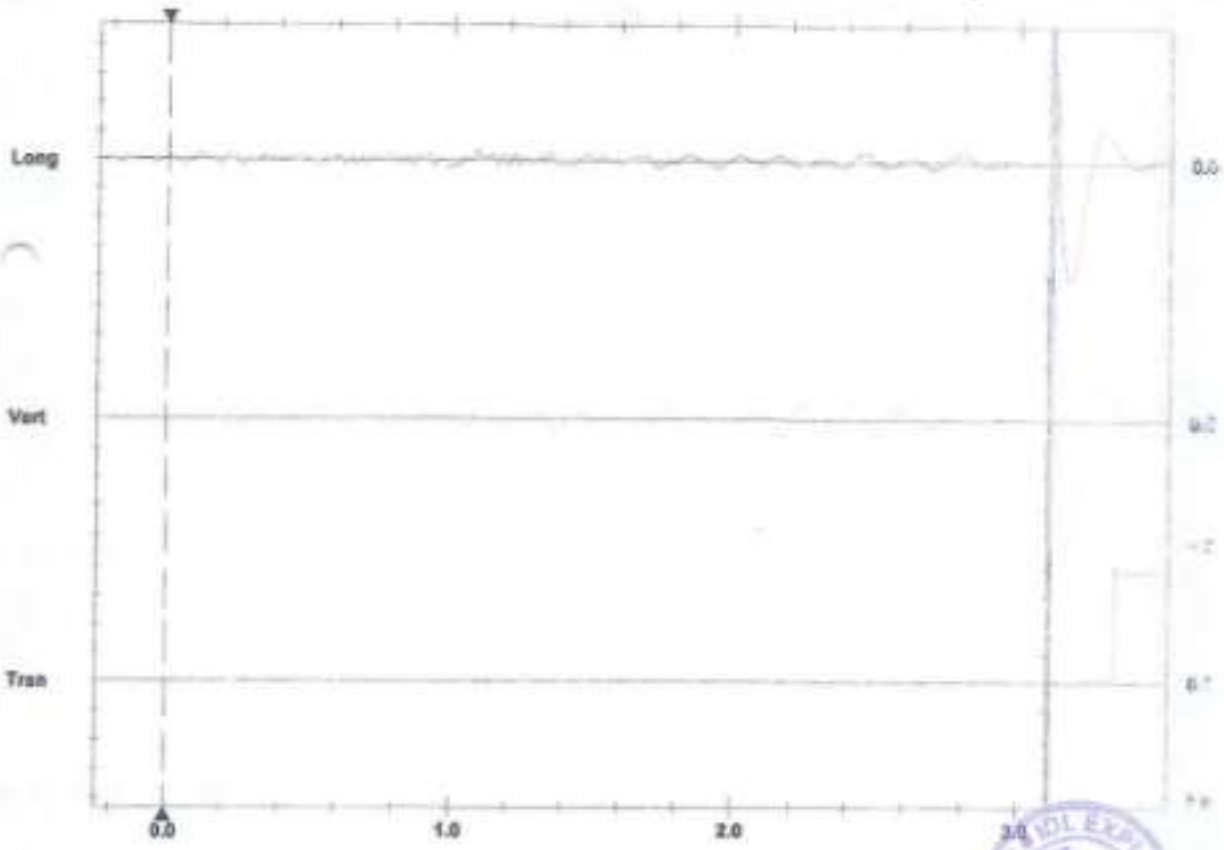
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20250110145438.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.047	1.143	0.686	mm/s
ZC Freq	85	6.1	6.0	Hz
Time (Rel. to Trig)	2.078	2.245	1.082	sec
Peak Acceleration	0.005	0.012	0.014	g
Peak Displacement	0.000	0.032	0.021	mm
Sensor Check	Check	Passed	Passed	
Frequency	7.9	7.7	7.3	Hz
Overswing Ratio	514.0	3.1	3.6	

Peak Vector Sum 1.212 mm/s at 2.427 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger =

Sensor Check

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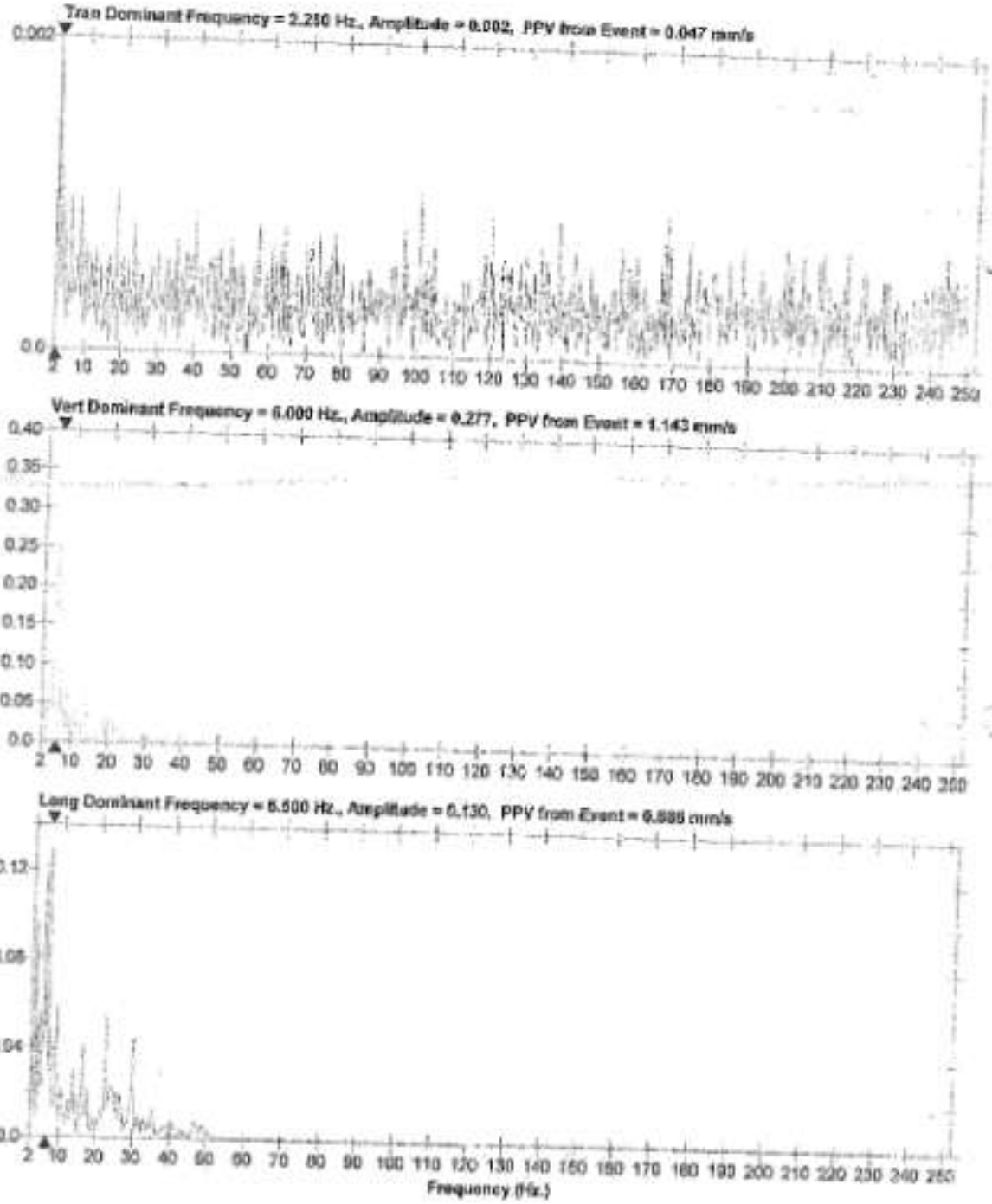
FFT Report

Date/Time	Vert at 14:54:38 January 10, 2025
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20250110145438.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:56:59 January 6, 2026
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/JODA.MMB

Serial Number	UM10500 V 10-00GC Micromate IDEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	_TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

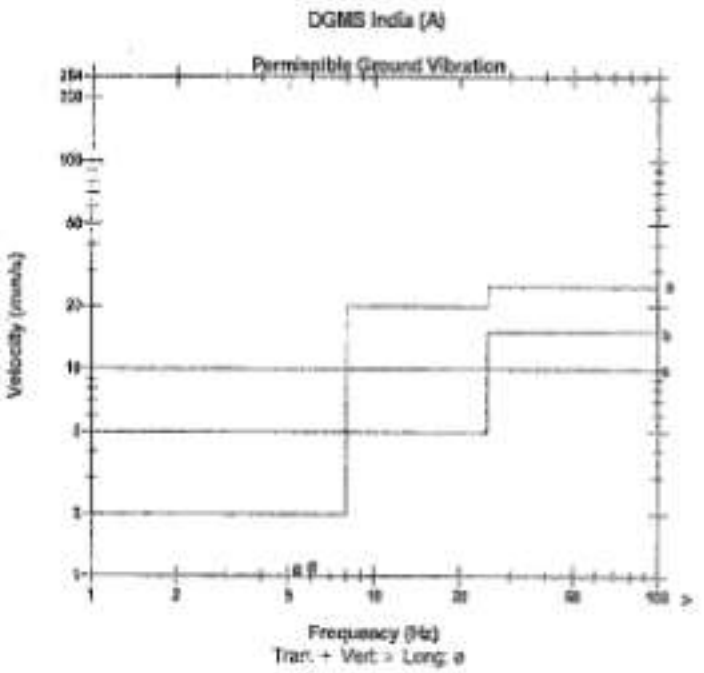
Notes
Location: On Ground Surfa
Client: KATAMATI IRON MINES
User Name: BOEPL
General:

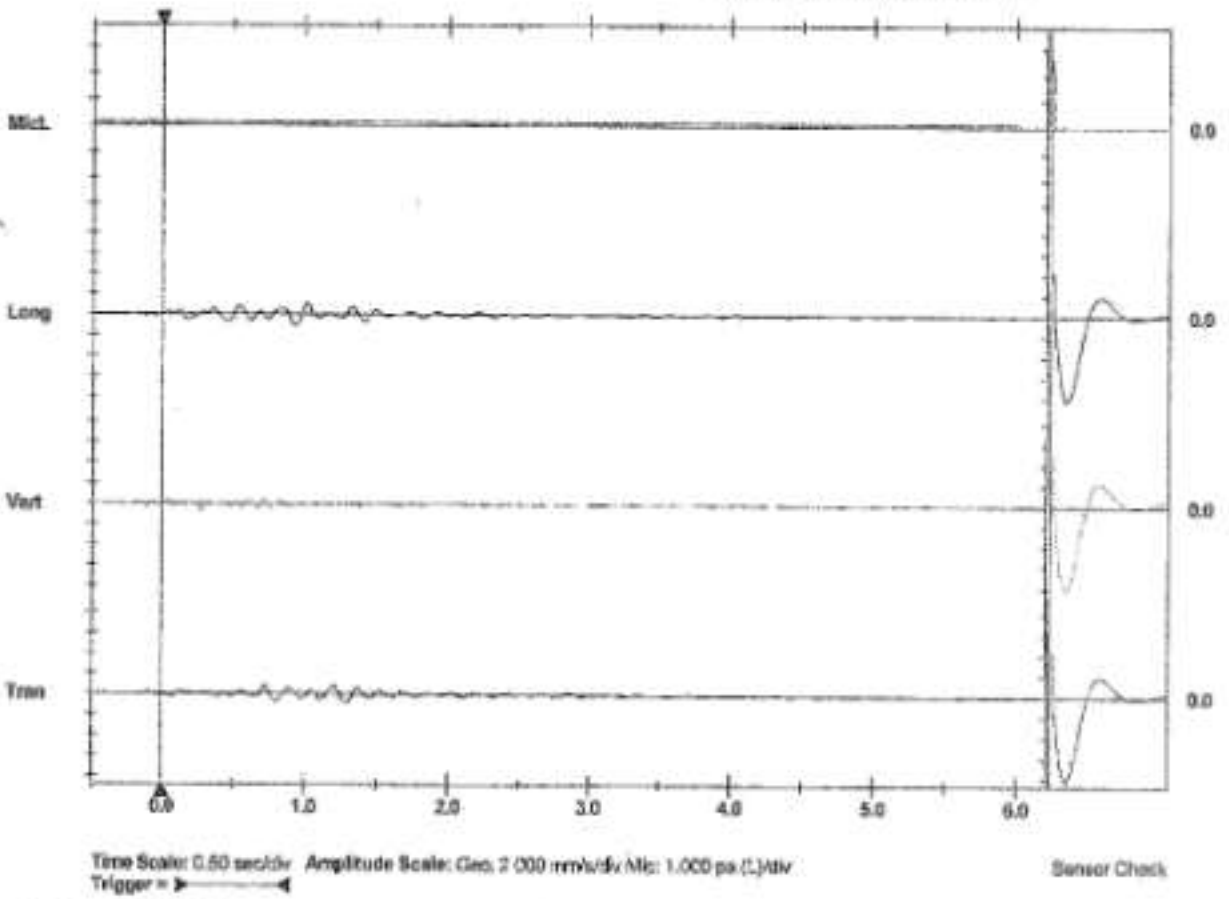
Extended Notes
100 mrs backside from blasting face.

Microphone	Linear Weighting
PSPL	<0.600 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.798	0.607	1.135	mm/s
ZC Freq	5.9	9.5	6.1	Hz
Time (Rel. to Trig)	1.297	0.279	1.029	sec
Peak Acceleration	0.006	0.008	0.007	g
Peak Displacement	0.023	0.009	0.033	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.3	Hz
Overswing Ratio	4.2	3.7	4.2	

Peak Vector Sum 1.199 mm/s at 0.926 sec
N/A: Not Applicable





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FFT Report

Date/Time	Vert at 13:56:59 January 6, 2025
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/JODA.MMB

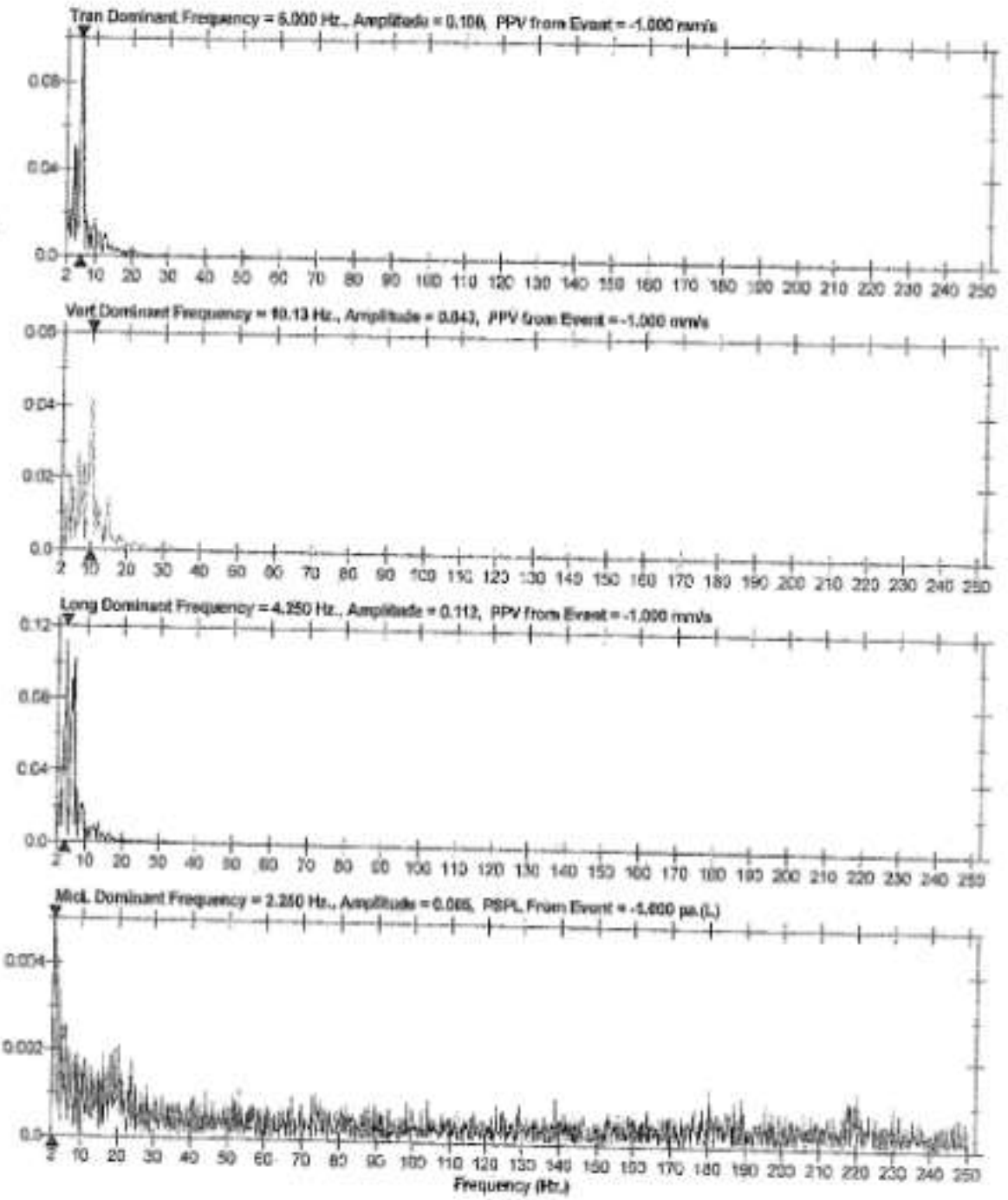
Notes

Location:	On Ground Surfa
Client:	KATAMATI IRON MINES
User Name:	BDEPL
General:	

Serial Number	UM19508 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

Extended Notes

100 mtrs backside from blasting face.



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Event Report

Date/Time	Tran at 13:56:42 January 6, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

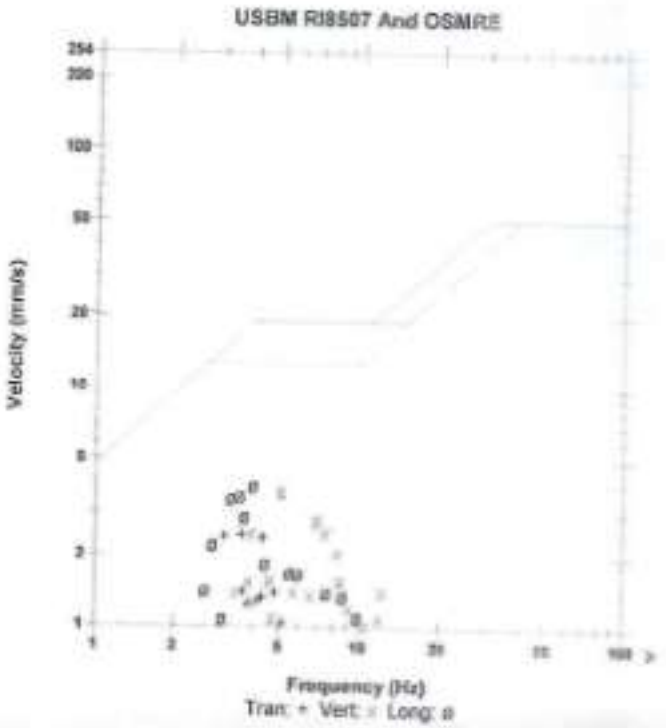
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250106135642.IDFW

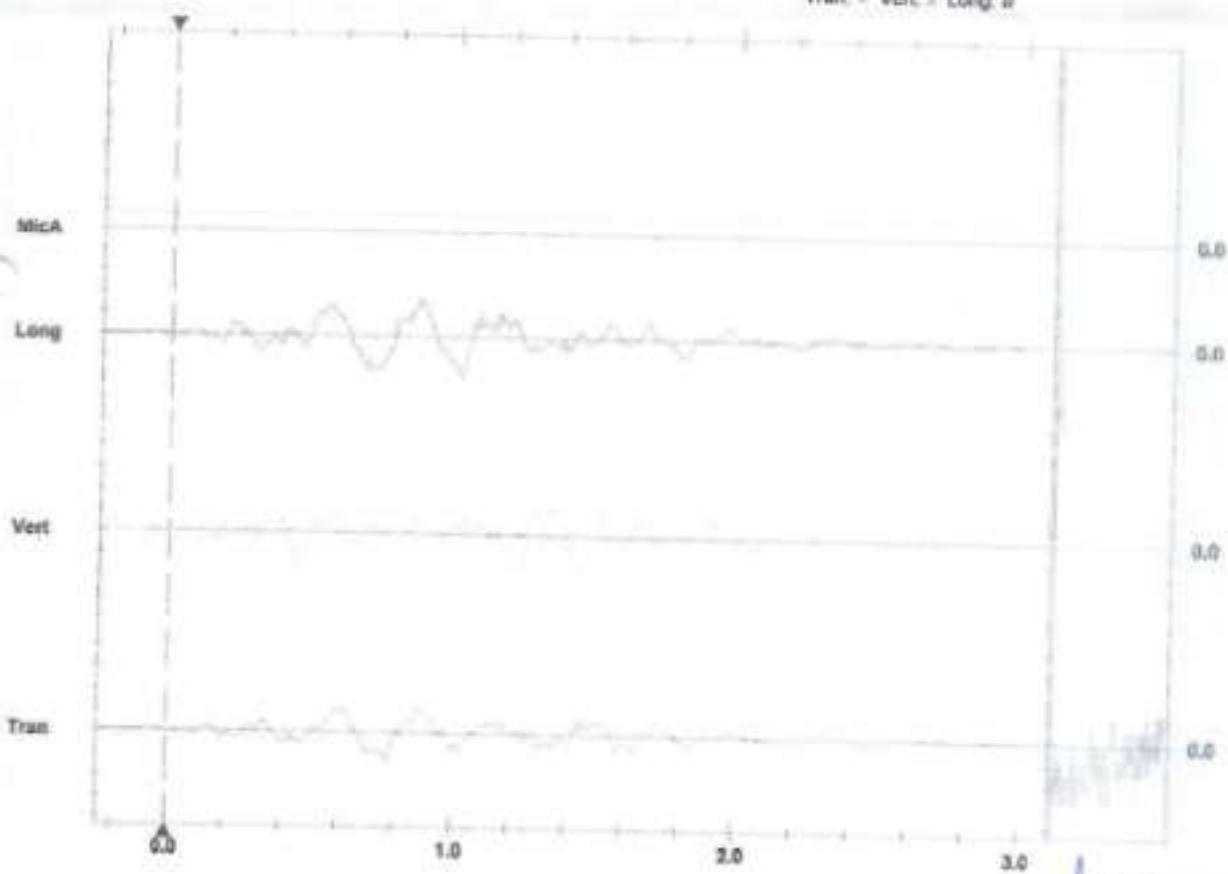
Notes
Location: MMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	2.443	3.690	3.879	mm/s
ZC Freq	3.6	5.0	4.0	Hz
Time (Rel. to Trig)	0.775	1.226	1.020	sec
Peak Acceleration	0.038	0.049	0.039	g
Peak Displacement	0.101	0.113	0.164	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.2	4.2	4.3	

Peak Vector Sum 4.152 mm/s at 0.880 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: January 7, 2025 (V 10.72 - 10.72.1)

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for IDL Explosives Limited

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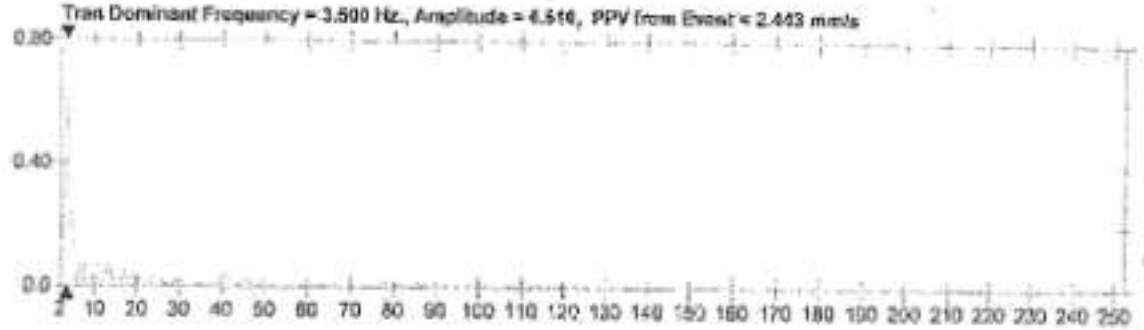
FFT Report

Date/Time	Tran at 13:56:42 January 6, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

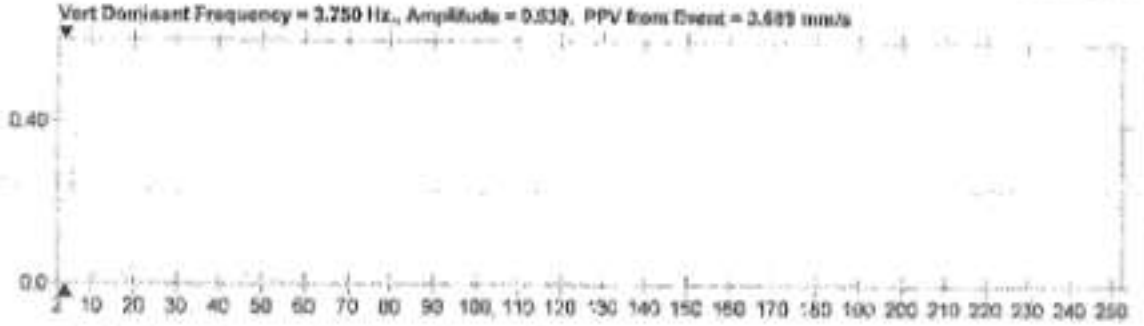
Serial Number	UM15576 V 10-90FB Micromate IBSE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250106135642.IDFW

Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

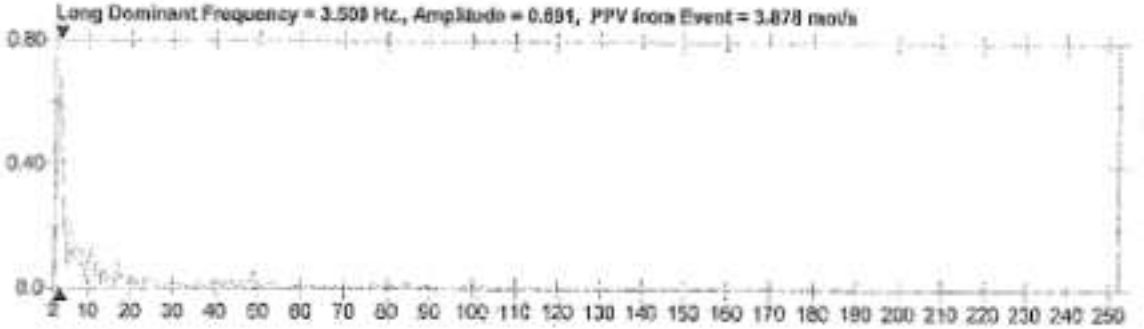
Tran Dominant Frequency = 3.500 Hz., Amplitude = 4.516, PPV from Event = 2.443 mm/s



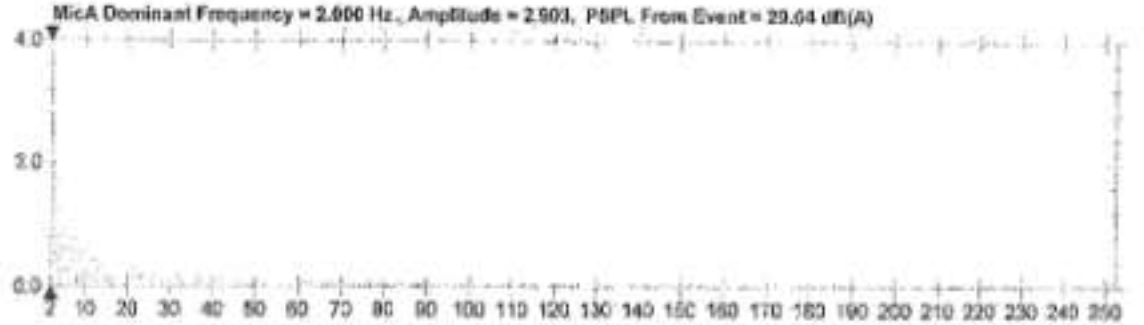
Vert Dominant Frequency = 3.750 Hz., Amplitude = 0.539, PPV from Event = 3.689 mm/s



Long Dominant Frequency = 3.500 Hz., Amplitude = 0.691, PPV from Event = 3.878 mm/s



MicA Dominant Frequency = 2.000 Hz., Amplitude = 2.903, PSPL From Event = 29.04 dB(A)



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Event Report

Date/Time	Tran at 13:37:54 January 4, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.4 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250104133754.IDFW

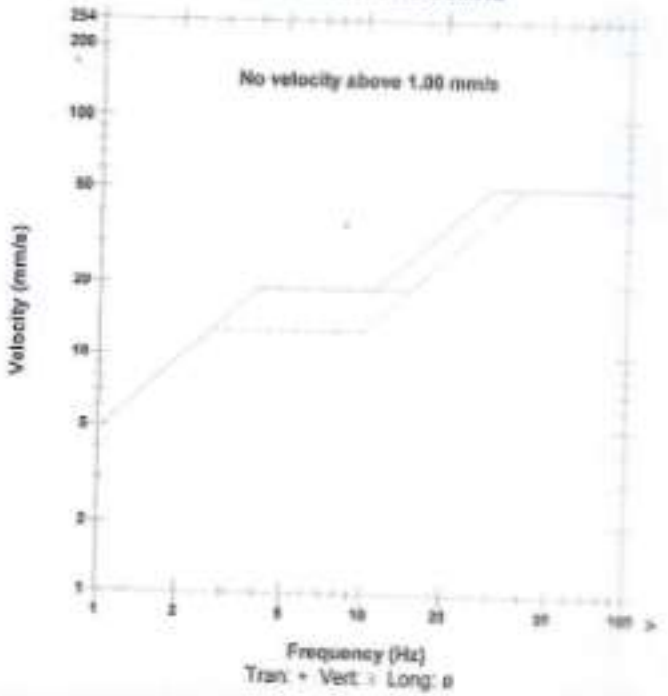
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

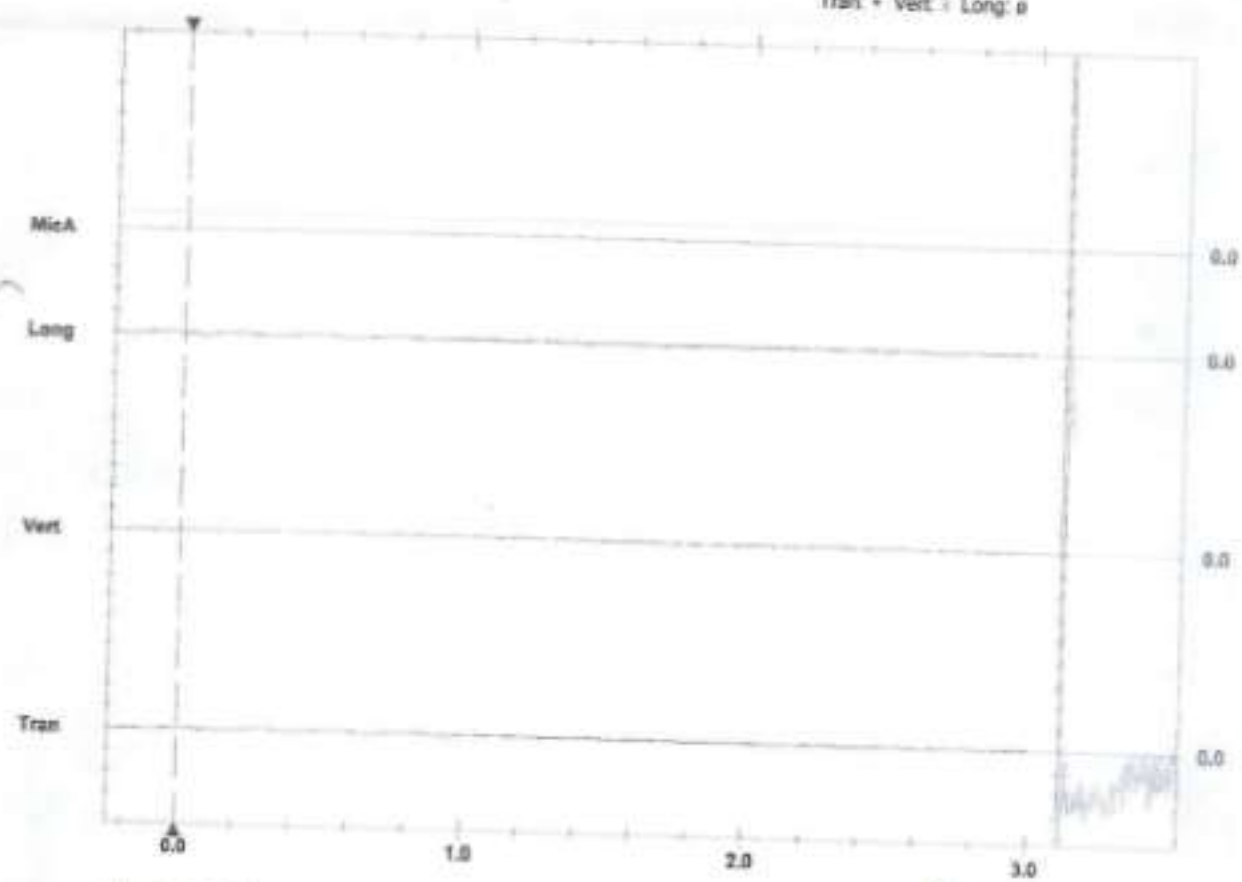
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.386	0.481	0.347	mm/s
ZC Freq	4.3	5.2	4.8	Hz
Time (Rel. to Trig)	0.293	0.795	0.065	sec
Peak Acceleration	0.005	0.006	0.005	g
Peak Displacement	0.015	0.014	0.011	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 0.549 mm/s at 0.795 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

Printed: January 5, 2025 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

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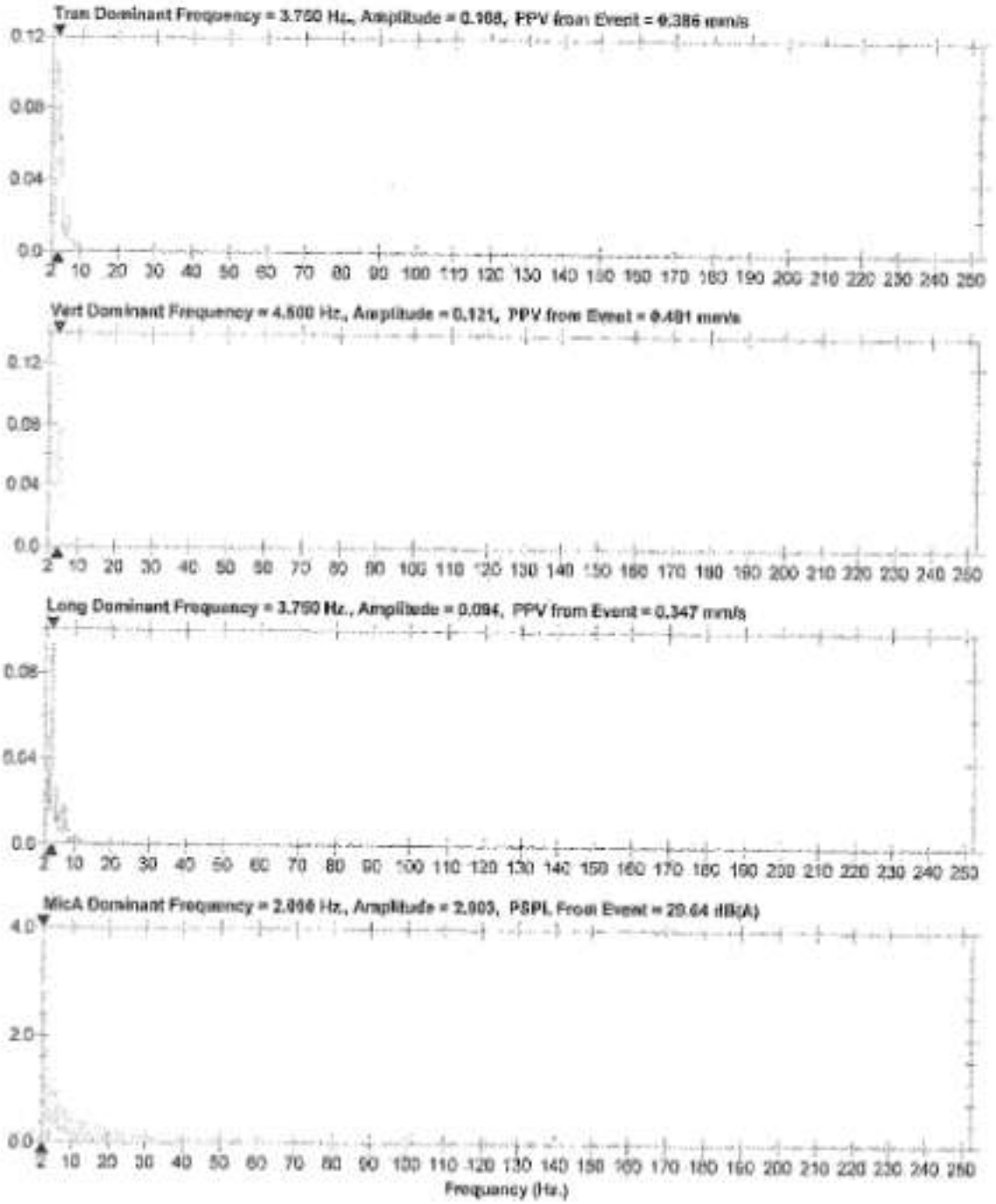
FFT Report

Date/Time	Tran at 13:37:54 January 4, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MM8

Serial Number	UM15578 V 10-90FB Micromate ISEE
Battery Level	3.4 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15578_20250104133754.IDFW

Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 13:37:46 January 4, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MM8

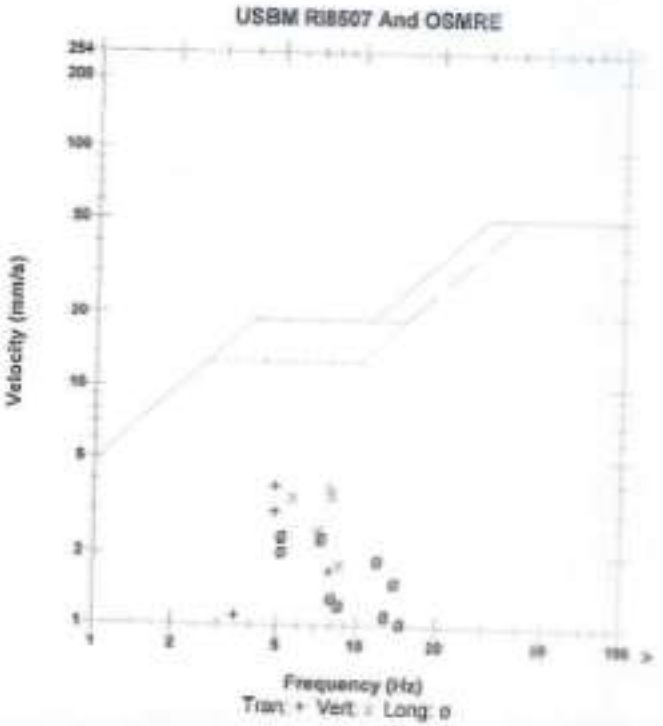
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.4 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250104133748.IDFW

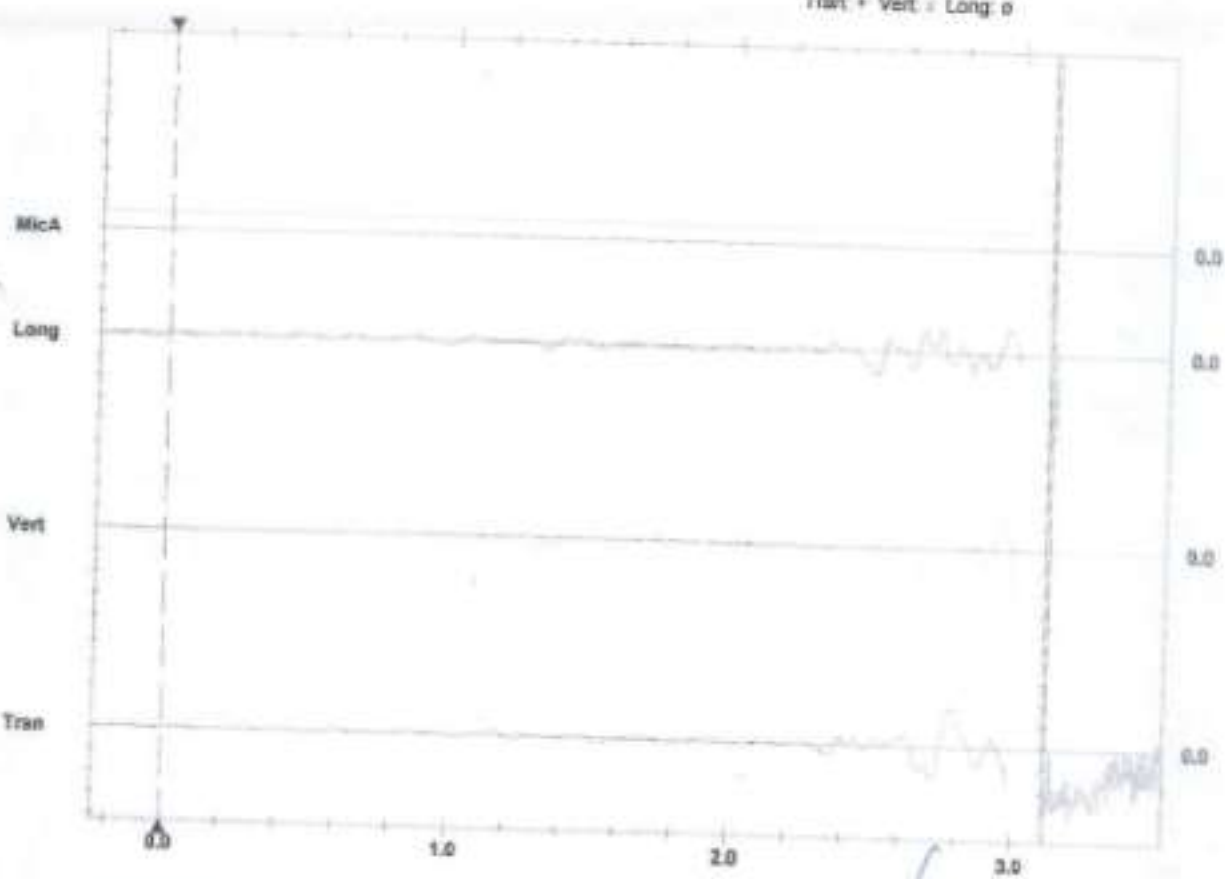
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	3.807	3.736	2.380	mm/s
ZC Freq	4.9	7.9	5.2	Hz
Time (Rel. to Trig)	2.777	2.773	2.724	sec
Peak Acceleration	0.035	0.027	0.022	g
Peak Displacement	0.105	0.083	0.068	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 5.397 mm/s at 2.774 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

Printed: January 6, 2025 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

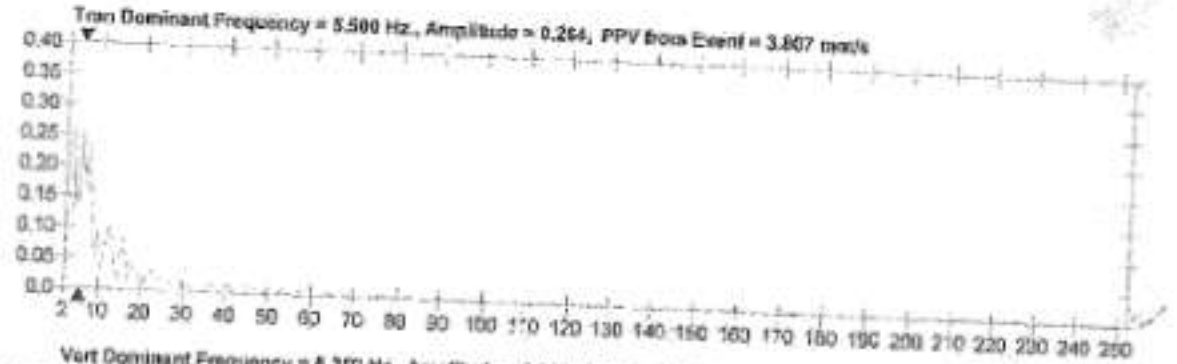
Instantel

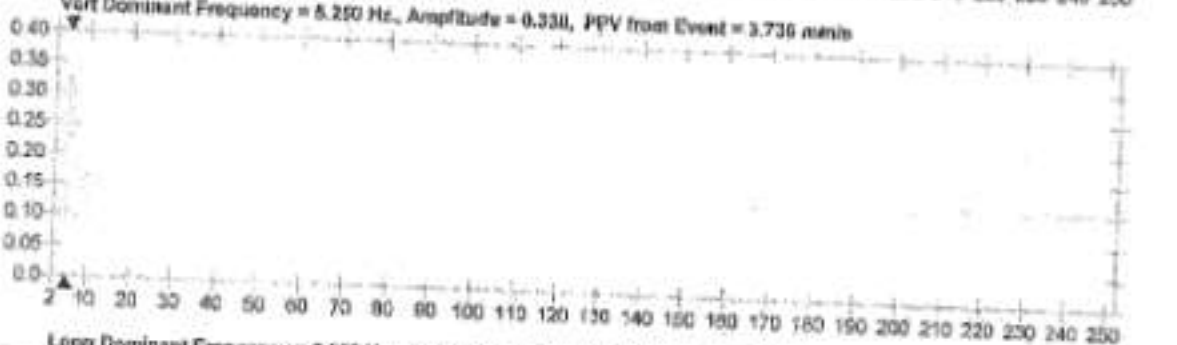
FFT Report

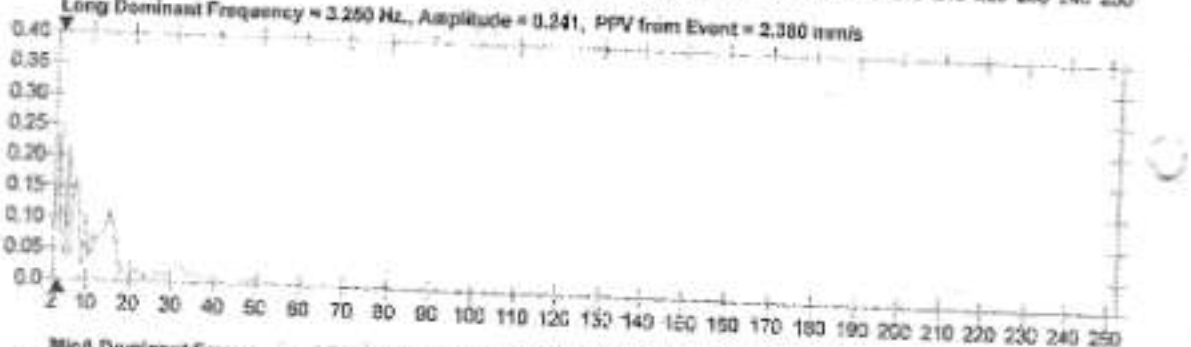
Date/Time	Long at 13:37:48 January 4, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2000.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

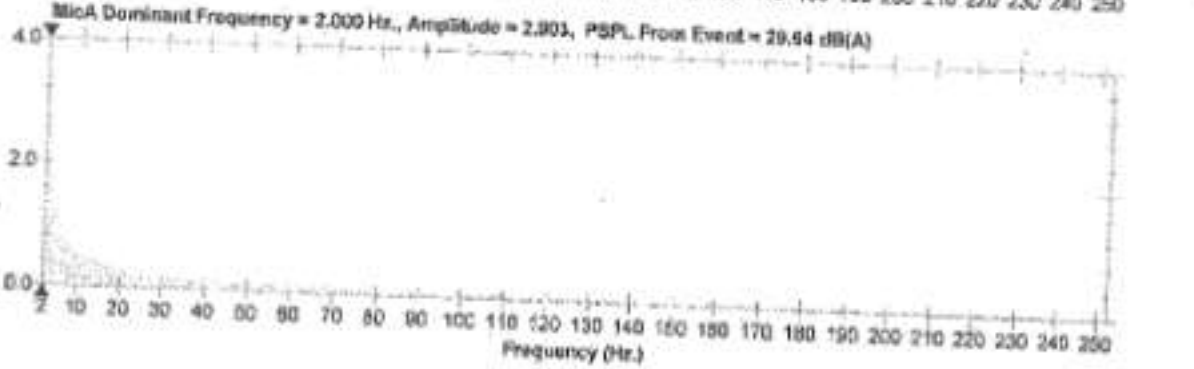
Serial Number	UM15570 V 10 BCFB Micromate BSEE
Battery Level	3.4 Volts
Unit Calibration	June 10, 2024 by UES New Delhi
File Name	UM15570_20250104133748.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:









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Event Report

Date/Time	Long at 13:43:12 January 2, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20250102134312.IDFW

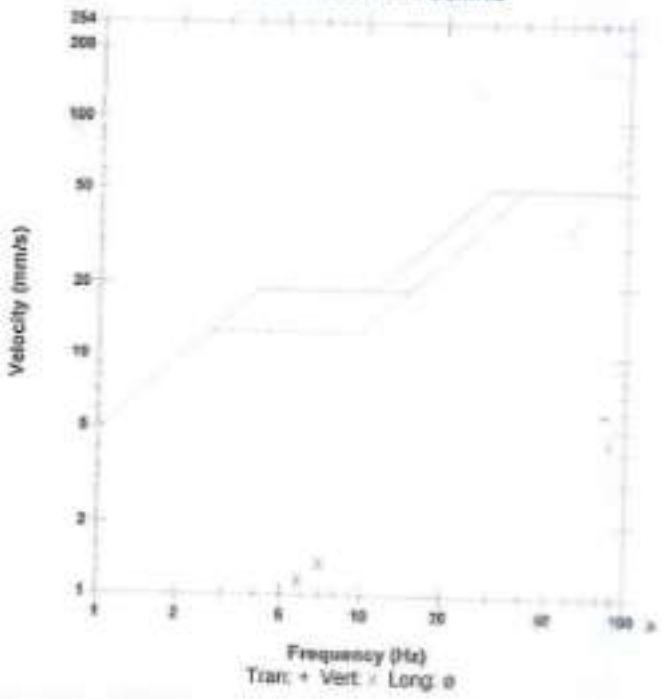
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

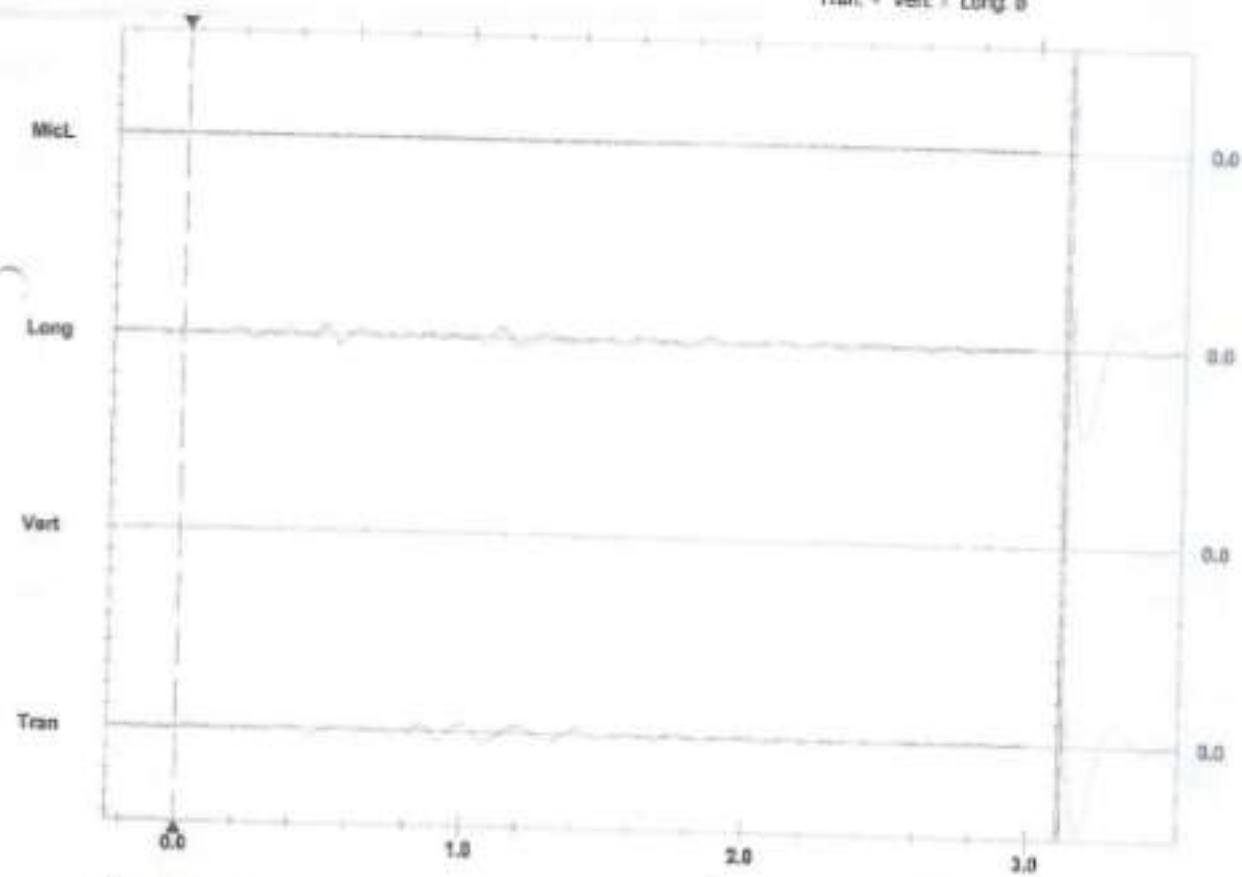
Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	11.1 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.883	1.371	0.946	mm/s
ZC Freq	7.6	7.0	7.4	Hz
Time (Rel. to Trig)	0.923	1.089	1.119	sec
Peak Acceleration	0.010	0.018	0.012	g
Peak Displacement	0.024	0.029	0.020	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 1.645 mm/s at 1.096 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = ▶ ◀

Sensor Check

Printed: January 3, 2025 (V 10.72 - 10.72.1)

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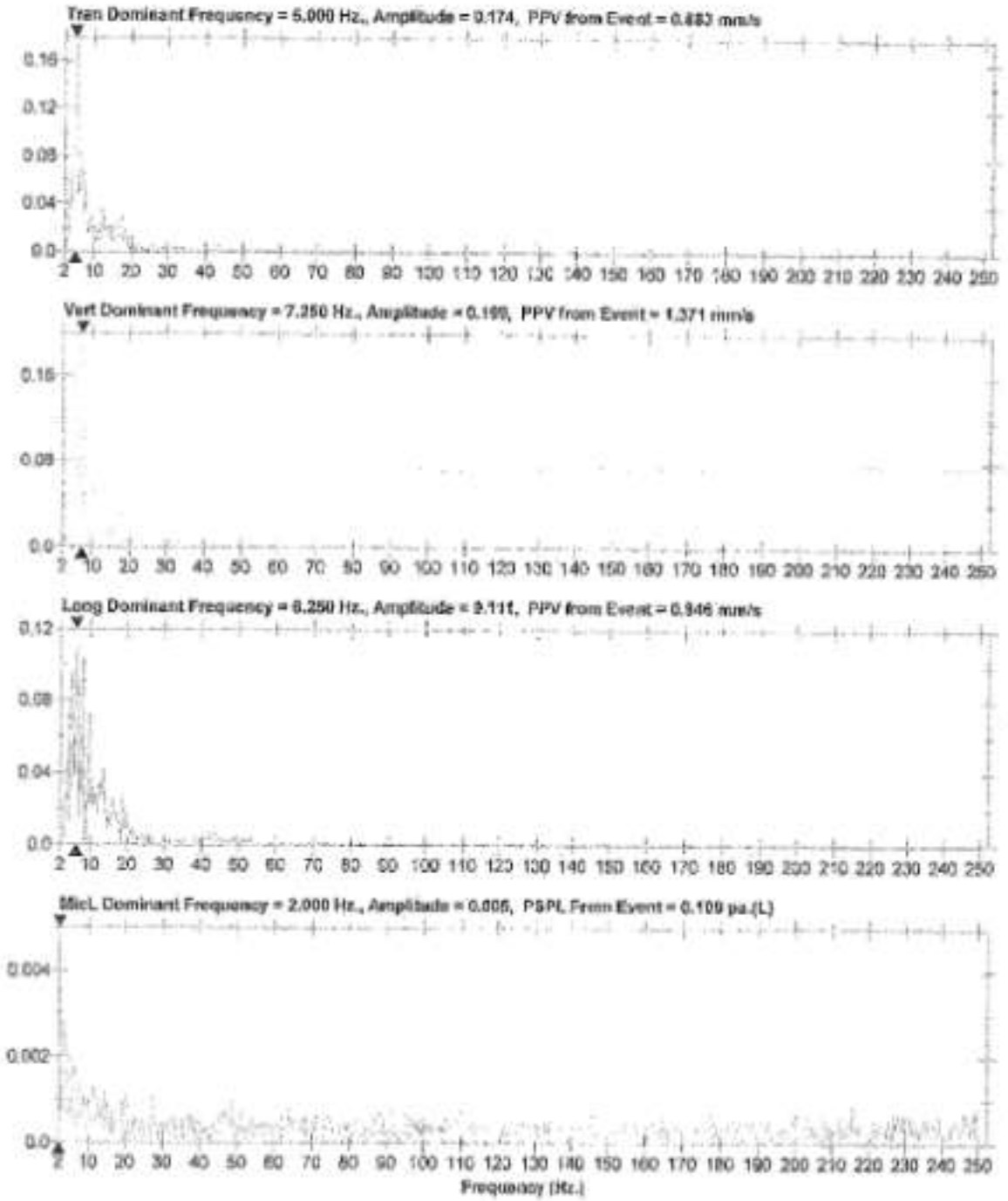
FFT Report

Date/Time	Long at 13:43:12 January 2, 2025
Trigger Source	Geo: 0.300 mm/s, Mic: 2.300 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15578 V 10-90FS Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15578_20250102134312.IDFW

Notes

Location:	NMD / KTM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Event Report

Date/Time	Long at 14:04:43 December 28, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

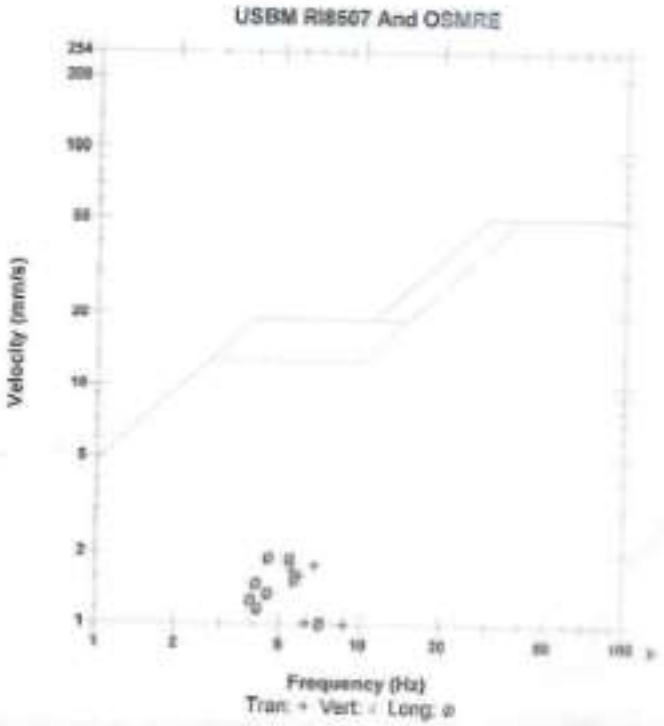
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241228140443.IDFW

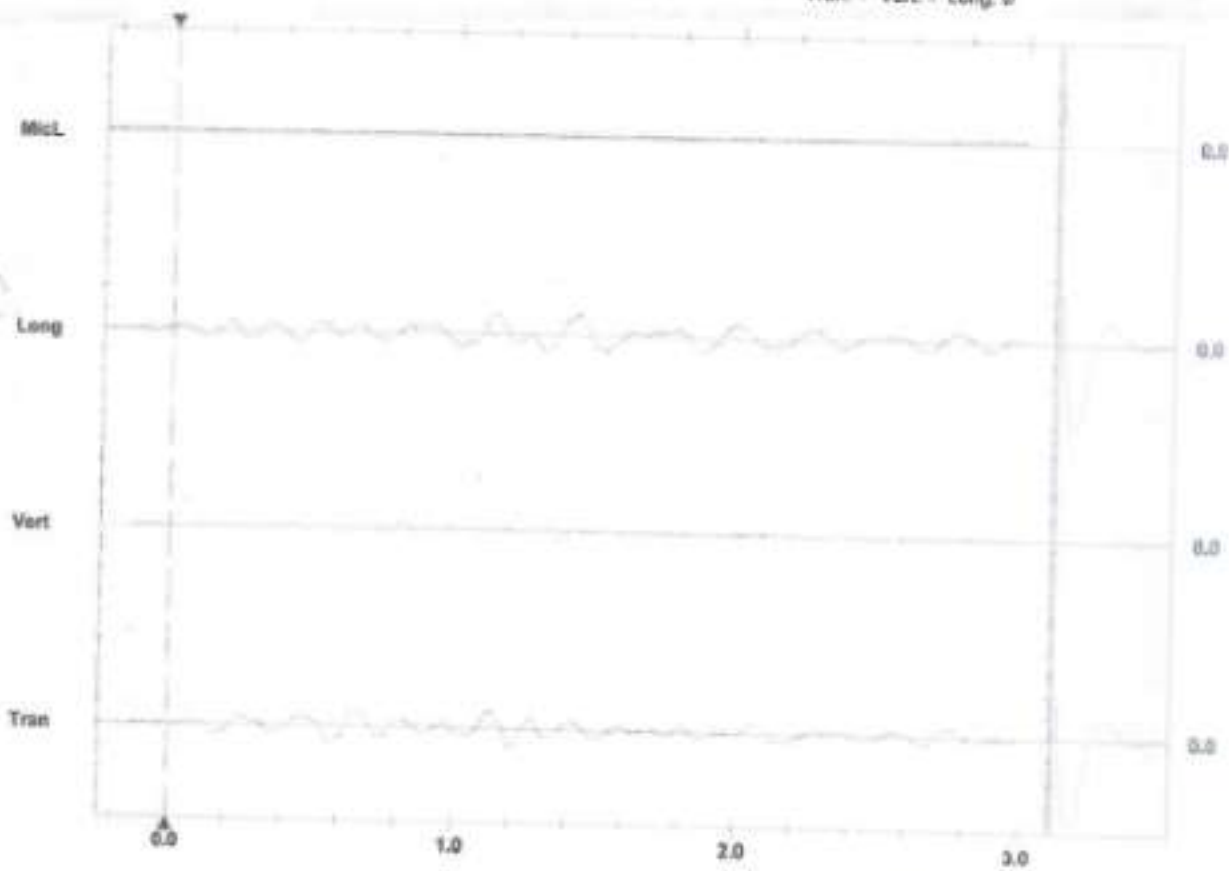
Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.766	0.717	1.923	mm/s
ZC Freq	6.8	7.6	4.5	Hz
Time (Rel. to Trig)	1.208	0.700	1.432	sec
Peak Acceleration	0.015	0.012	0.016	g
Peak Displacement	0.047	0.015	0.069	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.3	Hz
Overswing Ratio	4.1	4.1	4.1	

Peak Vector Sum 2.503 mm/s at 1.135 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = ▶ ◀

Sensor Check

Printed: December 30, 2024 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

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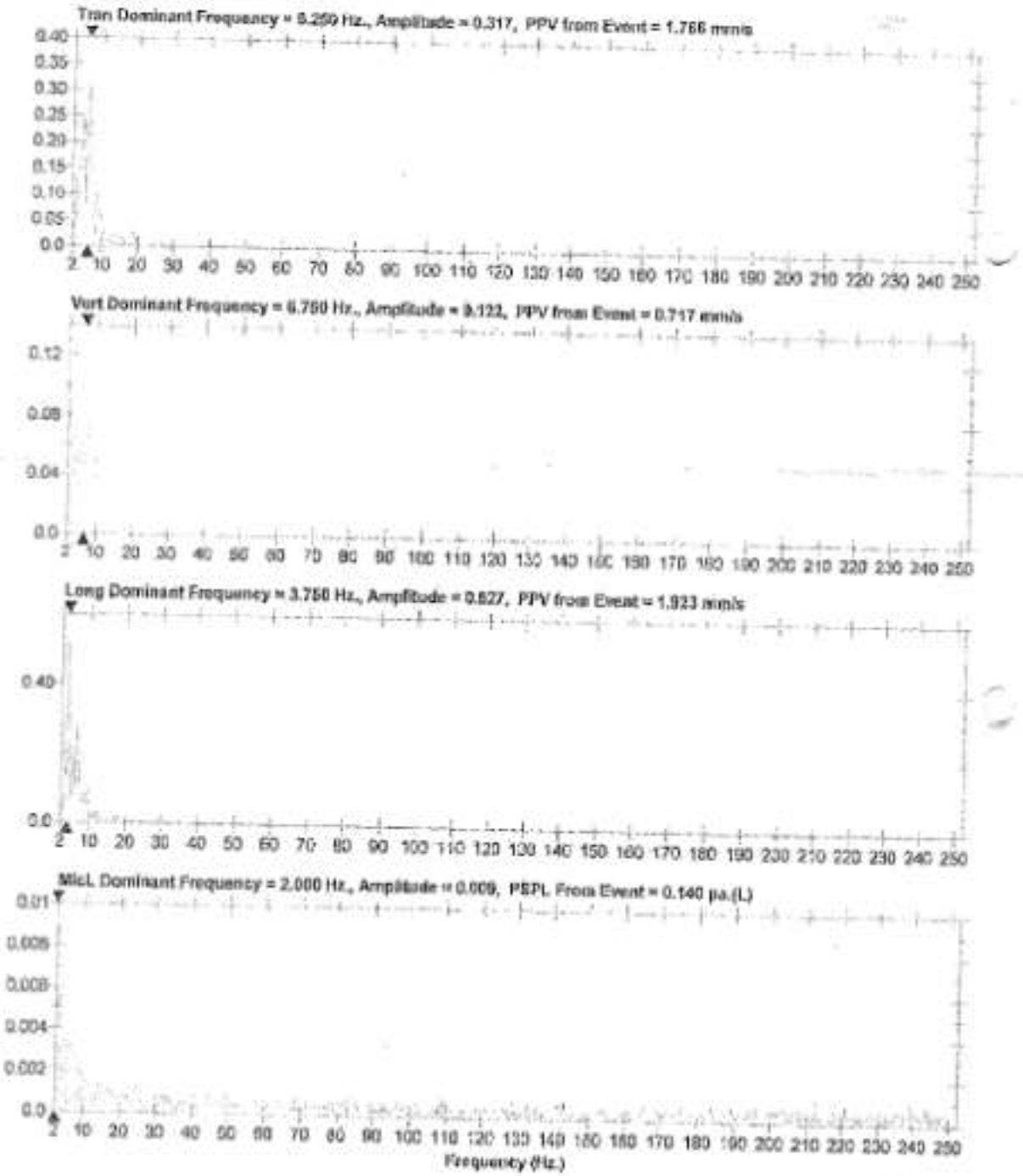
FFT Report

Date/Time	Long at 14:04:43 December 28, 2024	Serial Number	UM15576 V 10-90F8 Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 2.000 pa.(L)	Battery Level	3.6 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 spe	File Name	UM15576_20241228140443.IDFW
Operator/Setup:	Operator/factory.MM8		

Notes
Location: NMD / KTM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 13:57:49 December 27, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241227135749.IDFW

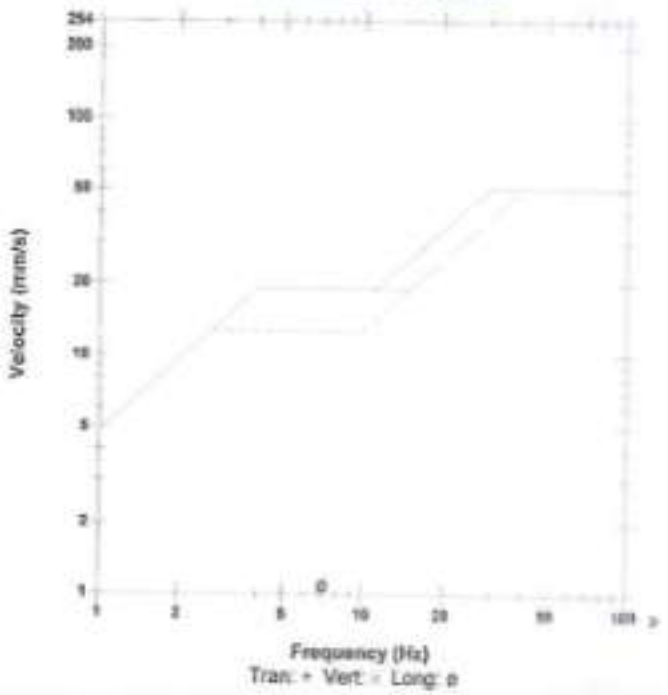
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

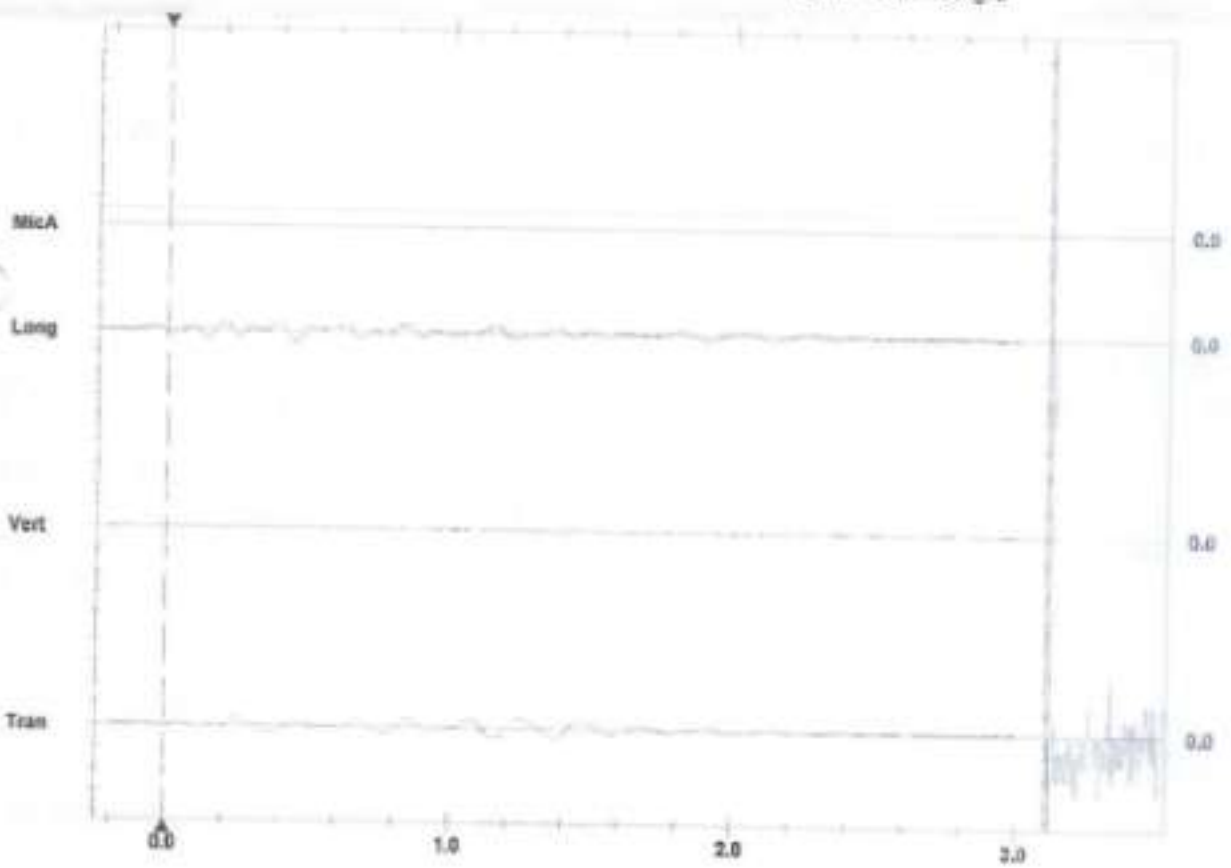
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
ppv	0.893	0.441	1.096	mm/s
ZC Freq	4.7	5.5	7.1	Hz
Time (Rel. to Trig)	1.251	0.389	0.447	sec
Peak Acceleration	0.012	0.010	0.015	g
Peak Displacement	0.027	0.011	0.024	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.2	

Peak Vector Sum 1.185 mm/s at 0.453 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

Printed: December 28, 2024 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

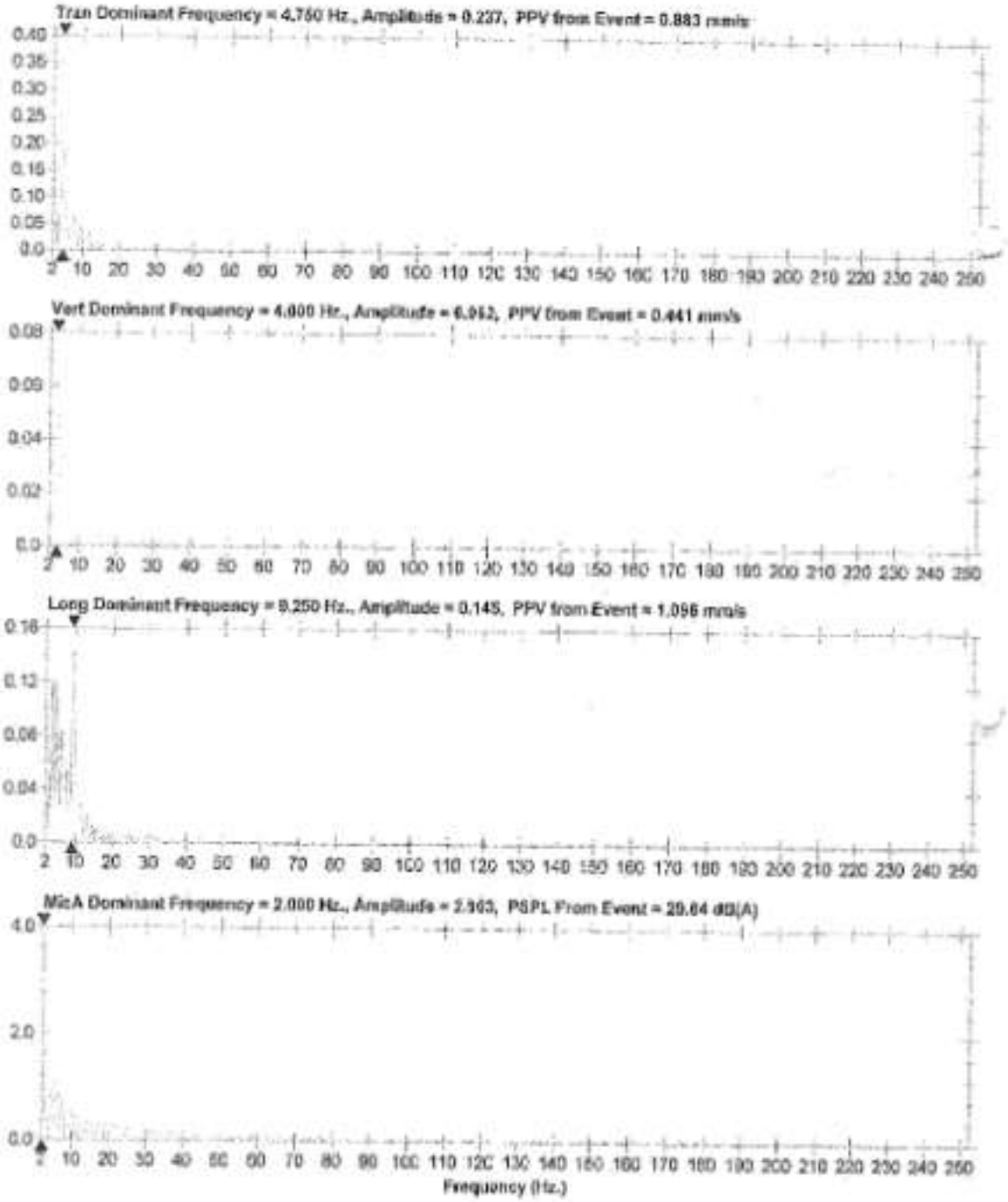
Instantel

FFT Report

Date/Time	Long at 13:57:49 December 27, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-00FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 18, 2024 by UES New Delhi
File Name	UM15576_20241227135749.IDFW

Notes
Location: KTM / NSM
Client: TATA STEEL LTD
User Name: SDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:44:07 December 25, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241225134407.IDFW

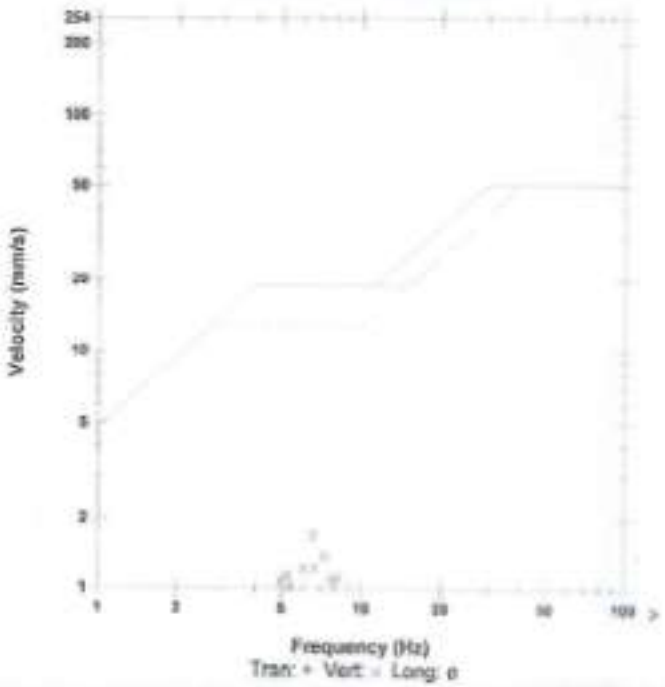
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

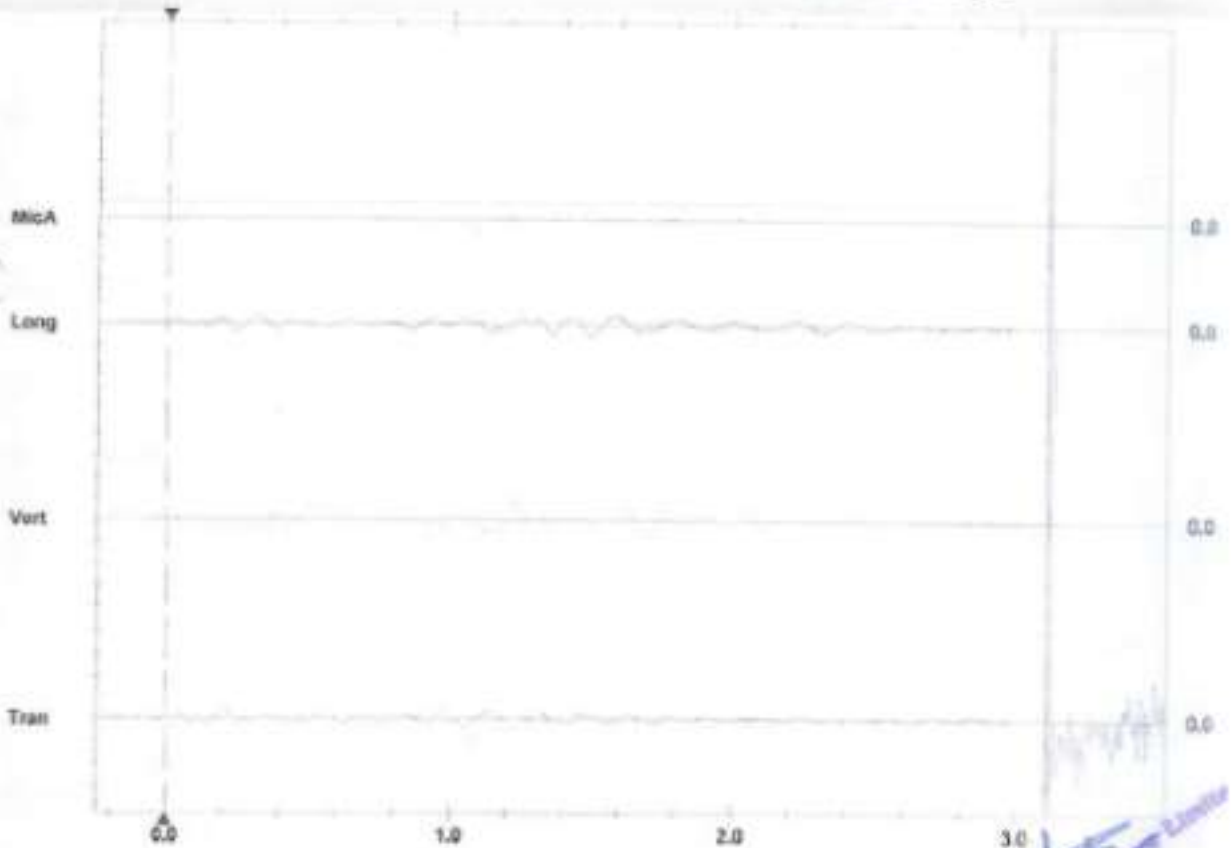
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.991	1.710	0.993	mm/s
ZC Freq	11.5	6.6	7.3	Hz
Time (Rel. to Trig)	0.961	1.229	1.492	sec
Peak Acceleration	0.013	0.020	0.015	g
Peak Displacement	0.020	0.038	0.026	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 1.882 mm/s at 1.226 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

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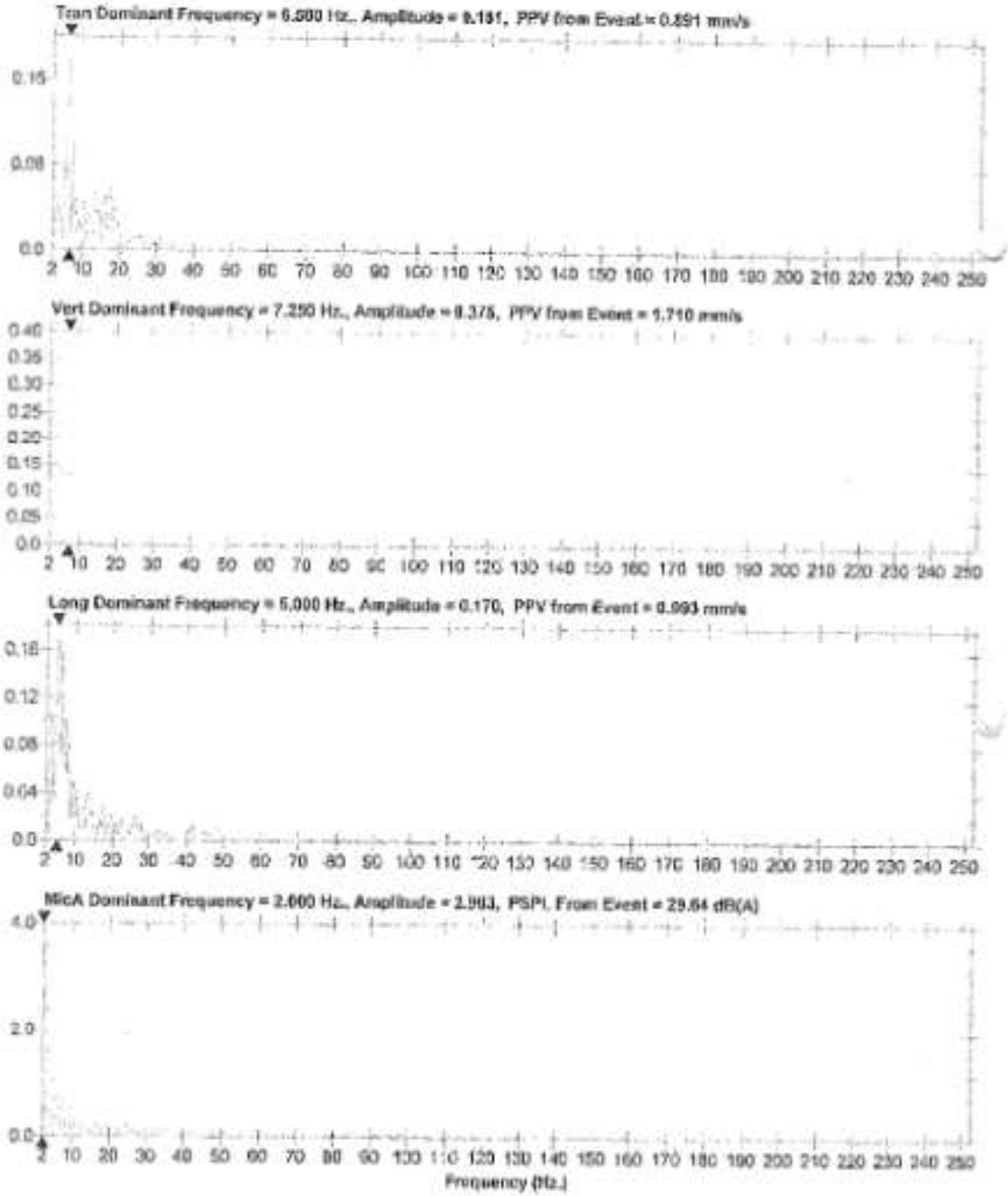
FFT Report

Date/Time	Vert at 12:44:07 December 26, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 060 C dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory M/B

Serial Number	UM15578 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 18, 2024 by UES New Delhi
File Name	UM15578_20241226134407.IDFW

Notes

Location:	KTM / NM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Event Report

Date/Time	Vert at 13:44:12 December 25, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 860.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	Juno 19, 2024 by UES New Delhi
File Name	UM15576_20241225134412.IDFW

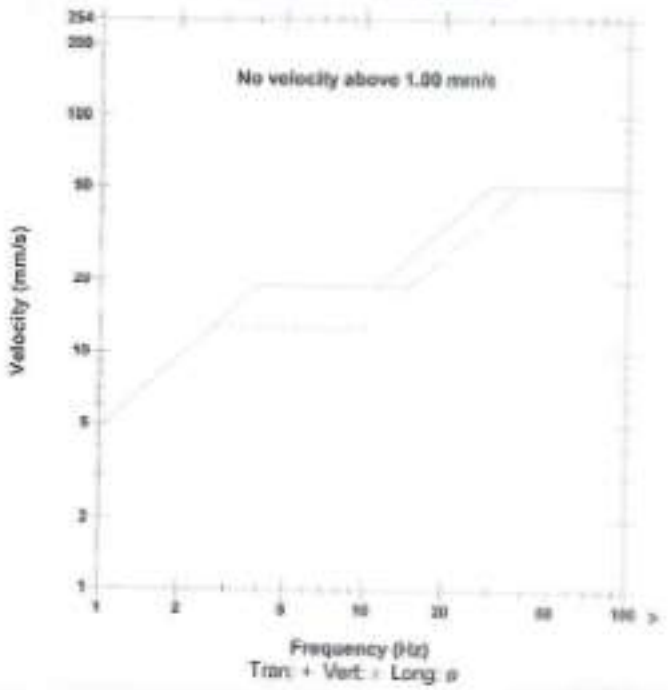
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General

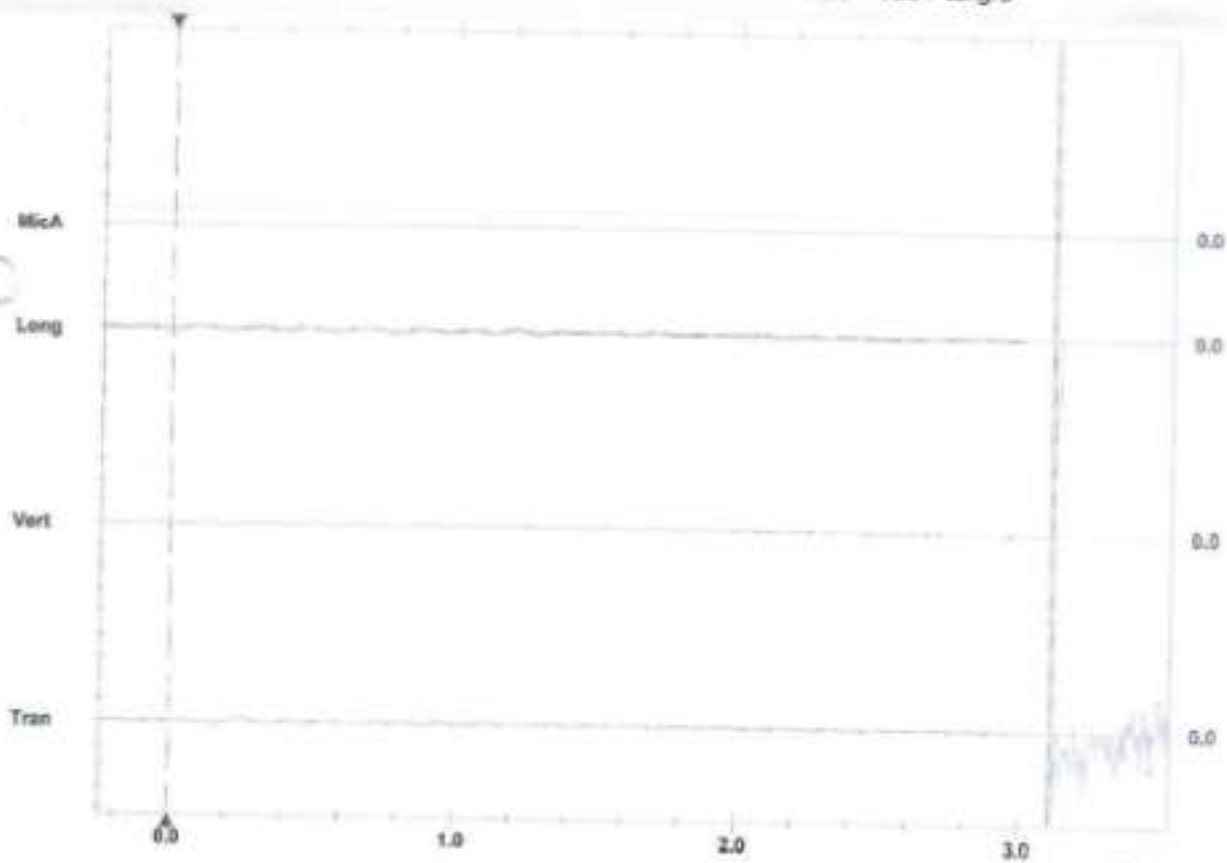
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.402	0.441	0.339	mm/s
ZC Freq	5.1	7.5	4.8	Hz
Time (Rel. to Trig)	0.258	0.977	0.676	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.011	0.012	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 0.501 mm/s at 0.677 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

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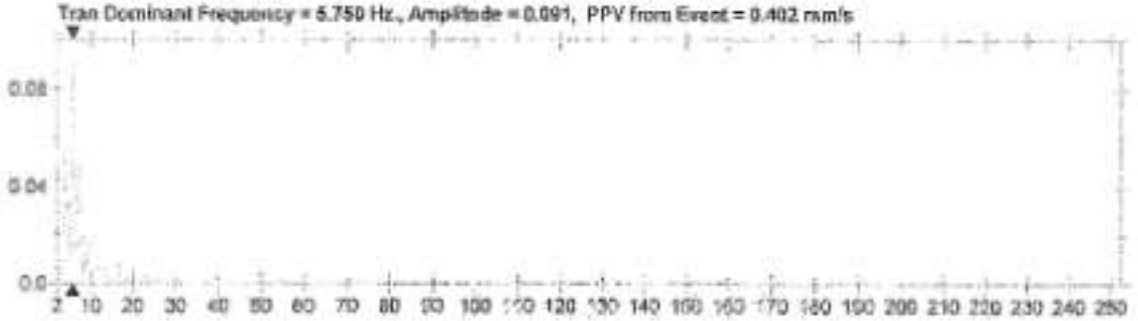
FFT Report

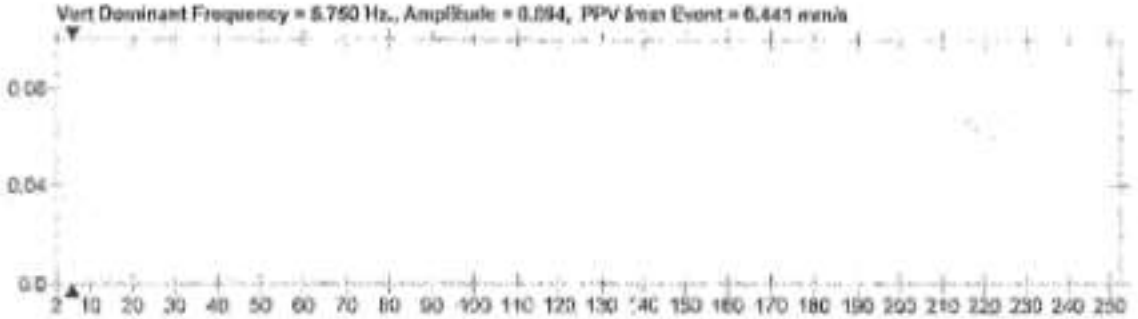
Date/Time	Vert at 13:44:12 December 25, 2024	**Serial Number**	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	**Battery Level**	5.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM15576_20241225134412.IDFW
Operator/Setup:	Opeator/factory.MMB		

Notes
Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

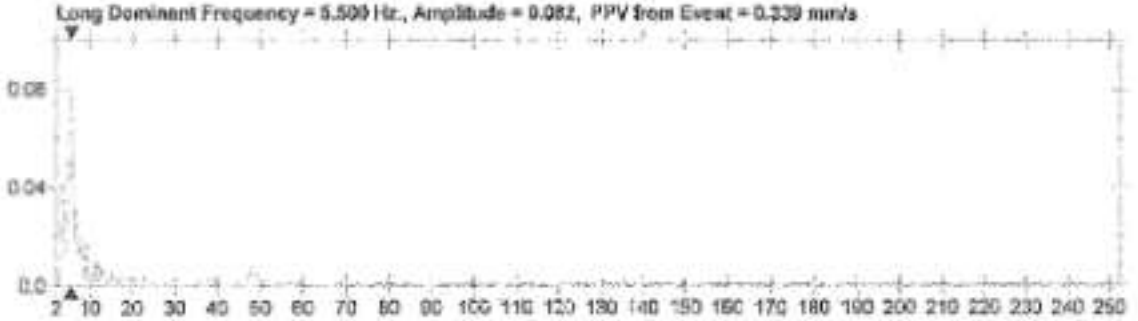
Tran Dominant Frequency = 5.750 Hz., Amplitude = 0.091, PPV from Event = 0.402 mm/s



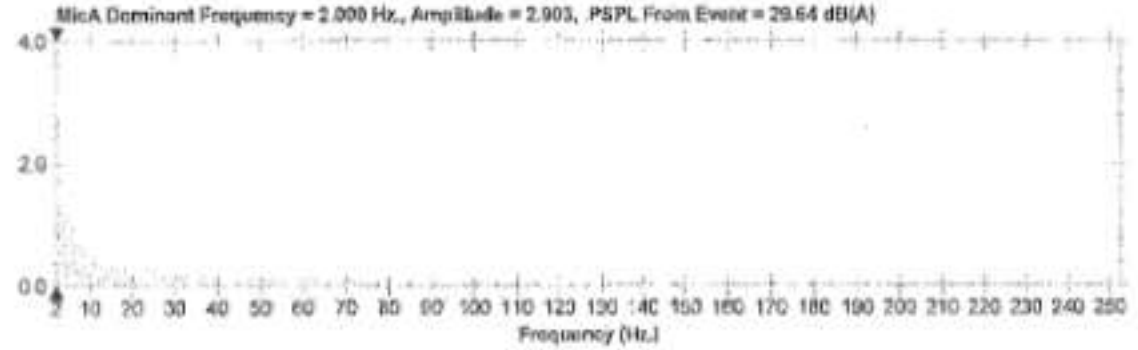
Vert Dominant Frequency = 5.750 Hz., Amplitude = 0.094, PPV from Event = 0.441 mm/s



Long Dominant Frequency = 5.500 Hz., Amplitude = 0.082, PPV from Event = 0.239 mm/s



MicA Dominant Frequency = 2.000 Hz., Amplitude = 2.903, PSPL From Event = 29.64 dB(A)



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Event Report

Date/Time	Trans at 13:57:52 Dec 25, 2024
Trigger Source	Geo: 0.527 mm/s, Mic: 70.56 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup	Operator/TSL 0.MM8

Serial Number	UM21128 V 10-BGGC Micromate iSEE
Battery Level	3.6 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

Notes

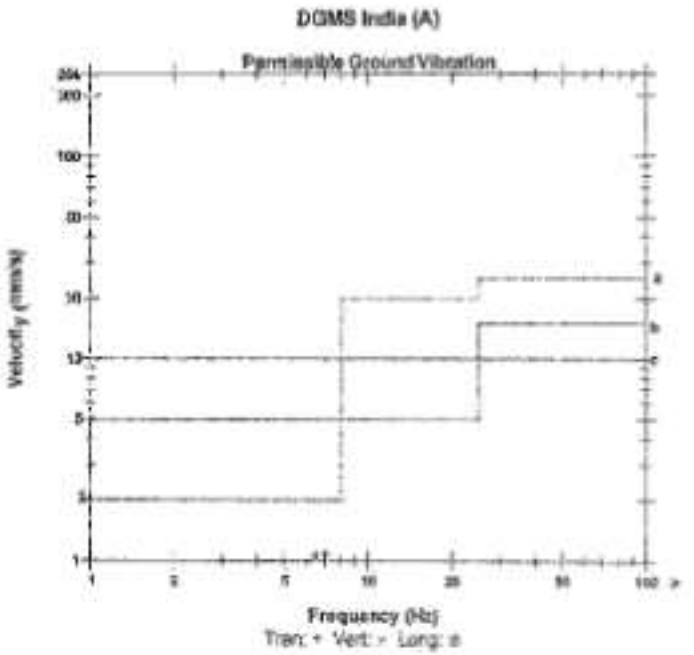
Location:	ON GROUND SURFACE
Client:	TATA STEEL PVT LTD
User Name:	BLACK DIAMOND EXPLOSIVES PVTLTD
General:	KATAMATI IRON MINES

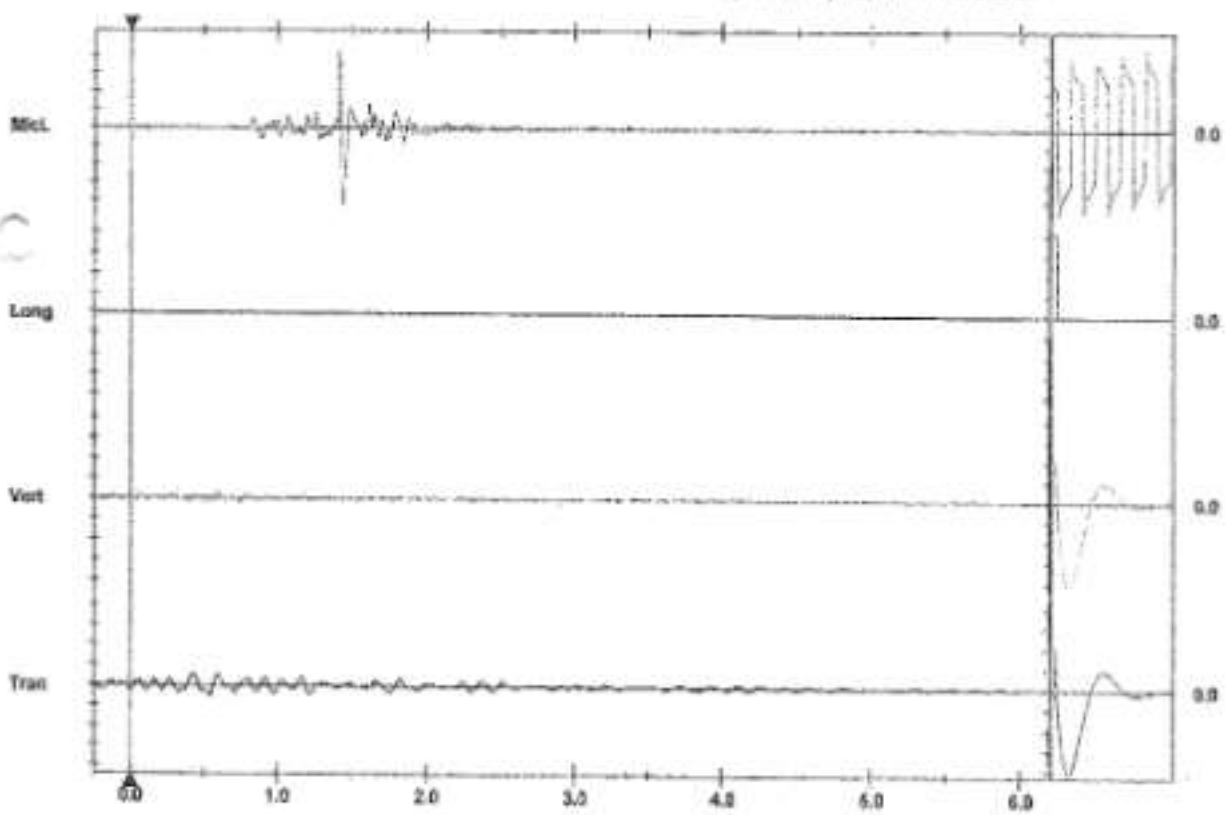
Extended Notes
Recorded at 150 meter back side from the blasting face.

Microphone	Linear Weighting
PSPL	22.08 pa (L) at 1.411 sec
ZC Freq	10 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1250 mv)

	Tran	Vert	Long	
PPV	1.072	0.434	0.039	mm/s
ZC Freq	7.2	11	>100	Hz
Time (Rel. to Trig)	0.625	0.559	0.147	sec
Peak Acceleration	0.012	0.007	0.006	g
Peak Displacement	0.026	0.007	0.000	mm
Sensor Check	Passed	Passed	Check	
Frequency	7.3	7.3	1024.0	Hz
Overswing Ratio	4.4	4.2	0.0	

Peak Vector Sum 1.150 mm/s at 0.605 sec





Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 8.000 pa (L)/div

Sensor Check

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FFT Report

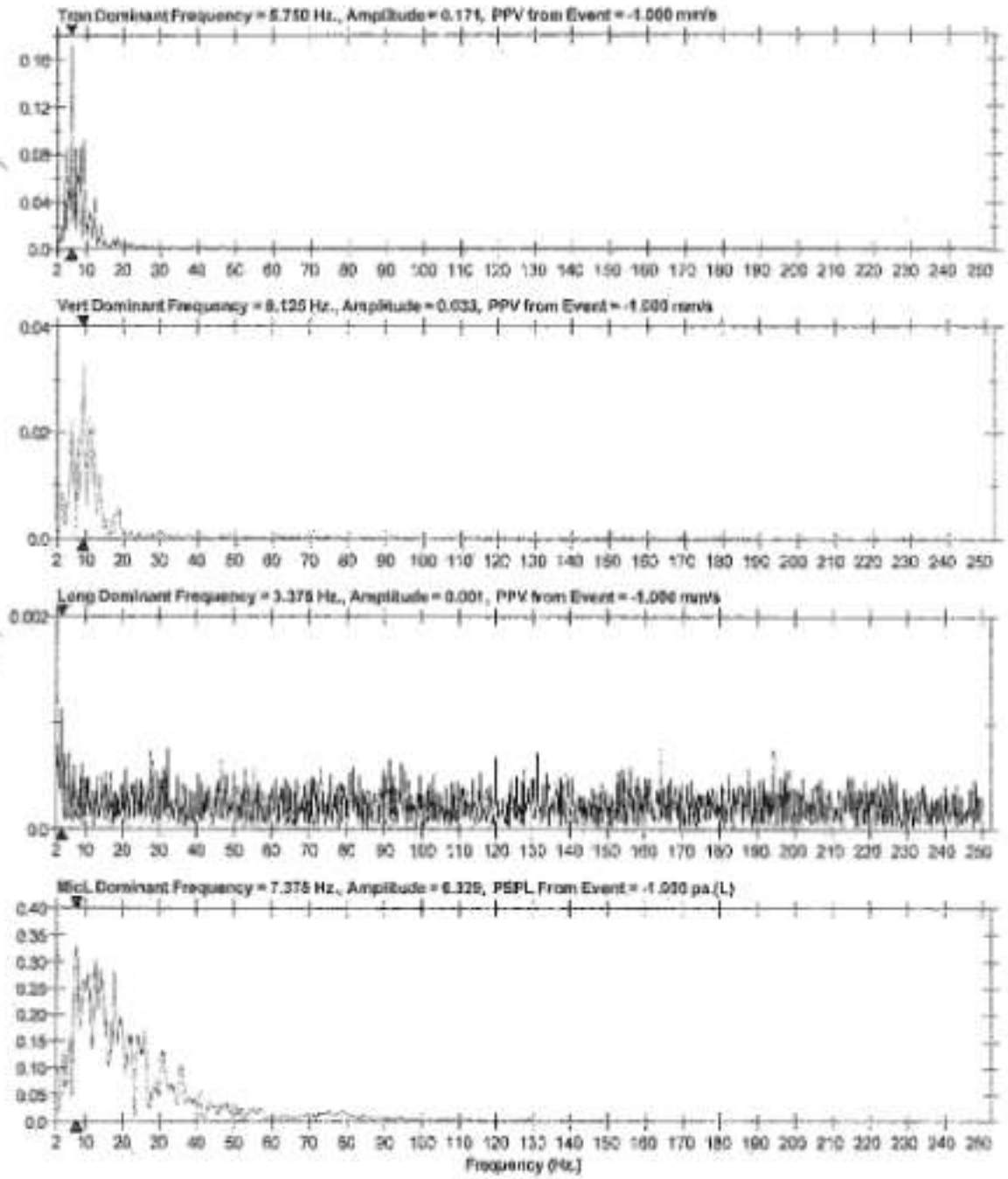
Date/Time	Tran at 13:57:52 Dec 25, 2024
Trigger Source	Geo: 0.627 mm/s, Mic: 70.96 pa (L)
Range	Geo: 254.0 mm/s
Record Time	5.0 sec at 1024 sps
Operator/Setup:	Operator/TSL O MMB

Serial Number	UM21128 V 10-90DC Micromate iSEE
Battery Level	3.6 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	ON GROUND SURFACE
Client:	TATA STEEL PVT LTD
User Name:	BLACK DIAMOND EXPLOSIVES PVTLTD
General:	KATANATI IRON MINES

Extended Notes
Recrded at 152 meter back side from the blasting face.



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Event Report

Kadarmahi RL-728

Date/Time	Long at 13:49:36 December 21, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241221134936.IDFW

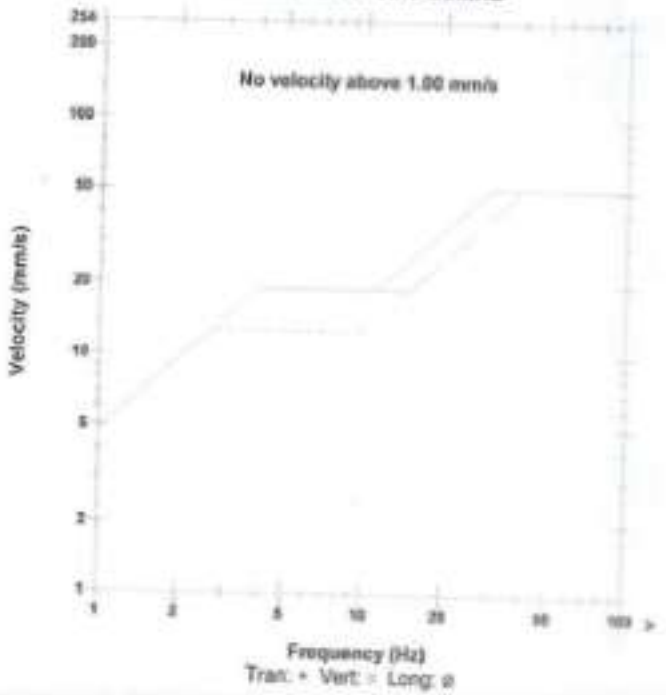
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

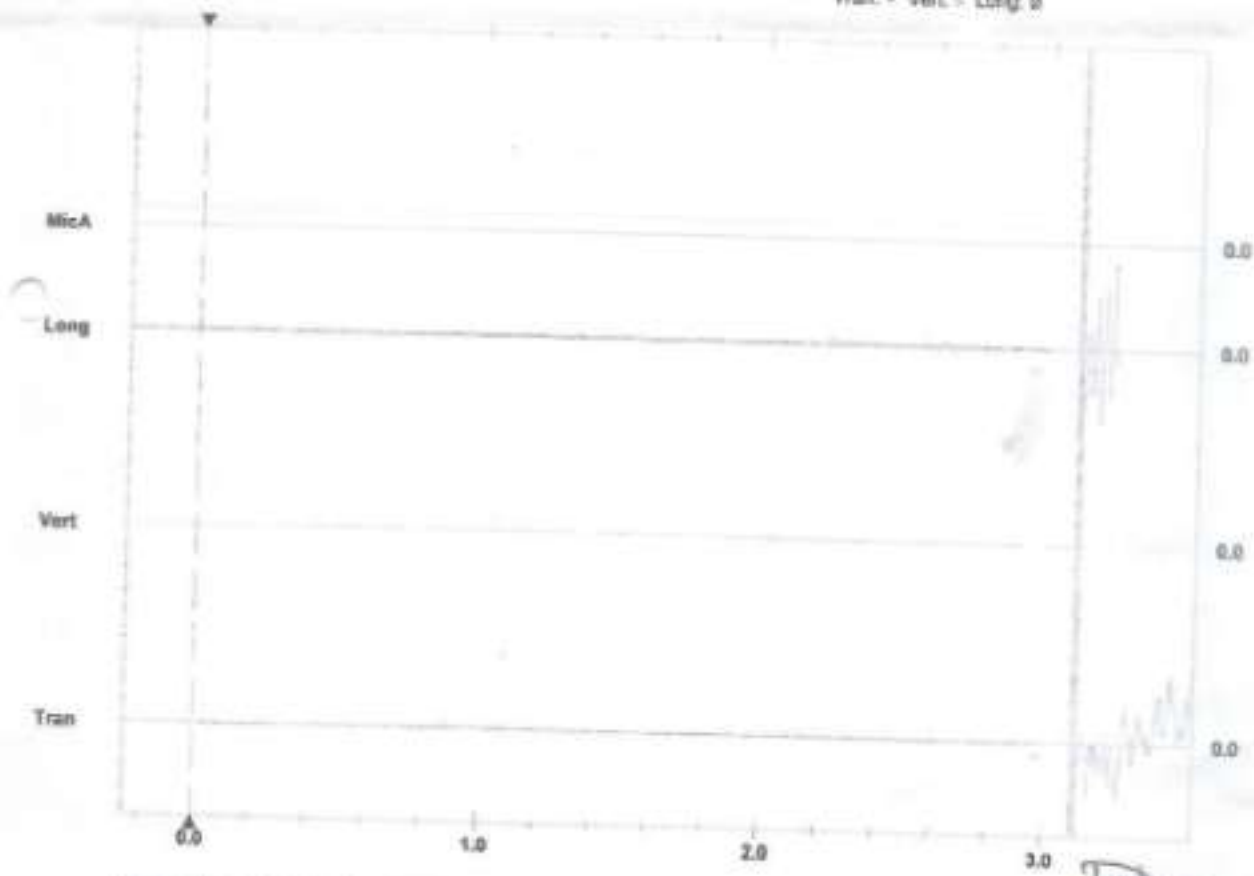
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.213	0.279	0.599	mm/s
ZC Freq	64	64	73	Hz
Time (Rel. to Trig)	0.420	2.229	2.236	sec
Peak Acceleration	0.016	0.016	0.035	g
Peak Displacement	0.003	0.001	0.003	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 0.616 mm/s at 2.230 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: December 23, 2024 (V 10.72 - 10.72.1)

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For IDL Explosives Ltd
Signatory

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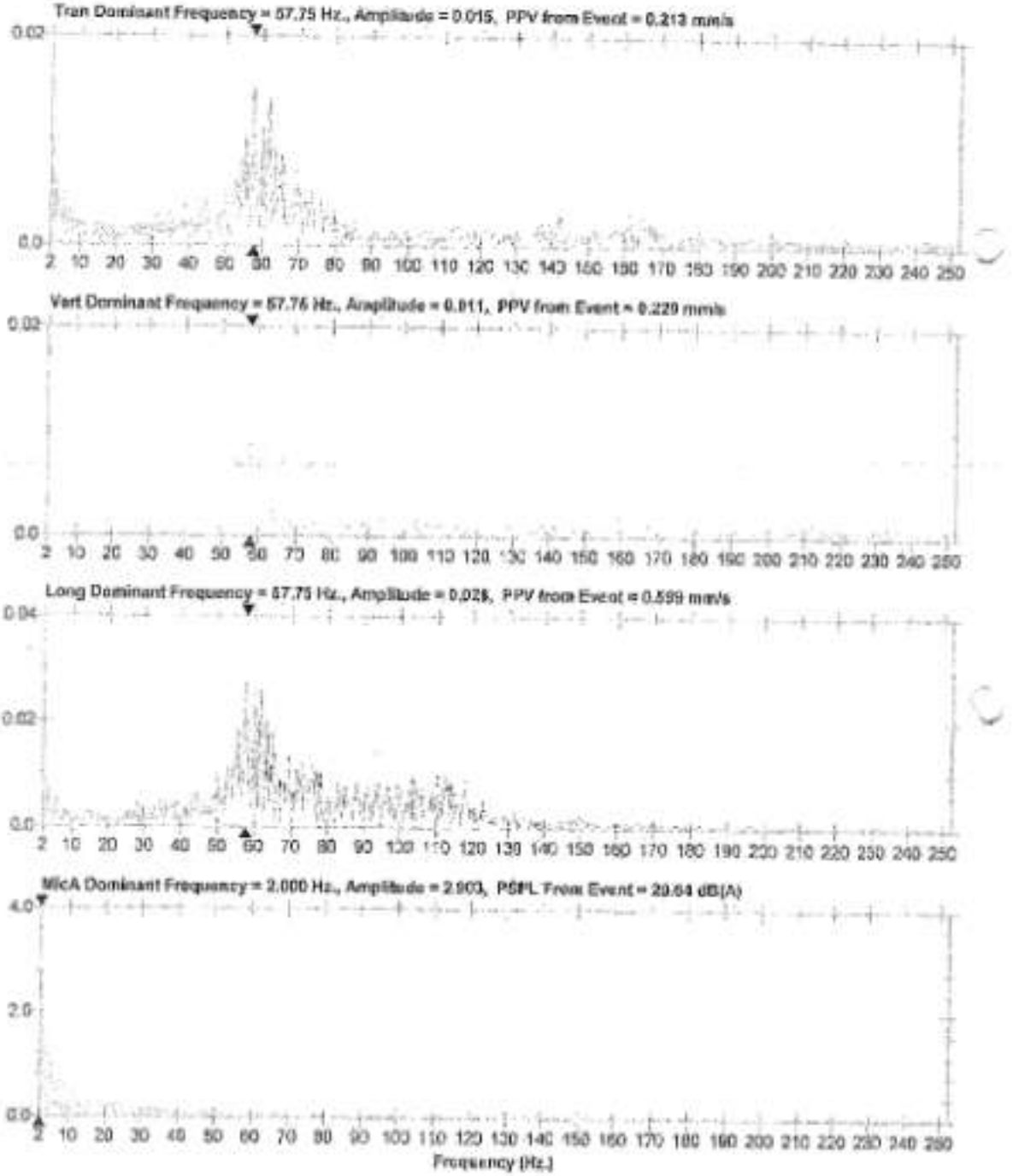
FFT Report

Date/Time	Long at 13:49:36 December 21, 2024	Serial Number	UM15576 V 10-6CFB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	Battery Level	3.9 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15576_20241221134936.IDFW
Operator/Setup:	Operator/factory MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General



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Event Report

Date/Time	Tran at 14:17:05 December 20, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL MMB

Serial Number	UM21129 V 10-00GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

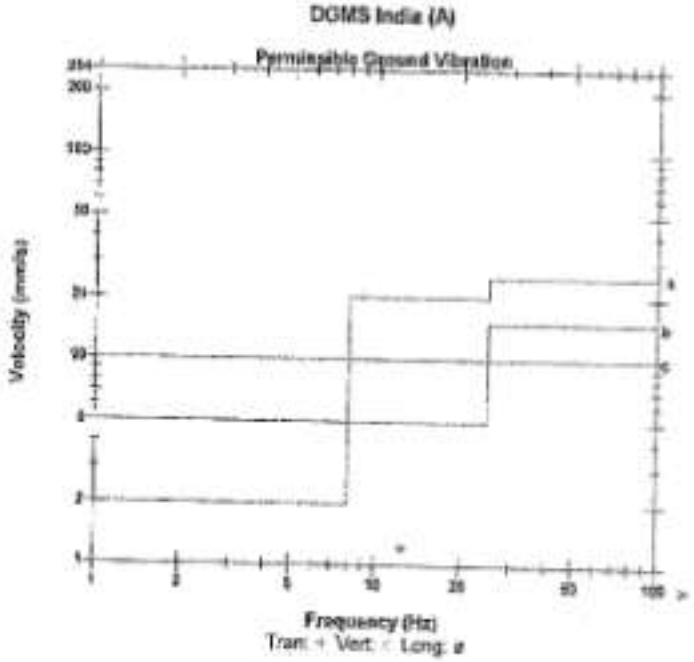
Notes

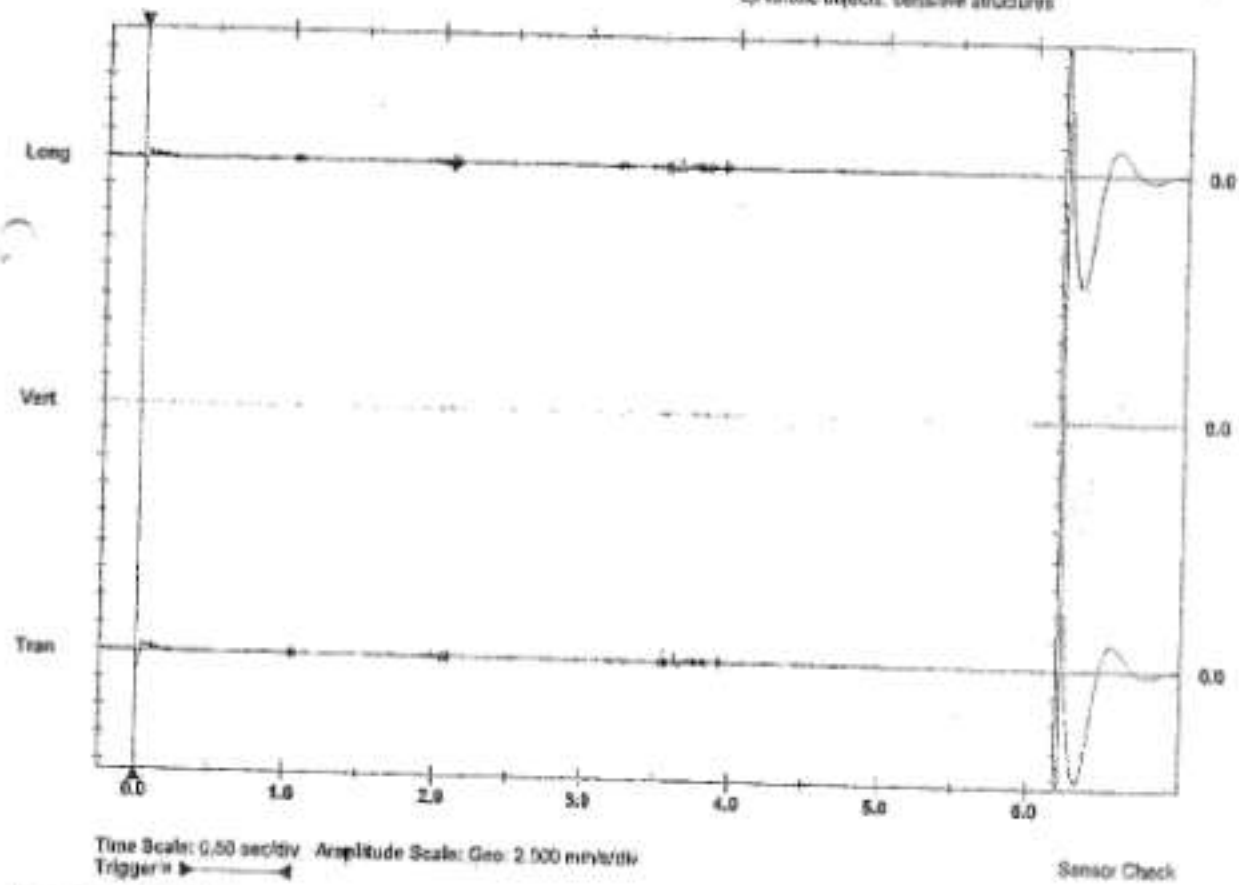
Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face.

	Tran	Vert	Long	
PPV	1.214	0.238	0.851	mm/s
ZC Freq	12	85	13	Hz
Time (Rel. to Trig)	0.000	2.088	0.010	sec
Peak Acceleration	0.039	0.016	0.039	g
Peak Displacement	0.014	0.000	0.006	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.4	4.5	4.4	

Peak Vector Sum 1.485 mm/s at 0.010 sec





```
POST /ipp/print HTTP/1.1
Connection: Keep-Alive
Content-Type: application/ipp
User-Agent: Windows Internet Print Provider
Content-Length: 653
Host: localhost

●●●G♦attributes-charset♣utf-8Httributes-natural-language♣en-inEprinter-uri♦ipp
```


```
●●●G♦attributes-charset♣utf-8Httributes-natural-language♣en-inEprinter-uri♦ipp

Host: localhost
Content-Length: 653
User-Agent: Windows Internet Print Provider
Content-Type: application/ipp
Connection: Keep-Alive
POST /ipp/print HTTP/1.1
```

Instantel

FFT Report

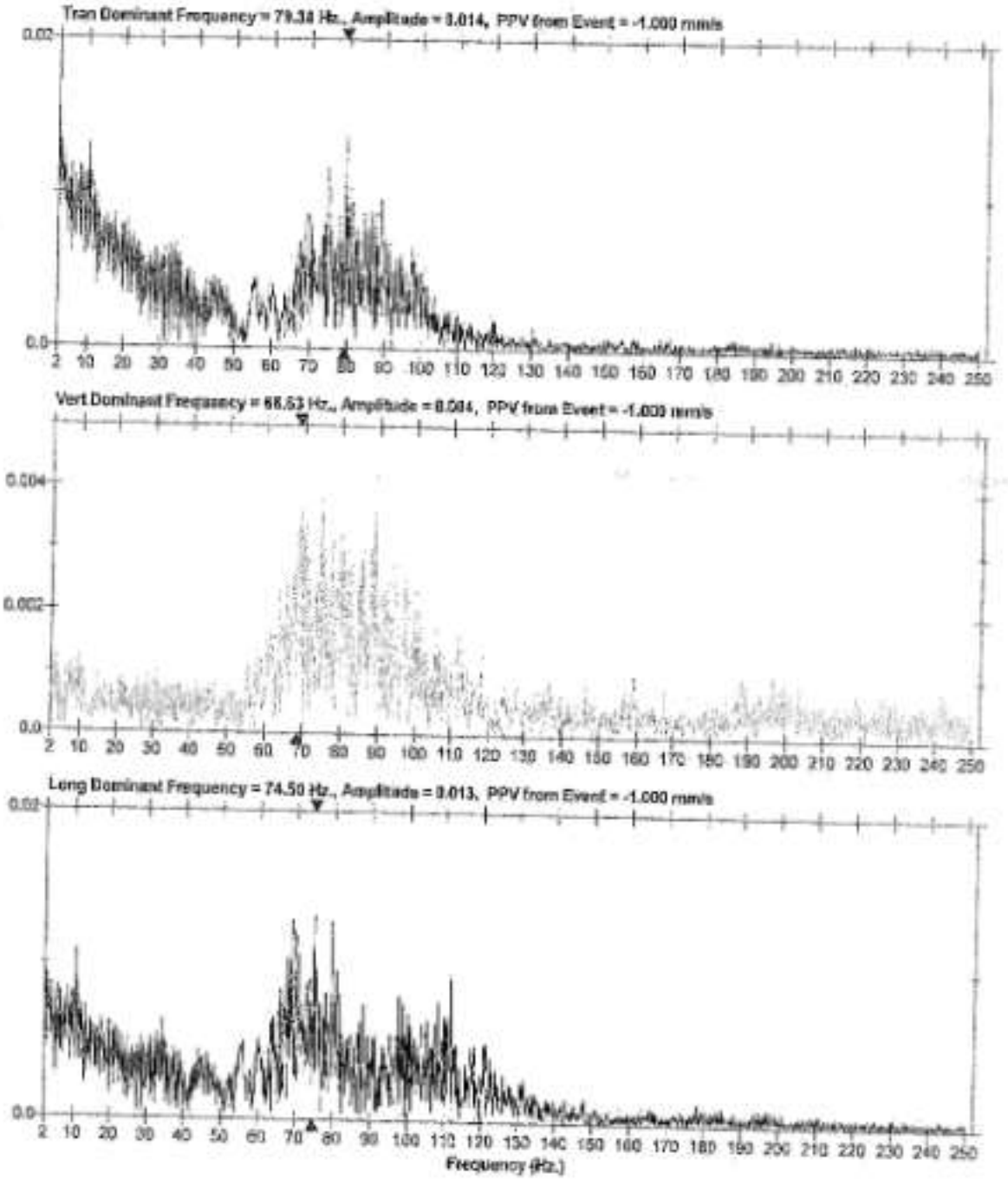
Date/Time	Tran at 14:17:08 December 22, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL,MMB

Serial Number	UM21129 V 10-90GC Micromate IBEE
Battery Level	3.7 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face.



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Event Report

Date/Time	Tran at 13:39:34 December 20, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241220133934.IDFW

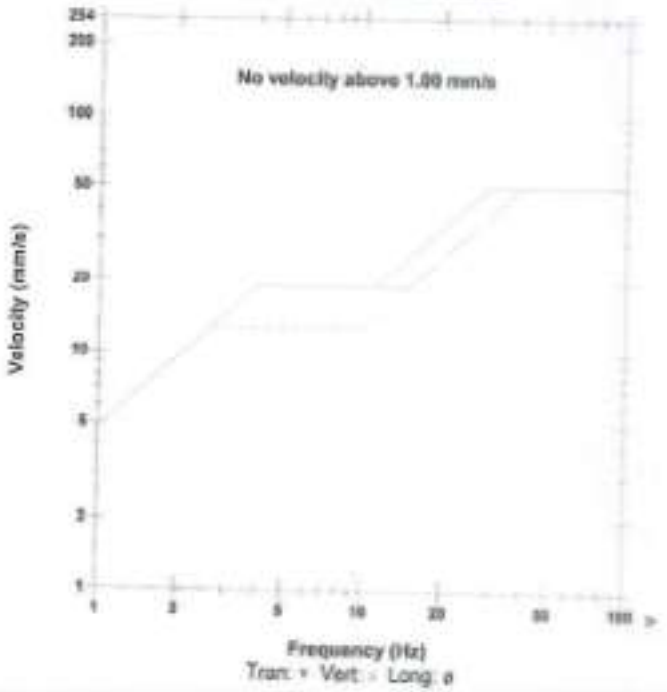
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

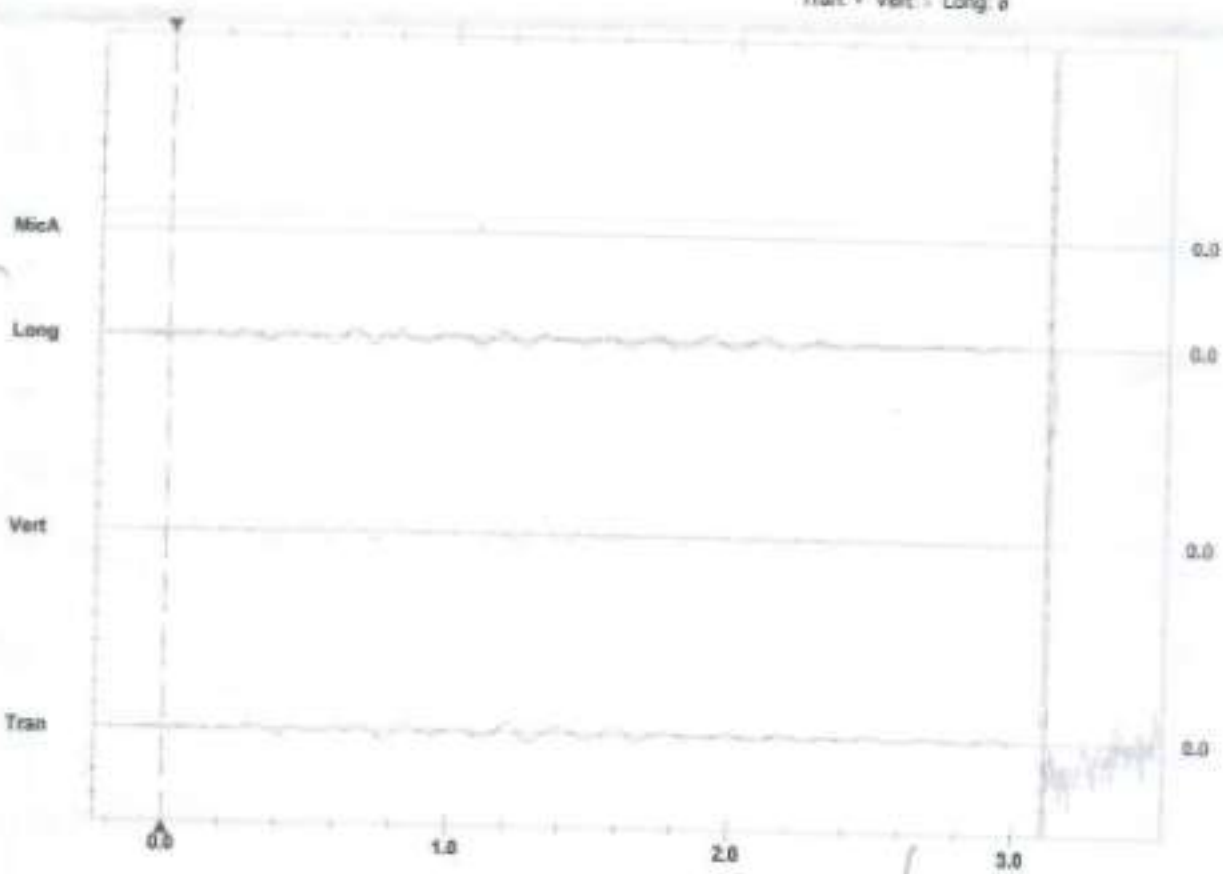
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.930	0.906	0.765	mm/s
ZC Freq	6.2	7.0	9.1	Hz
Time (Rel. to Trig)	1.210	0.796	0.726	sec
Peak Acceleration	0.018	0.013	0.020	g
Peak Displacement	0.023	0.019	0.016	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.2	

Peak Vector Sum 1.100 mm/s at 0.582 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 60.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

Printed: December 21, 2024 (V 10.72 - 10.72.1)

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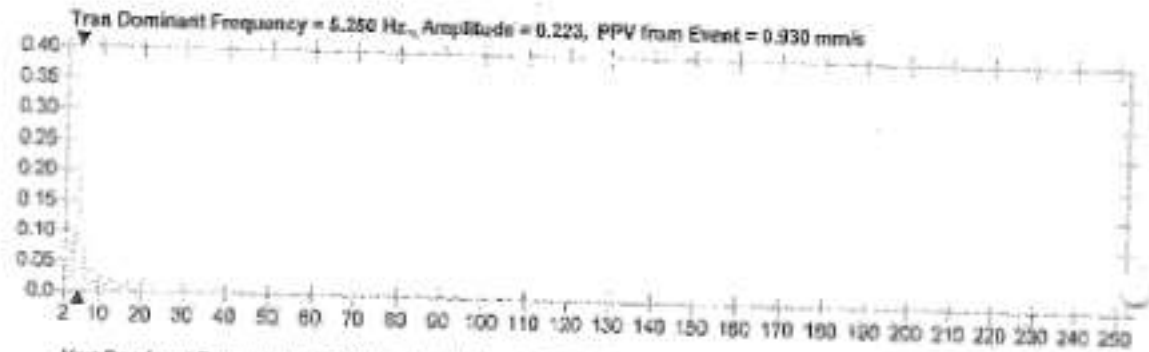
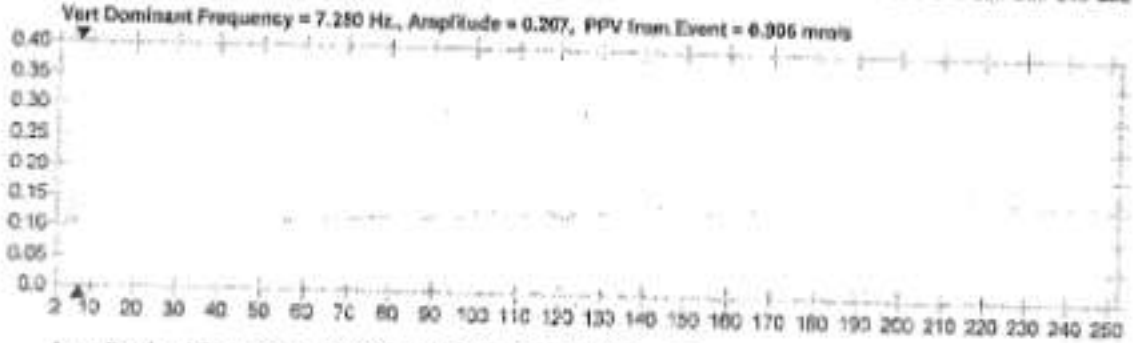
FFT Report

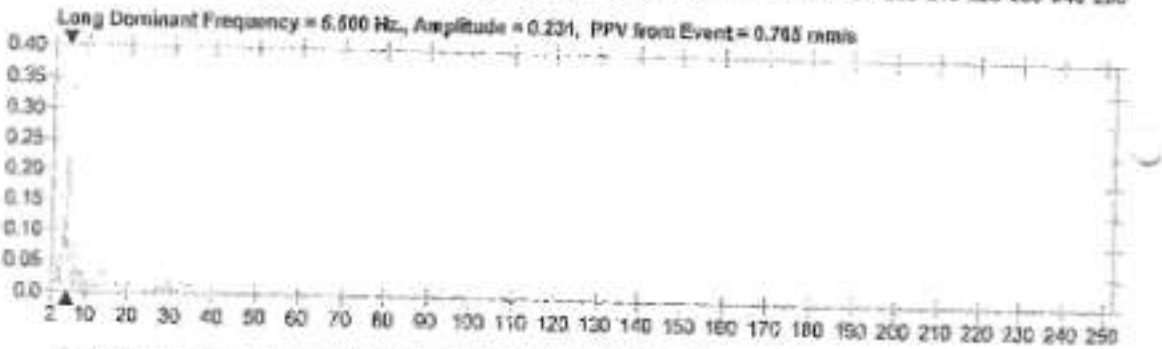
Date/Time	Tran at 13:39:34 December 20, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

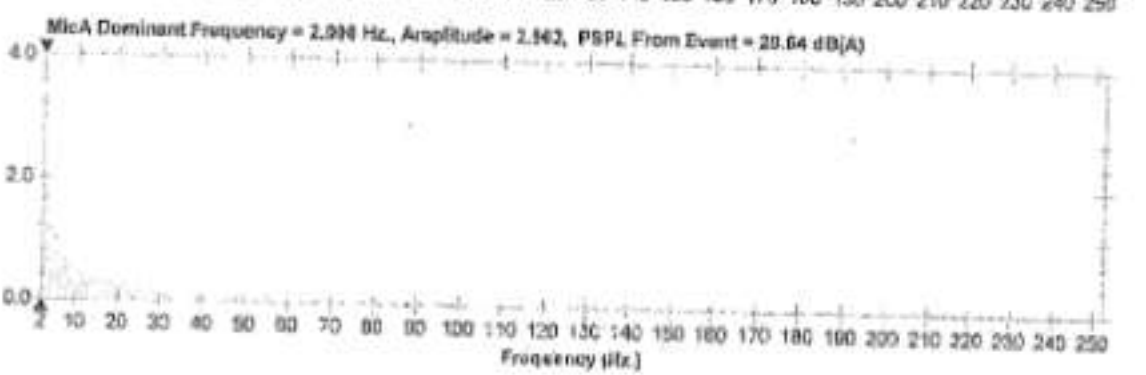
Serial Number	UM16576 V 10-99FB Micl/Unute ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM16576_20241220133934.IDFW

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:









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Event Report

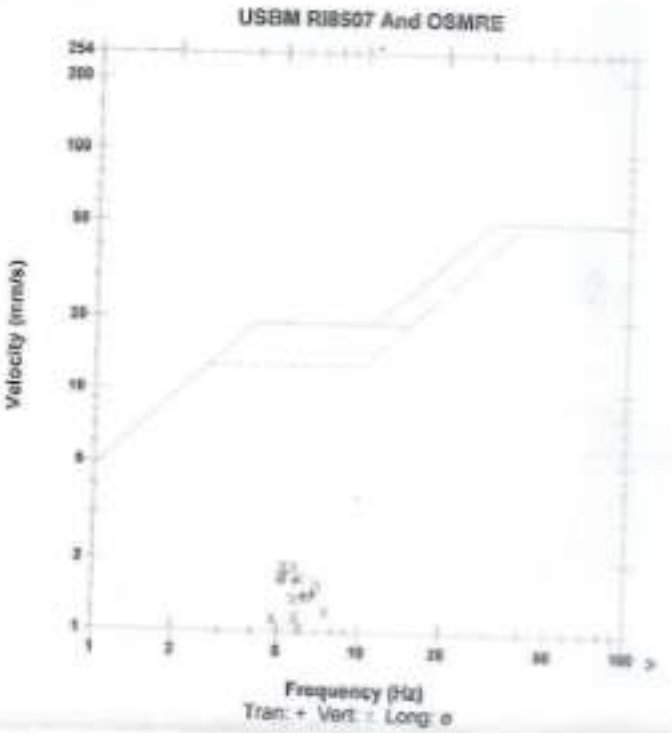
Date/Time	Tran at 14:02:49 December 20, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory MMB

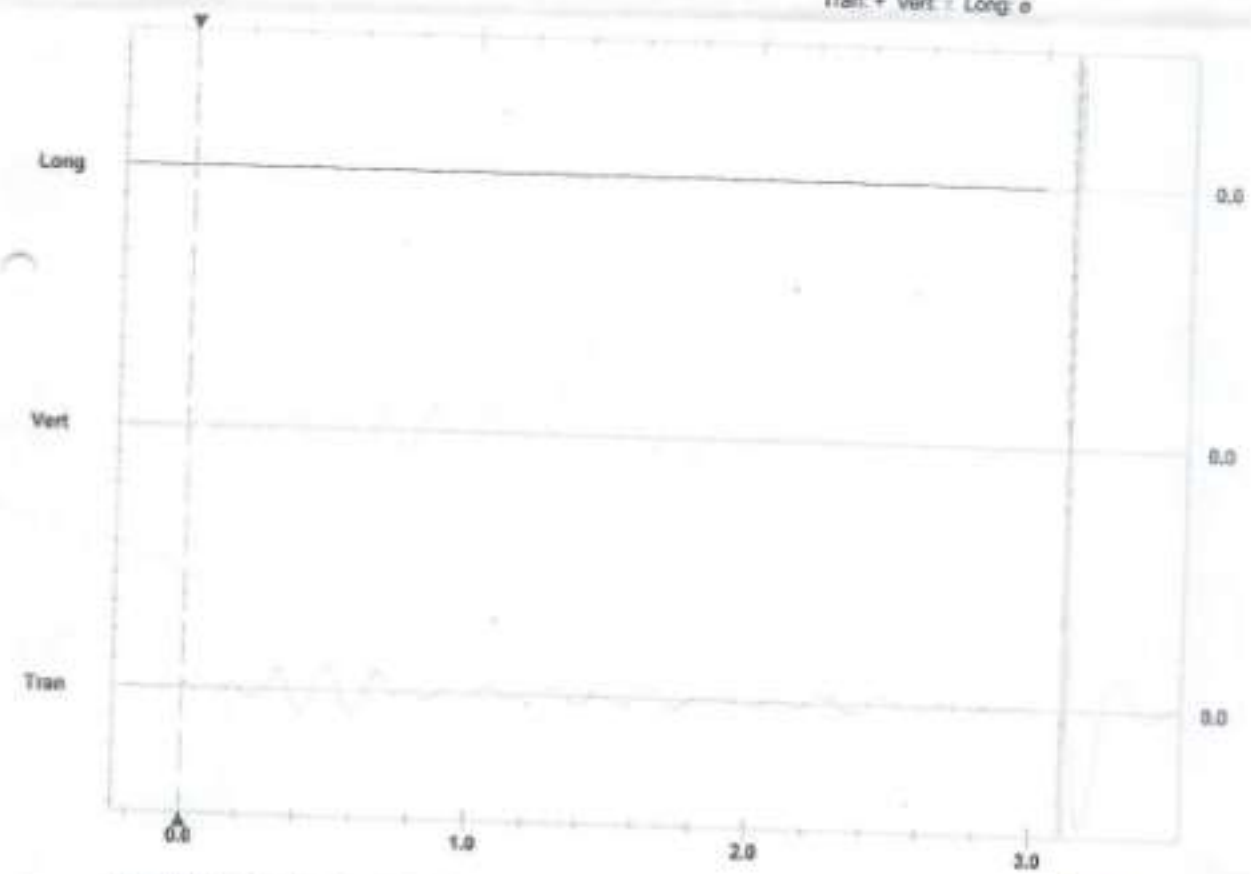
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20241220140249.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.758	1.892	0.079	mm/s
ZC Freq	5.3	5.2	N/A	Hz
Time (Rel. to Trig)	0.499	0.954	1.344	sec
Peak Acceleration	0.018	0.017	0.005	g
Peak Displacement	0.052	0.055	0.018	mm
Sensor Check	Passed	Passed	Check	
Frequency	7.3	7.7	1024.0	Hz
Overswing Ratio	3.3	3.0	0.0	

Peak Vector Sum 1.953 mm/s at 0.861 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

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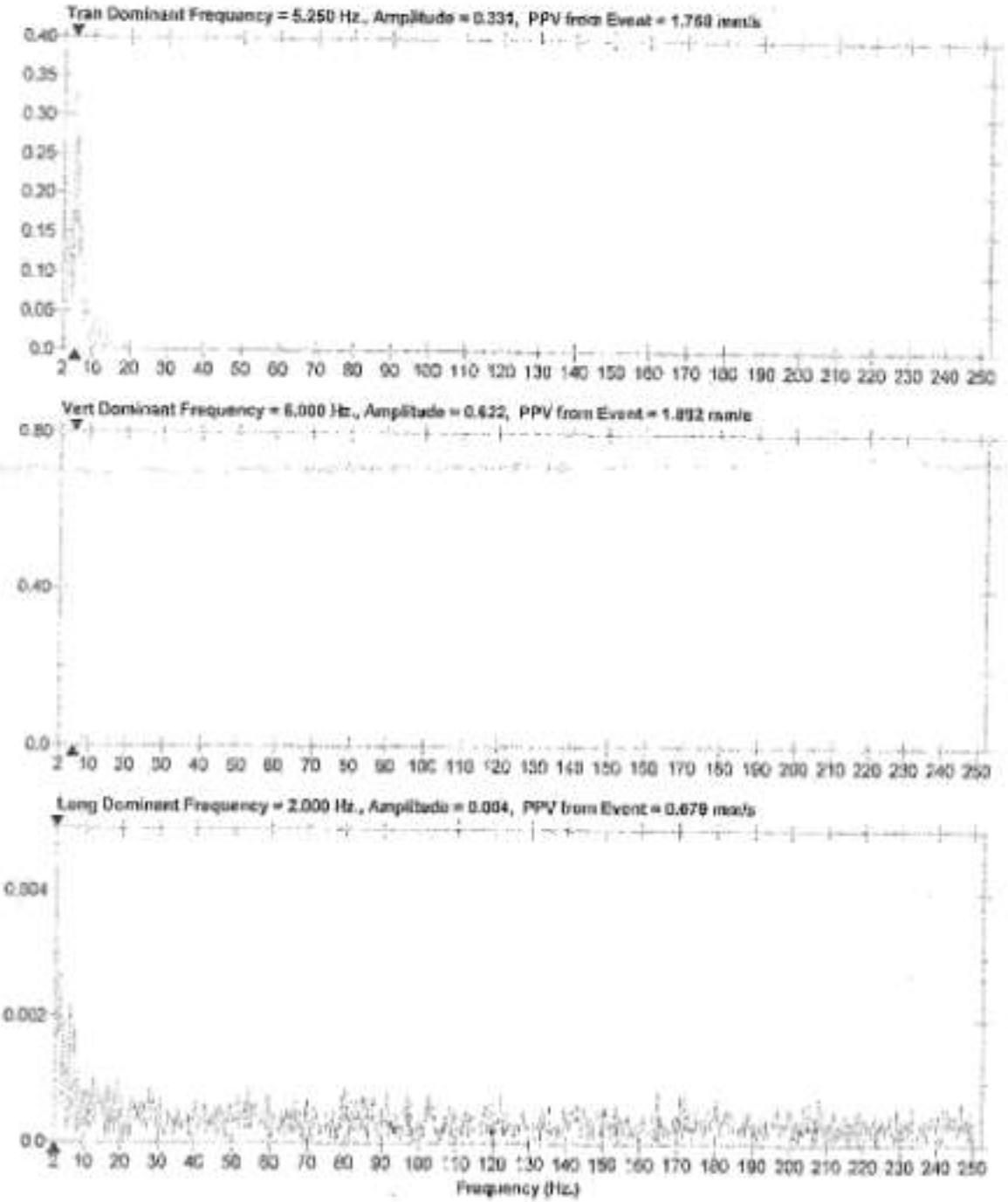
FFT Report

Date/Time	Tran at 14:02:49 December 20, 2024
Trigger Source	Geo: 0.330 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operation/Setup:	Operator/factory:MMB

Serial Number	UM6253 V 10-78 Micromate IIBEE
Battery Level	3.8 Volts
Unit Calibration	February 25, 2024 by USS New Delhi
File Name	UM6253_20241220140249.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:55:01 December 16, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL.MMB

Serial Number	UM21129 V 10.90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

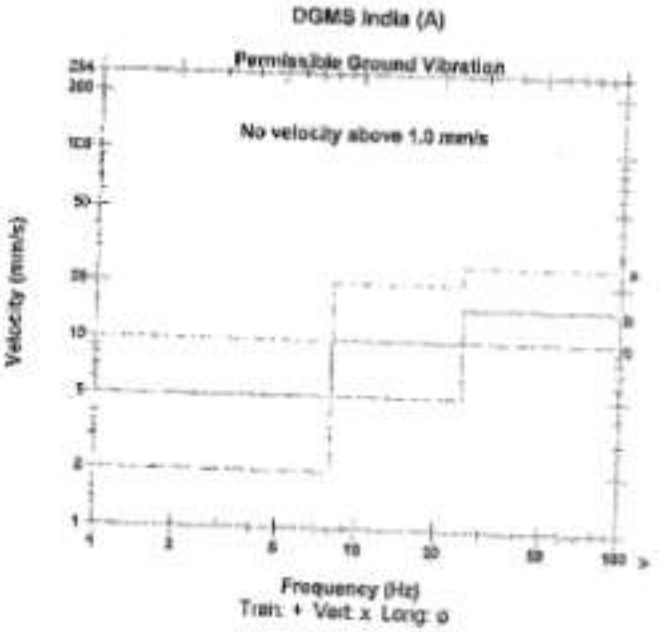
Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face.

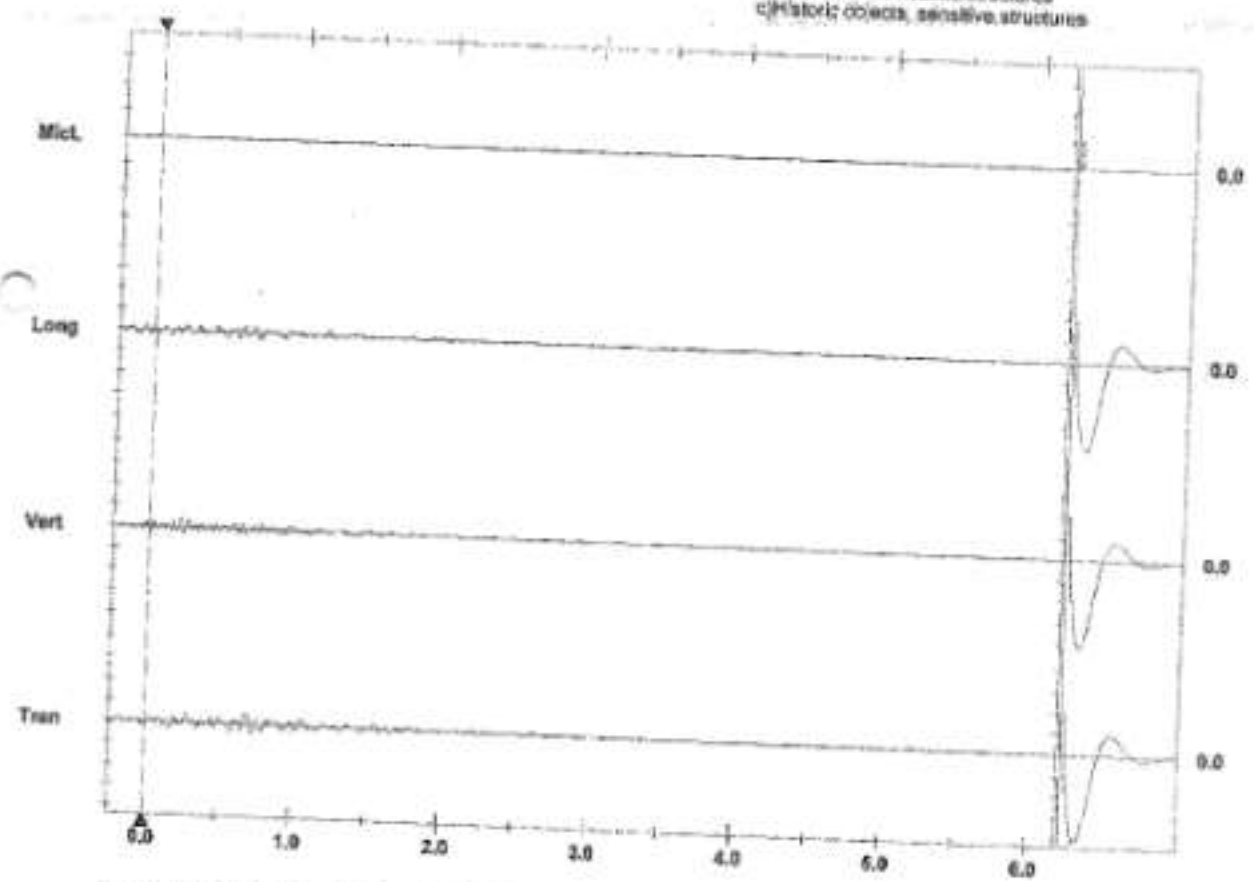
Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	>100 Hz
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.930	0.894	0.701	mm/s
ZC Freq	11	18	13	Hz
Time (Rel. to Trig)	0.702	0.212	0.718	sec
Peak Acceleration	0.017	0.012	0.012	g
Peak Displacement	0.012	0.007	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.3	4.8	4.5	

Peak Vector Sum 0.986 mm/s at 0.700 sec
N/A: Not Applicable



a)Industrial Buildings
b)Domestic houses/structures
c)Historic objects, sensitive structures



Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger = ▶ ◀

Sensor Check

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FFT Report

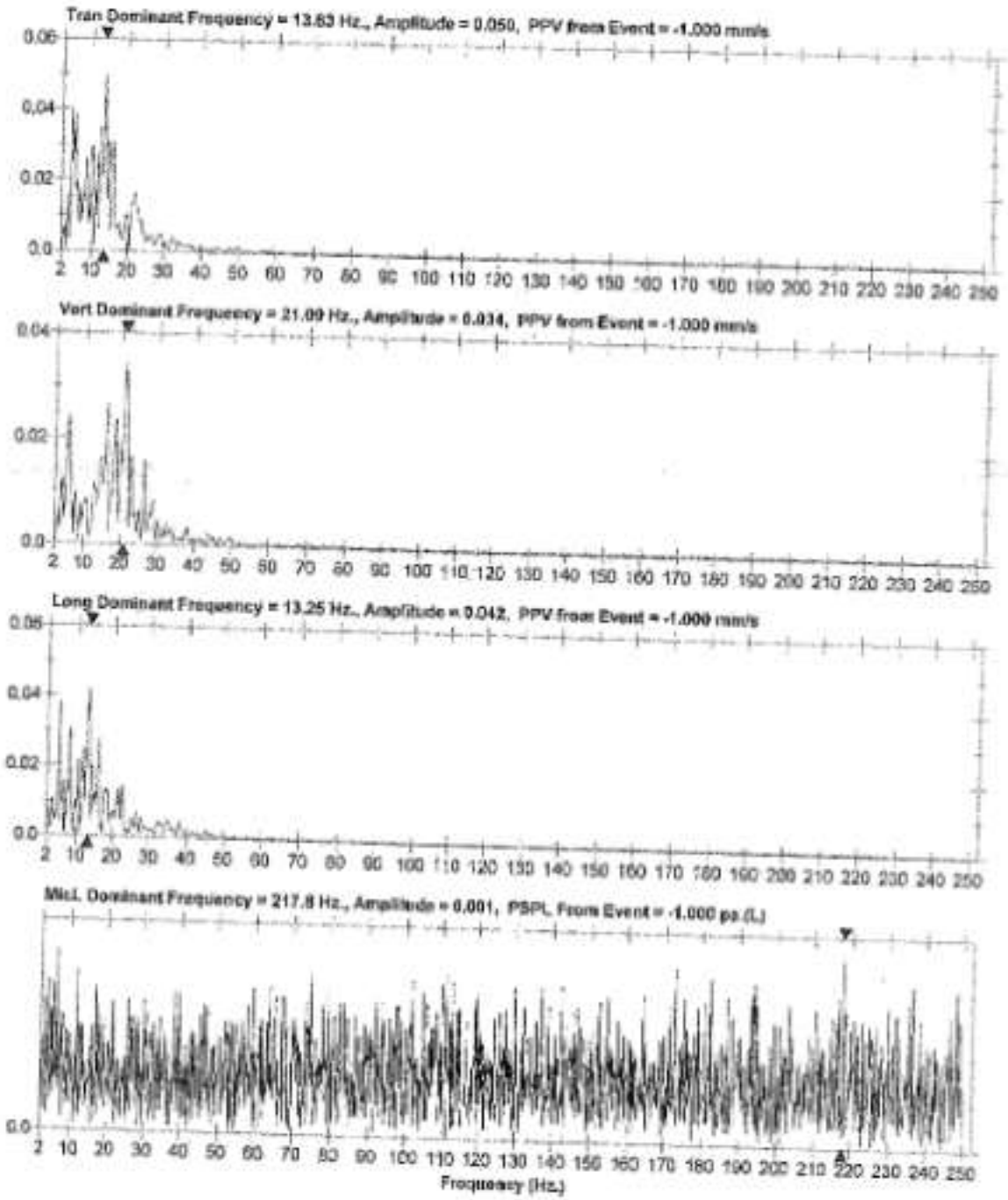
Date/Time	Vert at 13:55:01 December 16, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.98 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL.MM8

Serial Number	UM21129 V 10-00GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 150 meter back side of the blasting face



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Event Report

Date/Time	Long at 13:44:17 December 16, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory,MNB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241216134417.IDFW

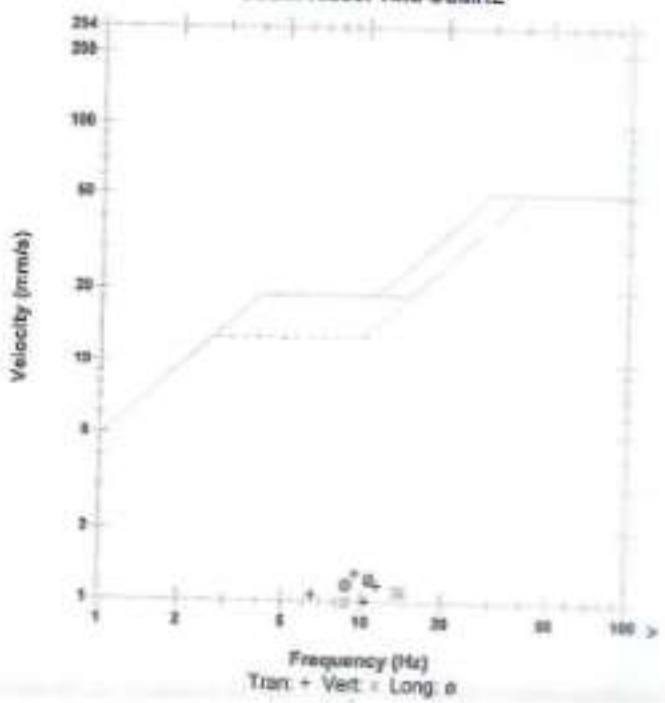
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

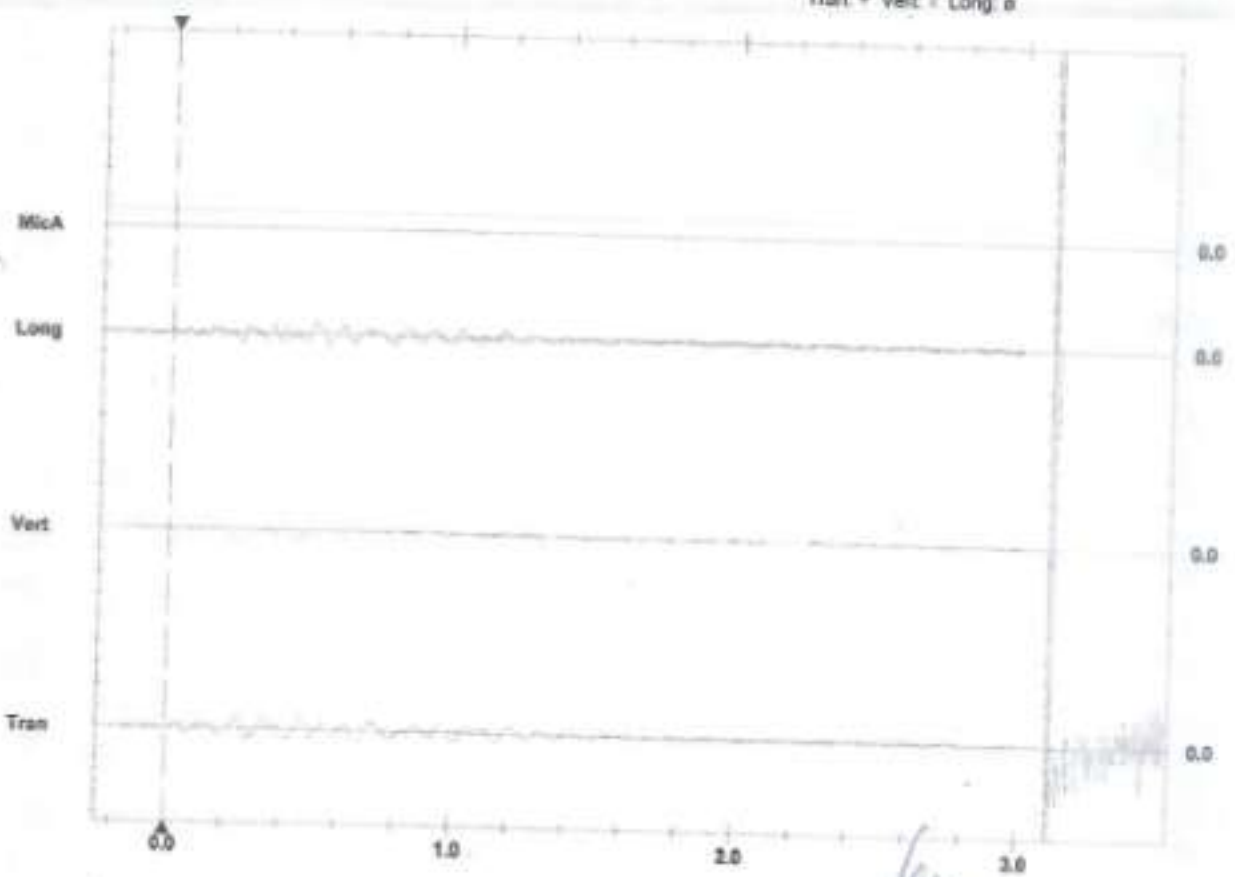
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.301	1.119	1.245	mm/s
ZC Freq	9.5	14.2	10.7	Hz
Time (Rel. to Trig)	0.476	0.500	0.552	sec
Peak Acceleration	0.018	0.016	0.026	g
Peak Displacement	0.016	0.016	0.015	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.3	

Peak Vector Sum 1.465 mm/s at 0.476 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger ▸ ◂

Sensor Check

Printed: December 17, 2024 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

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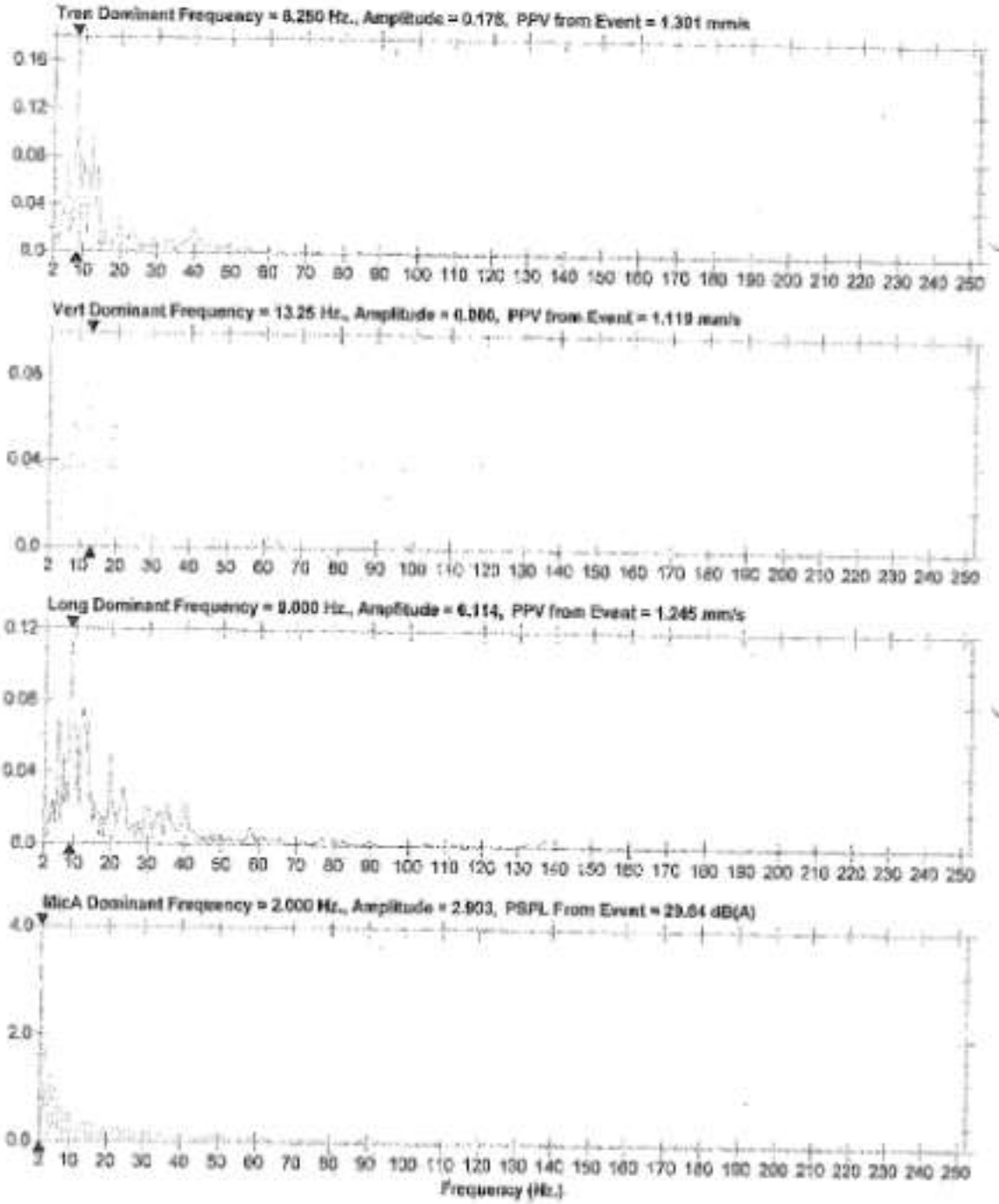
FFT Report

Date/Time	Long at 13:44:17 December 16, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory,MKB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 16, 2024 by UES New Delhi
File Name	UM15576_20241216134417.IDFW

Notes
Location: KTM / NM
Client: TATA STEEL LTD
User Name: IOL EXPLOSIVES LTD
General:



Instantel

Event Report

Date/Time	Tran at 14:25:54 December 14, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

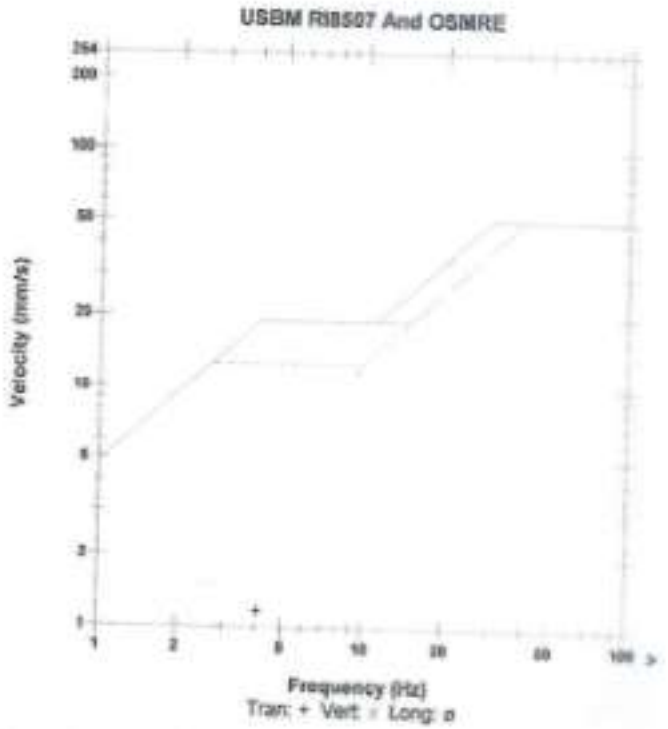
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241214142554.IDFW

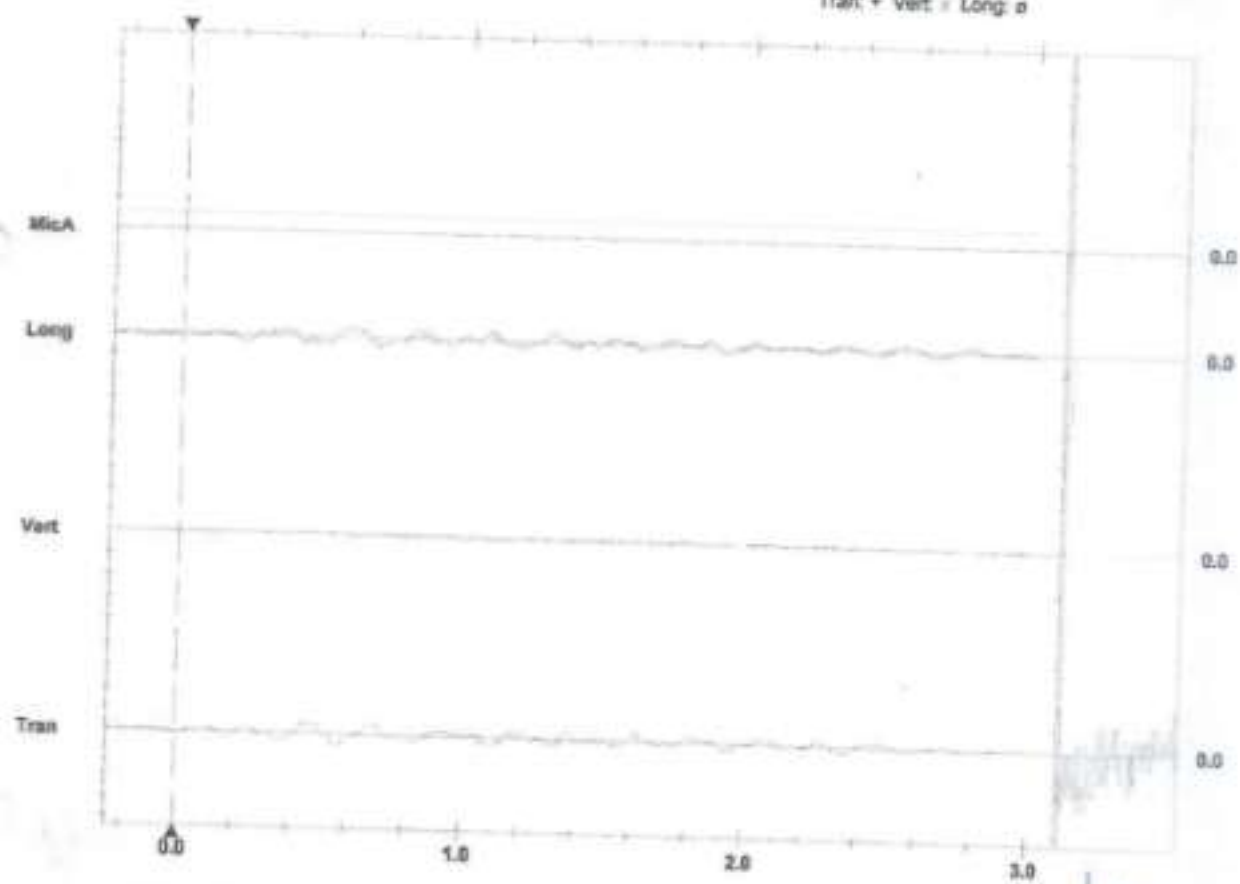
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.159	0.480	0.906	mm/s
ZC Freq	4.1	6.5	4.3	Hz
Time (Ref. to Trig)	0.573	0.813	0.605	sec
Peak Acceleration	0.010	0.010	0.015	g
Peak Displacement	0.031	0.010	0.035	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.2	

Peak Vector Sum 1.351 mm/s at 0.577 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: December 16, 2024 (V 10.72 - 10.72.1)

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for IDL Explosives Limited

Instantel

Event Report

Date/Time	Tran at 14:12:02 December 13, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241213141202.IDFW

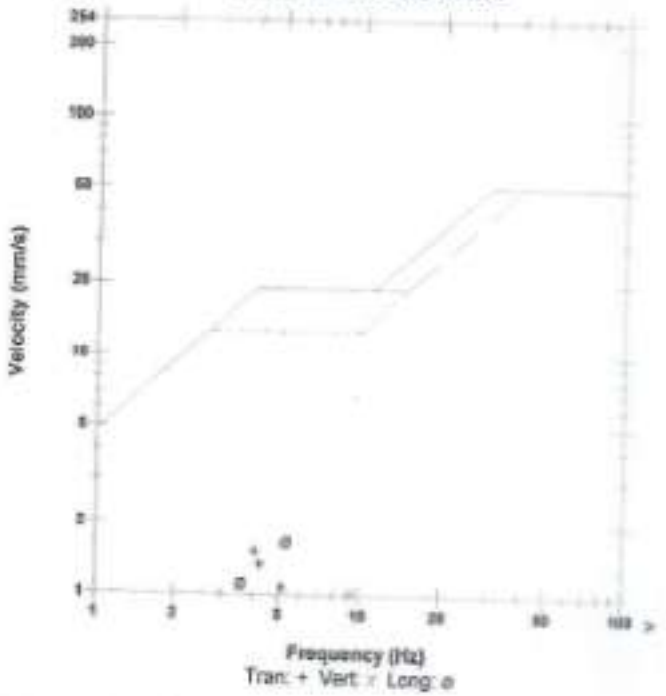
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

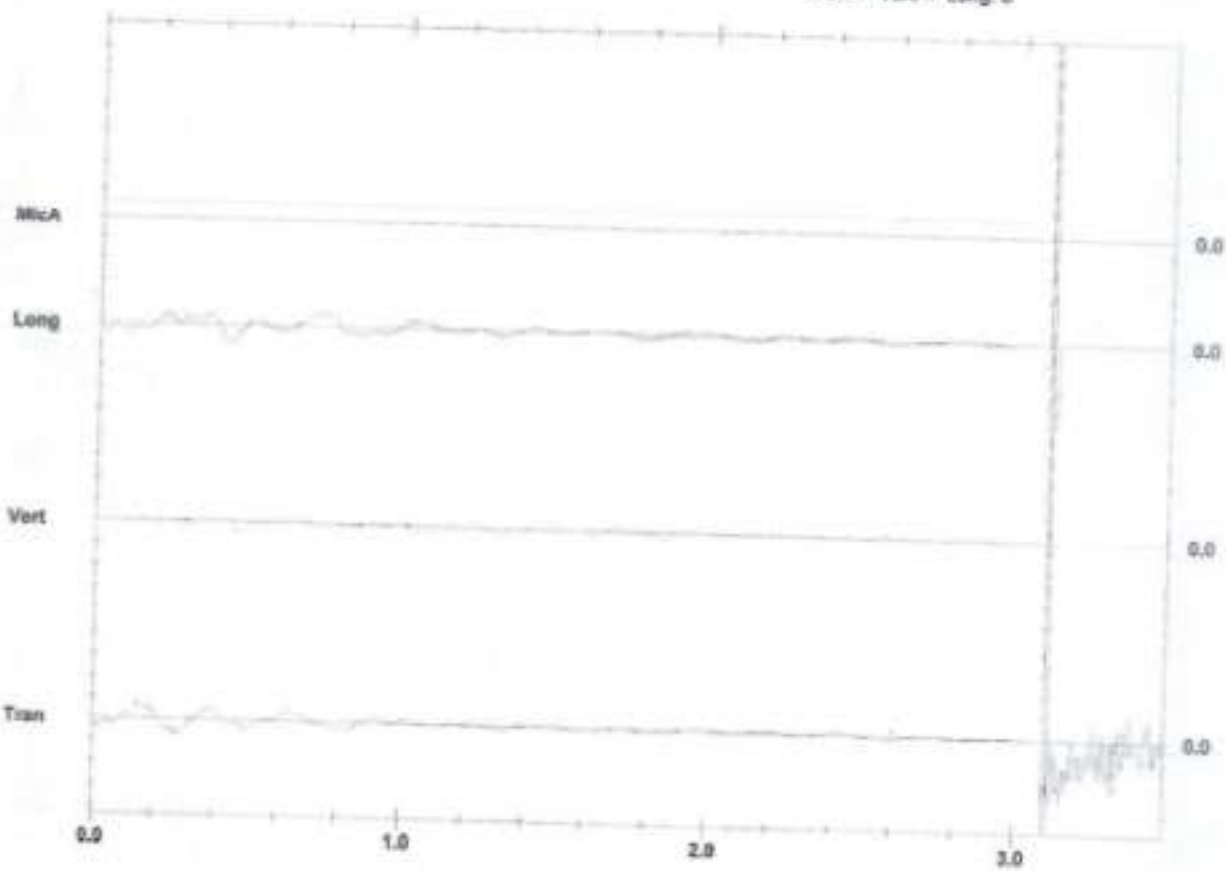
Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.513	1.033	1.687	mm/s
ZC Freq	4.0	9.4	5.3	Hz
Time (Rel. to Trig)	0.154	0.053	0.431	sec
Peak Acceleration	0.010	0.012	0.013	g
Peak Displacement	0.049	0.030	0.056	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 1.706 mm/s at 0.431 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div

Sensor Check

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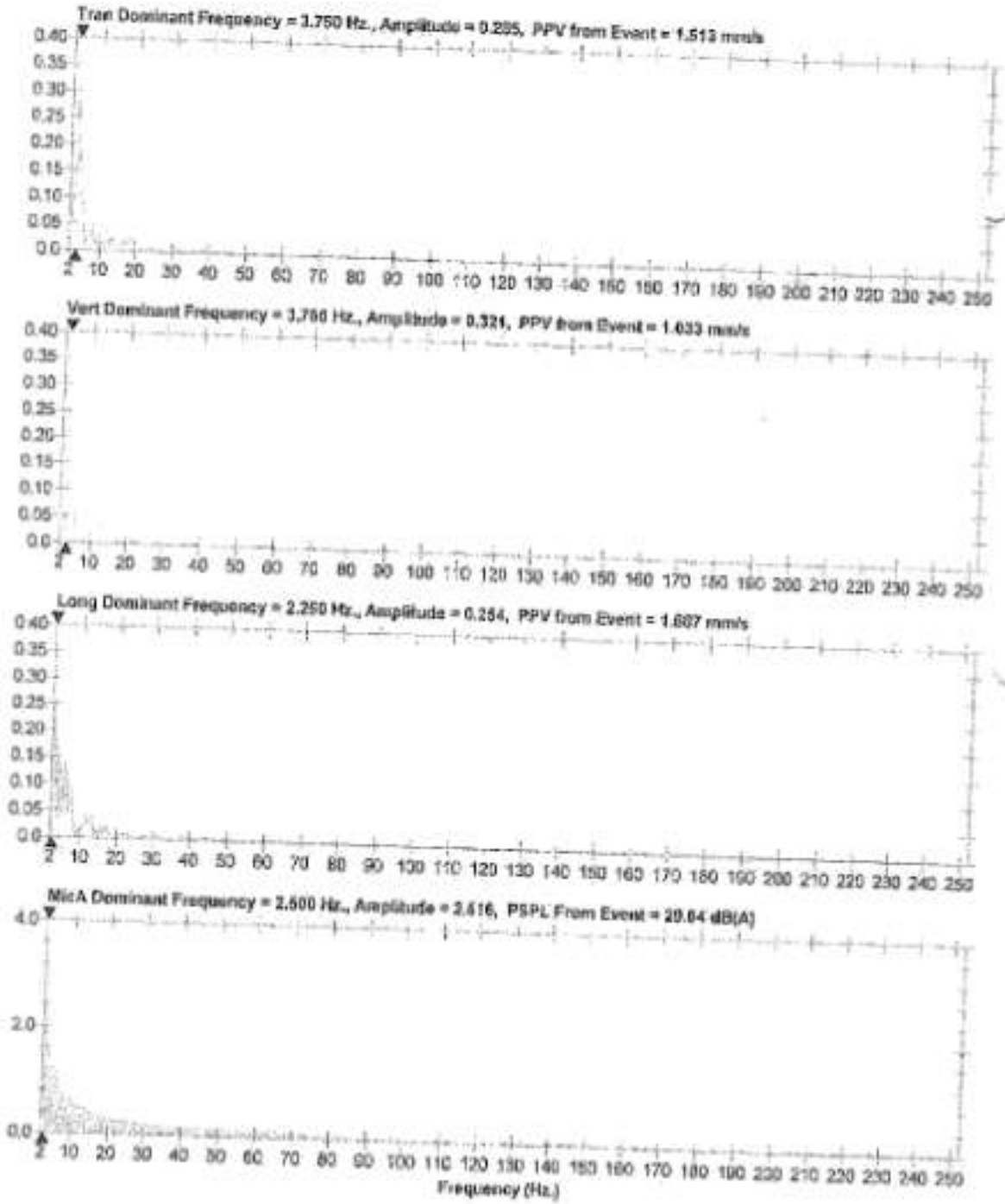
FFT Report

Date/Time	Tran at 14:12:02 December 13, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 650.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.IMB

Serial Number	UM15576 V 10-90F9 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241213141202.IDFW

Notes

Location: KTM / N58
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 12:58:08 Dec 12, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.98 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL.MM3

Serial Number	UM21129 V 10-60GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

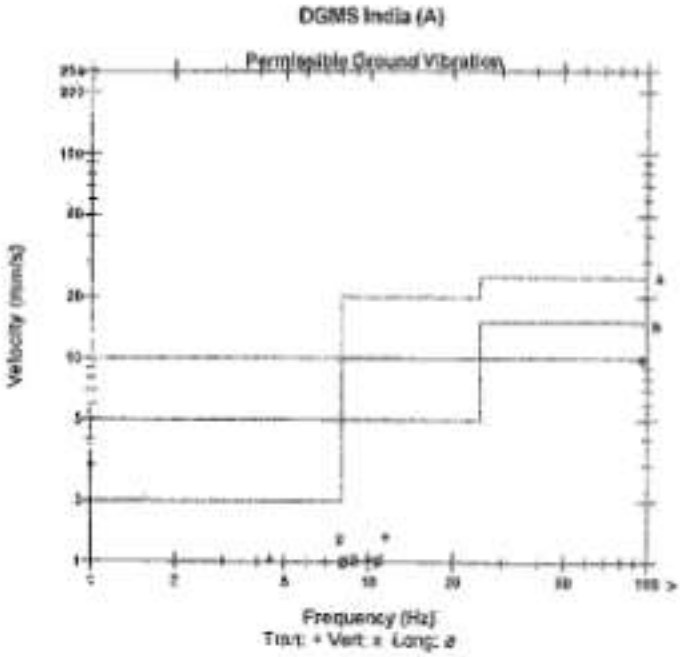
Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINES

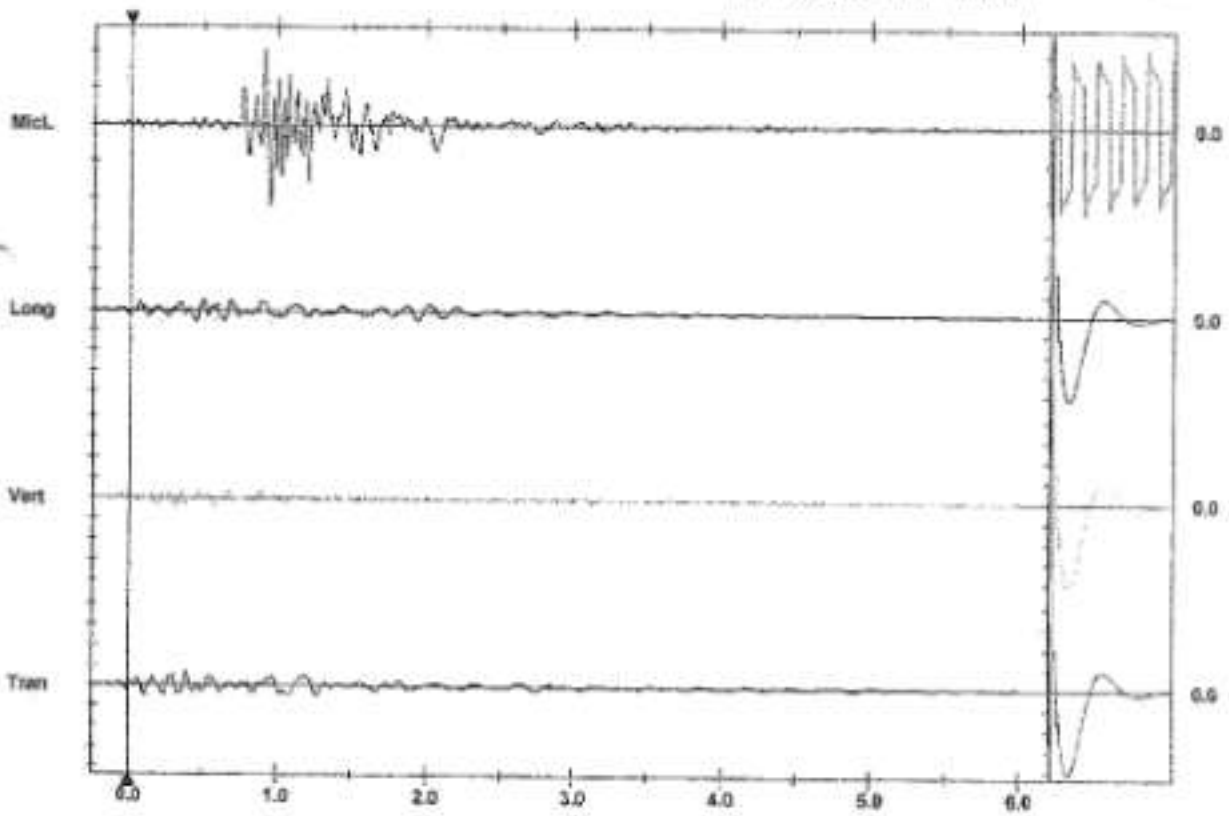
Extended Notes
Recorded at 150 meter back side of the blasting face.

Microphone	Linear Weighting
PSPL	11.06 pa.(L) at 0.562 sec
ZC Freq	12 Hz
Channel Test	Passed (Freq = 26.5 Hz Amp = 1294 mv)

	Tran	Vert	Long	
PPV	1.310	0.788	1.150	mm/s
ZC Freq	11	7.2	7.8	Hz
Time (Rel. to Trig)	0.400	0.595	0.452	sec
Peak Acceleration	0.025	0.014	0.015	g
Peak Displacement	0.037	0.016	0.027	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.5	Hz
Overswing Ratio	4.3	4.8	4.3	

Peak Vector Sum 1.328 mm/s at 0.450 sec





Time Scale: 0.50 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div
Trigger =

Sensor Check

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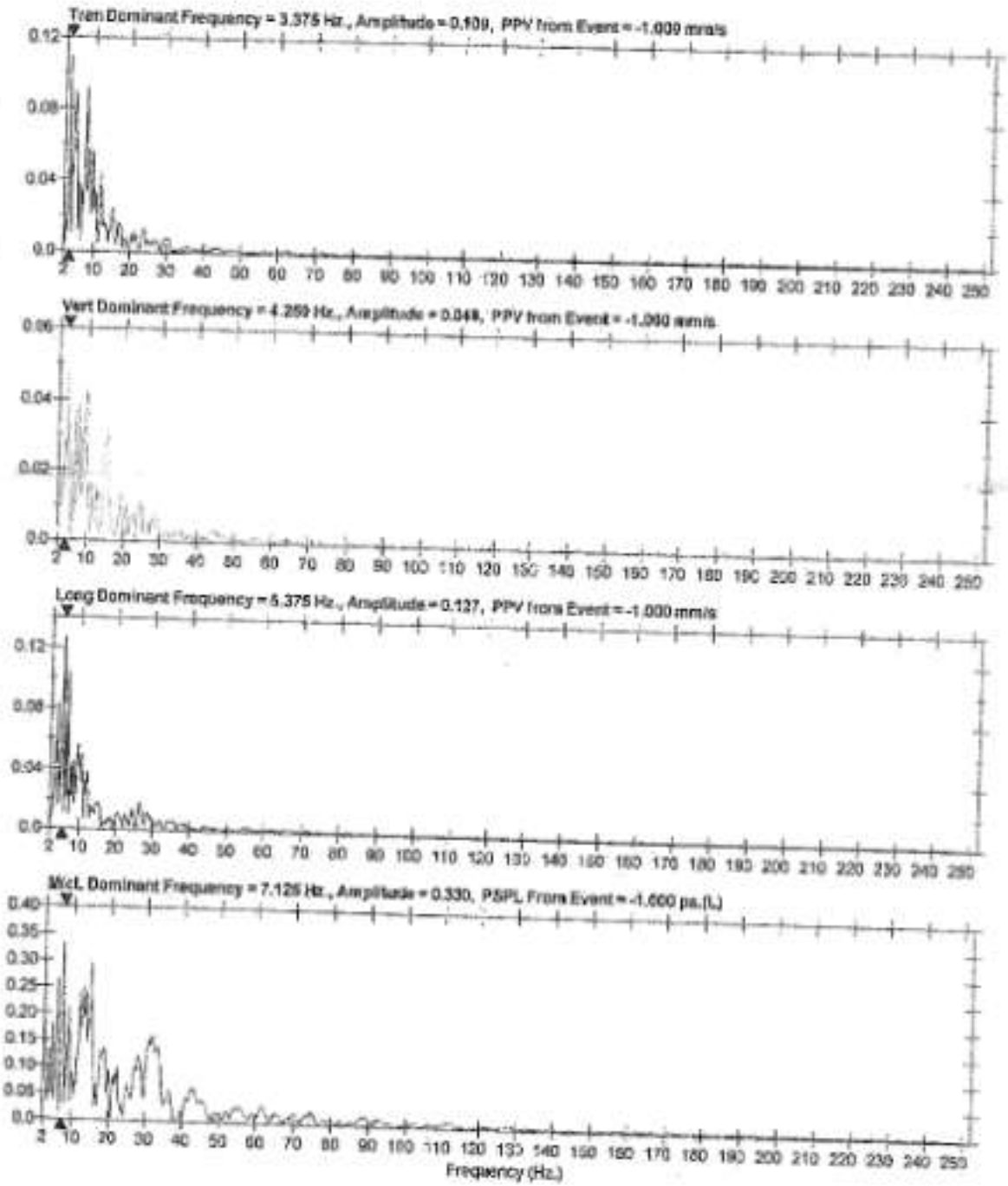
FFT Report

Date/Time	Long at 13:56:06 Dec 12, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	5.0 sec at 1024 sps
Operator/Setup:	Operator/TSL/MMB

Serial Number	UM21129 V 10-BDGC Micromate IDEE
Battery Level	3.7 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINES

Extended Notes
Recorded at 160 meter back side of the blasting face.



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Event Report

Date/Time	Tran at 13:48:59 December 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

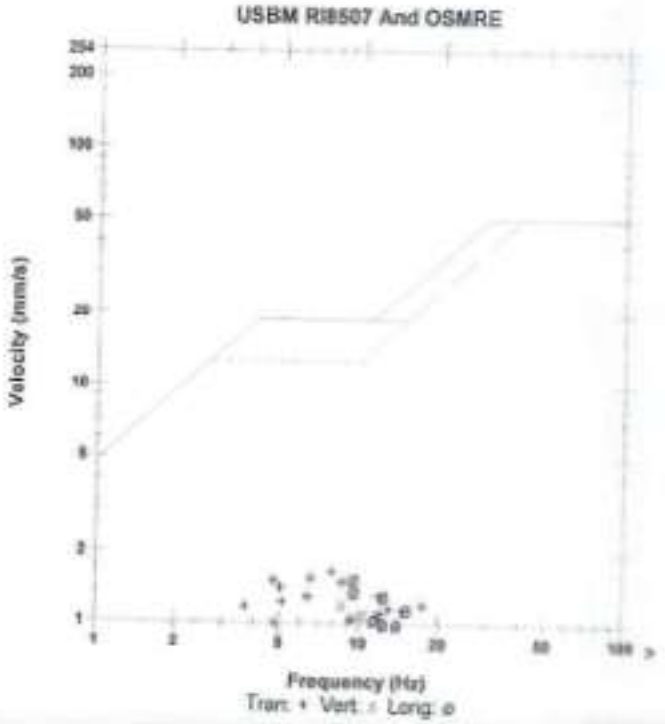
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241209134859.IDFW

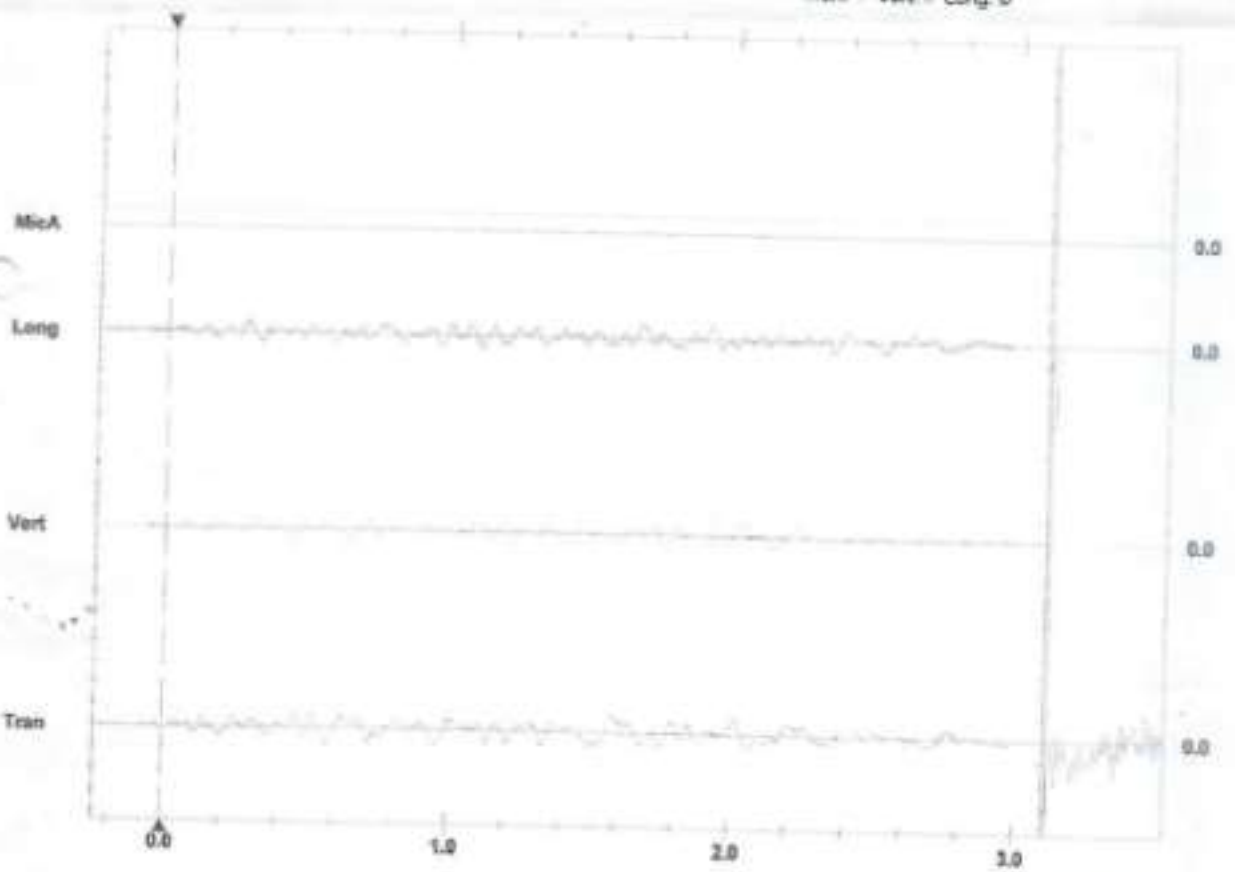
Notes
Location: KTM / NSM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.656	1.198	1.537	mm/s
ZC Freq	7.9	8.6	9.5	Hz
Time (Rel. to Trig)	0.584	2.042	1.672	sec
Peak Acceleration	0.023	0.020	0.020	g
Peak Displacement	0.045	0.023	0.025	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	3.9	4.1	4.0	

Peak Vector Sum 1.861 mm/s at 0.955 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Factory Check

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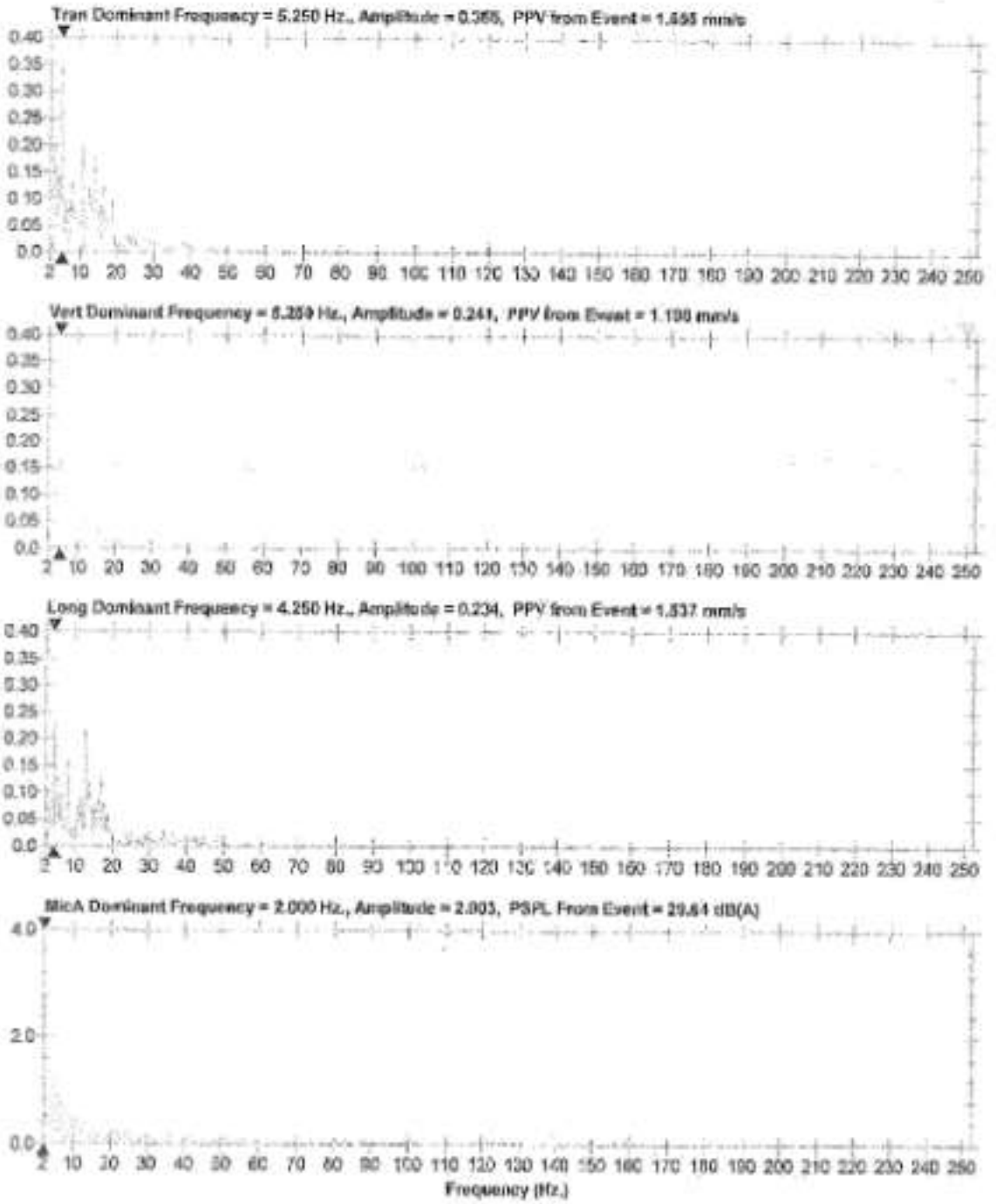
FFT Report

Date/Time	Tran at 13:46:59 December 9, 2024	Serial Number	UM15575 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	Battery Level	3.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15575_20241209134659.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTN / MM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:43:08 December 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

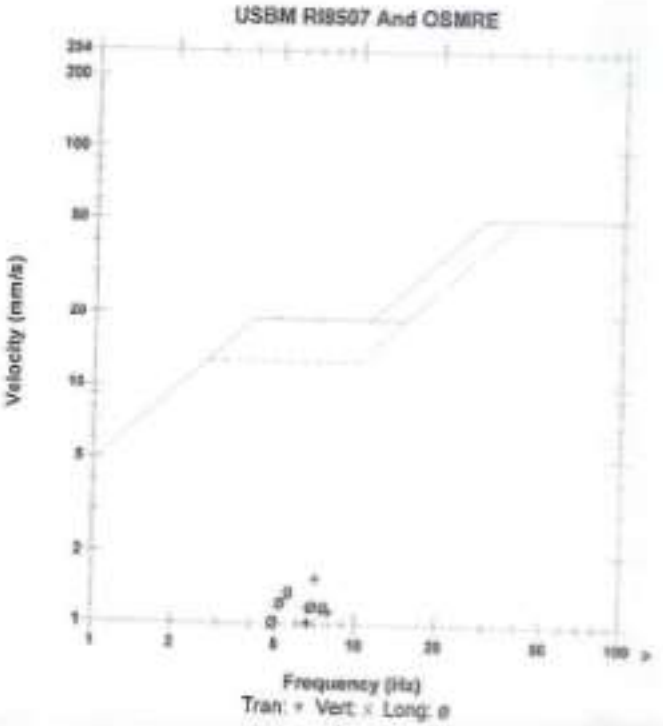
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241207134308.IDFW

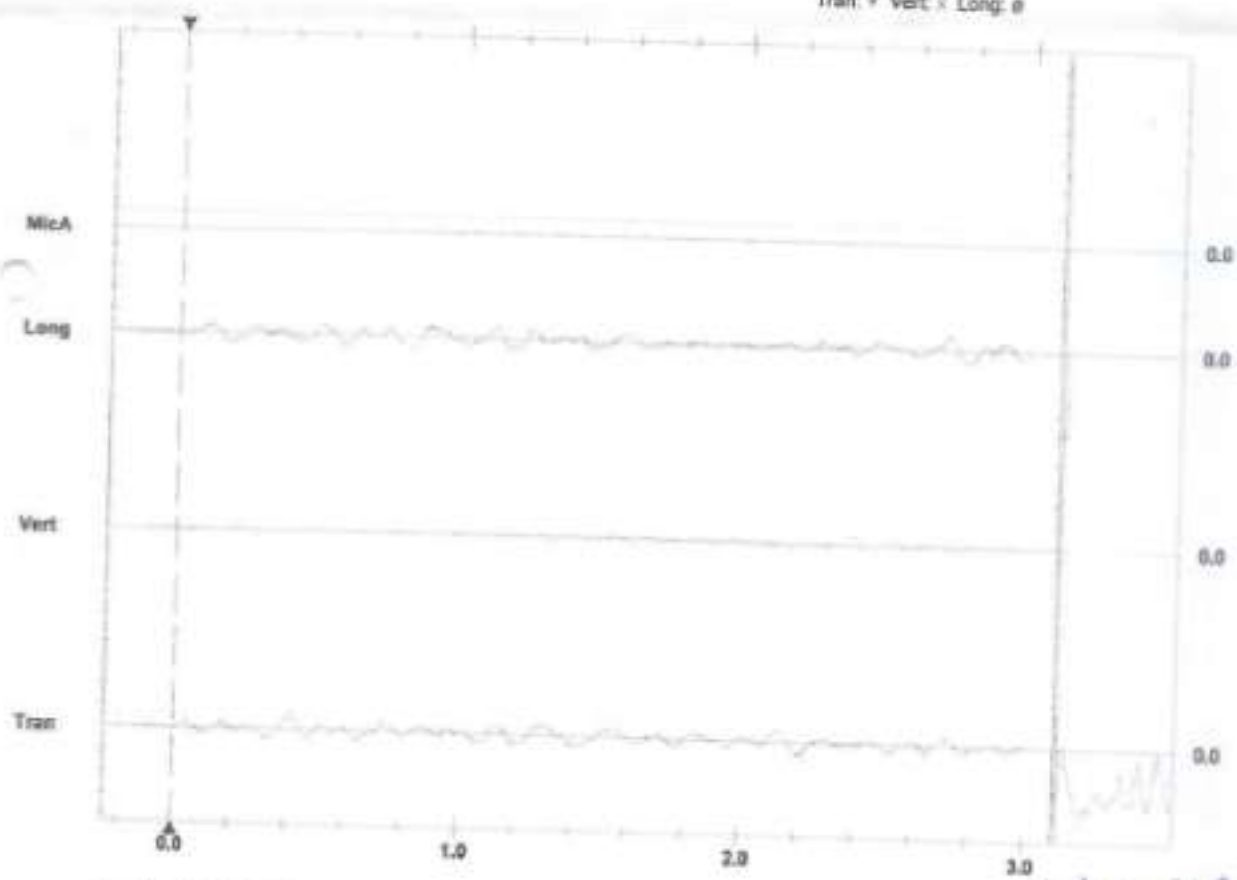
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.545	0.922	1.364	mm/s
ZC Freq	7.1	6.7	5.6	Hz
Time (Rel. to Trig)	0.423	0.348	0.816	sec
Peak Acceleration	0.013	0.016	0.018	g
Peak Displacement	0.031	0.023	0.032	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.6	4.2	4.2	

Peak Vector Sum 1.770 mm/s at 0.423 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger ▸ ◂

Printed: December 10, 2024 (V 10.72 - 10.72.1)

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For IDL Explosives Limited

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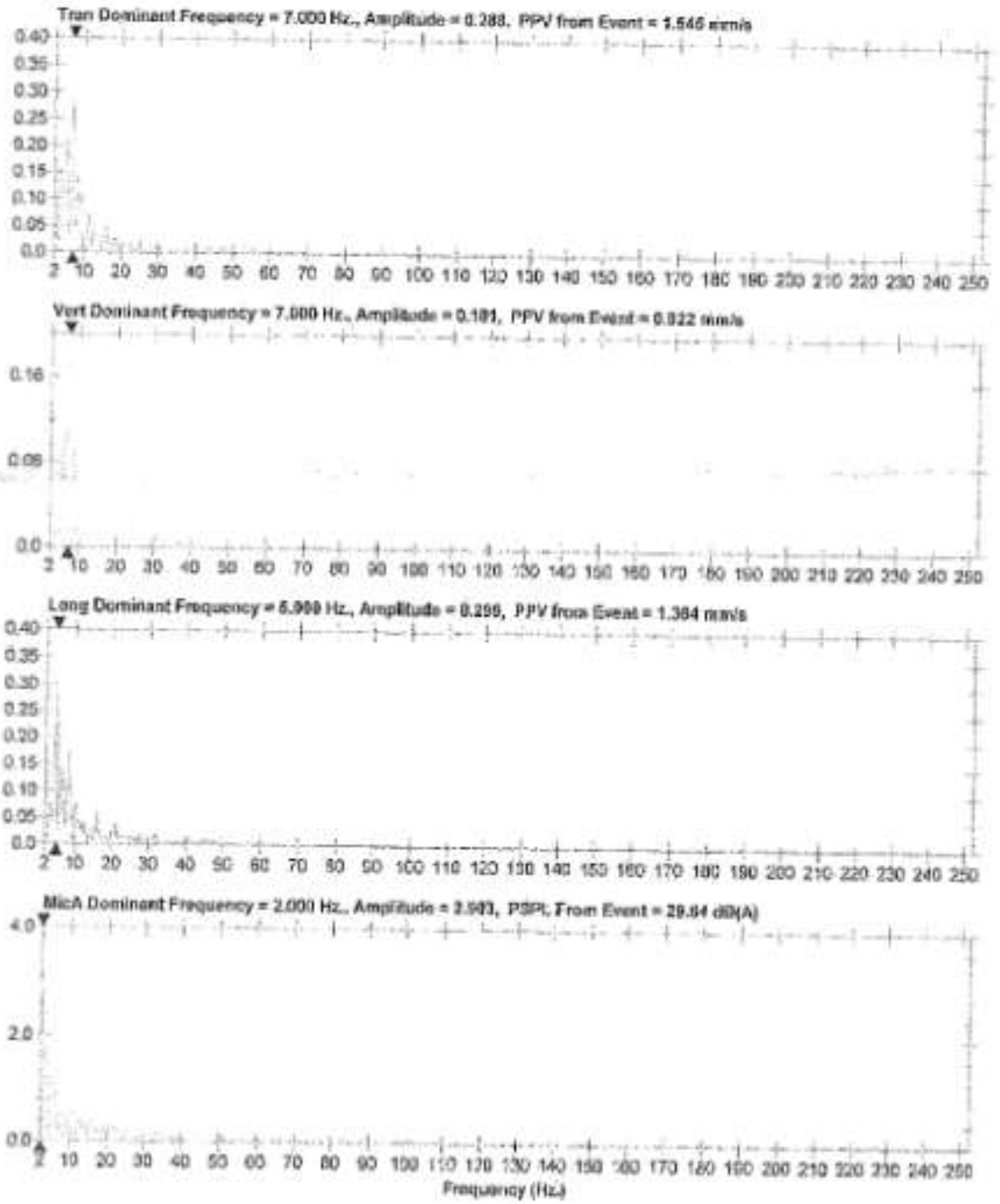
FFT Report

Date/Time	Vert at 13:43:08 December 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 16, 2024 by UES New Delhi
File Name	UM15576_20241207134308.IDFW

Notes

Location:	KTM / NM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Event Report

Date/Time	Long at 13:45:47 December 3, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241203134547.IDFW

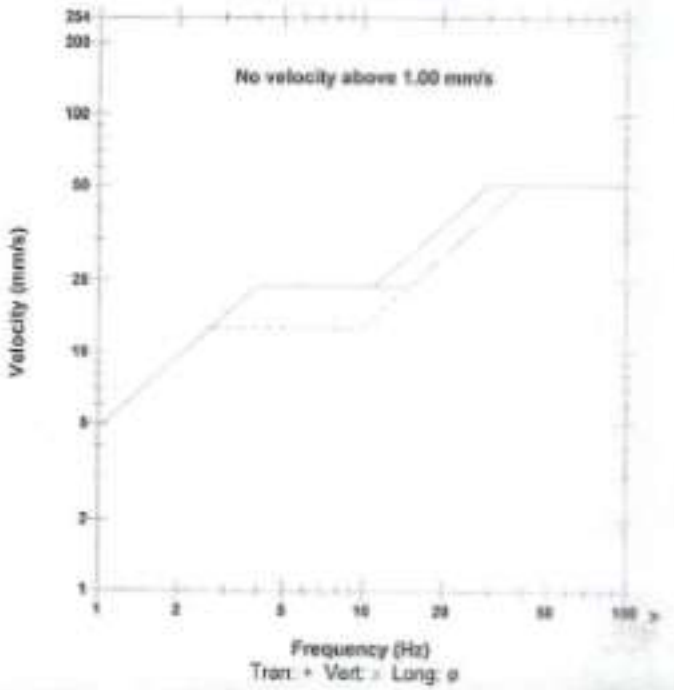
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

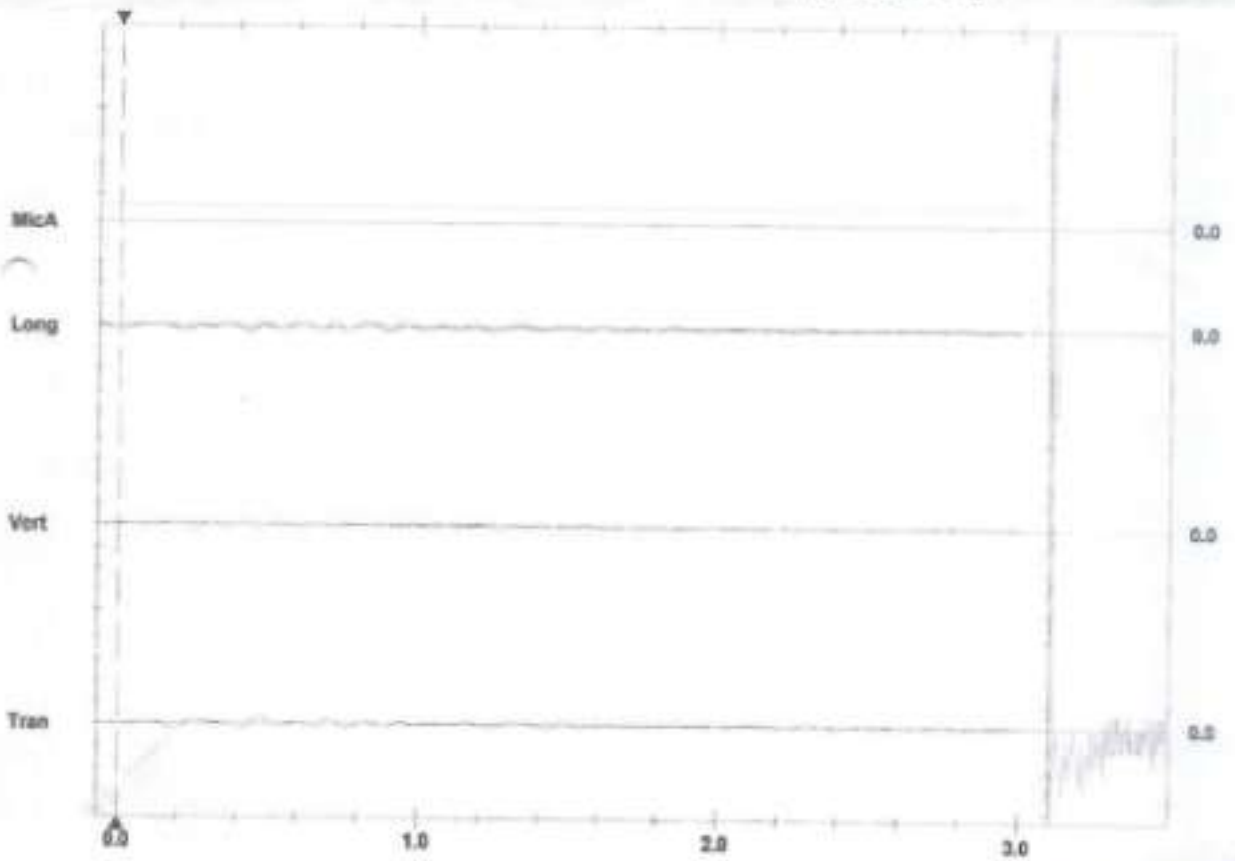
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.615	0.544	0.418	mm/s
ZC Freq	7.6	9.1	7.7	Hz
Time (Rel. to Trig)	0.481	0.432	0.435	sec
Peak Acceleration	0.010	0.012	0.012	g
Peak Displacement	0.012	0.011	0.009	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.2	

Peak Vector Sum 0.837 mm/s at 0.483 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

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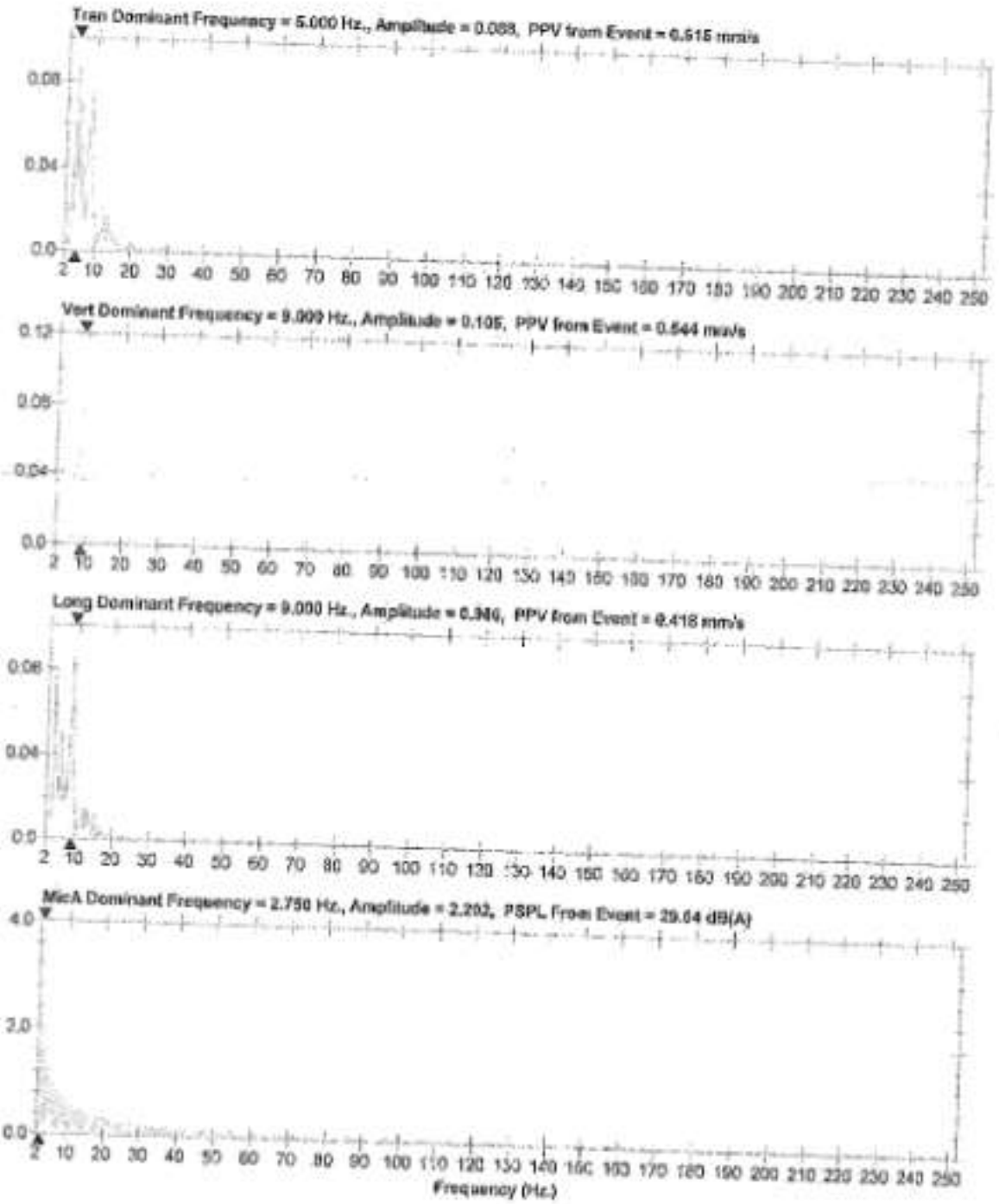
FFT Report

Date/Time	Long at 13:45:47 December 3, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM16576 V 10.90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM16576_20241203134547.IDFW

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 13:45:53 December 3, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241203134553.IDFW

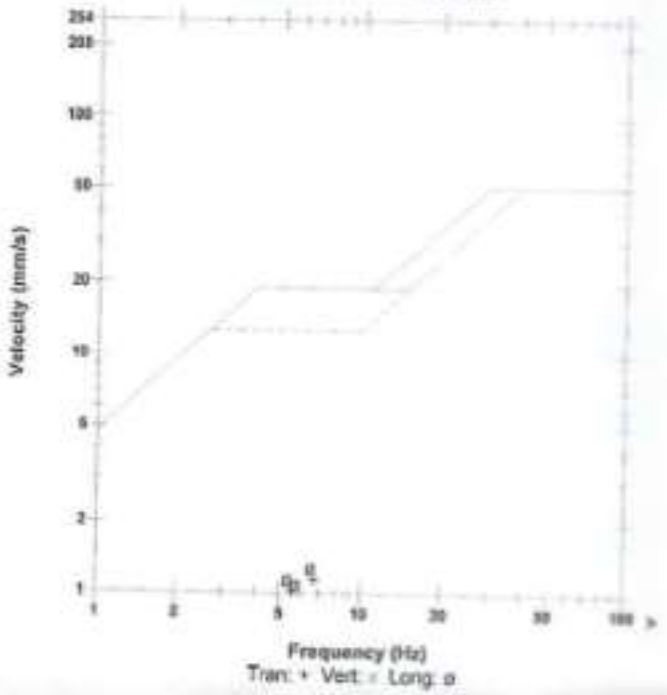
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

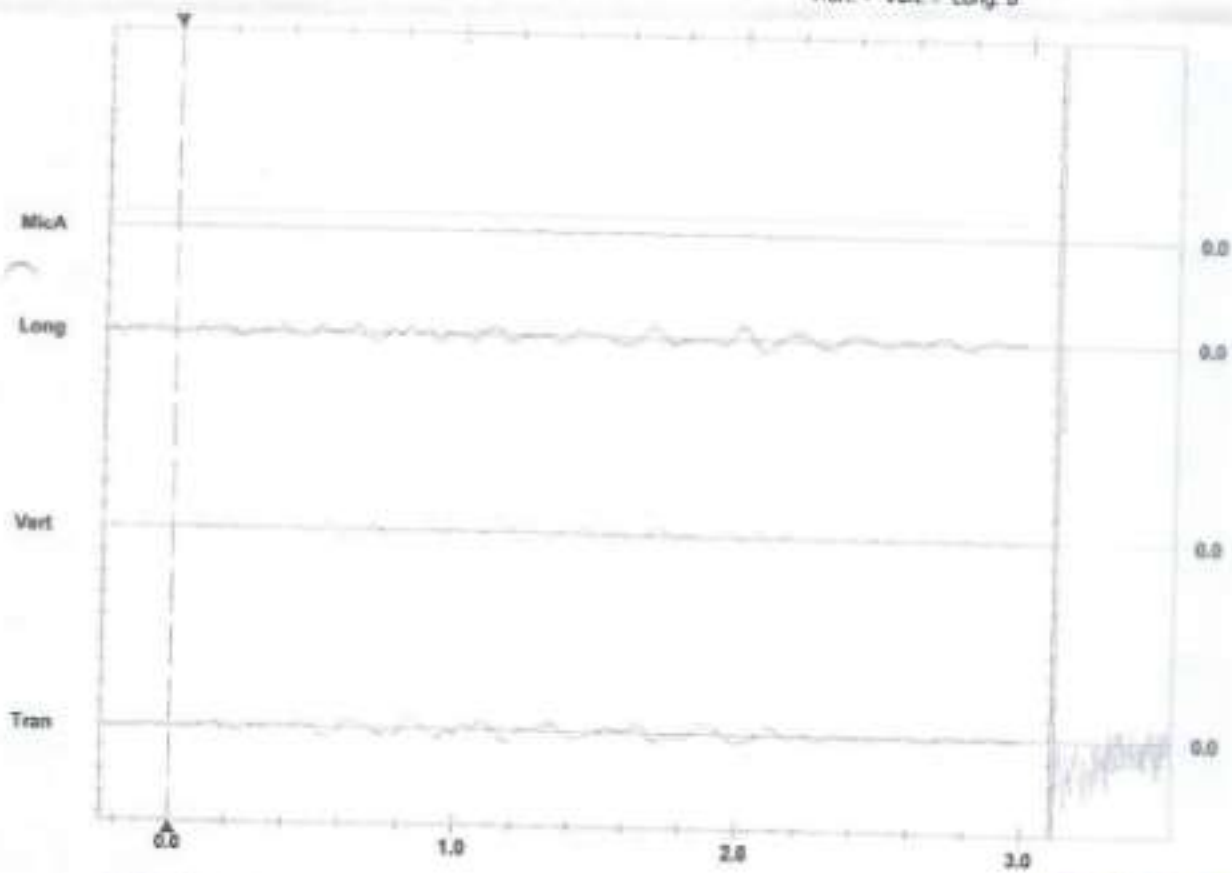
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.127	0.906	1.269	mm/s
ZC Freq	6.7	8.1	6.5	Hz
Time (Rel. to Trig)	0.845	0.552	2.005	sec
Peak Acceleration	0.012	0.012	0.013	g
Peak Displacement	0.031	0.016	0.030	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.2	

Peak Vector Sum 1.537 mm/s at 2.005 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

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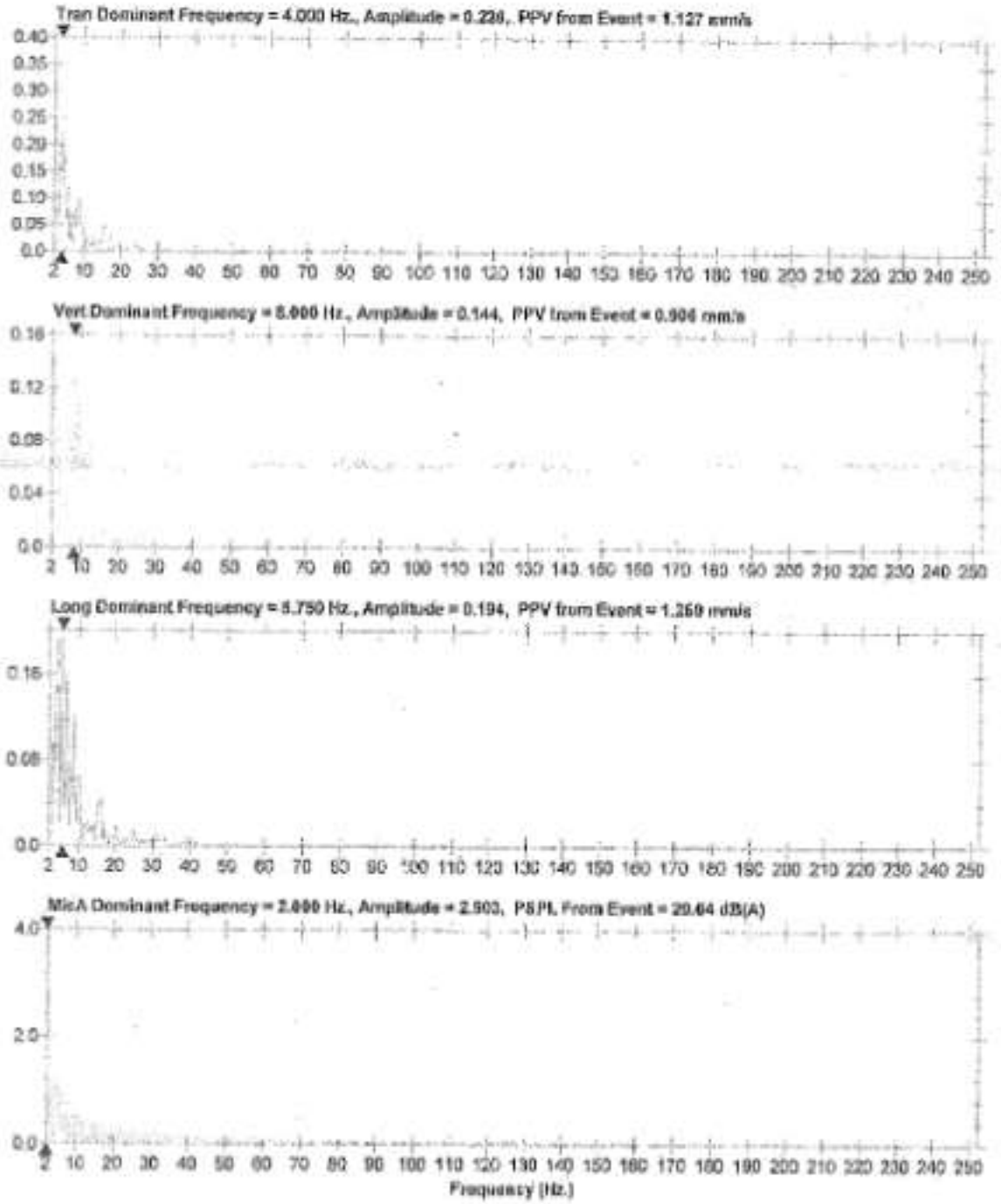
FFT Report

Date/Time	Long at 13:46:53 December 3, 2024	**Serial Number**	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	**Battery Level**	3.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM15576_20241203134653.IDFW
Operator/Setup:	Operator/factory.MM8		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 14:03:48 December 2, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

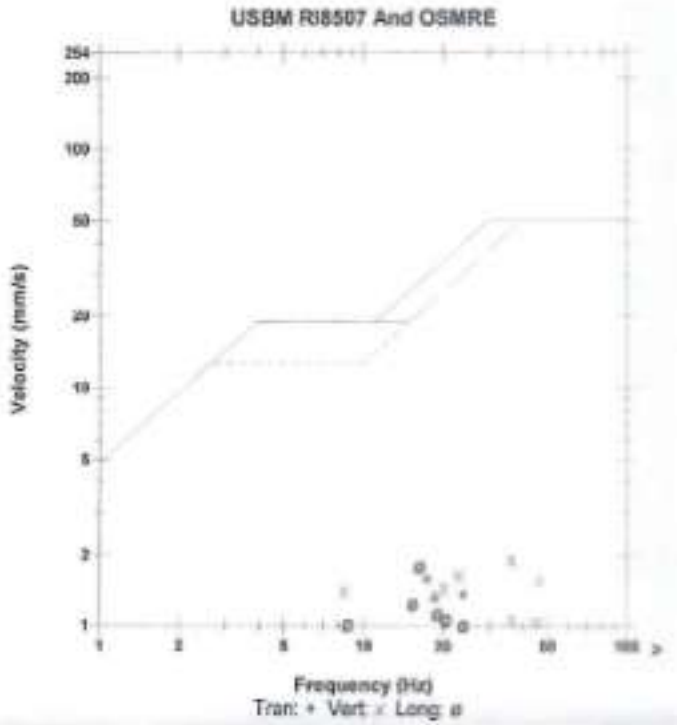
Serial Number	UM15676 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15676_20241202140348.IDFW

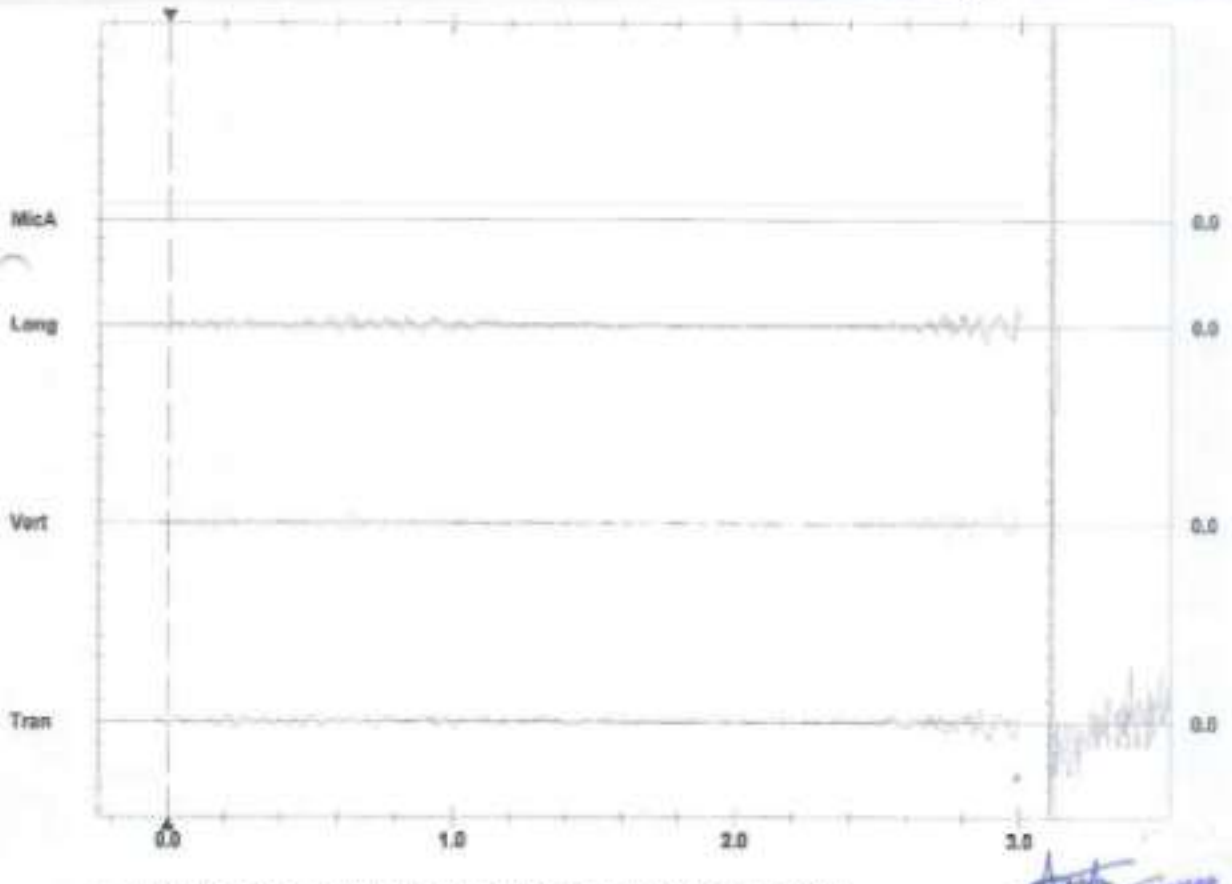
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.576	1.923	1.789	mm/s
ZC Freq	17.4	37	16.3	Hz
Time (Rel. to Trig)	2.893	2.749	2.881	sec
Peak Acceleration	0.053	0.066	0.048	g
Peak Displacement	0.014	0.016	0.015	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 2.202 mm/s at 2.880 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

for IDL Explosives Limited

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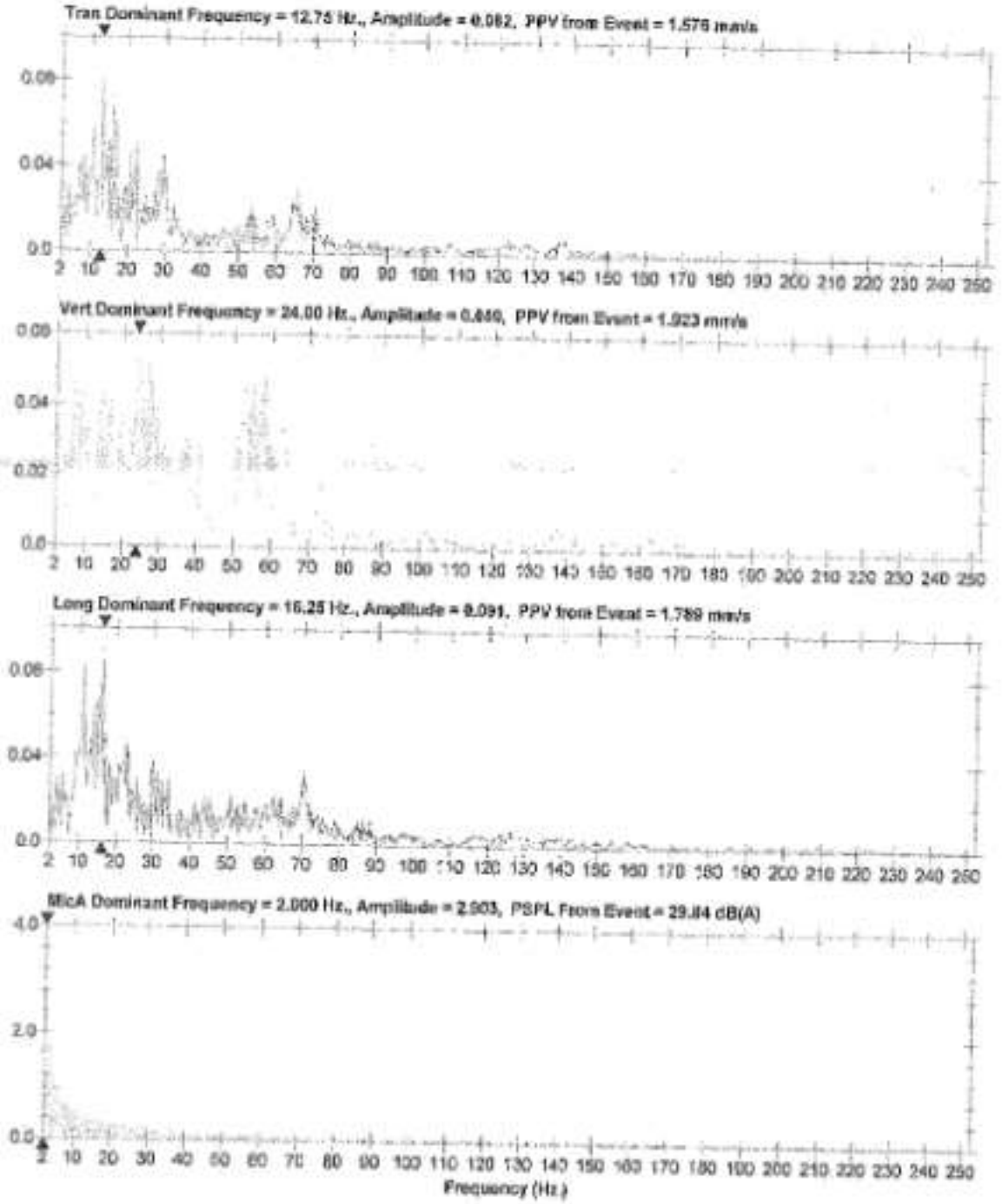
FFT Report

Date/Time	Tran at 14:03:48 December 2, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/Factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241202140348.IDFW

Notes

Location:	KTM / NM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Event Report

Date/Time	Tran at 14:03:51 December 2, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM8

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241202140351.IDFW

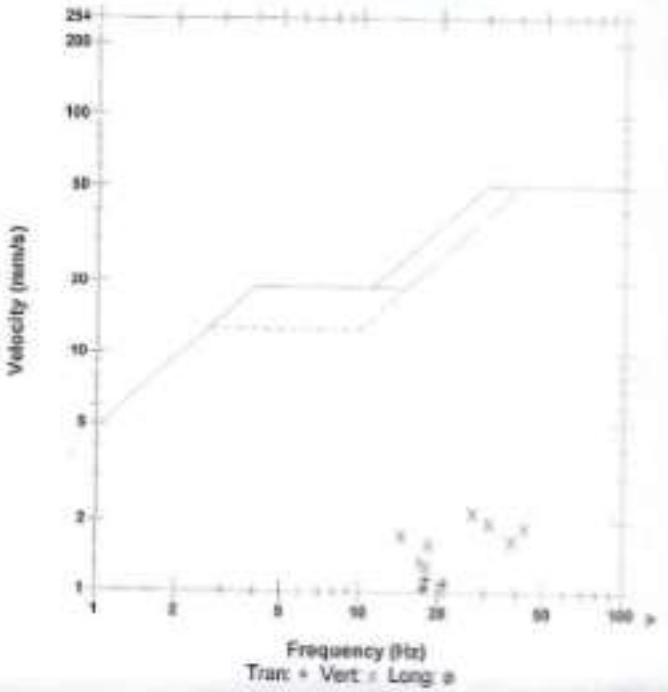
Notes
Location: KTM / MM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

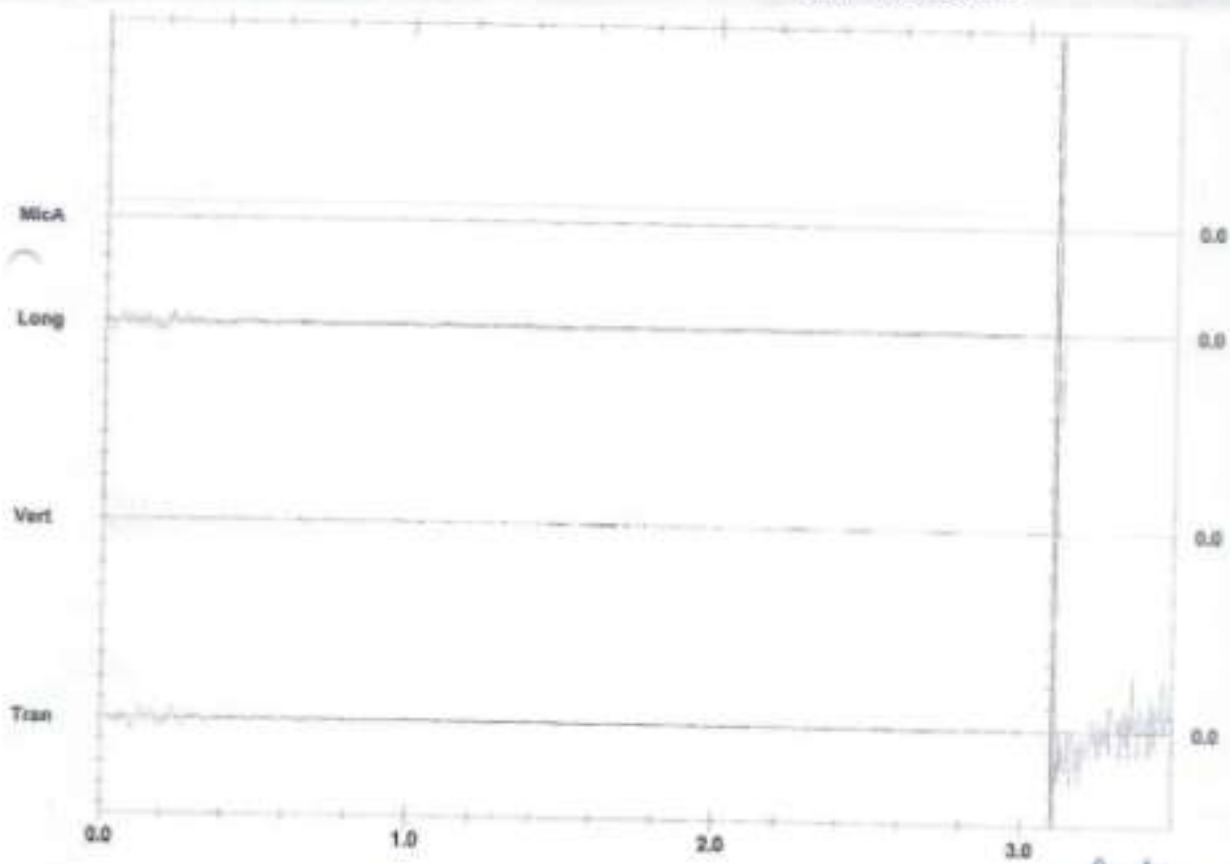
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.568	2.191	0.985	mm/s
ZC Freq	N/A	27	28	Hz
Time (Rel. to Trig)	0.007	0.135	0.028	sec
Peak Acceleration	0.035	0.077	0.049	g
Peak Displacement	0.011	0.011	0.015	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.1	4.2	4.2	

Peak Vector Sum 2.445 mm/s at 0.134 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div

Printed: December 4, 2024 (V 10.72 - 10.72.1)

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for ITL Products Limited

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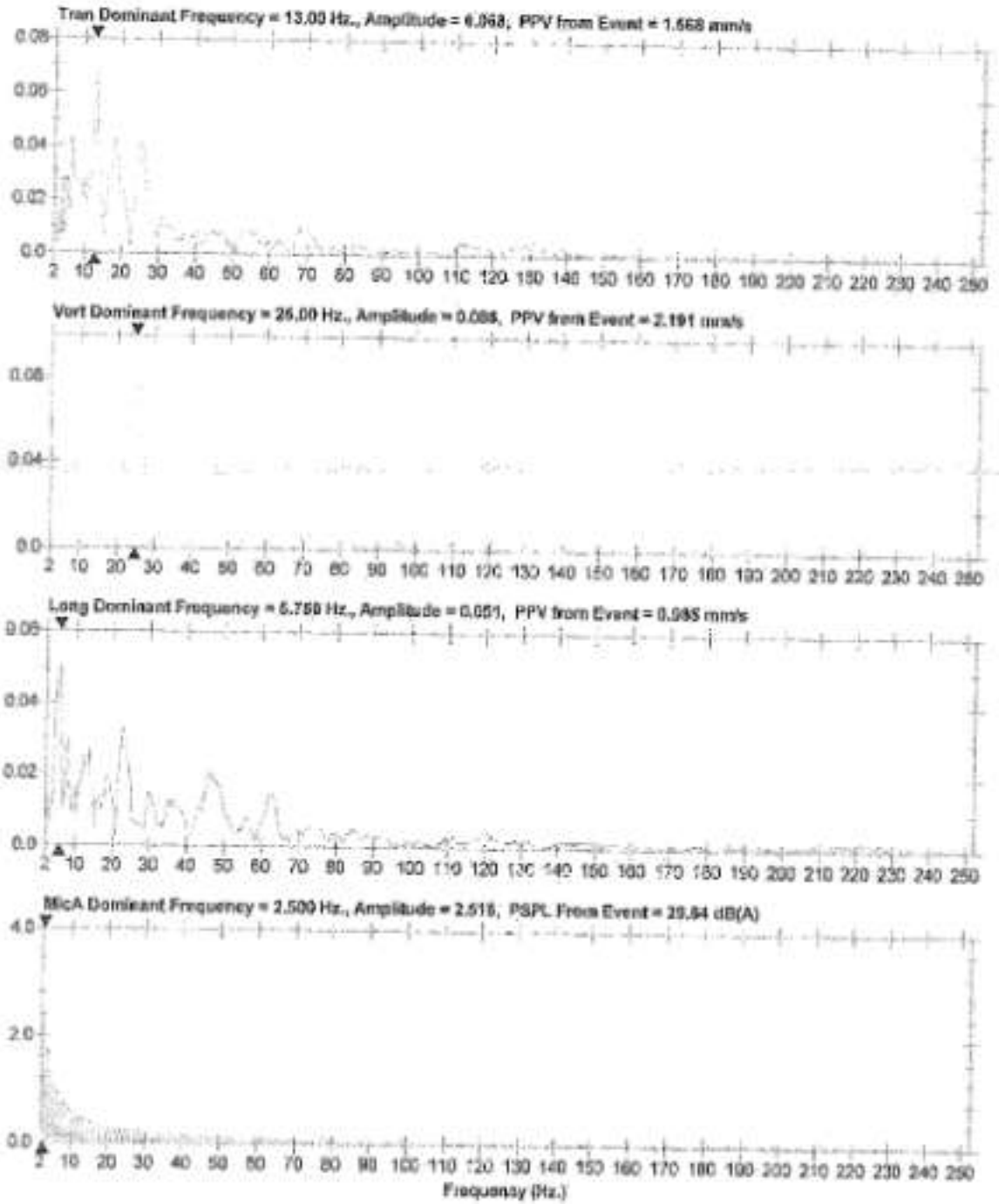
FFT Report

Date/Time	Tran at 14:03:51 December 2, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 980.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMS

Serial Number	UM15578 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15578_20241202140351.IDFW

Notes

Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 14:04:02 December 2, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.98 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSLMMB

Serial Number	UM21129 V 10-80GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

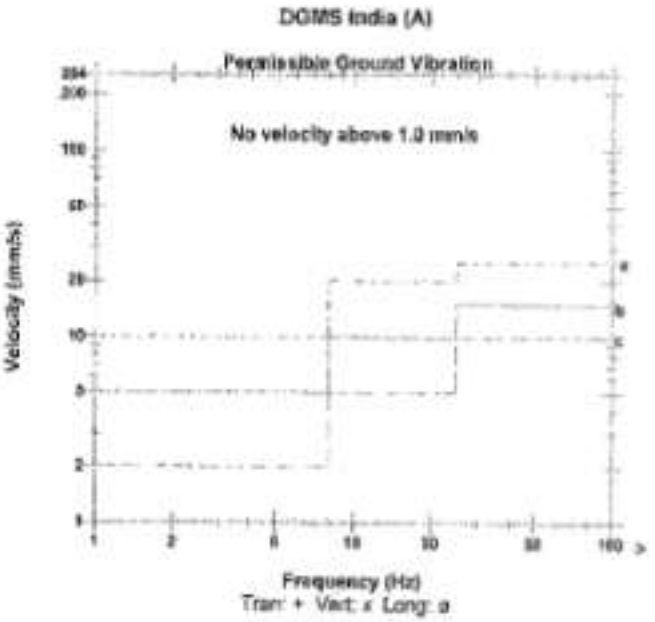
Notes
Location: On Ground Surface
Client: TATA STEEL (P) LIMITED
User Name: BLACK DIAMOND EXPLOSIVES PVT LTD
General: KATAMATI IRON MINE

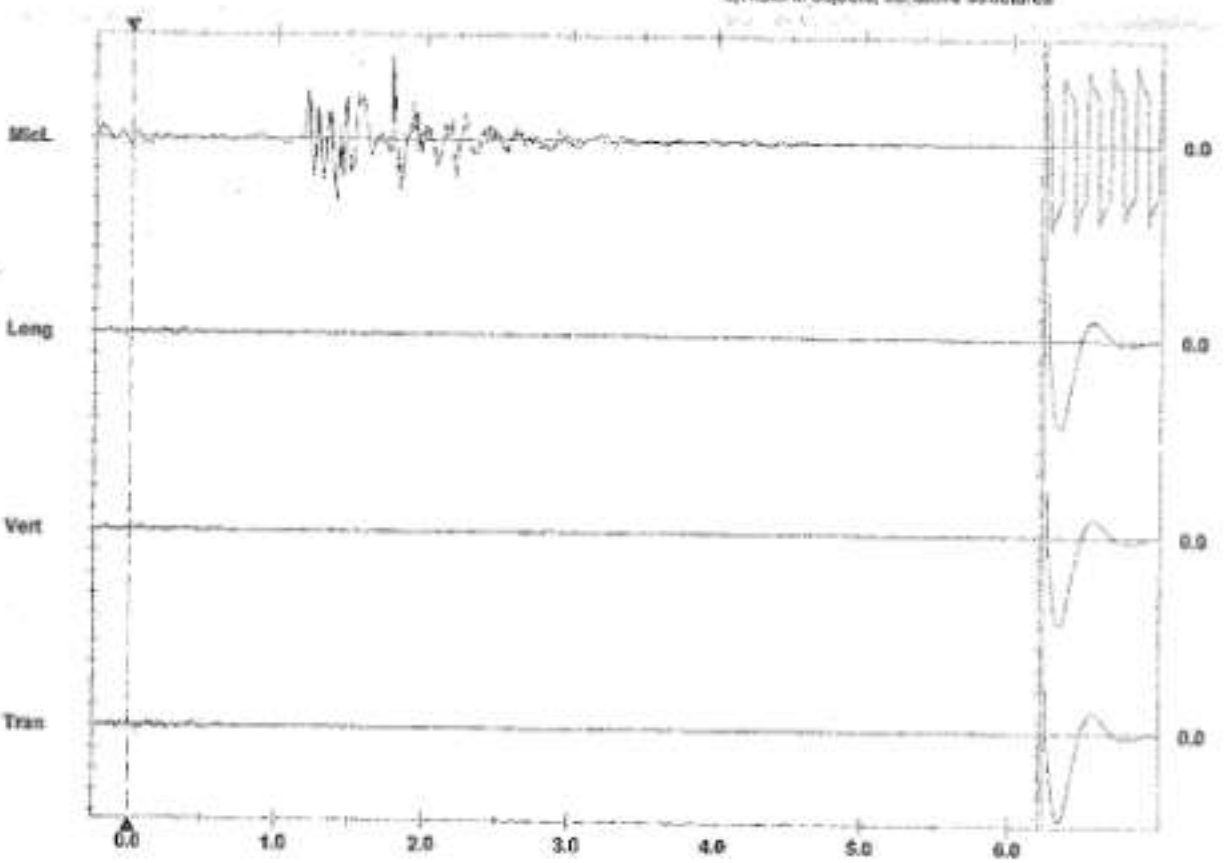
Extended Notes
Recorded at 150 meter back side of the blasting face

Microphone	Linear Weighting
PSPL	28.10 pa.(L) at 1.775 sec
ZC Freq	18 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1286 mv)

	Tran	Vert	Long	
PPV	0.544	0.300	0.481	mm/s
ZC Freq	10	10	7.1	Hz
Time (Rel. to Trig)	0.000	0.080	0.306	sec
Peak Acceleration	0.015	0.010	0.009	g
Peak Displacement	0.007	0.005	0.009	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.3	4.9	4.4	

Peak Vector Sum 0.570 mm/s at 0.004 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div
Trigger = ▶ — — — ◀

Sensor Check

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FFT Report

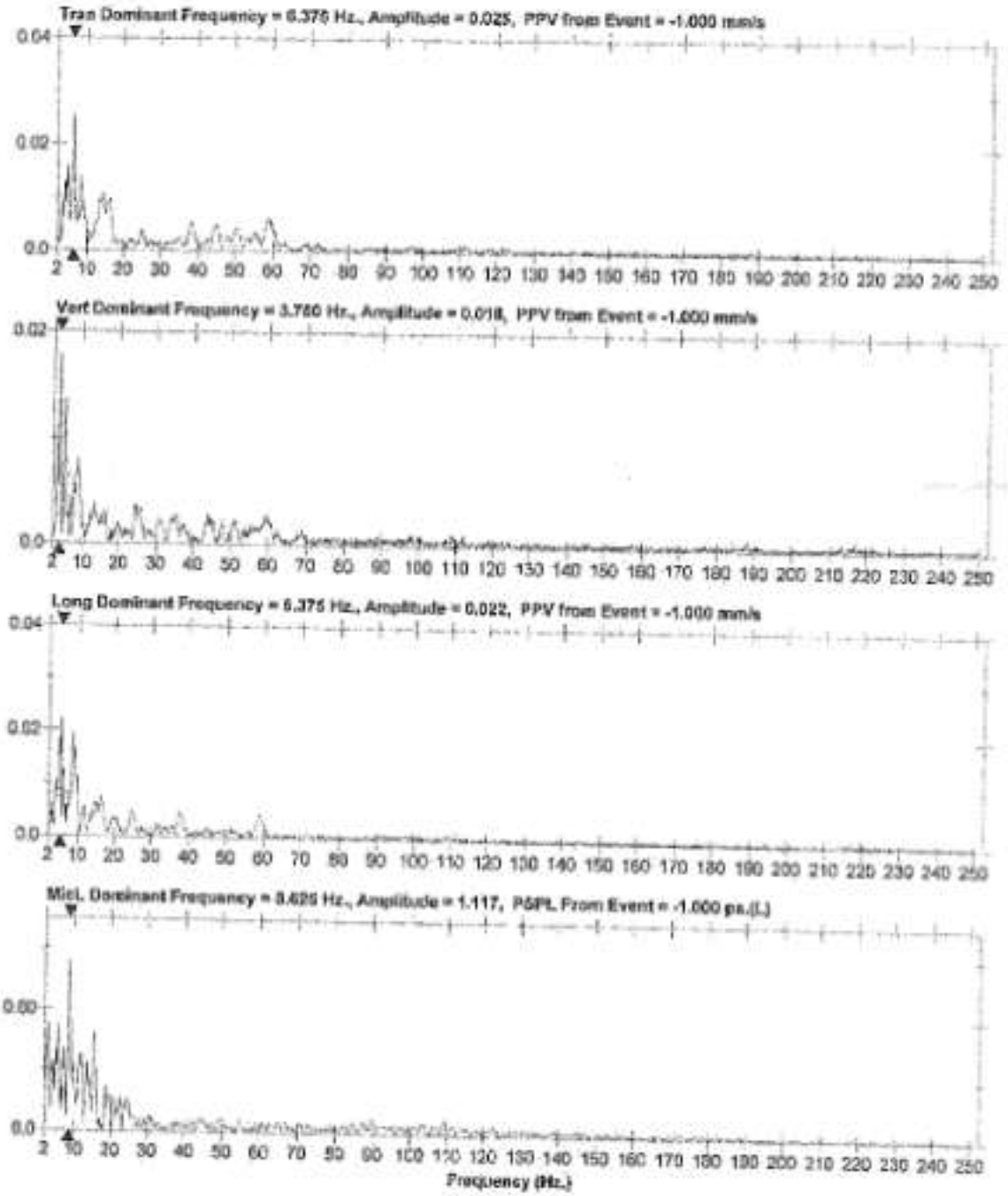
Date/Time	Tran at 14:04:02 December 2, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.56 pa (L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL.MMB

Serial Number	UM21129 V 10-90GC Micromate ISEE
Battery Level	5.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (I*) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINE

Extended Notes
Recorded at 100 meter back side of the blasting face.



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Event Report

Date/Time	Tran at 14:29:54 November 27, 2024
Trigger Source	Geo: 0.600 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup	Operator/Factory Misfi

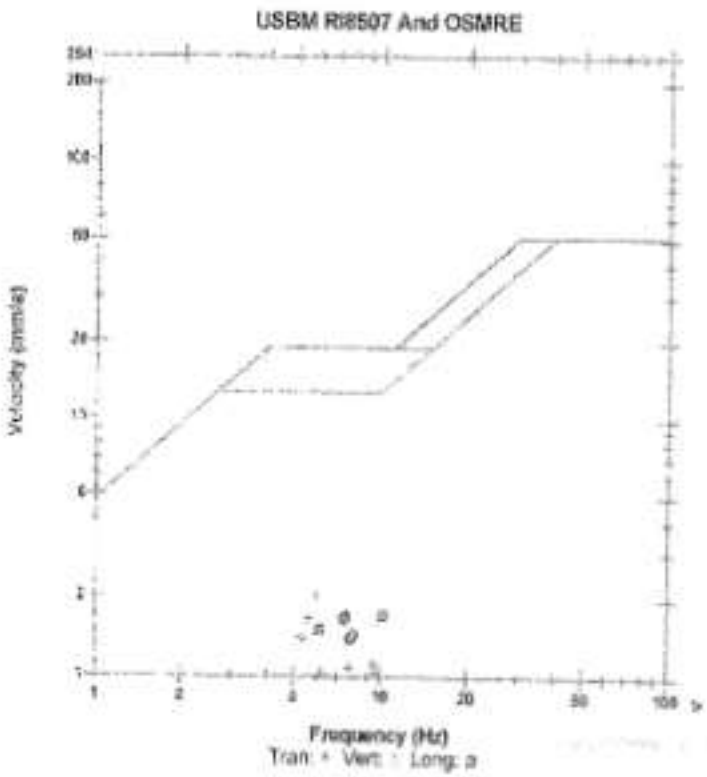
Serial Number	UM21108 V 10-BOOC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21108_20241127142954.IDFW

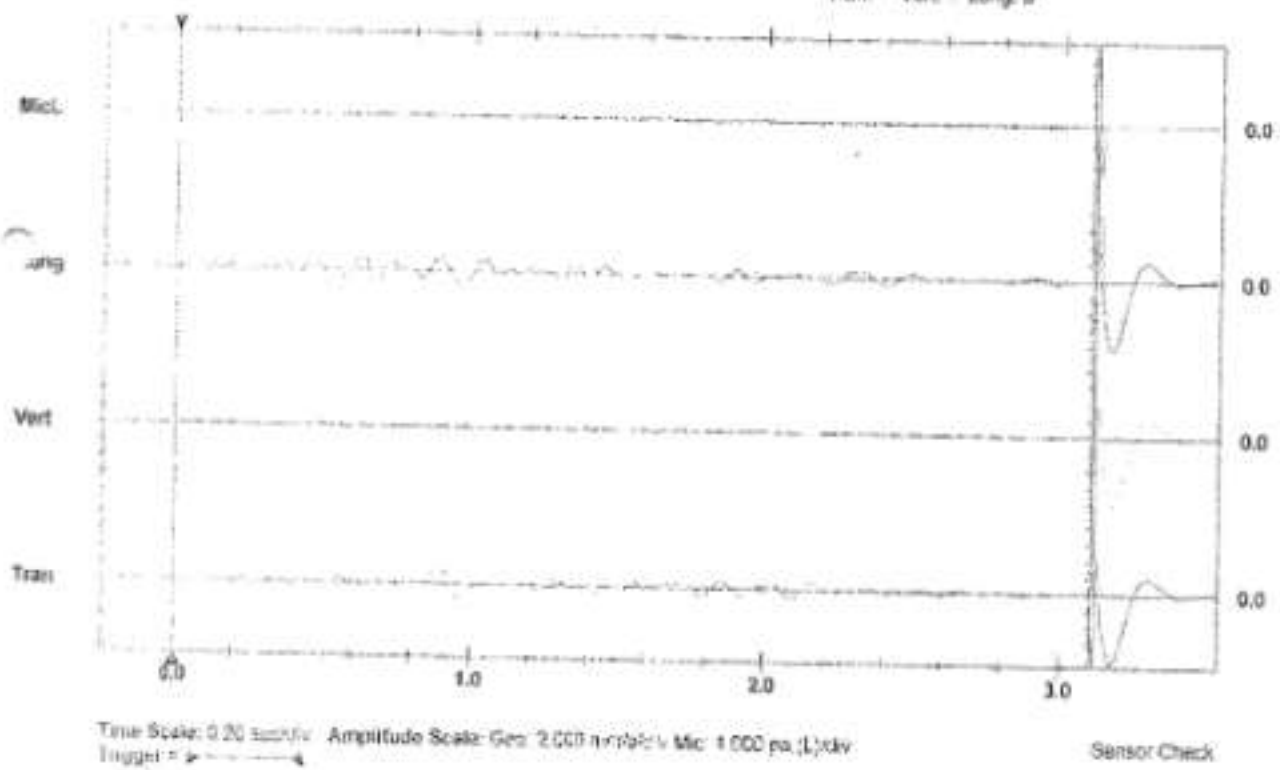
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	<1.0 Hz
Channel Test	Check (Freq = 5.0 Hz, Amp = 0 mm)

	Tran	Vert	Long	
PPV	2.016	0.920	1.734	mm/s
ZC Freq	6.9	10.1	10.1	Hz
Time (Ref. to Trig)	0.501	0.516	0.677	sec
Peak Acceleration	0.023	0.020	0.020	g
Peak Displacement	0.054	0.013	0.041	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.2	7.3	7.9	Hz
Overswing Ratio	4.1	4.0	3.5	

Peak Vector Sum: 2.051 mm/s at 0.581 sec
NA: Not Applicable





Printed: November 27, 2024 (W 06:29 - 14:29)
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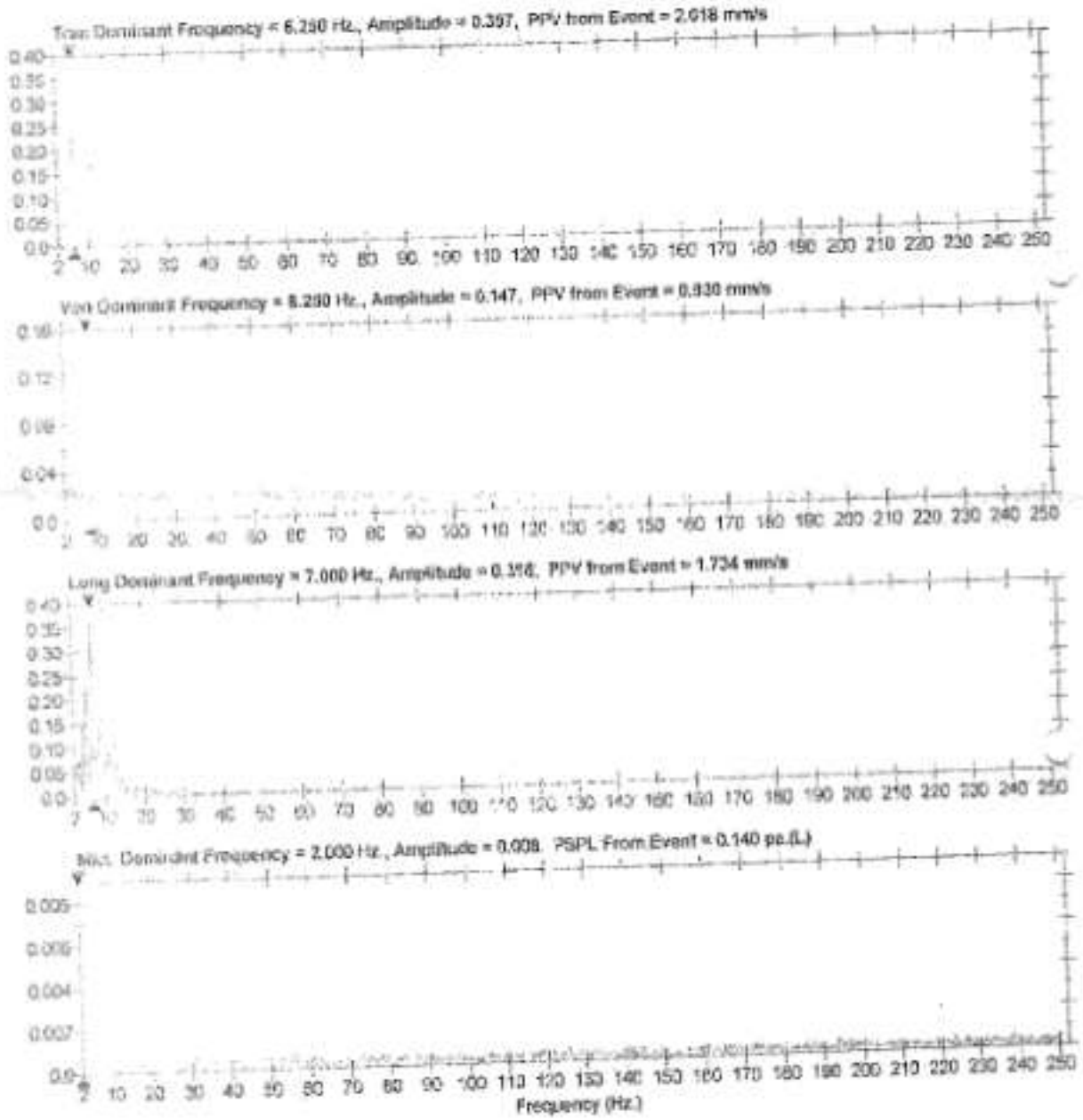
FFT Report

Date/Time	Tran at 14:29:54 November 27, 2024	Serial Number	UM21108 V 10.60GC Micromate IISE
Trigger Source	Geo: 0.500 mm/s Mic: 2.000 psi (L)	Battery Level	3.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	September 7, 2024 by UES New Delhi
Record Time	10 sec at 4096 sps	File Name	UM21108_20241027143954.IDFW
Operator/Setup	Operator/factory.NMB		

Notes
Location
Client
User Name
General



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Event Report

Date/Time	Vert at 15:03:43 November 27, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

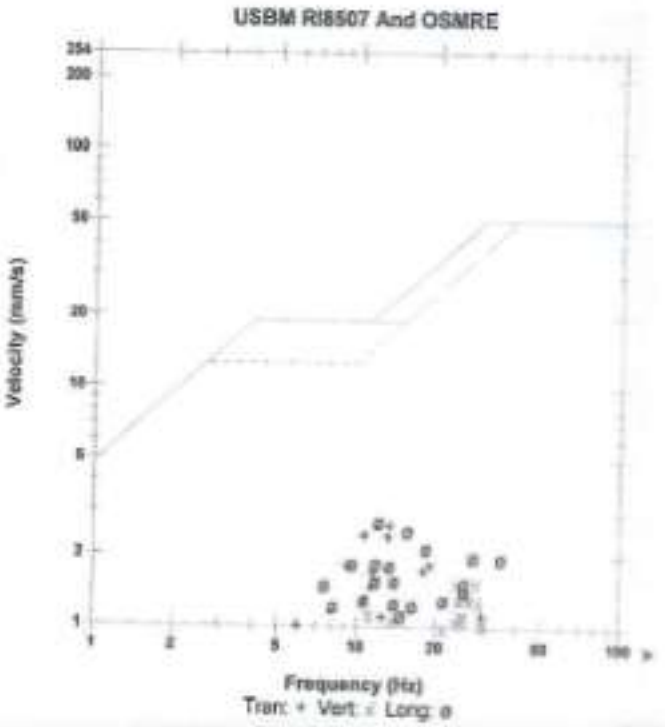
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241127150343.IDFW

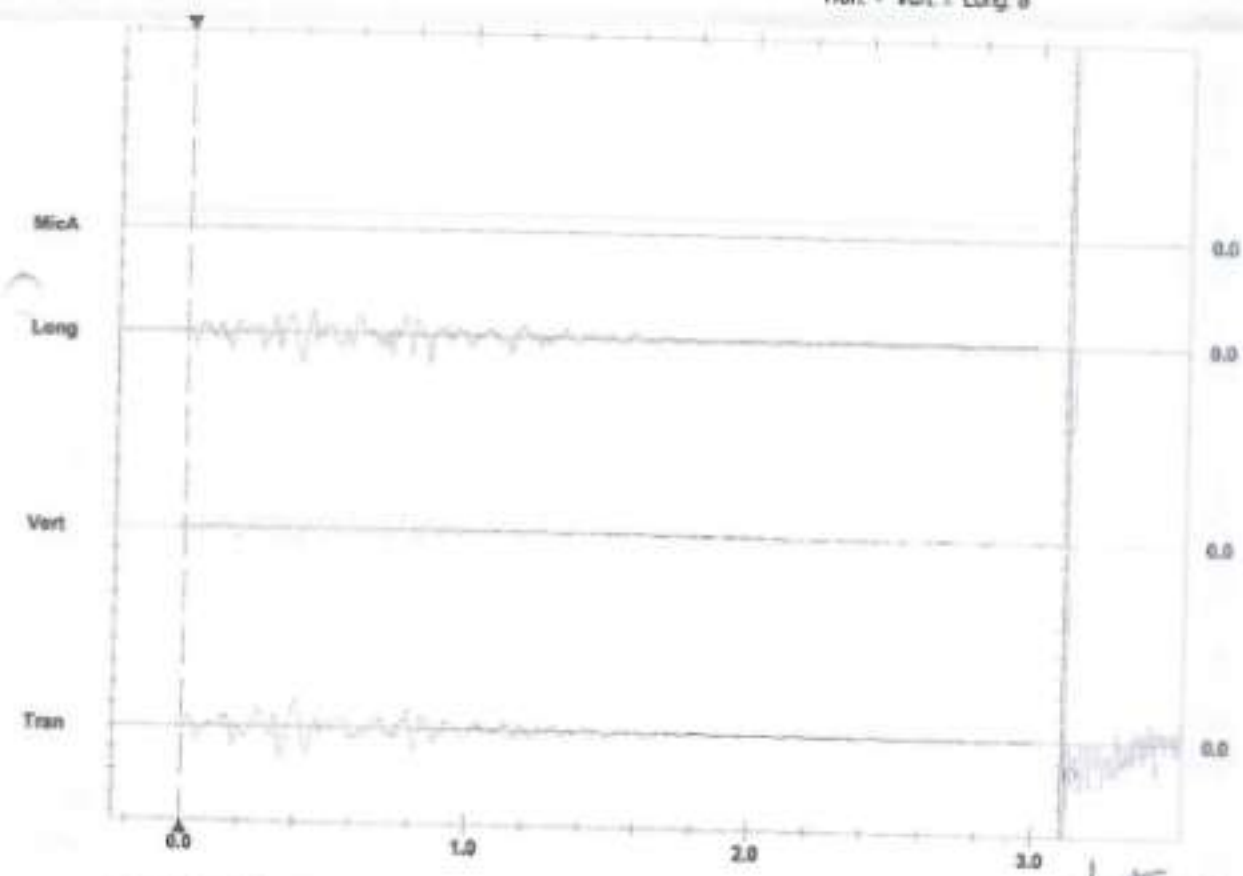
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	2.648	1.529	2.727	mm/s
ZC Freq	13.3	28	12.0	Hz
Time (Rel. to Trig)	0.354	0.770	0.409	sec
Peak Acceleration	0.039	0.044	0.074	g
Peak Displacement	0.037	0.012	0.029	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	3.9	4.2	4.1	

Peak Vector Sum 3.589 mm/s at 0.408 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger =

Sensor Check

Printed: November 28, 2024 (V 10.72 - 10.73.1)

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for IDL Explosives Limited

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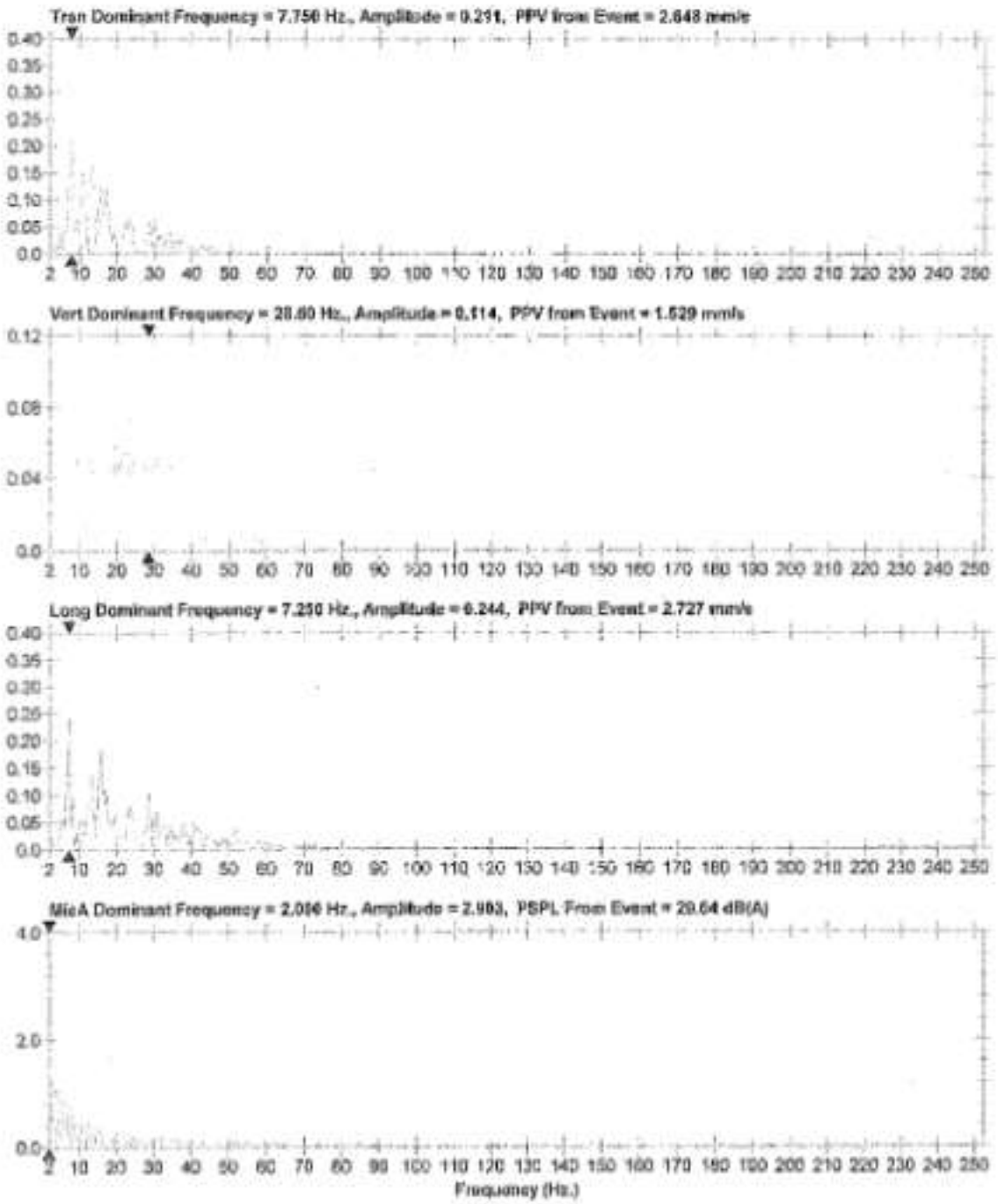
FFT Report

Date/Time	Vert at 15:03:43 November 27, 2024	**Serial Number**	UM16576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 10, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM16576_20241127150343.IDFW
Operator/Setup:	Operator/factory.MWB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



Format 0-1656-3D1 Knark Corporation

Event Report

Date/Time	Long at 14:10:13 November 26, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 spS
Operator/Setup:	Operator/Factory Set

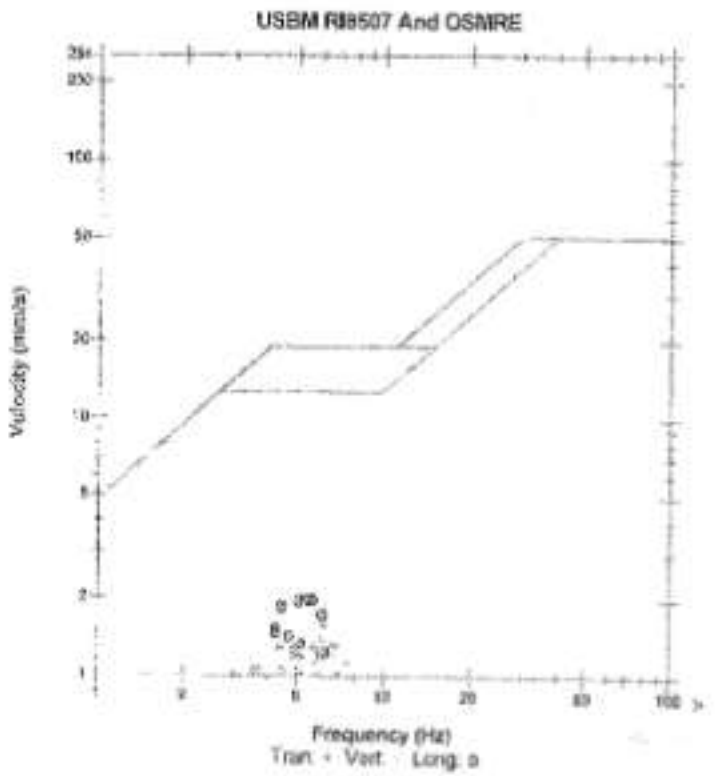
Serial Number	UM21106 V 10-99GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20241126141013.IDFW

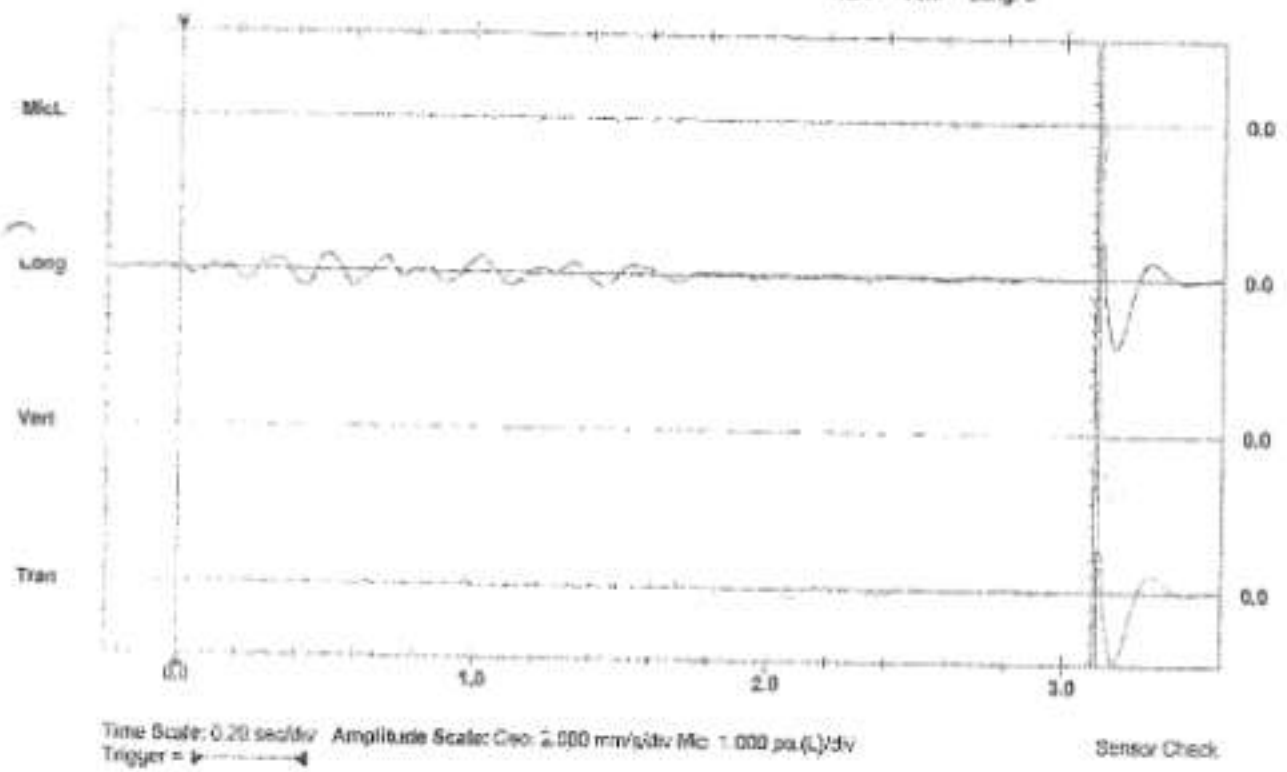
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	0.509 psi (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz, Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.587	0.747	2.010	mm/s
ZC Freq	6.2	8.2	9.5	Hz
Time (Rel. to Trig)	0.849	0.398	0.500	sec
Peak Acceleration	0.023	0.020	0.023	g
Peak Displacement	0.040	0.014	0.061	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.5	7.5	Hz
Overswing Ratio	3.9	3.9	3.9	

Peak Vector Sum: 2.311 mm/s at 0.421 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 psi(L)/div
Trigger =

Sensor Check

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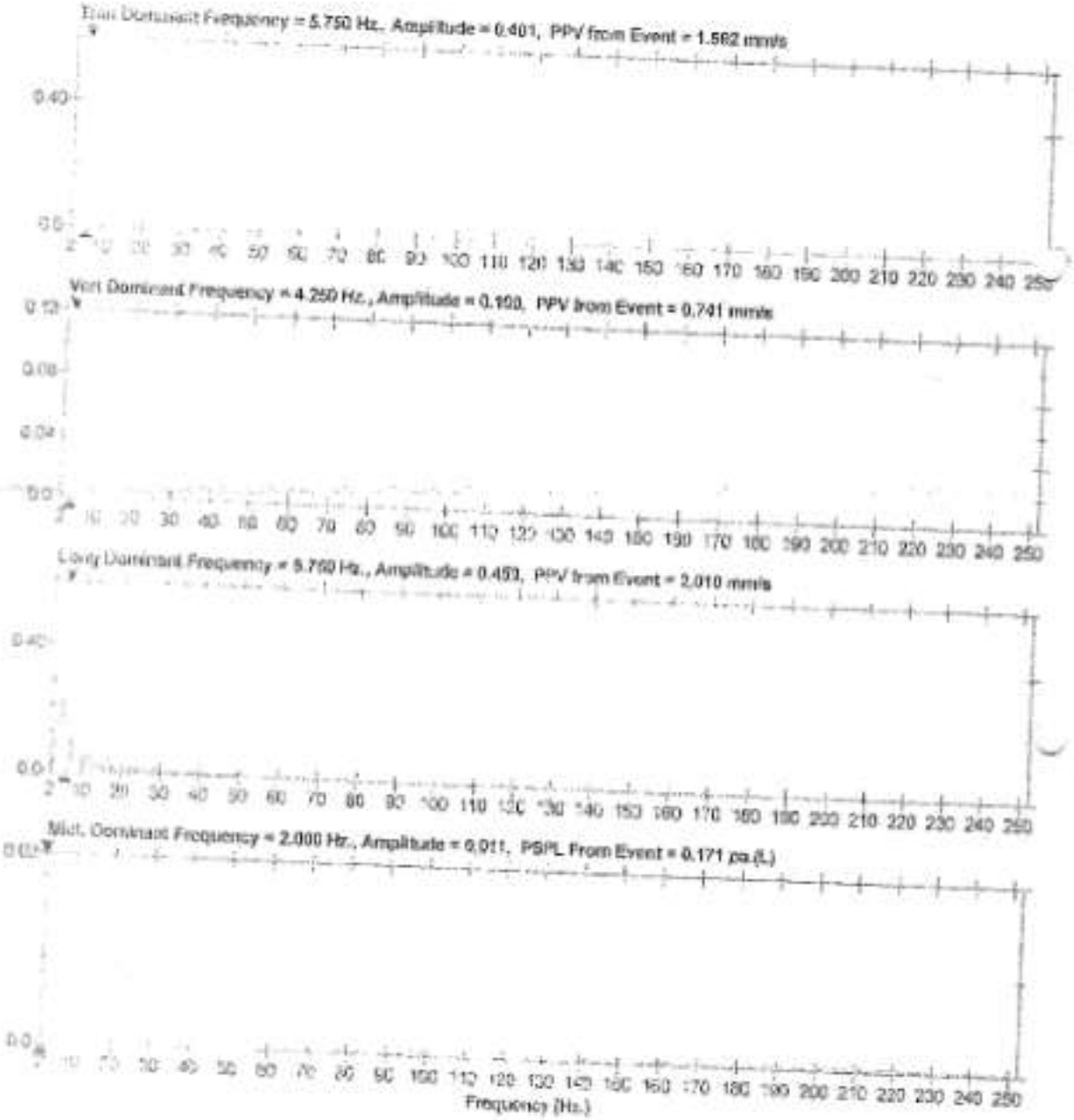
FFT Report

Date/Time	Long @ 14:10:13 November 26, 2024	Serial Number	UM21106 V 10.90GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi (L)	Battery Level	6.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	September 7, 2024 by UES New Delhi
Record Time	3.0 sec at 4096 sps	File Name	UM21106_20241126141013.IDFW
Operator/Setup	Operator/Factory MMB		

Notes
Location
Client
User Name
General



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Event Report

Date/Time	Long at 14:42:08 November 23, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

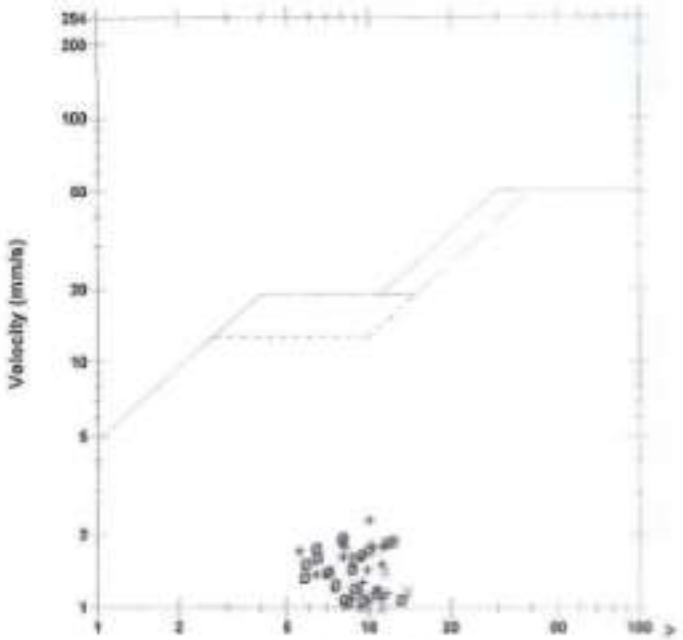
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20241123144208.IDFW

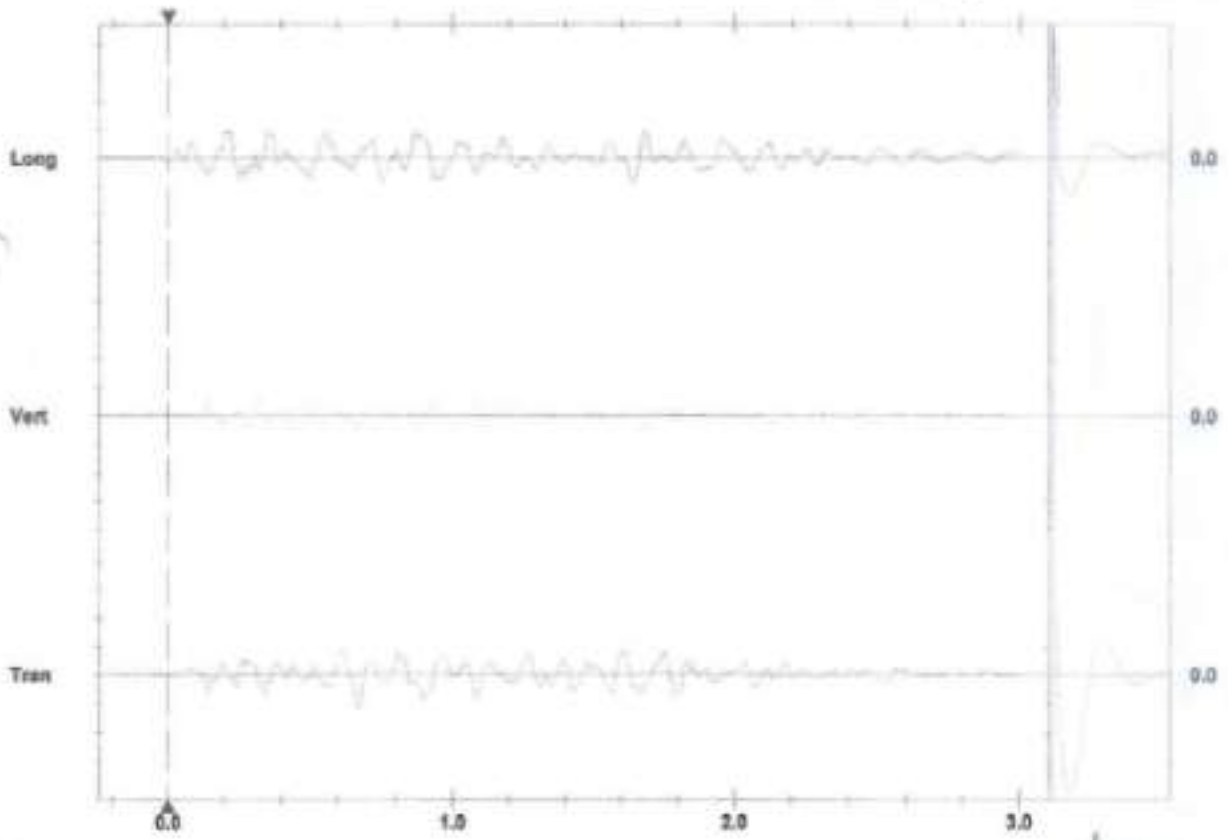
Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	2.286	1.411	1.939	mm/s
ZC Freq	10	11	8.0	Hz
Time (Rel. to Trig)	0.671	0.446	0.205	sec
Peak Acceleration	0.027	0.016	0.022	g
Peak Displacement	0.041	0.017	0.042	mm
Sensor Check	Passed	Check	Check	
Frequency	7.3	7.7	8.2	Hz
Overswing Ratio	3.4	0.4	3045.0	

Peak Vector Sum 2.373 mm/s at 0.671 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger = ▶ ◀

for IDL Explosives Limited

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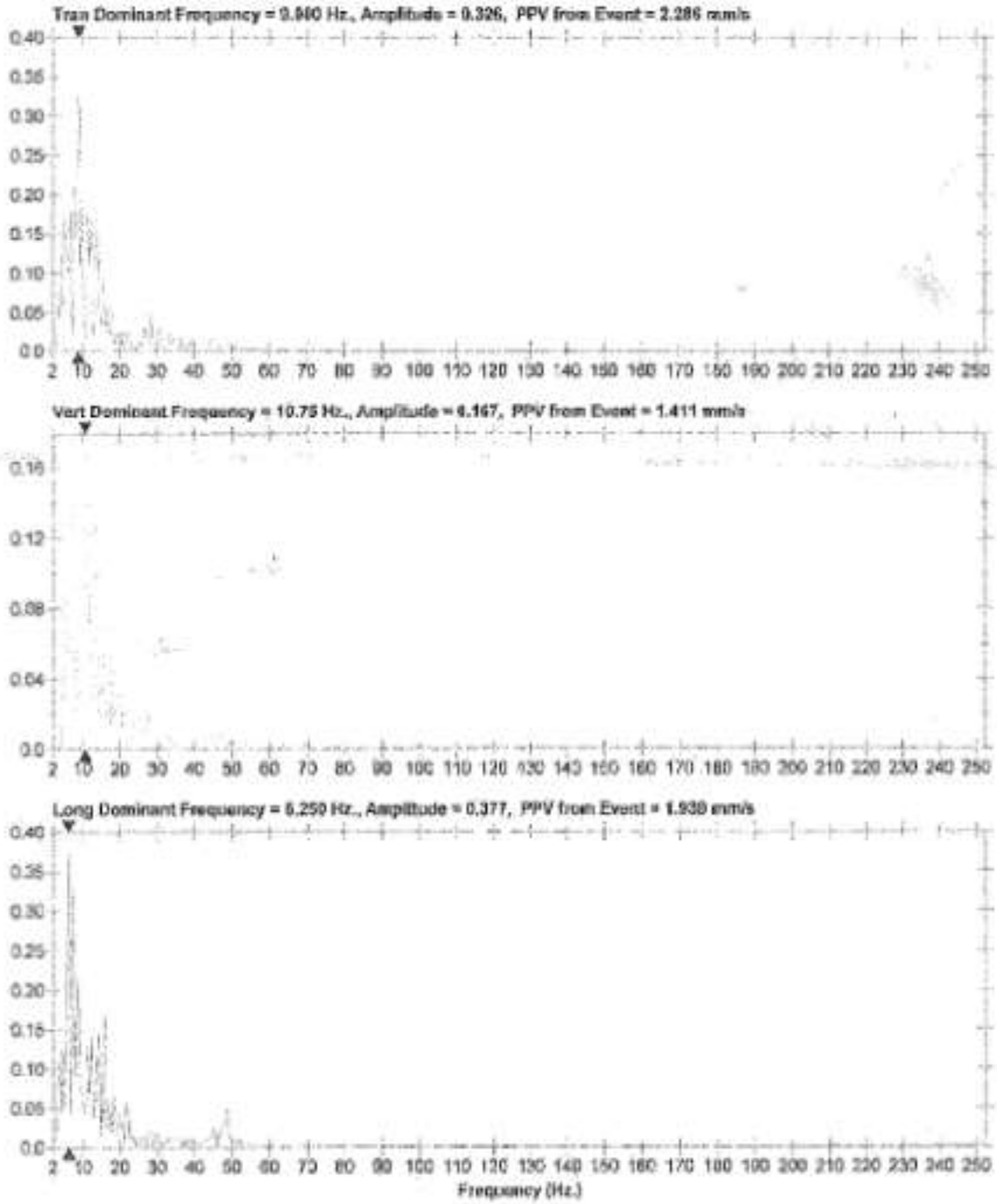
FFT Report

Date/Time	Long at 14:42:38 November 23, 2024	**Serial Number**	UM6253 V 10.76 Micromate IIEE
Trigger Source	Geo: 0.300 mm/s	**Battery Level**	3.6 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	**File Name**	UM6253_20241123144208.IDFW
Operator/Setup:	Operator/factory.MM0		

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:44:06 November 18, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.95 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL,MMB

Serial Number	UM21129 V 10-90GC Micromate iSEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

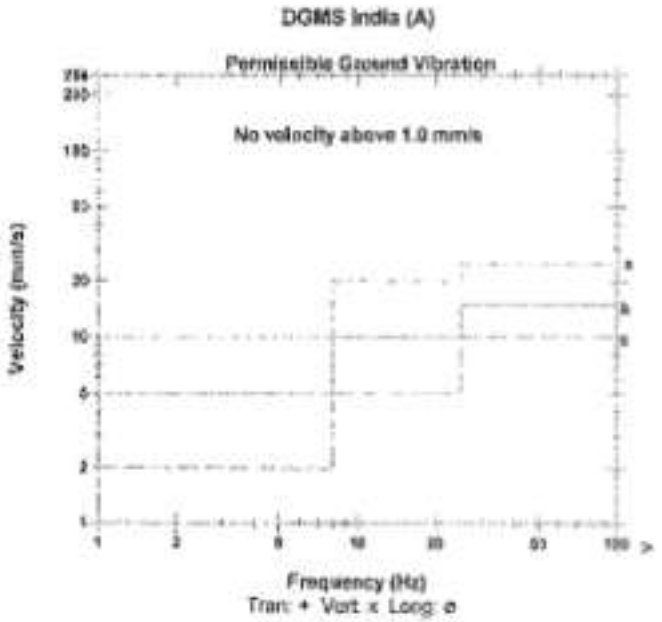
Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINES

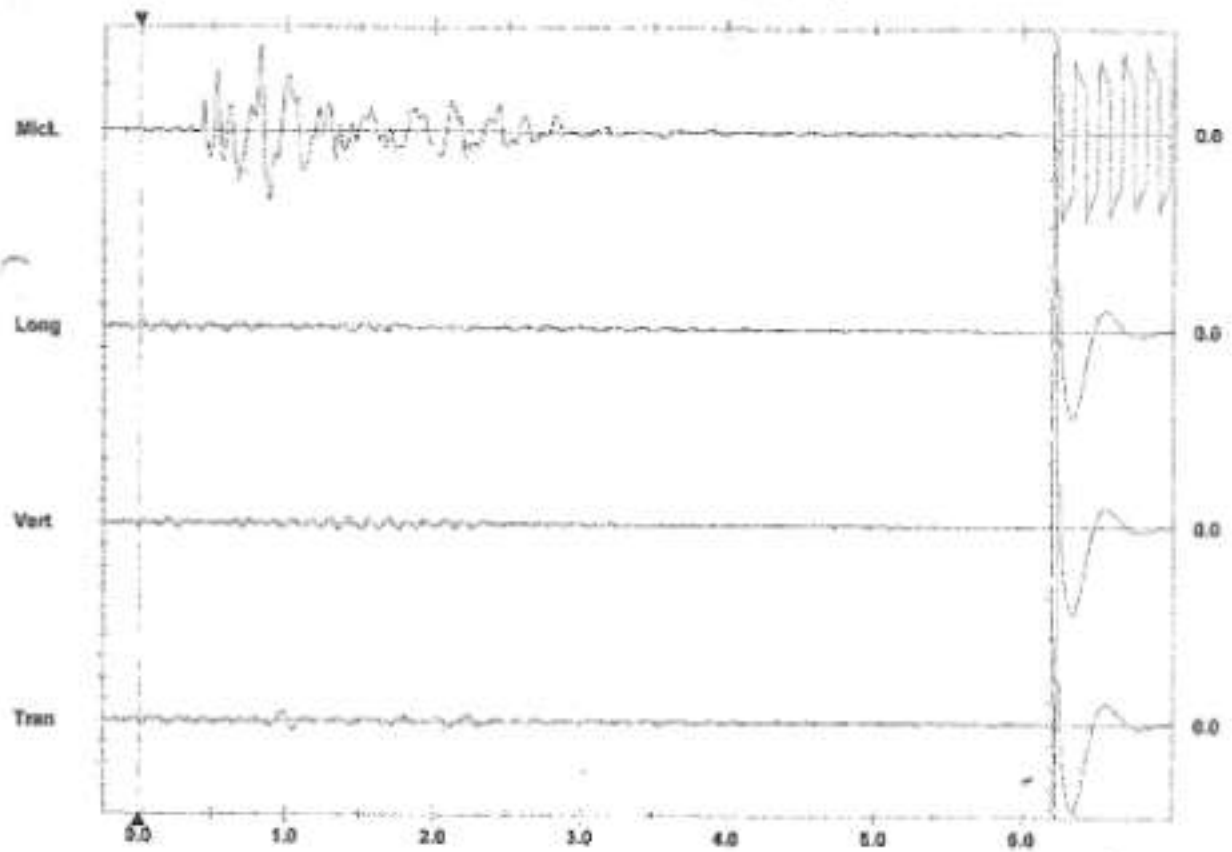
Extended Notes
Recorded at 150 meter back side of the blasting face.

Microphone	Linear Weighting
PSPL	9.154 pa.(L) at 0.821 sec
ZC Freq	4.5 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1253 mv)

	Tran	Vert	Long	
PPV	0.993	0.636	0.838	mm/s
ZC Freq	6.2	9.3	8.1	Hz
Time (Rel. to Trig)	0.985	1.629	0.012	sec
Peak Acceleration	0.010	0.007	0.007	g
Peak Displacement	0.024	0.012	0.014	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.5	Hz
Overswing Ratio	4.3	4.8	4.4	

Peak Vector Sum 1.052 mm/s at 0.985 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Sensor Check
Trigger =

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FFT Report

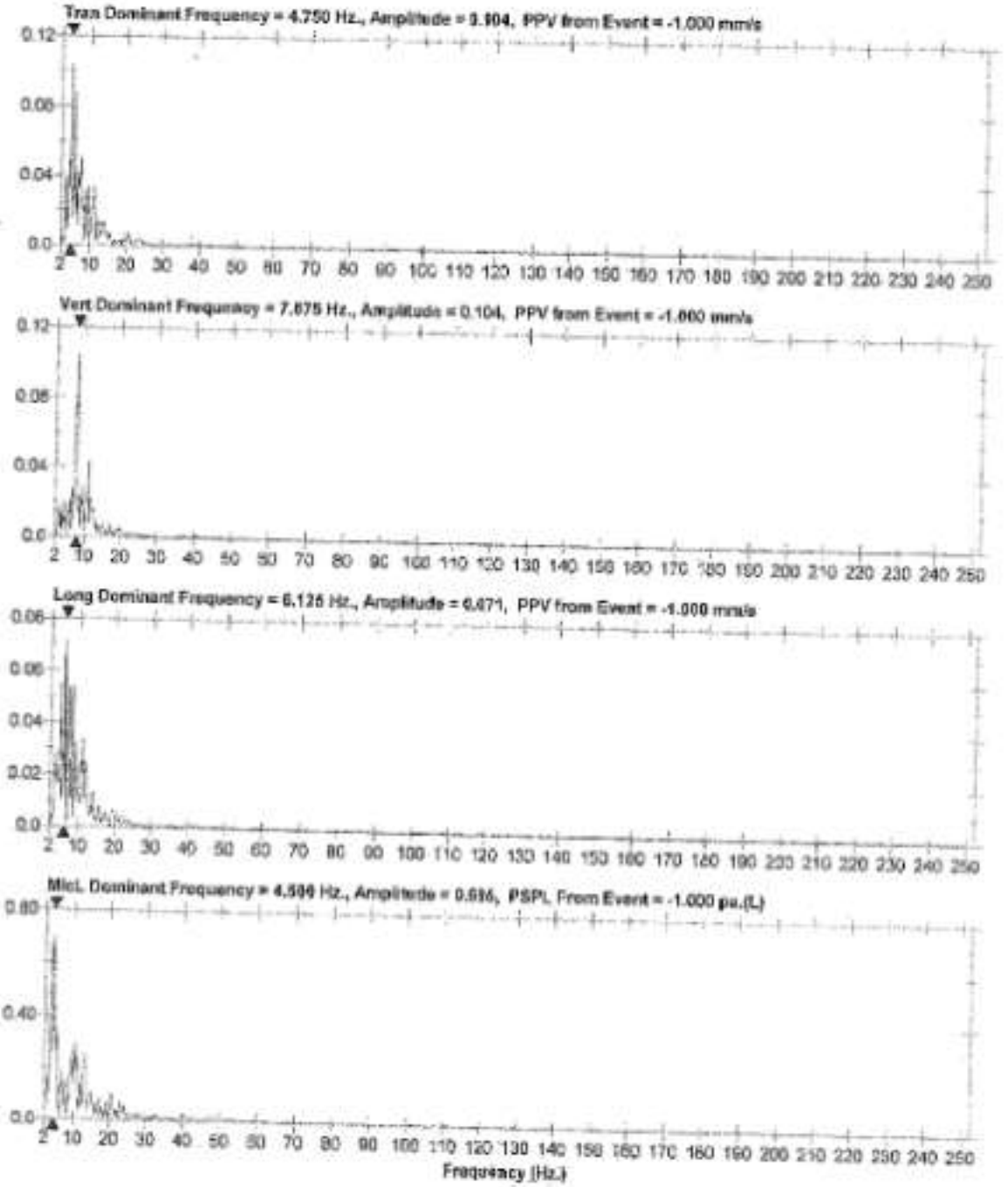
Date/Time	Long at 14:44:06 November 19, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/TSL MMB

Serial Number	UM21129 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	November 4, 2024 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location:	On Ground Surface
Client:	TATA STEEL (P) LIMITED
User Name:	BLACK DIAMOND EXPLOSIVES PVT LTD
General:	KATAMATI IRON MINES

Extended Notes
Recorded at 150 meter back side of the blasting face.



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Event Report

Date/Time	Long at 14:44:04 November 19, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM16576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM16576_20241119144404.IDFW

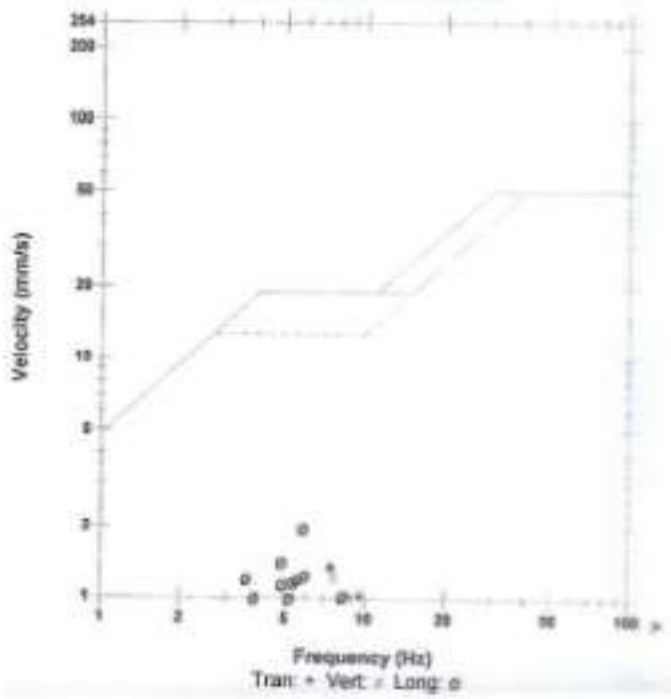
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

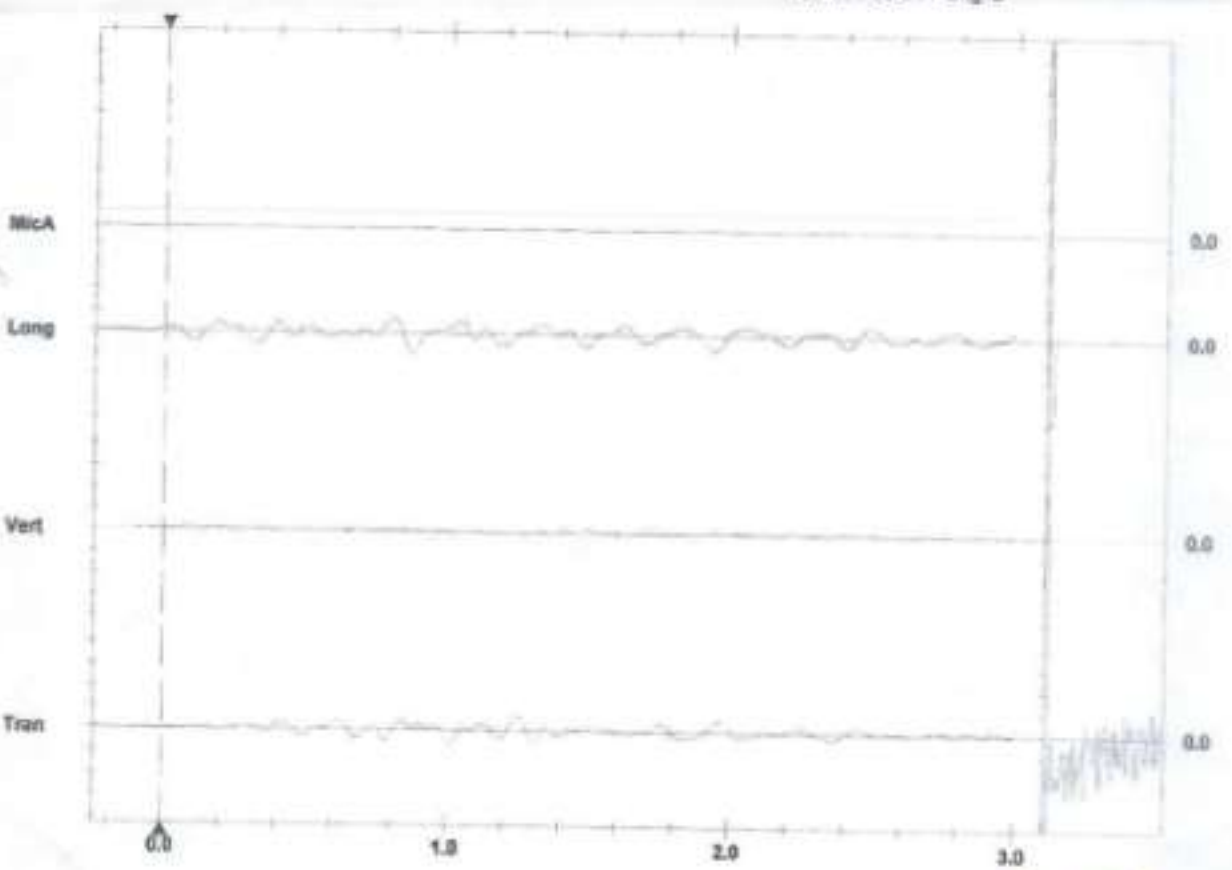
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.364	1.220	1.978	mm/s
ZC Freq	7.5	7.6	5.9	Hz
Time (Rel. to Trig)	1.251	0.886	0.870	sec
Peak Acceleration	0.012	0.016	0.013	g
Peak Displacement	0.031	0.023	0.045	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.1	

Peak Vector Sum 2.128 mm/s at 0.874 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger =

Printed: November 20, 2024 (V 10.72 - 10.72.1)

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for IDL Explosives Limited

Instantel

Event Report

Date/Time	Long at 14:43:55 November 19, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

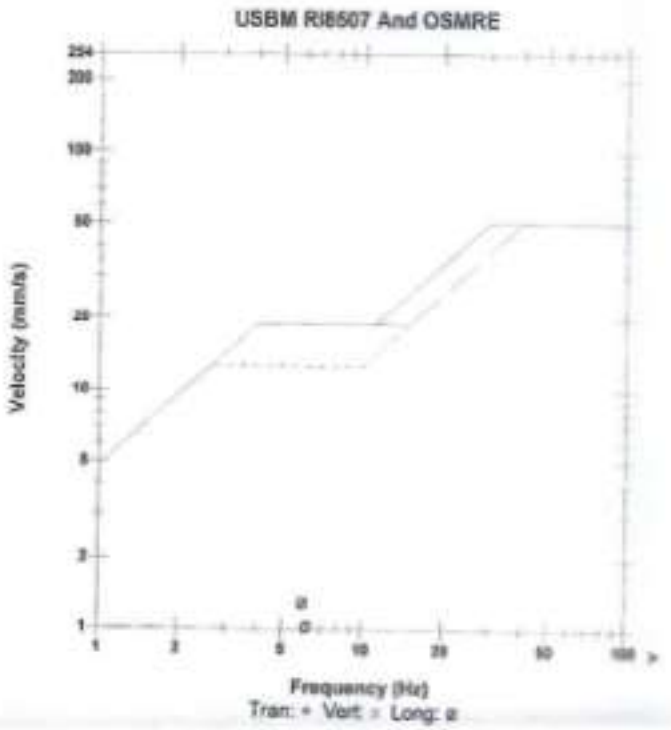
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241119144355.IDFW

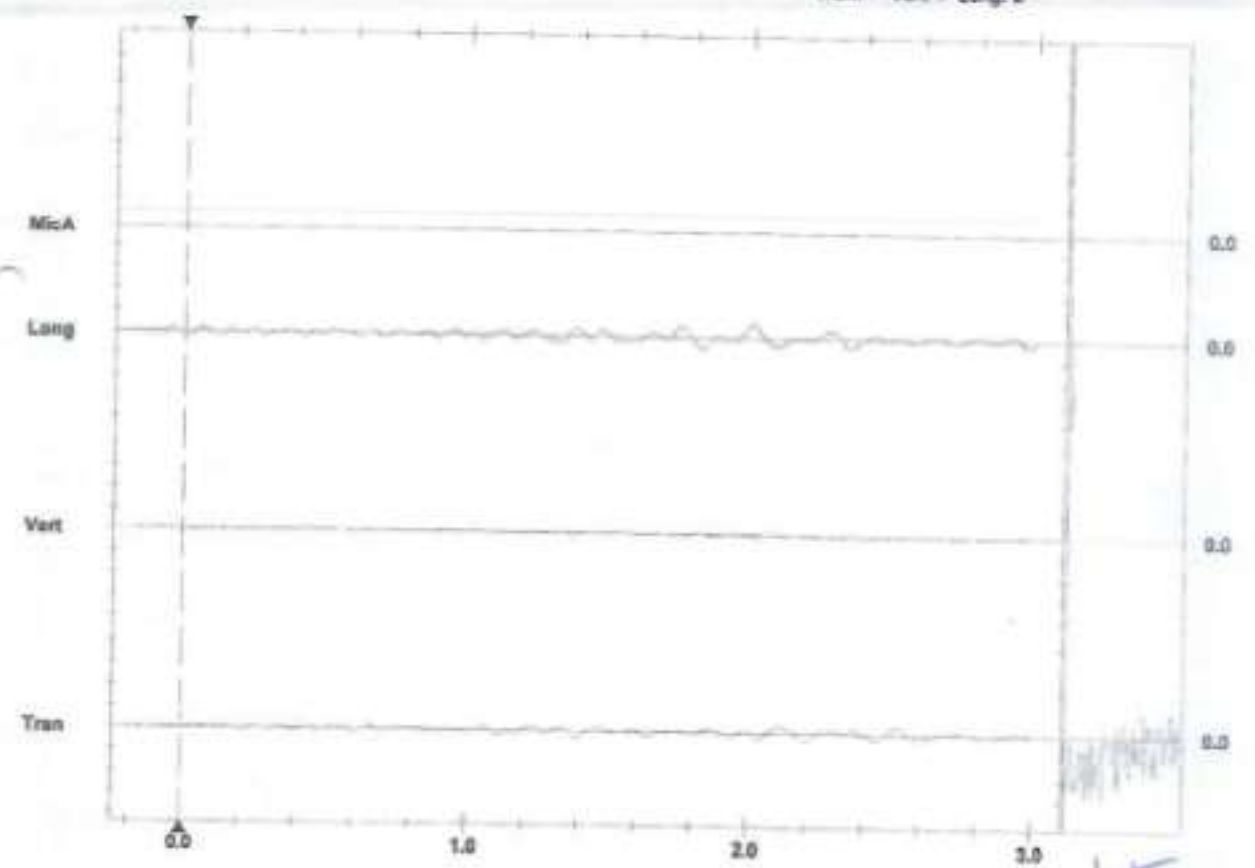
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.757	0.473	1.301	mm/s
ZC Freq	8.2	9.3	6.0	Hz
Time (Rel. to Trig)	2.203	1.023	2.008	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.018	0.010	0.031	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.1	

Peak Vector Sum 1.328 mm/s at 2.008 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: November 20, 2024 (V 10.72 - 10.72.1)

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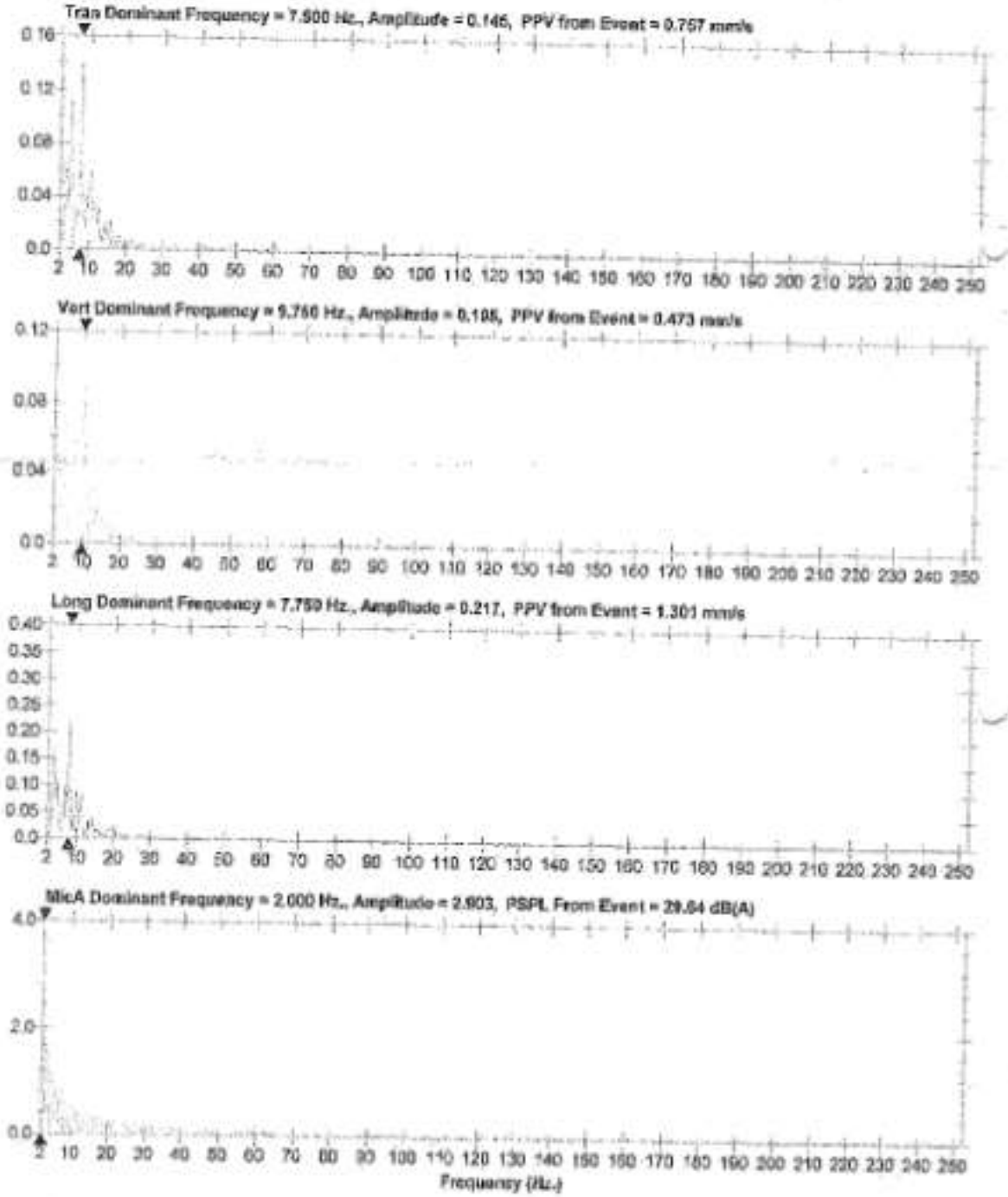
FFT Report

Date/Time	Long at 14:43:55 November 19, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 860.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM8

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241119144355.IDFW

Notes

Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:35:26 November 16, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

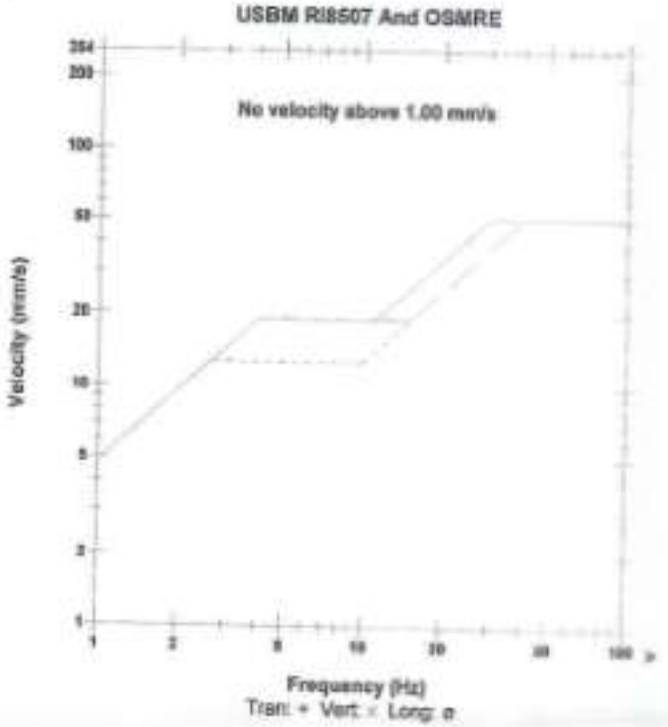
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241116133526.IDFW

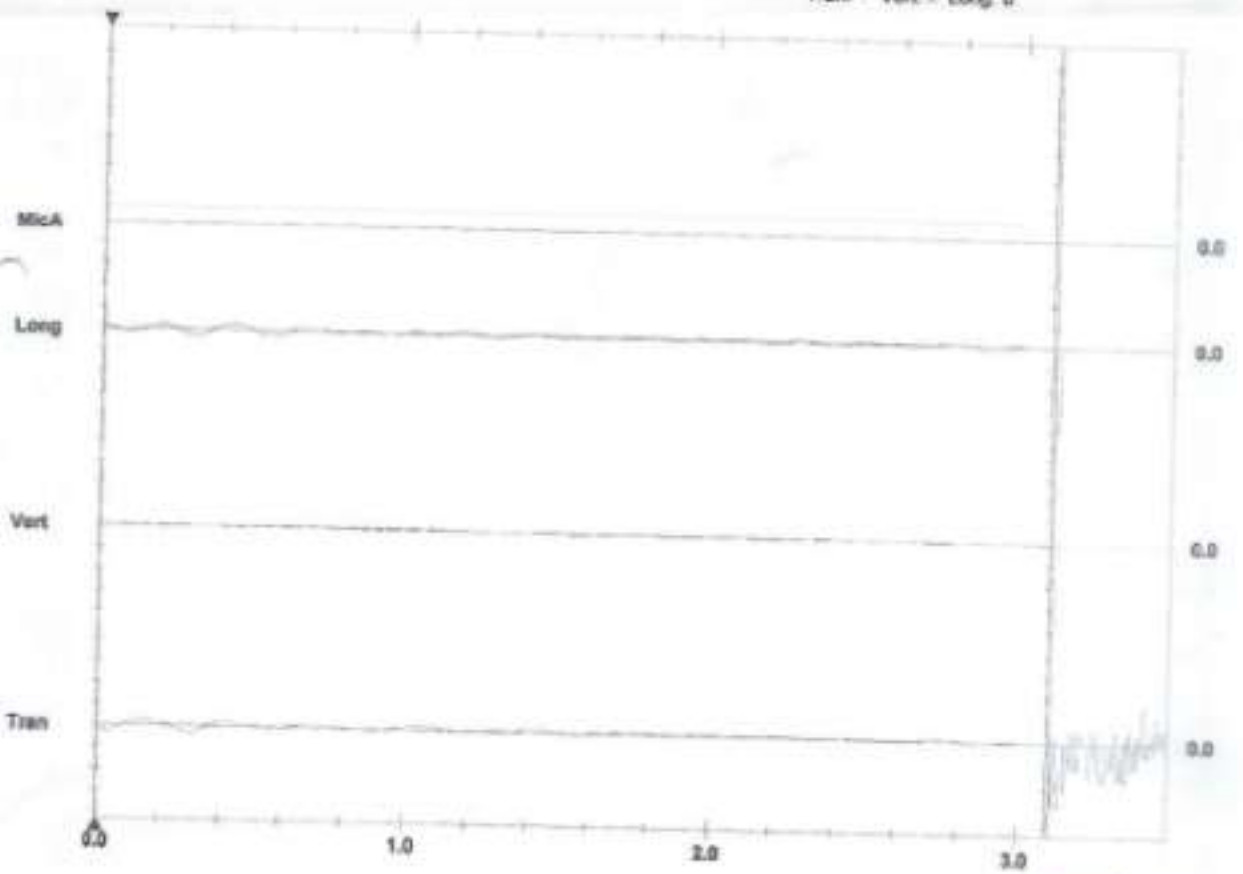
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.660	0.347	0.528	mm/s
ZC Freq	4.1	8.1	4.5	Hz
Time (Rel. to Trig)	0.301	0.009	0.303	sec
Peak Acceleration	0.010	0.006	0.012	g
Peak Displacement	0.024	0.007	0.021	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.2	

Peak Vector Sum 0.843 mm/s at 0.301 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger

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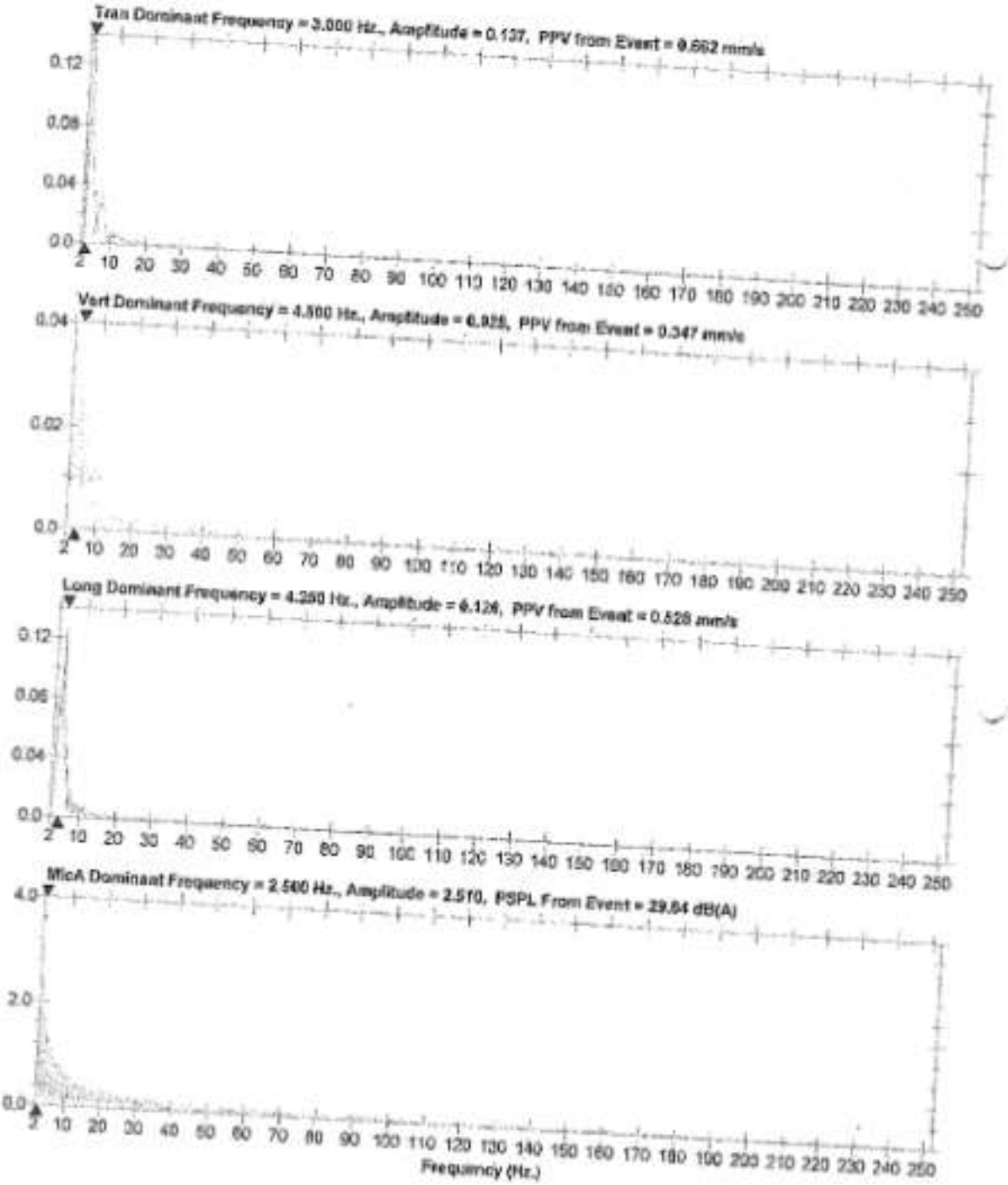
FFT Report

Date/Time	Vert at 13:36:28 November 18, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 spa
Operator/Setup:	Operator/factory.M4B

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241116133528.IDFW

Notes

Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 13:35:23 November 16, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

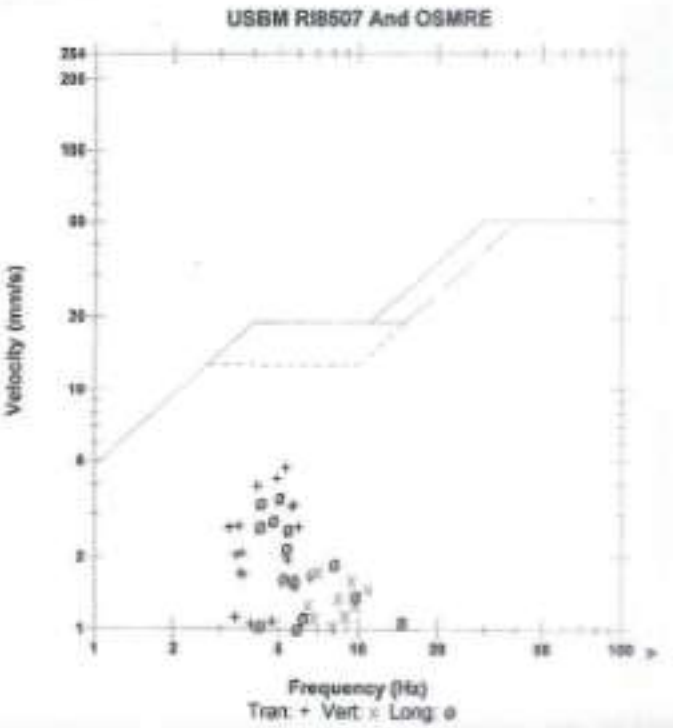
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241116133523.IDFW

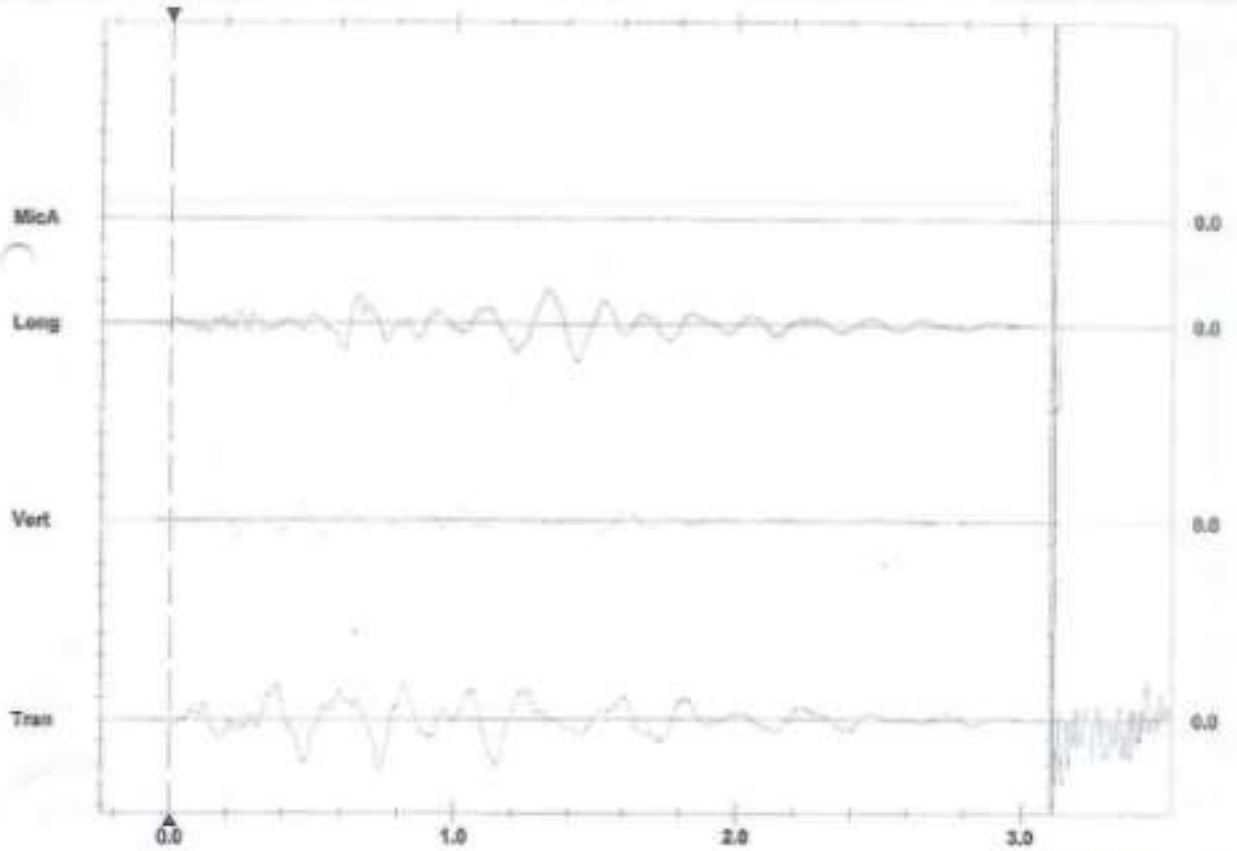
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Laq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	4.674	1.734	3.500	mm/s
ZC Freq	5.3	7.1	5.0	Hz
Time (Rel. to Trig)	0.739	0.537	1.431	sec
Peak Acceleration	0.026	0.026	0.026	g
Peak Displacement	0.122	0.034	0.115	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.2	

Peak Vector Sum 4.772 mm/s at 0.739 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

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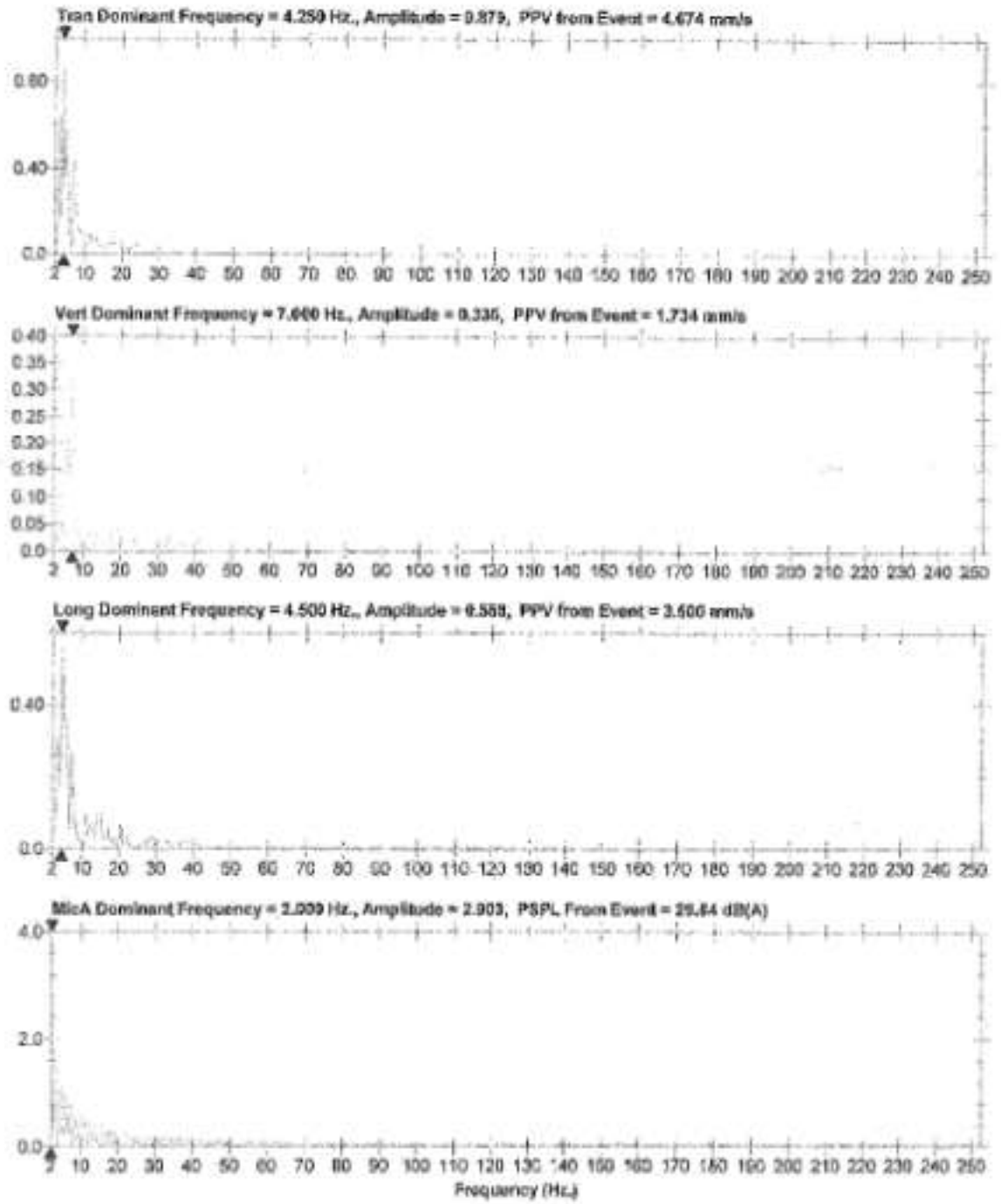
FFT Report

Date/Time	Tran at 13:35:23 November 16, 2024	Serial Number	UM15576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 662.0 dB(A)	Battery Level	3.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15576_20241116133523.IDFW
Operator/Setup:	Operator/factory MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

658

Date/Time	Vert at 13:36:46 November 12, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	5.0 sec at 4096 sps
Operator/Setup:	Operator/factory MWB

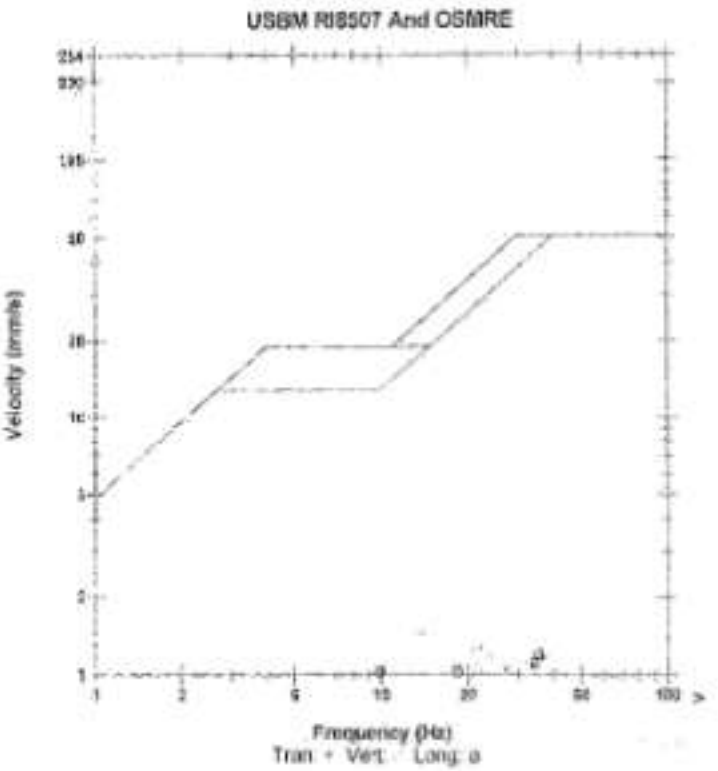
Serial Number	UM21106 V 10-80GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20241112133646.IDFW

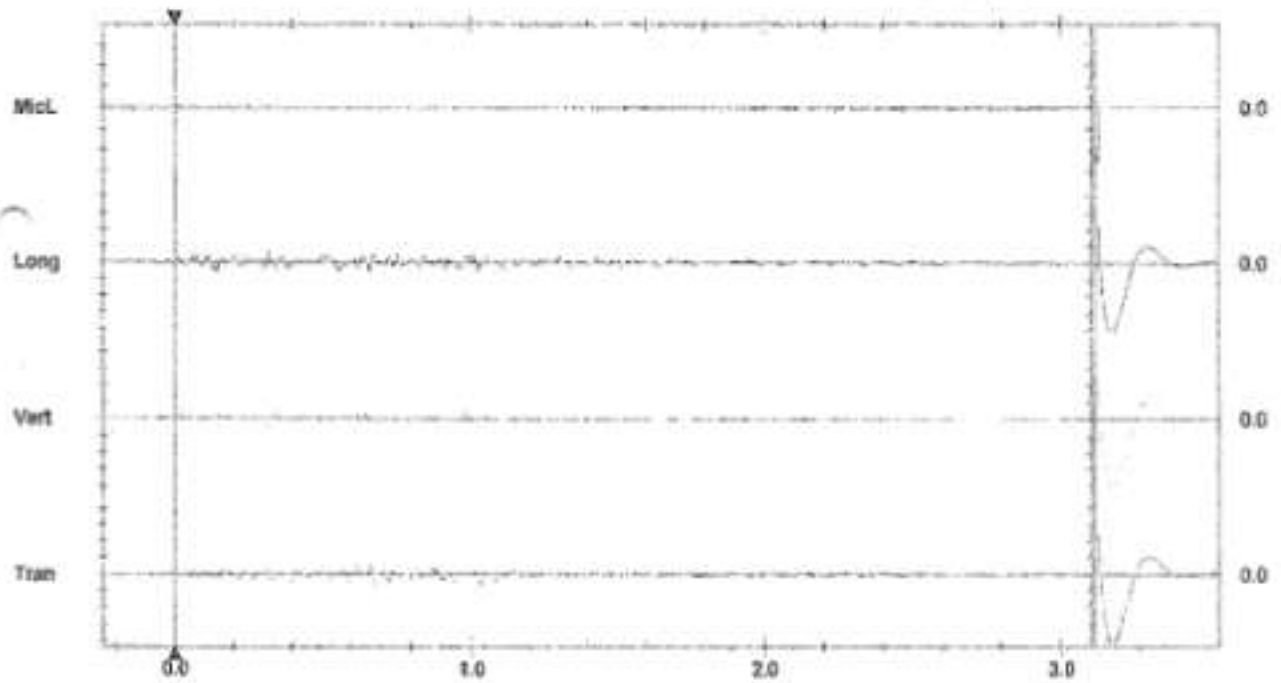
Notes
Location:
Client:
User Name:
General:

Microphone	Linear Weighting
PSPL	+0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.456	1.316	1.214	mm/s
ZC Freq	13.9	22.0	35.3	Hz
Time (Rel. to Trig)	0.497	0.635	1.027	sec
Peak Acceleration	0.079	0.038	0.040	g
Peak Displacement	0.012	0.009	0.012	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.1	7.5	Hz
Overswing Ratio	4.1	3.9	4.0	

Peak Vector Sum 1.881 mm/s at 0.660 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.500 mm/s/div Mic: 1.000 pa (L)/div

Trigger =

Sensor Check

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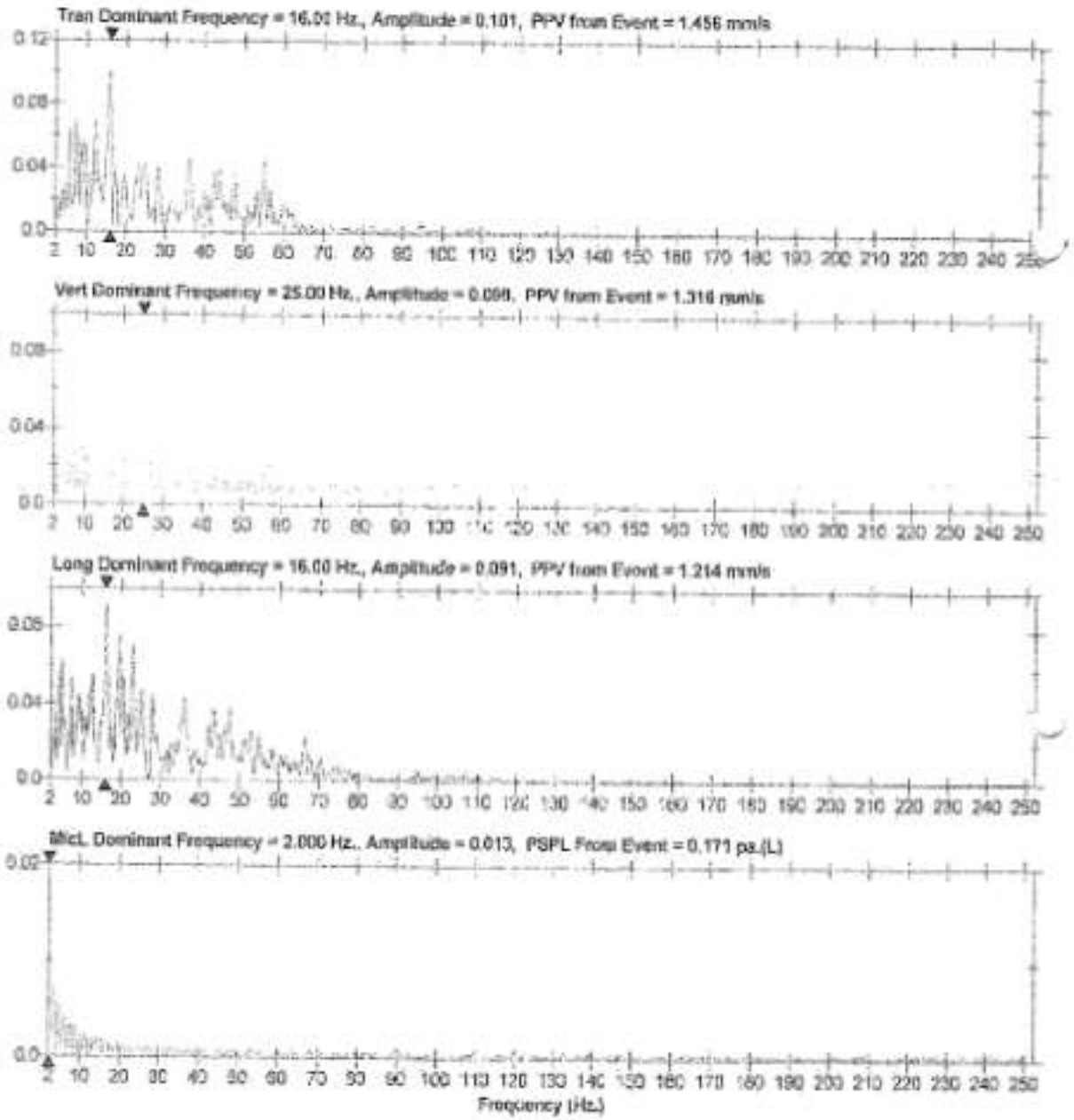
FFT Report

Date/Time	Vert at 13:36:43 November 12, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM21108 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21108_20241112133645.IDFW

Notes
Location:
Client:
User Name:
General:



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Event Report

7+62

Date/Time	Tran at 13:37:31 November 12, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

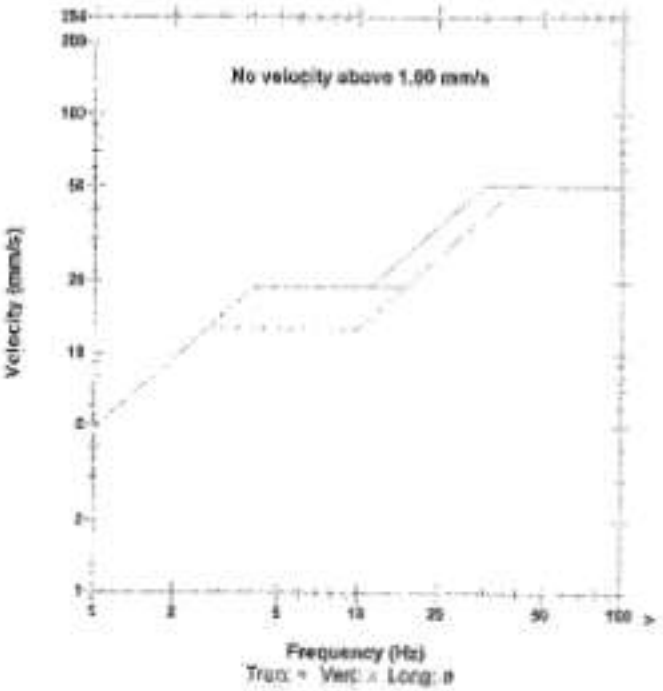
Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20241112133751.IDFW

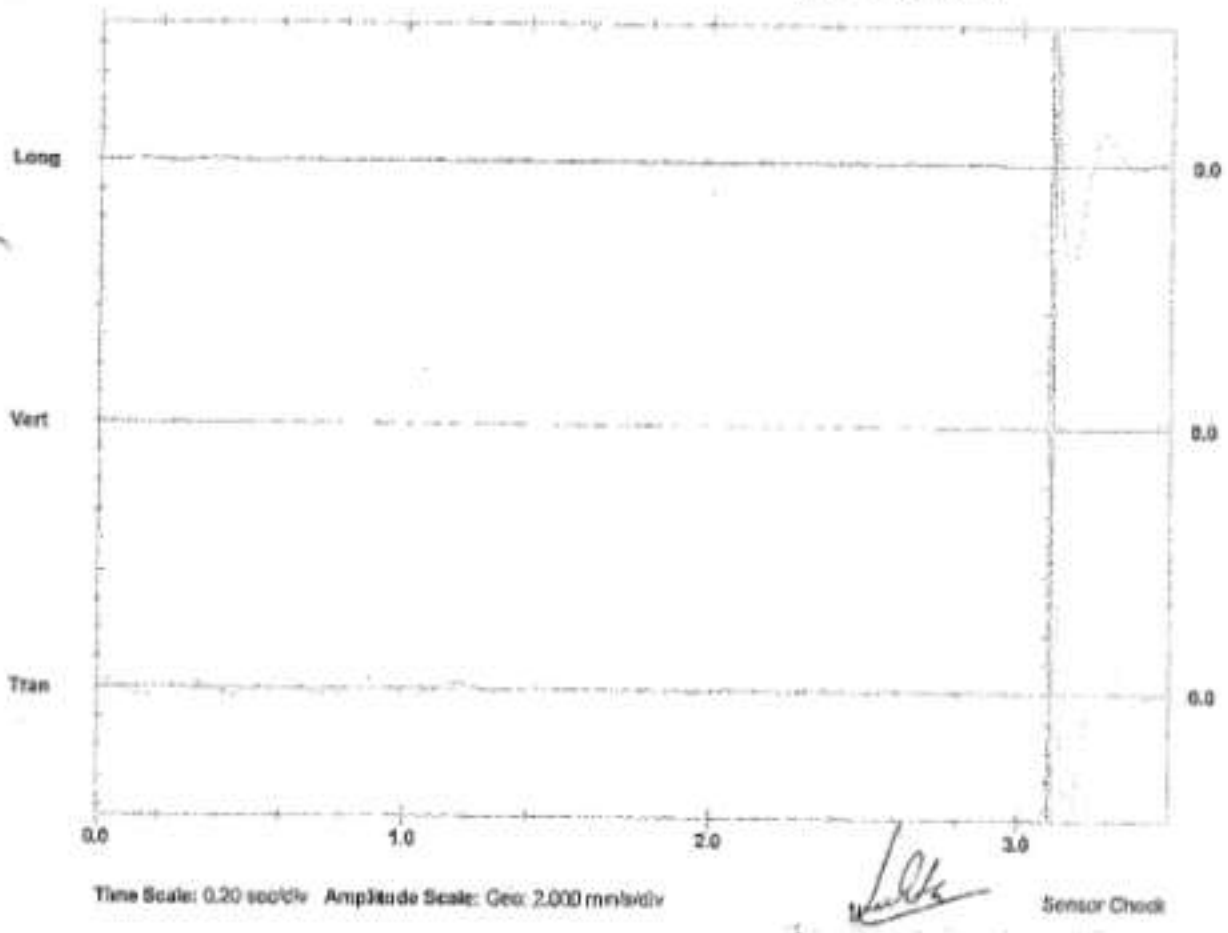
Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	0.607	0.142	0.235	mm/s
ZC Freq	3.5	N/A	3.7	Hz
Time (Rel. to Trig)	0.696	0.002	0.129	sec
Peak Acceleration	0.006	0.005	0.004	g
Peak Displacement	0.027	0.004	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.5	Hz
Overswing Ratio	3.3	3.0	3.3	

Peak Vector Sum 0.615 mm/s at 0.696 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div

Sensor Check

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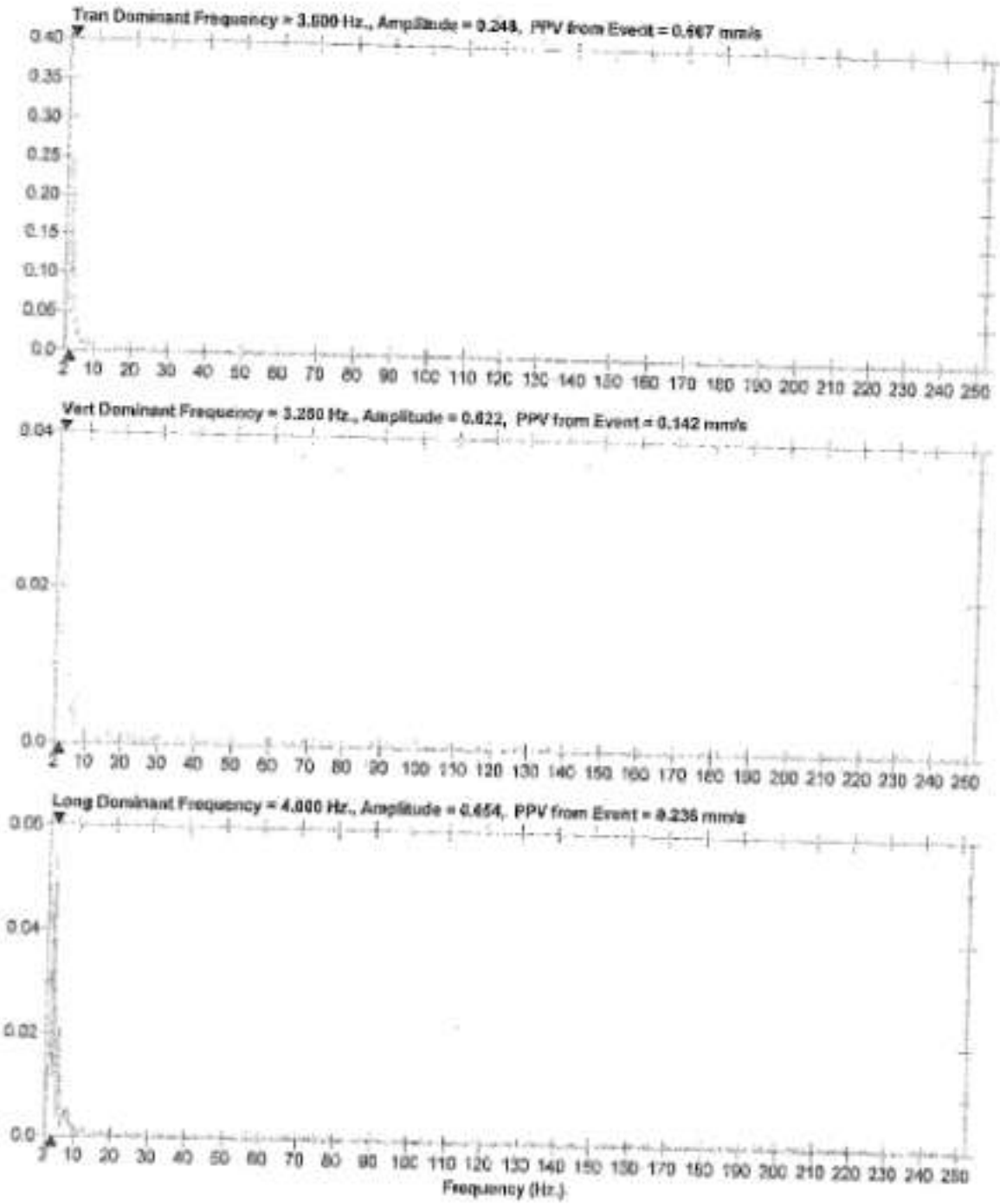
FFT Report

Date/Time	Tran at 13:37:51 November 12, 2024	Serial Number	UM6263 V 10-76 Micromate ISEE
Trigger Source	Geo: 0.300 mm/s	Battery Level	3.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 1024 sps	File Name	UM6263_20241112133751.IDFW
Operator/Setup:	Operator/factory:MWB		

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

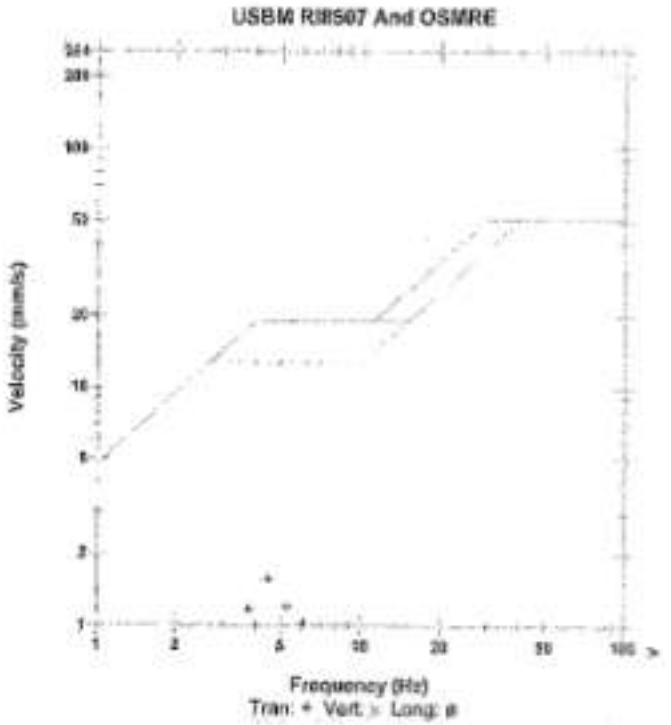
Date/Time	Tran at 13:53:13 November 12, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/factory.MMB

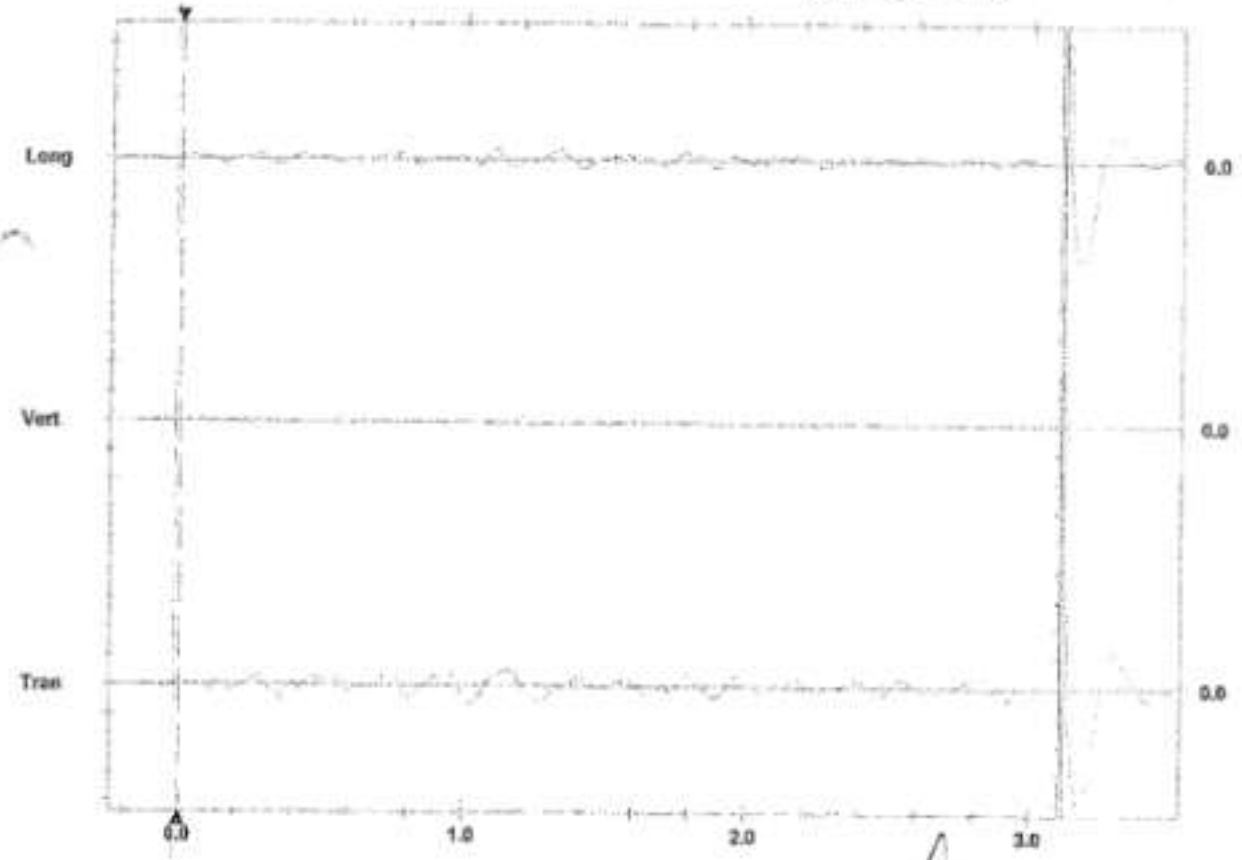
Serial Number	UM6253 V 10-70 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20241112135313.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:

	Tran	Vert	Long	
PPV	1.563	0.906	0.757	mm/s
ZC Freq	4.5	9.1	4.7	Hz
Time (Rel. to Trig)	1.276	0.550	1.320	sec
Peak Acceleration	0.012	0.008	0.009	g
Peak Displacement	0.049	0.015	0.022	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.5	Hz
Overswing Ratio	3.3	3.0	3.3	

Peak Vector Sum: 1.565 mm/s at 1.278 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger ▸ ◂

Sensor Check

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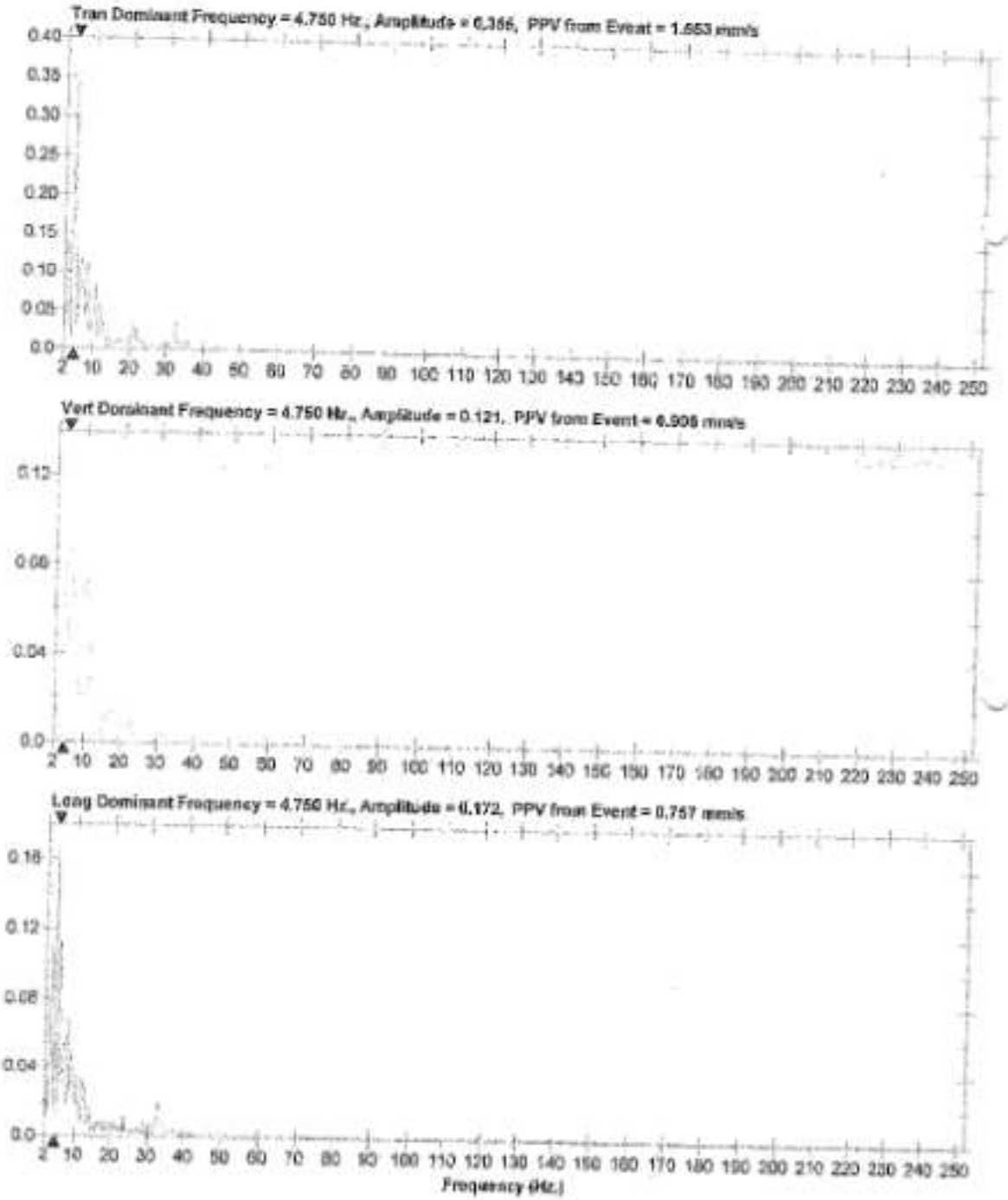
FFT Report

Date/Time	Tran at 13:53:13 November 12, 2024
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 1024 sps
Operator/Setup:	Operator/Factory.MWB

Serial Number	UM6253 V 10-76 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM6253_20241112135313.IDFW

Notes
Location:
Client: TATA STEEL PVT LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Waveform Trigger Source	Trim at November 8, 2024 14:33:16	Serial Number	UM39539
Trigger Level(s)	Geo 0.508 mm/s	Model Number	Micromate IS/E IS.605C
Trigger Level (Mic)	Mic 2.00 pa, 100 dB(L)	Battery Level	3.6 volts
Pre-Trigger/Record Time	0.50 sec/5.0 sec (Fixed)	Unit Calibration	September 17, 2024 by GIS New Delhi
Sample Rate	1024 sps	Event File Name	UM39539_20241104141316.IDFW
Setup File Name	KATAMATI.VMG	USB Sensor Support	Disabled
Operator	Overseer	Scaled Distance	35.8 (100.0 m, 11.0 kg)

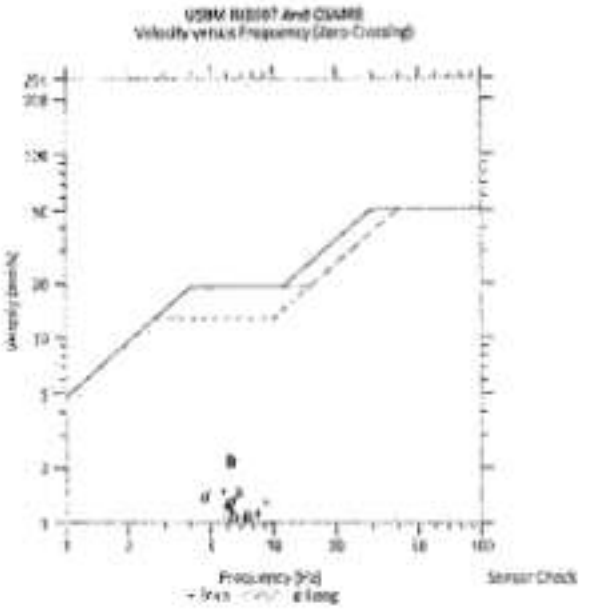
Notes
Location: On Ground Surface
Client: KATAMATI IRON ORE MINE
User Name: BSUPL
General:

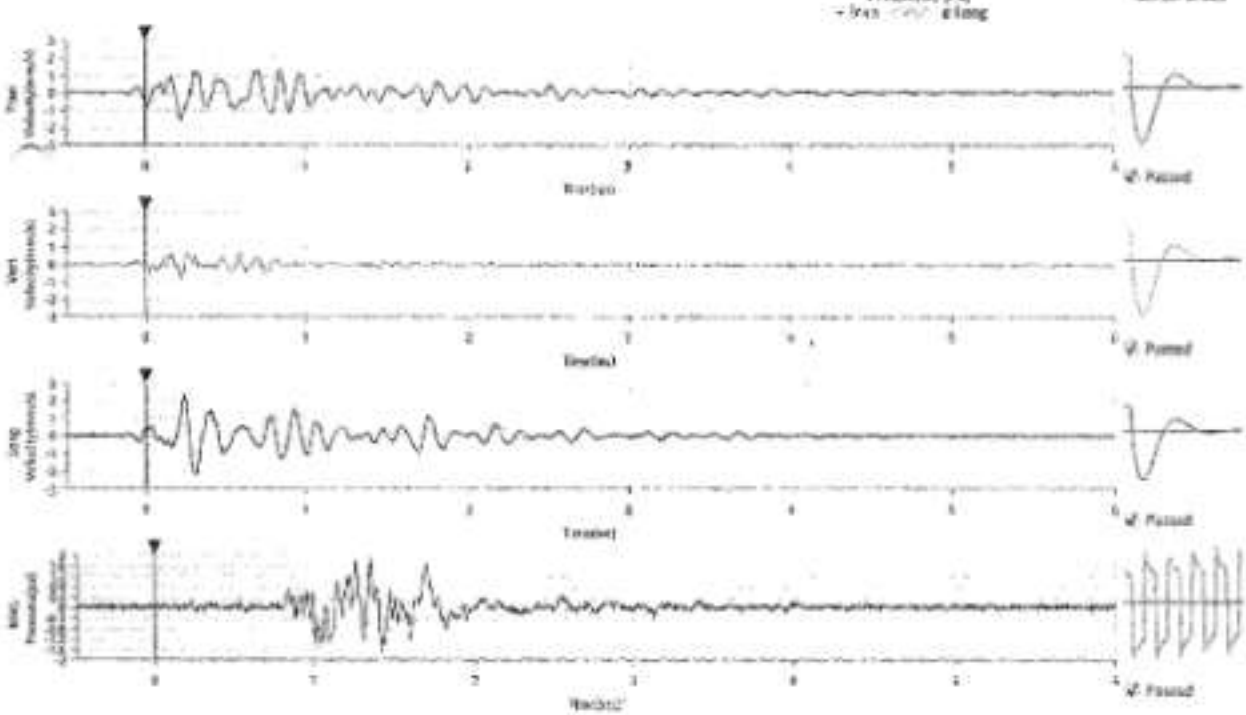
Extended Notes: 100 mtrs backside from blasting face
Post Event Notes: No text to be displayed.

Geophone	Tran	Vert	Long
Peak Particle Velocity	1.575 mm/s	0.958 mm/s	2.270 mm/s
Zero Crossing Frequency	5.7 Hz	10.2 Hz	6.4 Hz
Time (Relative to Trigger)	0.233 sec	0.235 sec	0.241 sec
Peak Acceleration	0.014 g	0.015 g	0.021 g
Peak Displacement	0.039 mm	0.015 mm	0.056 mm
Sensor Check	✓ Passed	✓ Passed	✓ Passed
Frequency	7.5 Hz	7.7 Hz	7.5 Hz
Overswing Ratio	4.1	3.7	4.3

Peak Vector Sum: 2.589 mm/s at 0.237 sec

Linear Microphone
Peak Sound Pressure Level	1.85 psi
Time (Relative to Trigger)	1.354 sec
Zero Crossing Frequency	5.7 Hz
Sensor Check	✓ Passed
Frequency	10.5 Hz
Test Amplitude	1.855 psi





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FFT Report

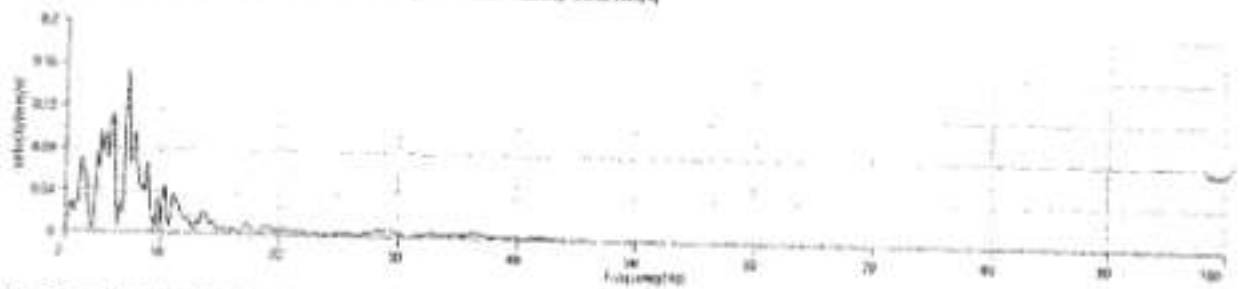
Waveform Trigger Source	Tran at November 4, 2024 14:03:06	Serial Number	BM29535
Trigger Level(s)	Geo 0.500 mm/s	Model Number	Micromate (SEE 10.96)C
Trigger Level (Mic)	Mic 2.00 pa, 100 dB(L)	Battery Level	3.6 volts
Pre-Trigger/Record Time	6.50 sec/5.0 sec (Fixed)	Unit Calibration	September 17, 2024 by UES New Delhi
Sample Rate	1024 sps	Event File Name	UM29686_20241104144156.IDFW
Setup File Name	KAPASHATI.IMWB	USB Server Support	Disabled
Operator	Operator	Serial Distance	25.8 CDG 0 m, 11.0 kg)

Notes
Location:
Client:
User Name:
General:

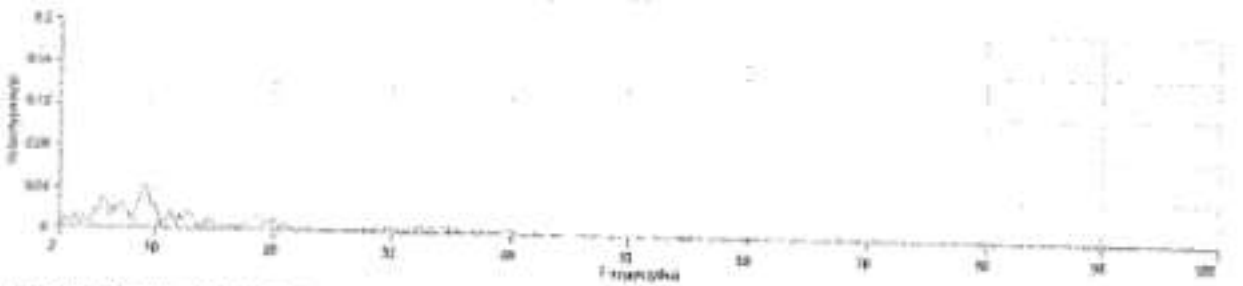
Client Project Surface
KATARIYA T. IRON ORE PATH
BDOPL

Extended Notes: 108 m/s backside from blasting face.
Post Event Notes: Notice to be displayed.

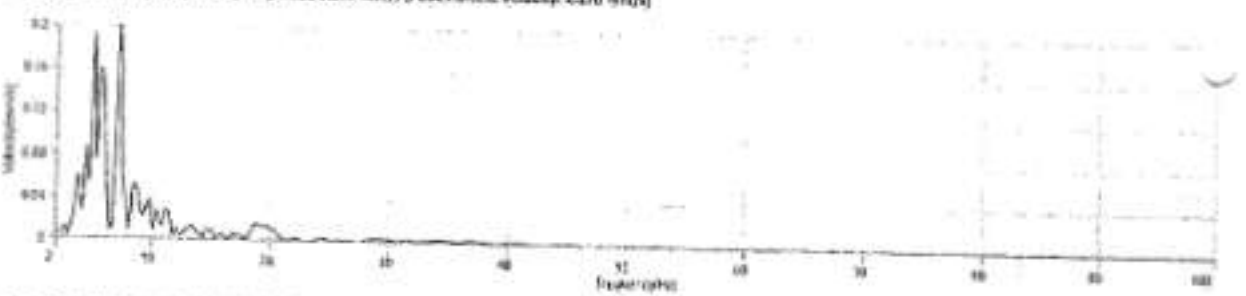
Tran - Dominant Frequency 7.2 Hz, Amplitude 0.134 mm/s (Peak Particle Velocity 1.512 mm/s)



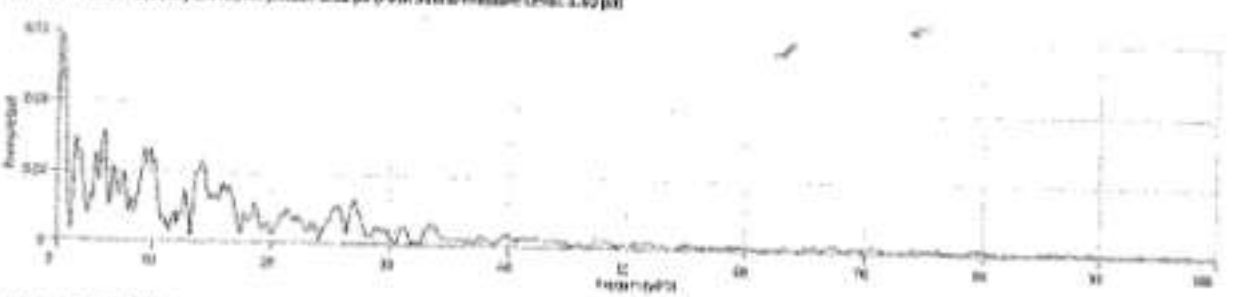
Vert - Dominant Frequency 9.2 Hz, Amplitude 0.041 mm/s (Peak Particle Velocity 0.053 mm/s)



Long - Dominant Frequency 7.2 Hz, Amplitude 0.197 mm/s (Peak Particle Velocity 2.170 mm/s)



Mic - Dominant Frequency 2.4 Hz, Amplitude 0.12 pa (Peak Sound Pressure Level: 1.62 pa)



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Event Report

Pit-3 - RL-636

Date/Time	Vert at 13:47:06 November 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

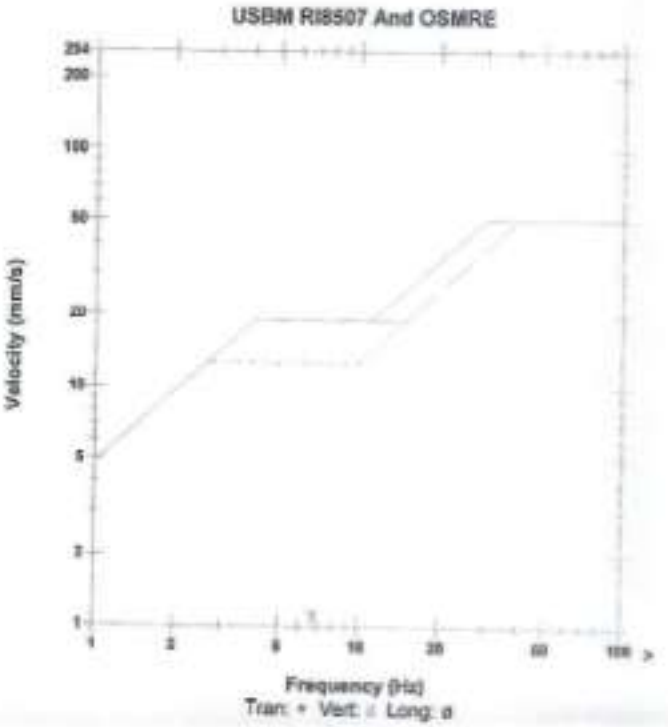
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241109134706.IDFW

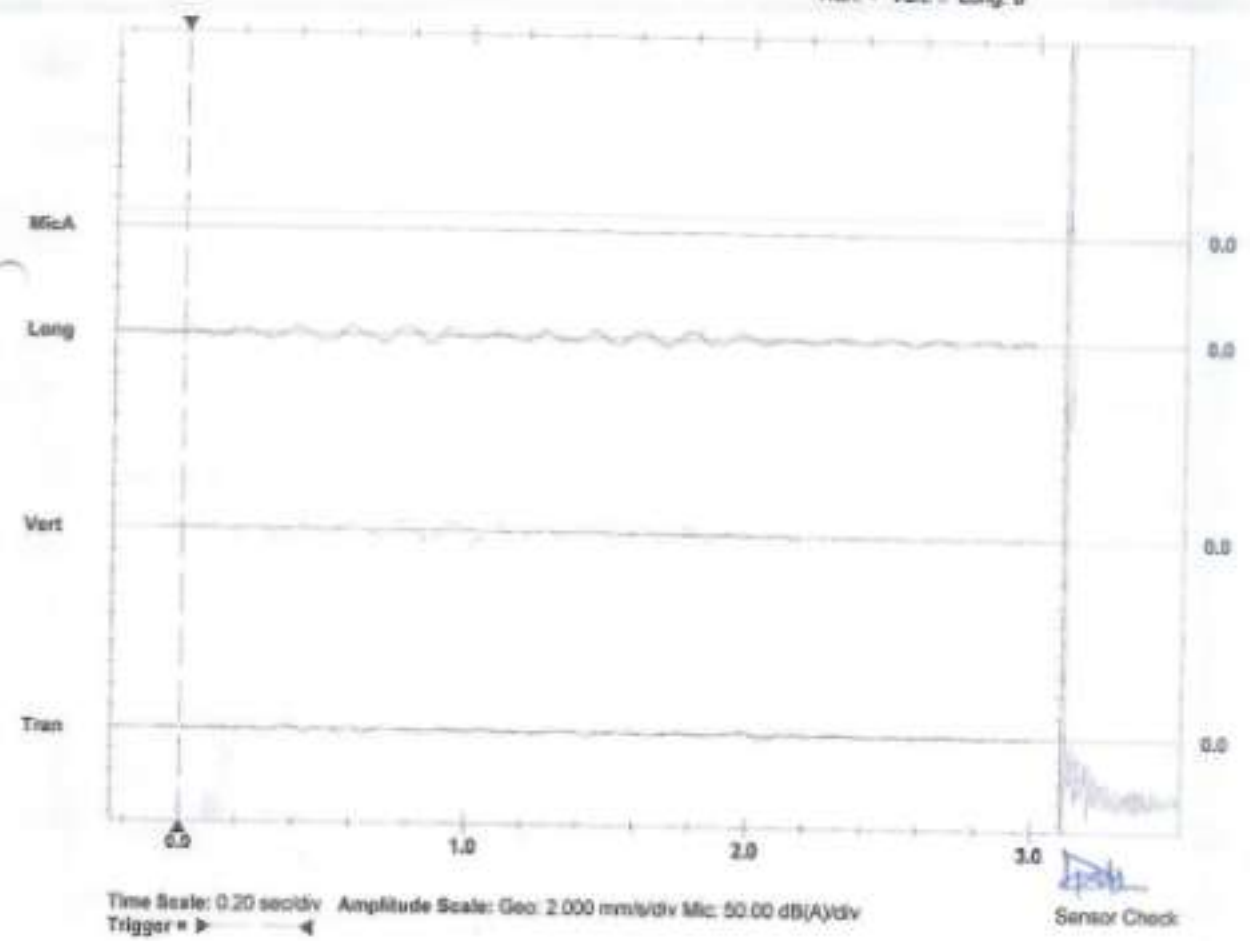
Notes
Location: Kalamati Iron mine RL-636
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.402	1.111	0.867	mm/s
ZC Freq	6.1	6.8	6.1	Hz
Time (Rel. to Trig)	2.056	0.789	0.569	sec
Peak Acceleration	0.010	0.013	0.012	g
Peak Displacement	0.010	0.023	0.022	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 1.307 mm/s at 0.789 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger ▸ ◂

Sensor Check

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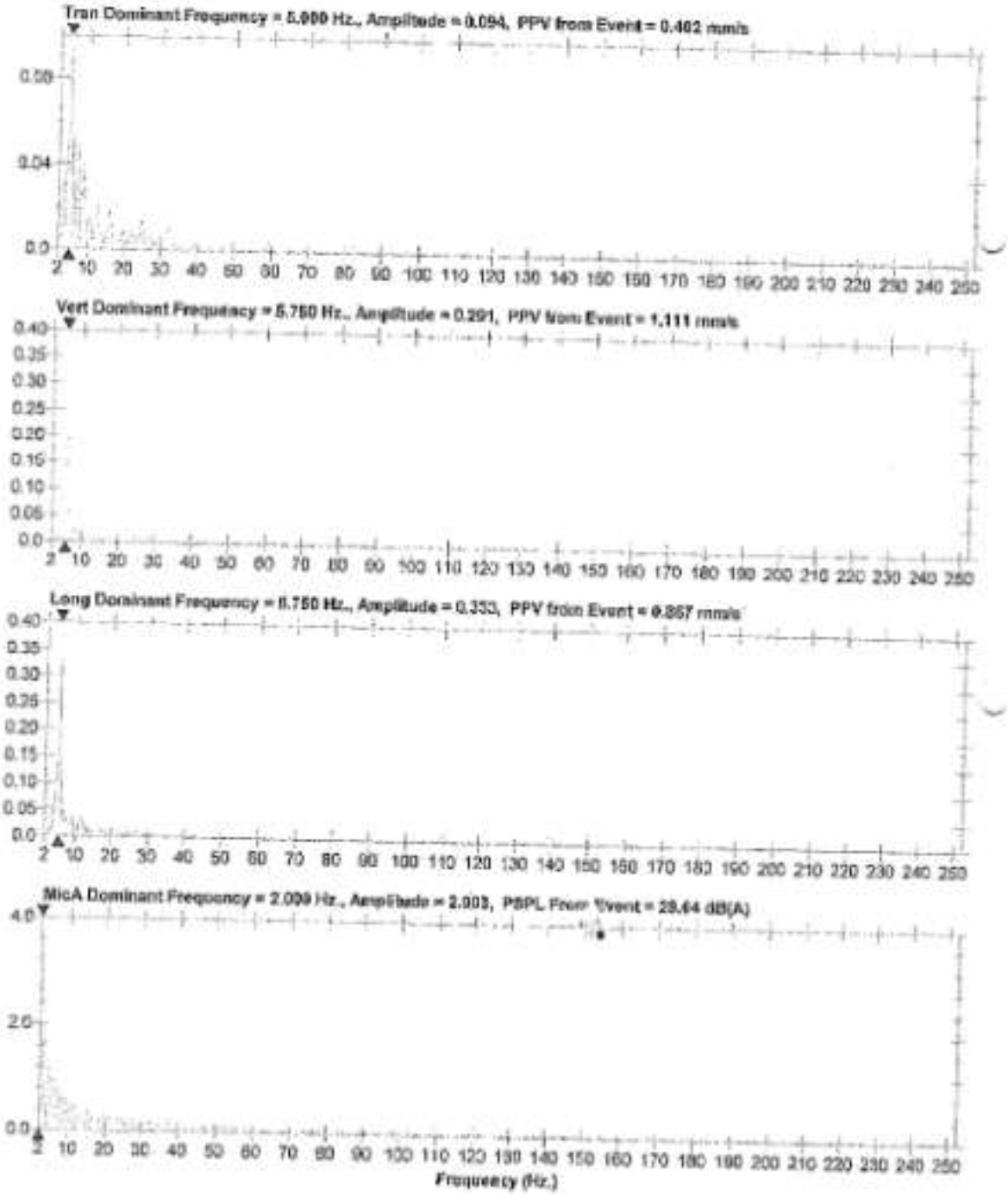
FFT Report

Date/Time	Vert at 13:47:06 November 9, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.NMB

Serial Number	UM15576 V 10-60FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241109134706.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

PTT-2, RL-636

Date/Time	Vert at 13:47:09 November 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory:MMB

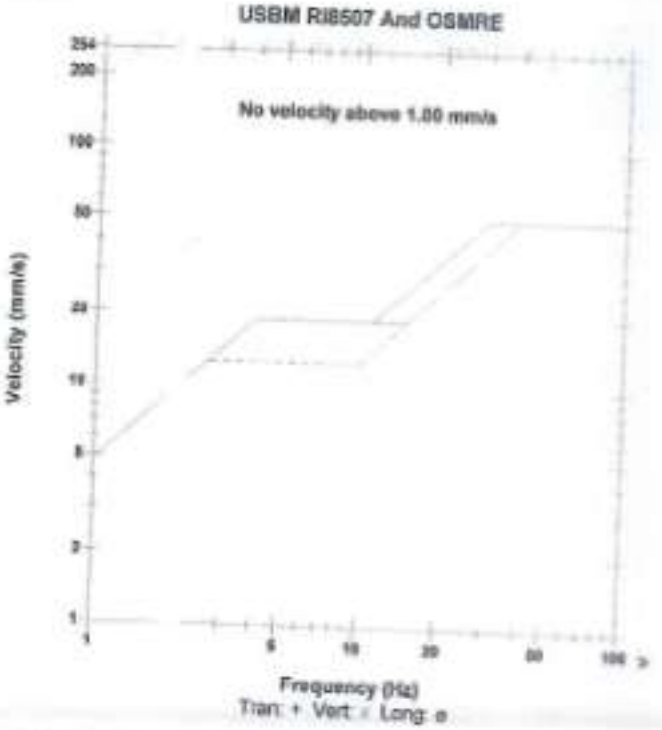
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 10, 2024 by UES New Delhi
File Name	UM15576_20241109134709.IDFW

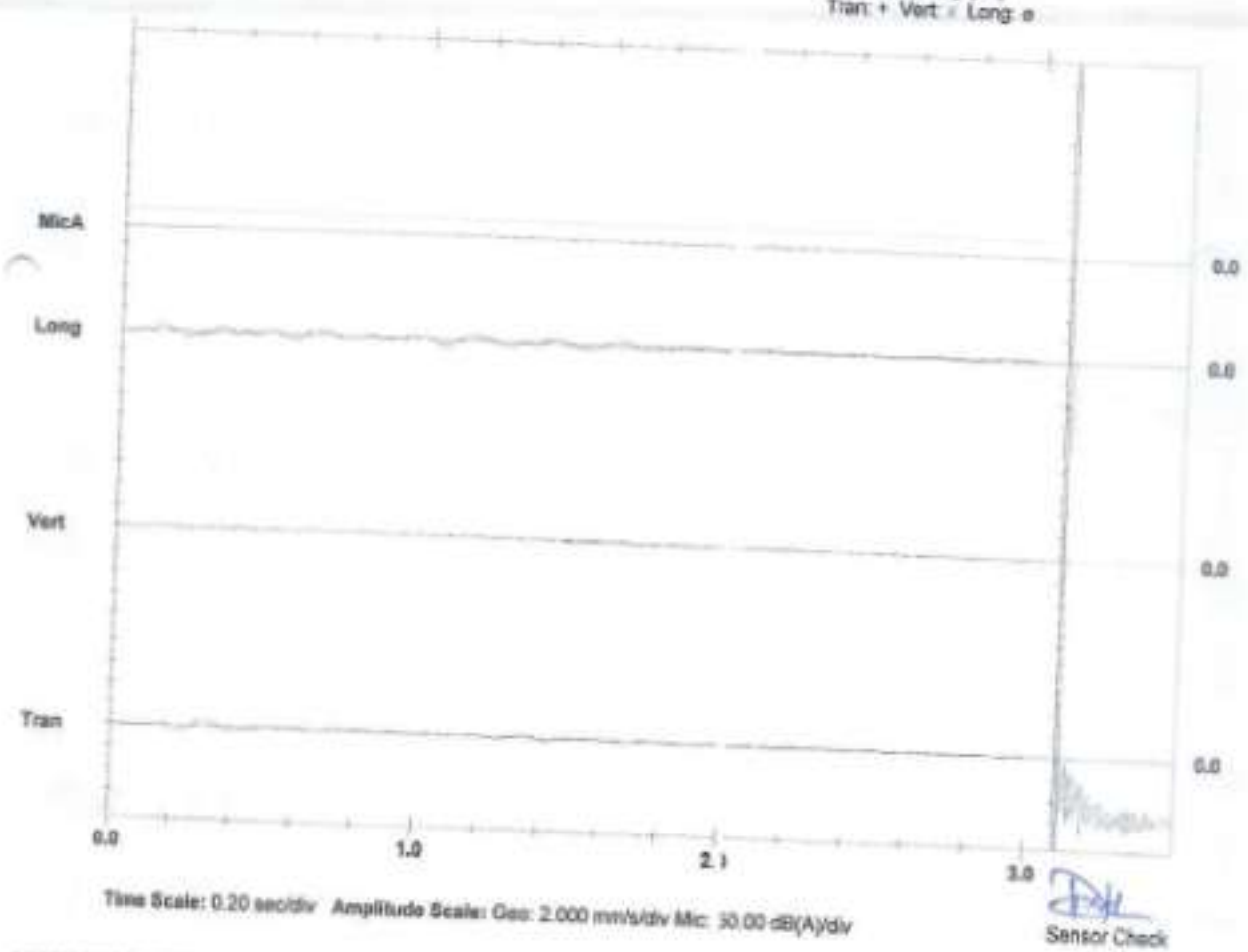
Notes
Location: Kalamati iron mines RL-636
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.512	0.646	0.575	mm/s
ZC Freq	5.1	7.9	5.9	Hz
Time (Rel. to Trig)	0.312	0.062	1.063	sec
Peak Acceleration	0.010	0.012	0.010	g
Peak Displacement	0.016	0.014	0.018	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 0.803 mm/s at 0.347 sec





Printed: November 11, 2024 (V 10.72 - 10.72.1)
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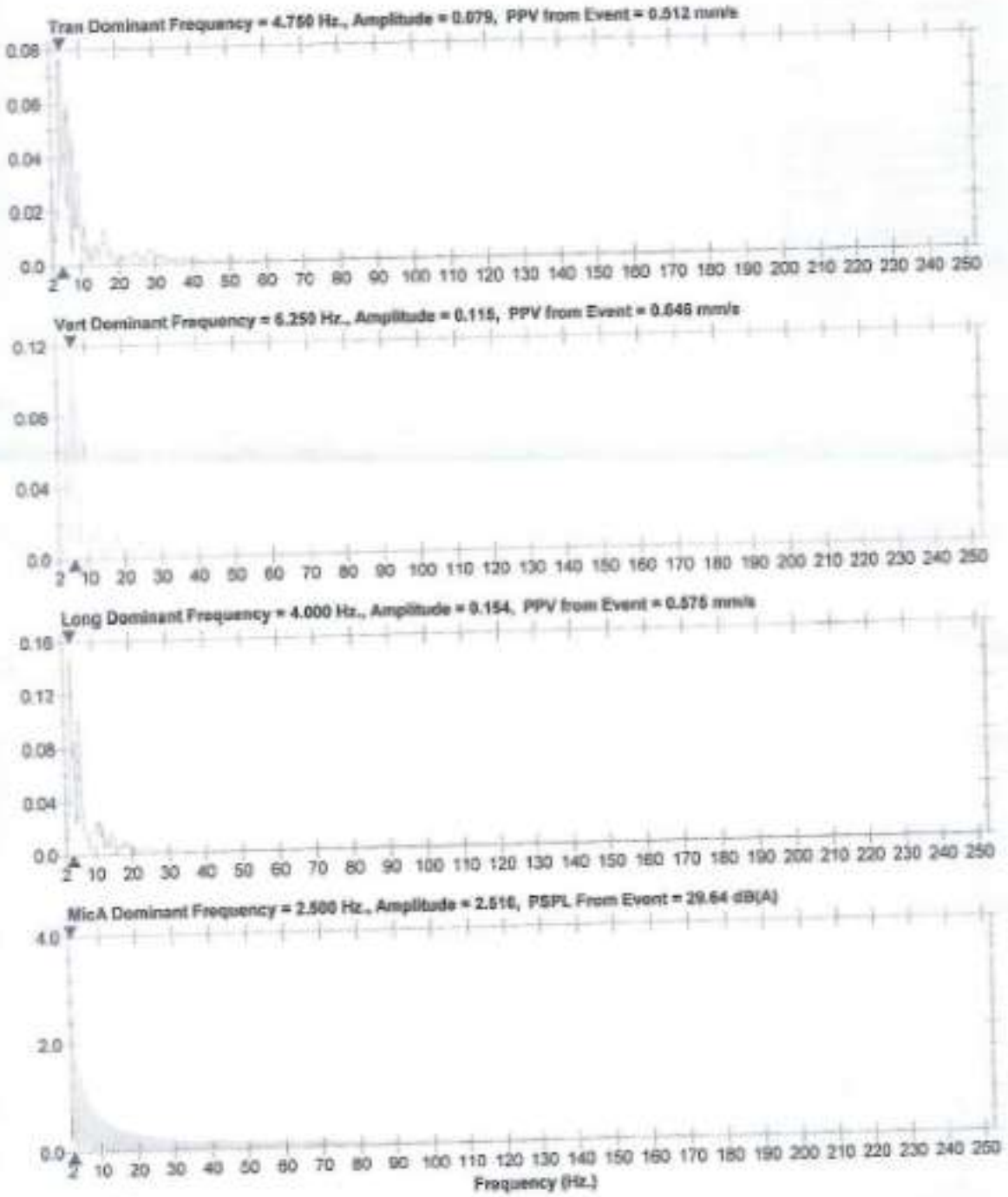
FFT Report

Date/Time	Vert at 13:47:09 November 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241109134709.IDFW

Notes
Location: Kalyanpur Iron Mine RL-636
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 13:54:11 November 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM8

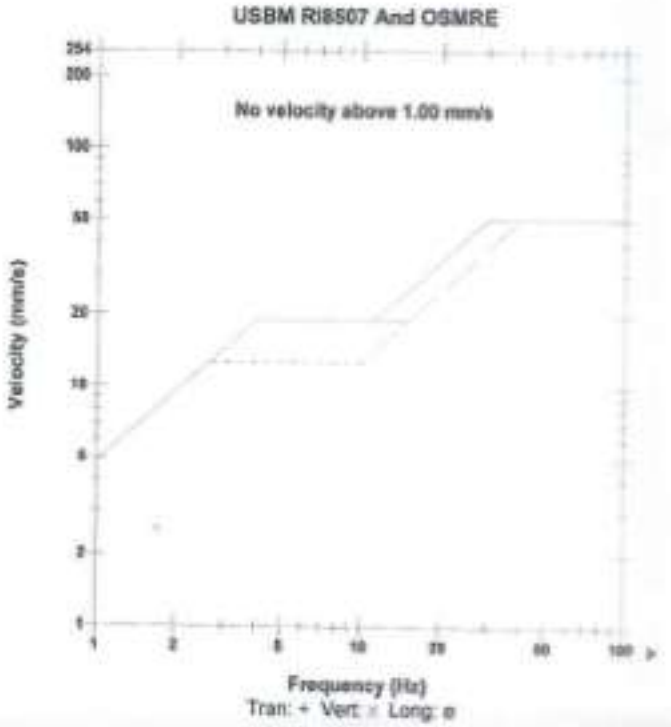
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241107135411.IDFW

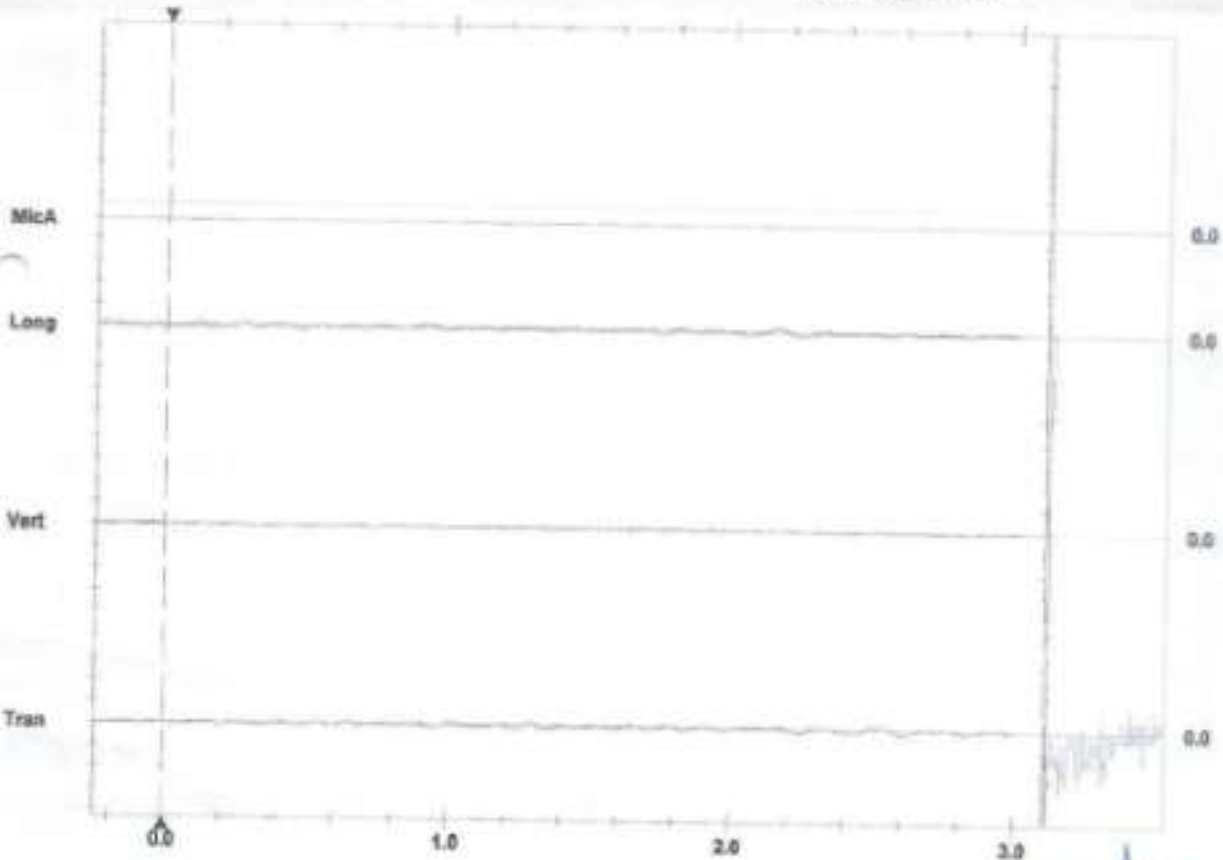
Notes
Location: JEIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Laq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.449	0.481	0.441	mm/s
ZC Freq	6.0	6.6	6.8	Hz
Time (Rel. to Trig)	2.538	2.239	0.258	sec
Peak Acceleration	0.010	0.008	0.013	g
Peak Displacement	0.012	0.011	0.009	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 0.592 mm/s at 2.240 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

IDL Explosives Limited

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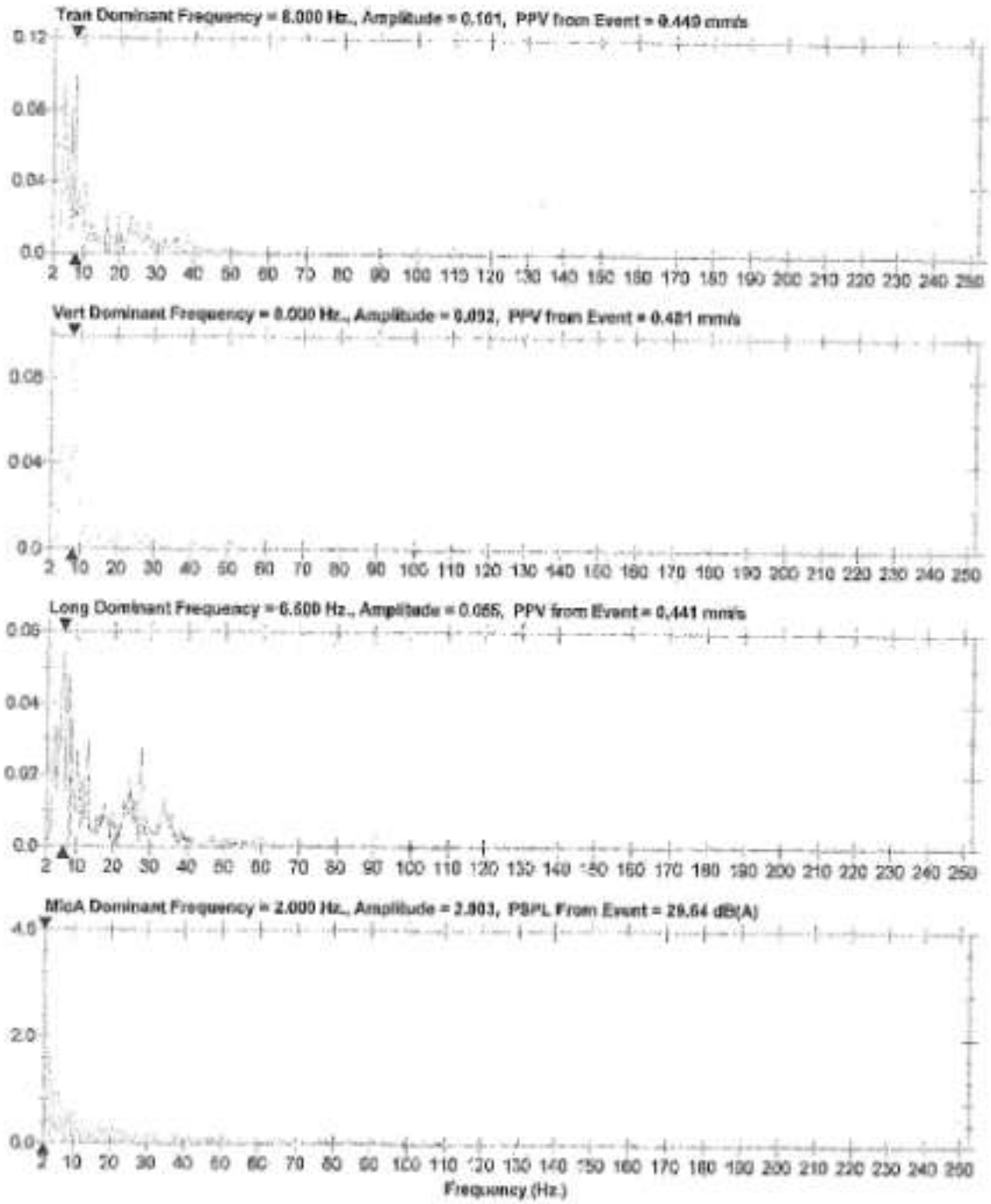
FFT Report

Date/Time	Tran at 13:54:11 November 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MM9

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241107135411.IDFW

Notes
Location: JEIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 13:38:44 November 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241107133644.IDFW

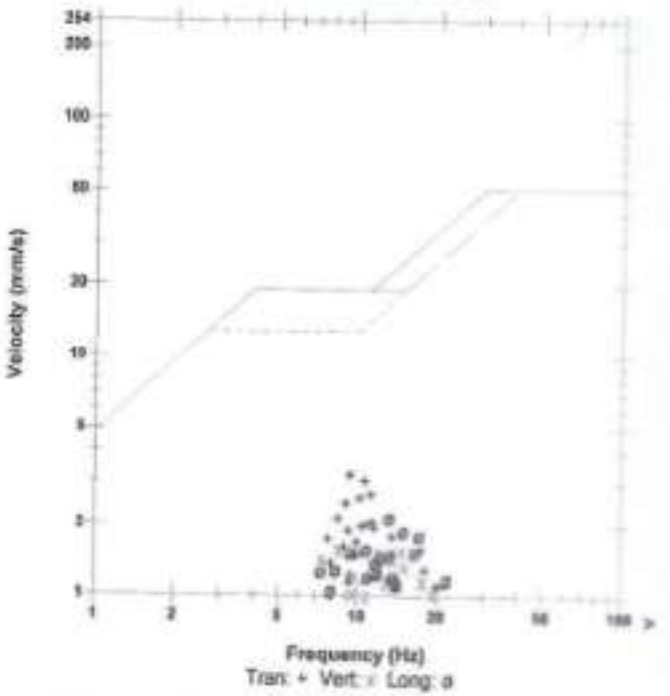
Notes
Location: JEIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

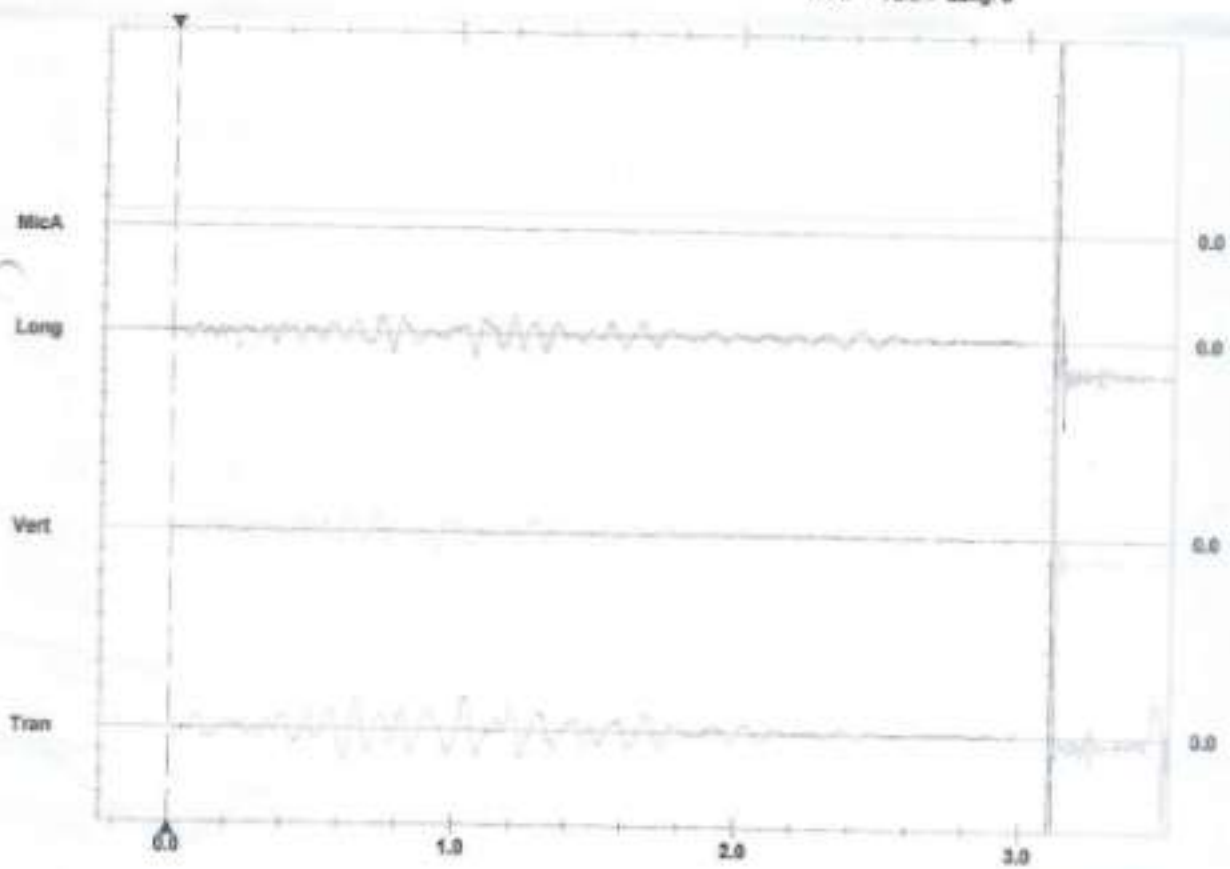
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	3.208	1.661	2.136	mm/s
ZC Freq	9.3	8.5	13.1	Hz
Time (Rel. to Trig)	1.043	0.942	1.064	sec
Peak Acceleration	0.036	0.039	0.031	g
Peak Displacement	0.048	0.027	0.022	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Oversweng Ratio	4.0	4.1	4.1	

Peak Vector Sum 3.425 mm/s at 1.043 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: November 8, 2024 (V 10.72 - 10.72.1)

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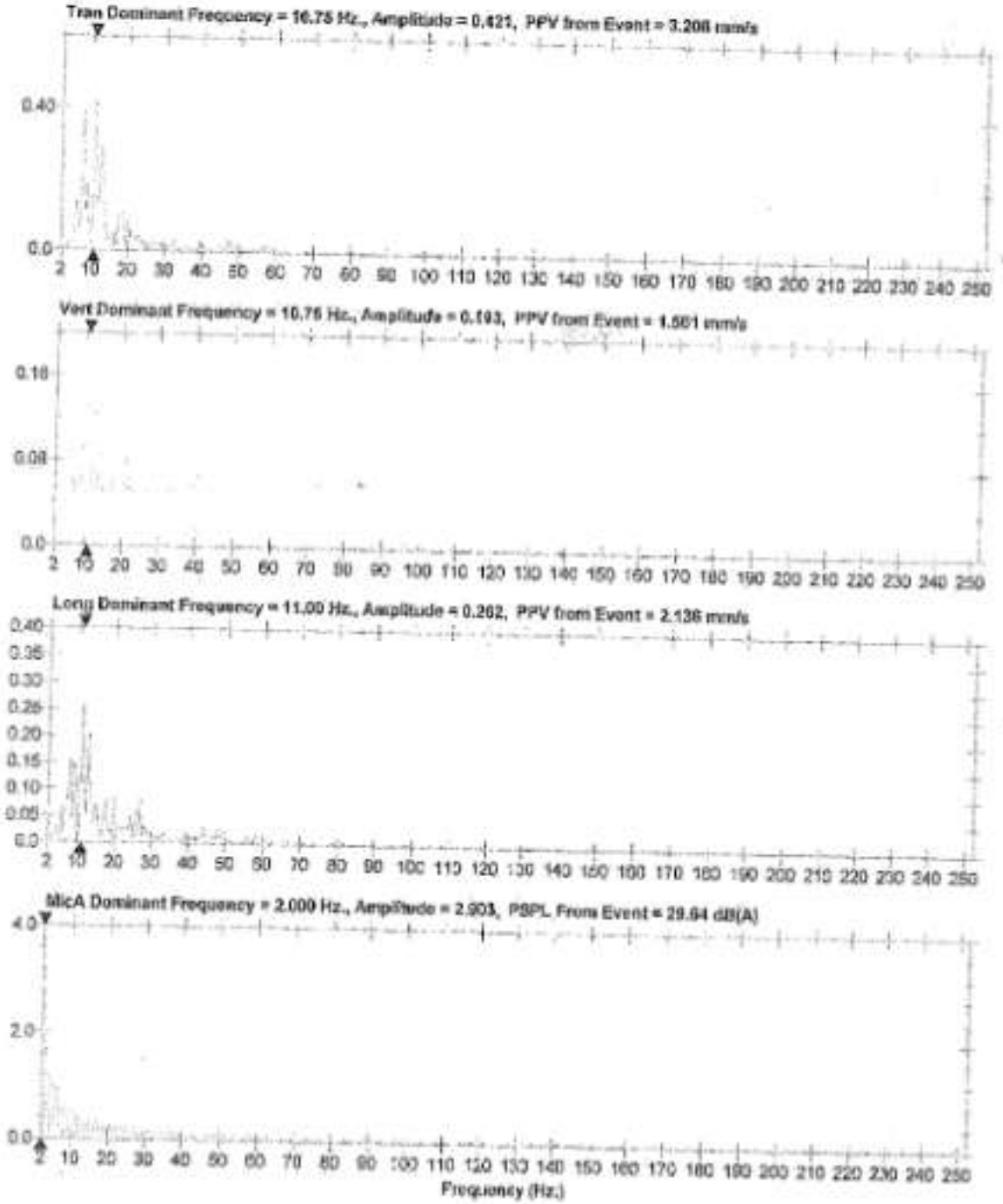
FFT Report

Date/Time	Vert at 13:36:44 November 7, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 860.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FS Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241107133644.IDFW

Notes
Location: JEIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:09:24 November 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241104140924.IDFW

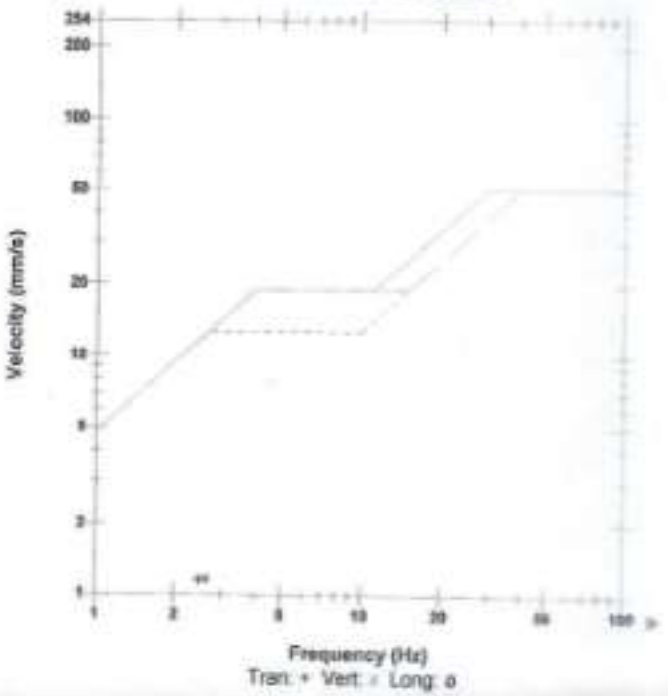
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General

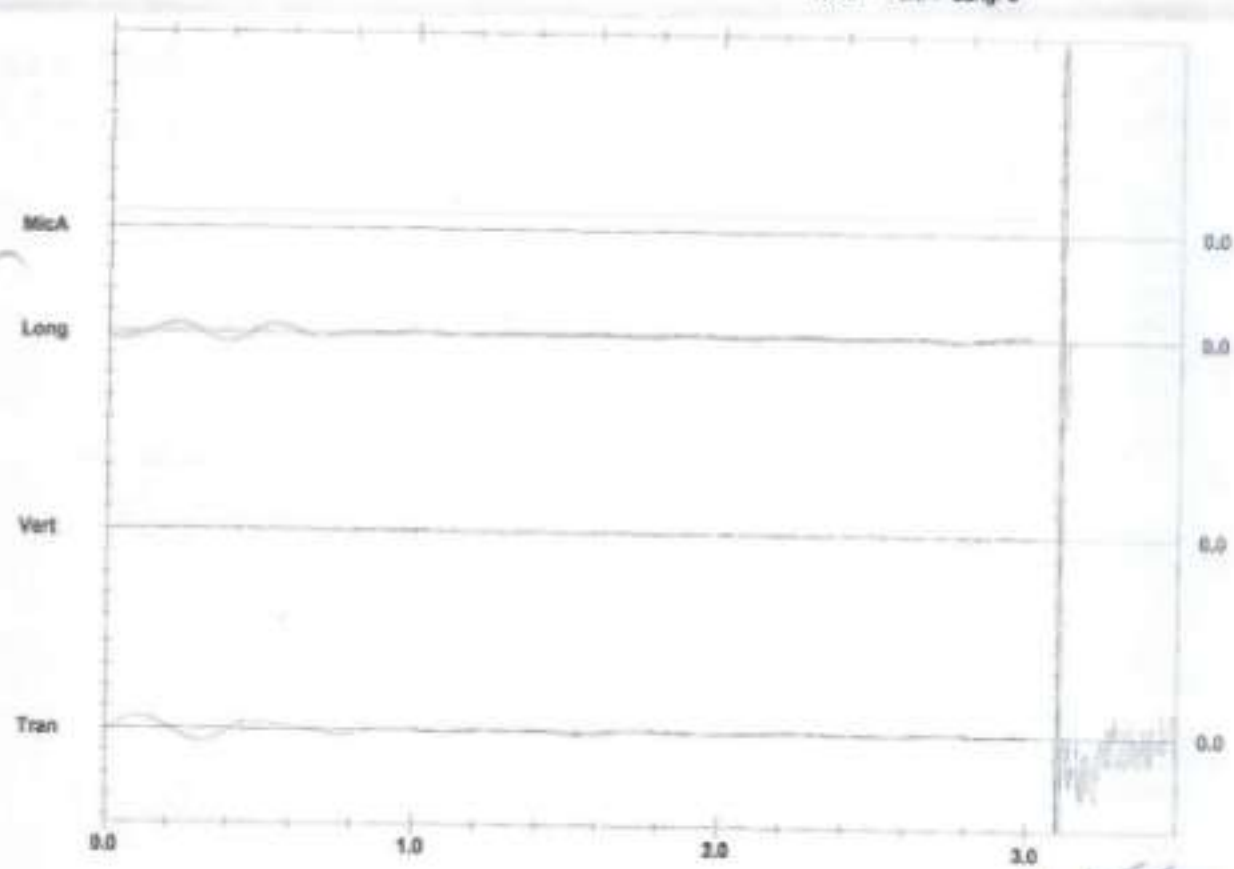
Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.151	0.315	0.940	mm/s
ZC Freq	2.6	3.3	3.0	Hz
Time (Rel. to Trig)	0.314	1.219	0.389	sec
Peak Acceleration	0.010	0.012	0.008	g
Peak Displacement	0.073	0.014	0.048	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.1	

Peak Vector Sum 1.198 mm/s at 0.344 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div

For IDL

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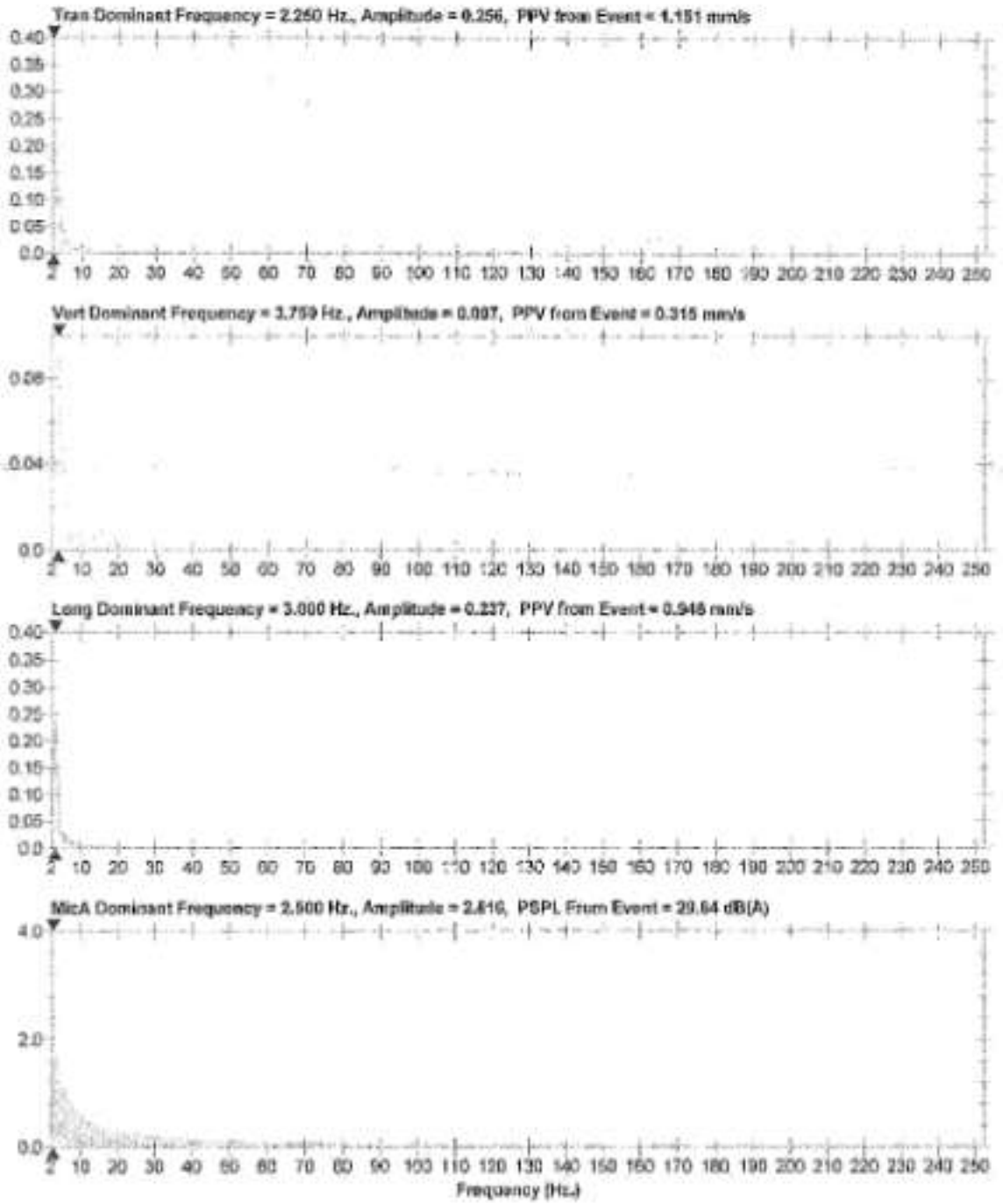
FFT Report

Date/Time:	Long at 14:09:24 November 4, 2024	Serial Number	UM15576 V 10-90FS M'comtale ISEE
Trigger Source	Geo: 0.300 mm/s Mic: 650.0 dB(A)	Battery Level	3.6 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15576_20241104140524.IDFW
Operator/Setup:	Operator/factory.IMWB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:09:27 November 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

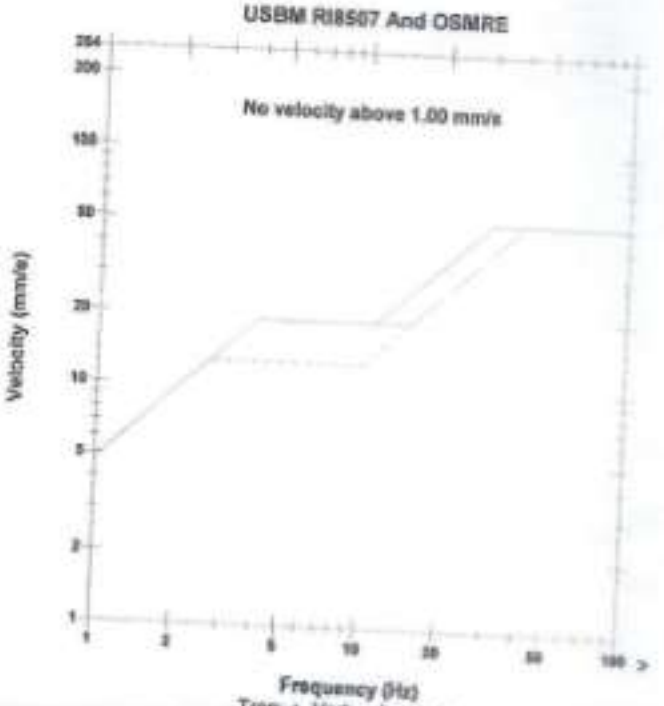
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241104140927.IDFW

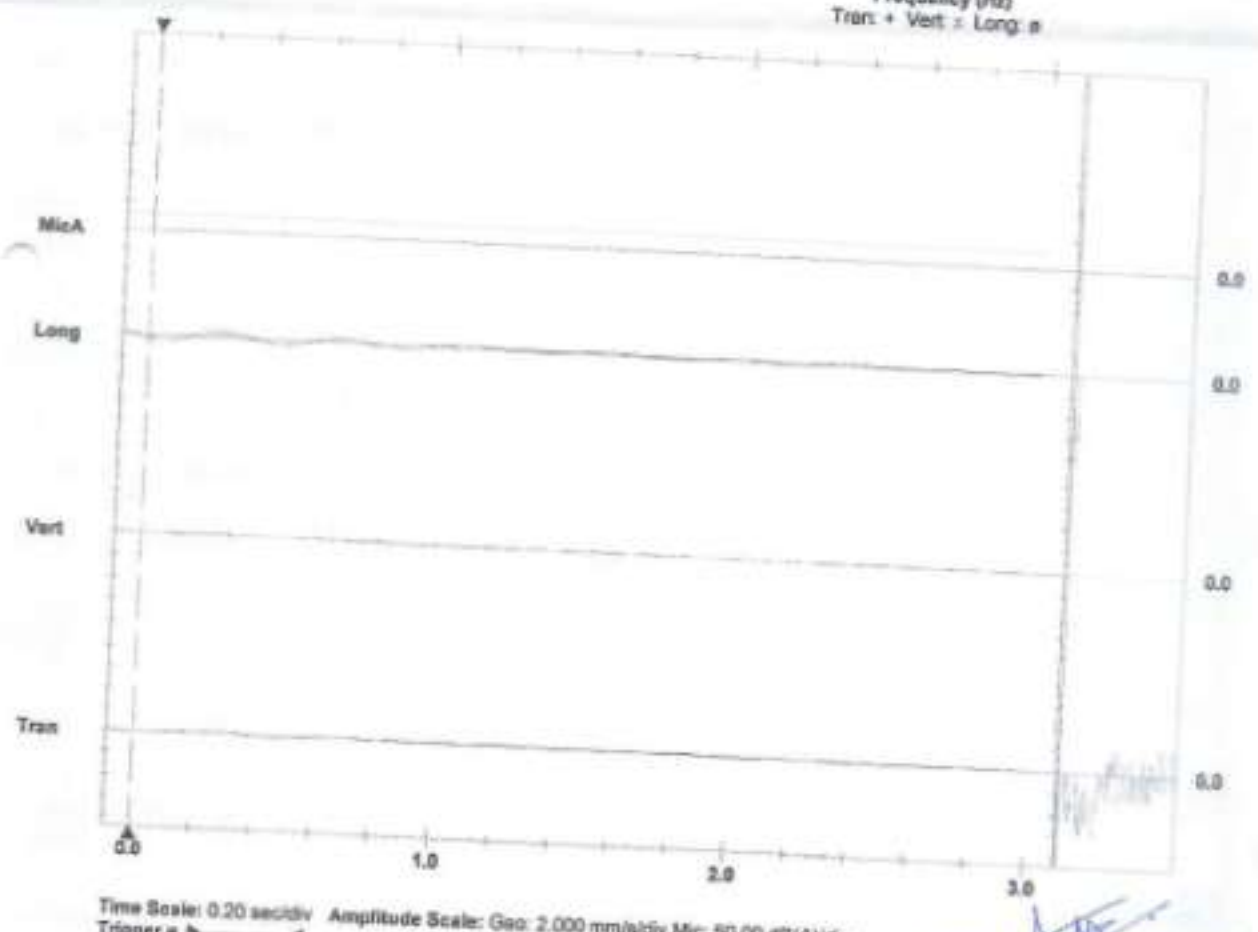
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.260	0.197	0.449	mm/s
ZC Freq	2.8	3.6	2.6	Hz
Time (Rel. to Trig)	0.478	0.897	0.250	sec
Peak Acceleration	0.010	0.010	0.008	g
Peak Displacement	0.016	0.008	0.027	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.2	4.1	

Peak Vector Sum: 0.500 mm/s at 0.250 sec





Printed: November 5, 2024 (V 10.72 - 10.72.1)

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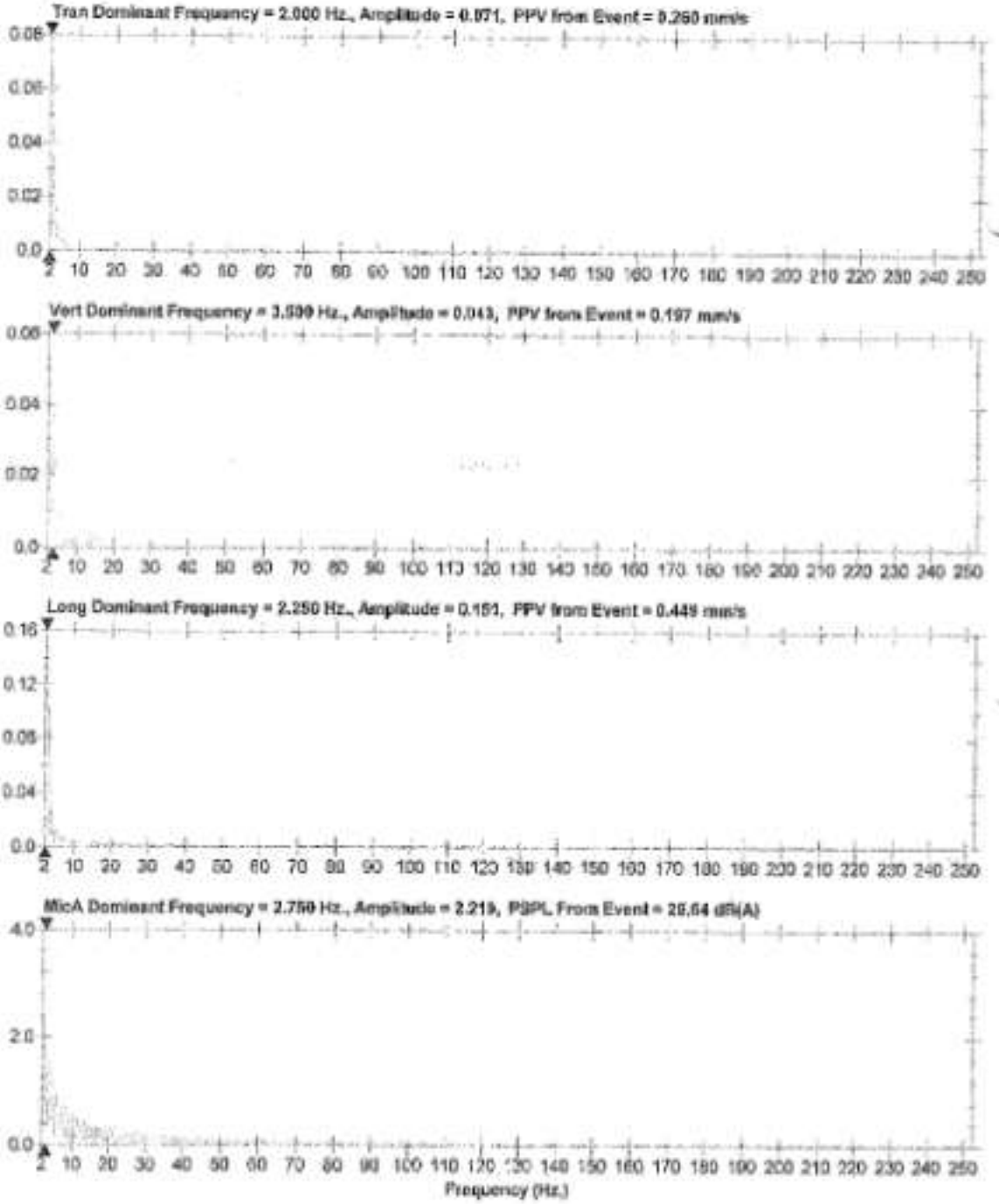
FFT Report

Date/Time	Long at 14:09:27 November 4, 2024	**Serial Number**	UM16576 V 10-90FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 650.0 dB(A)	**Battery Level**	3.8 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	**File Name**	UM16576_20241104140927.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Vert at 14:08:59 November 2, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM21106 V 10-90CC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	__TEMP.EVT

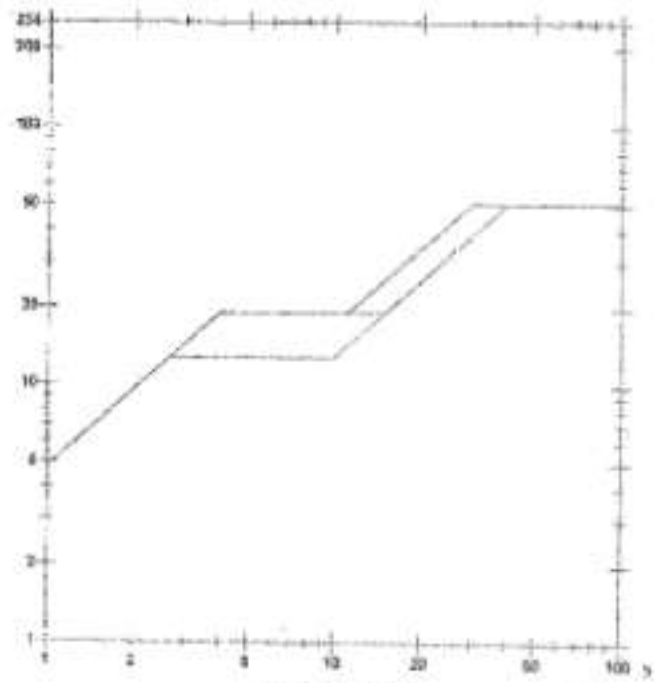
Notes
Location:
Client:
User Name:
General:

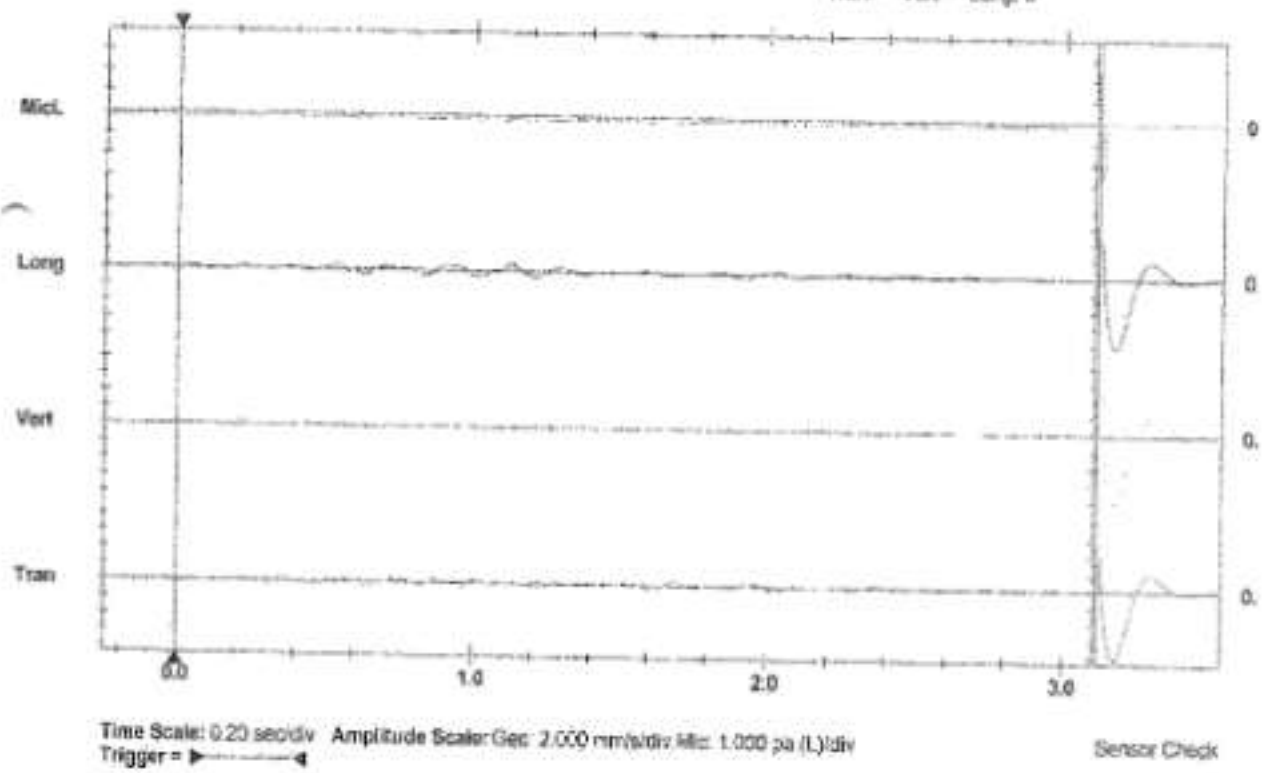
Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.591	1.119	0.863	mm/s
ZC Freq	6.6	6.8	5.0	Hz
Time (Rel. to Trig)	0.957	0.864	1.121	sec
Peak Acceleration	0.020	0.020	0.020	g
Peak Displacement	0.015	0.024	0.020	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	4.1	4.0	4.5	

Peak Vector Sum 1.162 mm/s at 0.985 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa (L)/div
Trigger =

Sensor Check

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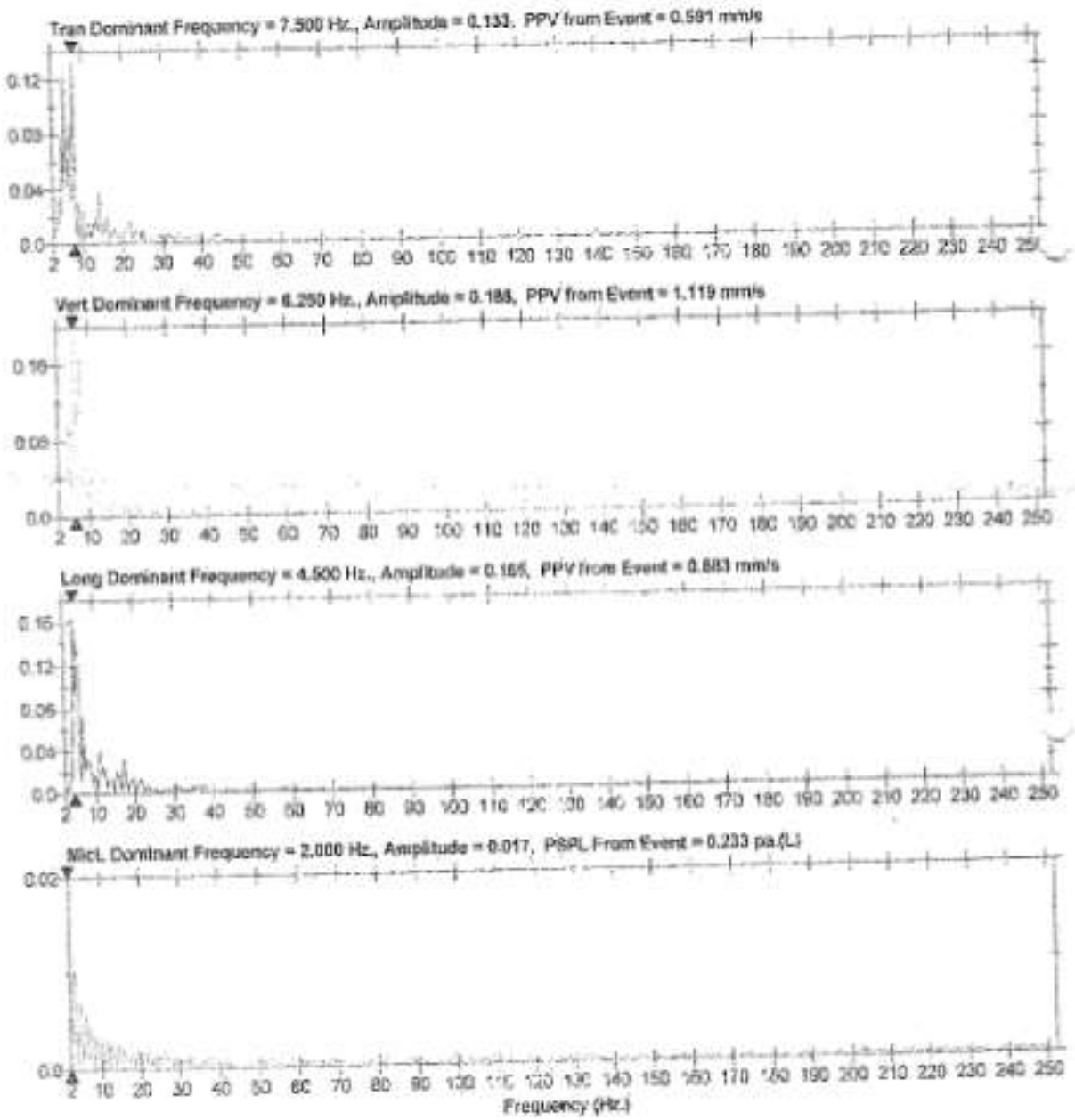
FFT Report

Date/Time	Vert at 14:08:59 November 2, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory MWB

Serial Number	UM21105 V 10-90GC Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21105_20241102140859.IDFW

Notes
Location:
Client:
User Name:
General:



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Event Report

Date/Time	Long at 13:42:14 October 3rd, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 pa (L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory, MME

Serial Number	UM21106 V 10-90GC Minimate ISEE
Battery Level	3.6 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20241003134214.IDFW

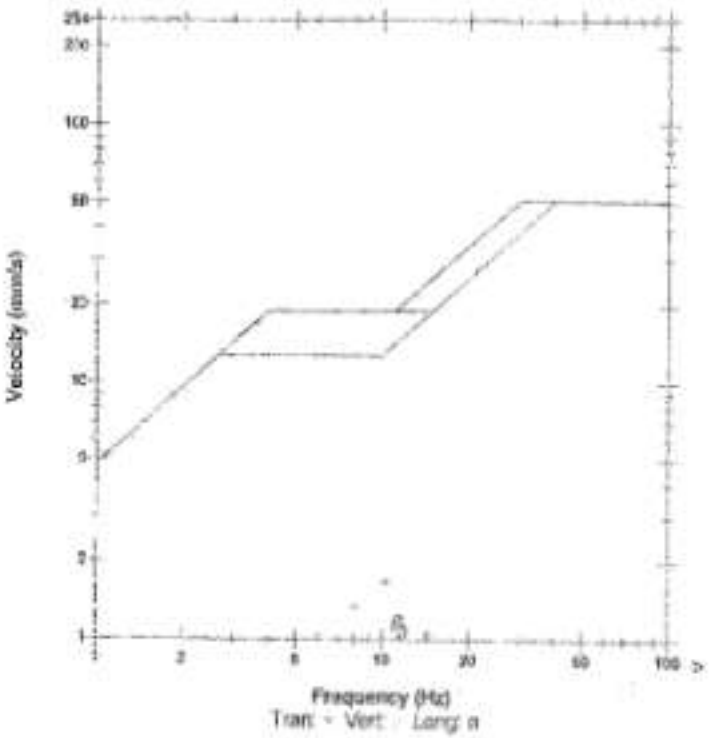
Notes
Location
Client
User Name
General

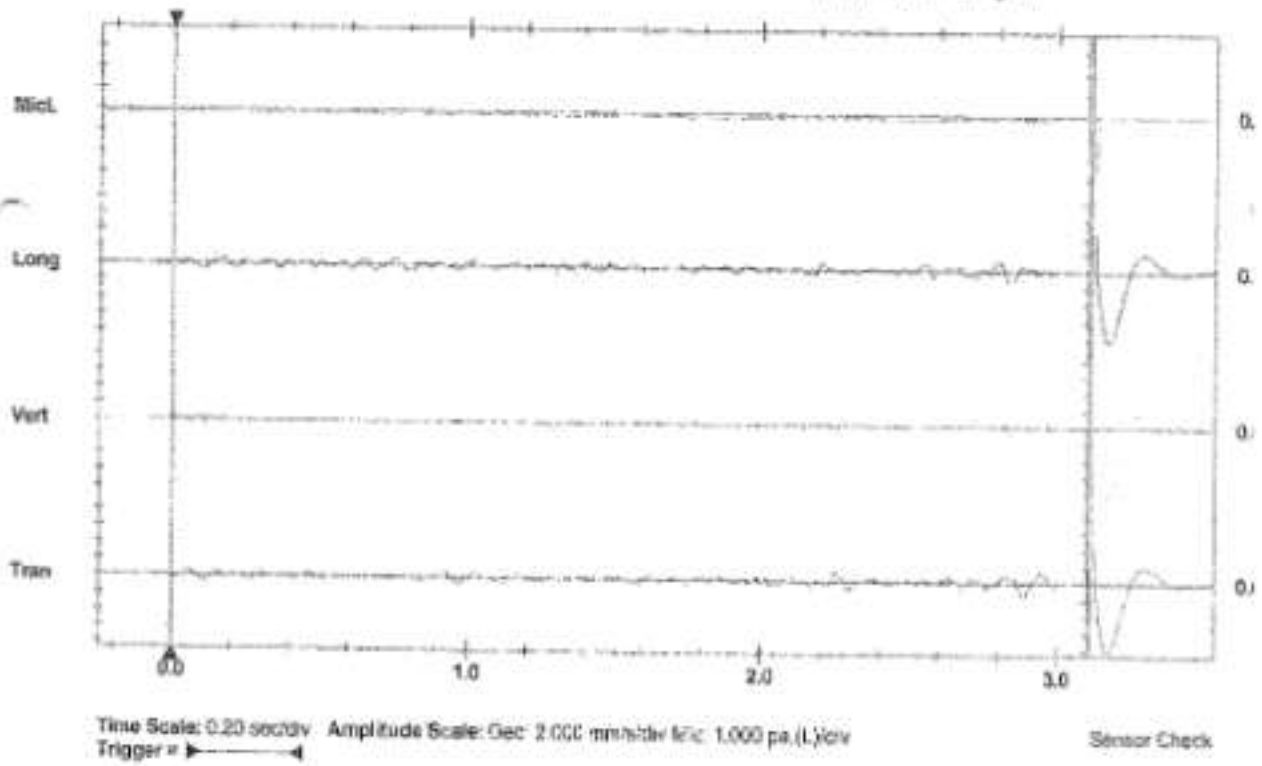
Microphone	Linear Weighting
PSPL	<0.500 pa (L)
ZC Freq	N/A
Channel Test	Check (Freq = 0.0 Hz Amp = 0 inv.)

	Tran	Vert	Long	
PPV	1.655	0.906	1.198	mm/s
ZC Freq	10.2	14.6	11.4	Hz
Time (Rel. to Trig)	2.869	2.851	2.837	sec
Peak Acceleration	0.026	0.026	0.033	g
Peak Displacement	0.025	0.011	0.017	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.5	Hz
Overswing Ratio	4.1	3.9	4.3	

Peak Vector Sum 1.670 mm/s at 2.869 sec
N/A: Not Applicable

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa (L)/div
Trigger

Sensor Check

Printed: October 31, 2024 (V 10.72 - 19.72)

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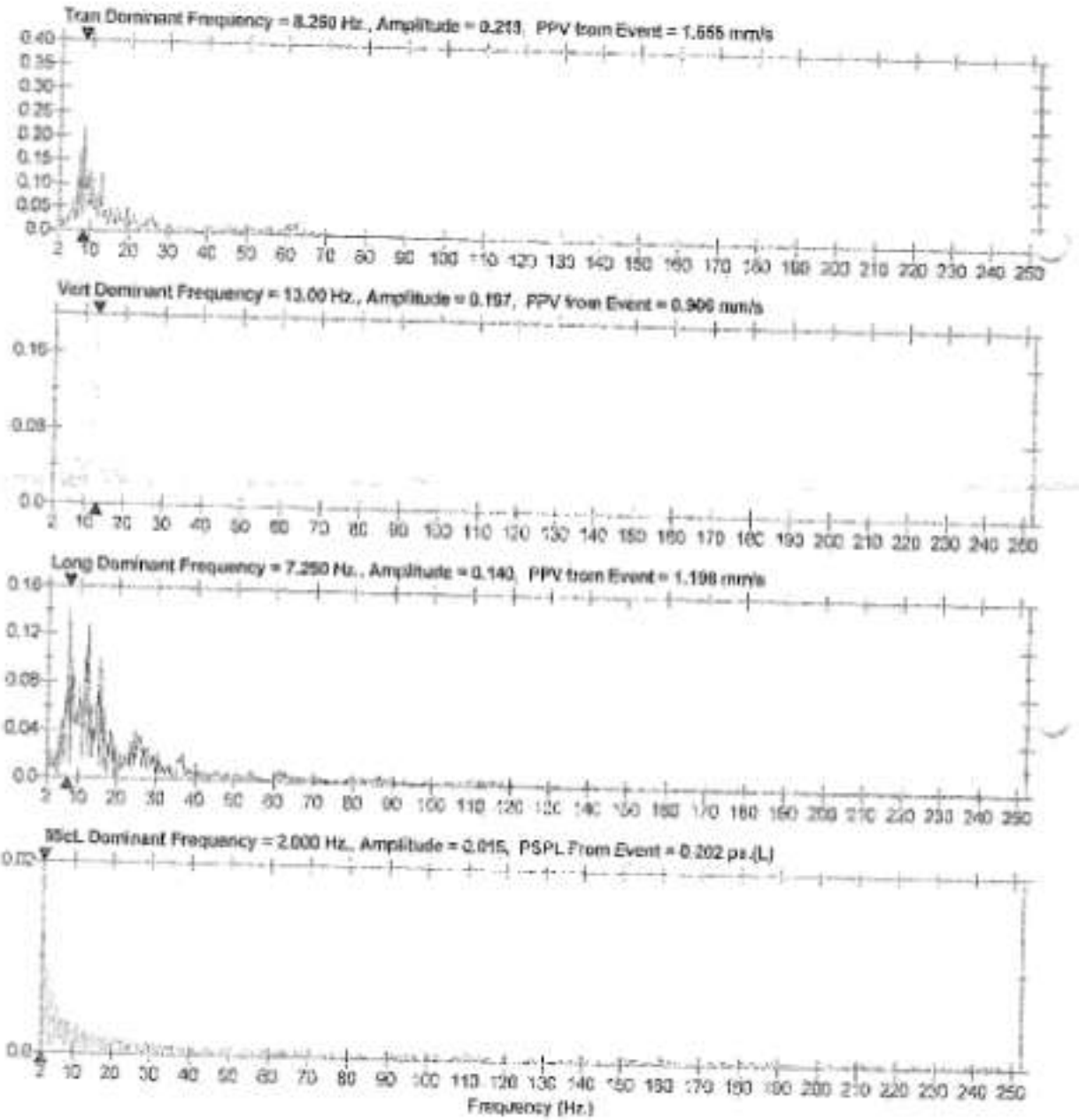
FFT Report

Date/Time	Long at 13:42:14 October 31, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 2.000 psi.(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 4096 sps
Operator/Setup:	Operator/factory.MM8

Serial Number	UM21106 V 10-900C Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 7, 2024 by UES New Delhi
File Name	UM21106_20241031_134214.IDFW

Notes
Location:
Client:
User Name:
General:



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Event Report

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Date/Time	Triggered at 19:24:07 OCT 28, 2024
Trigger Source	Geo: 0.527 mm/s, Mic: 75.95 ps(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 spa Operator/Test
Operator/Setup:	O.MMB

Serial Number	UM21126 V 10-90DC Micromate (SE)
Battery Level	3.6 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	_TEMP.EVT

Notes

Location: ON GROUND SURFACE
Client: TATA STEEL PVT LTD
User Name: BLACK DIAMOND EXPLOSIVES PVTLTD
General: KATAMATI IRON MINES

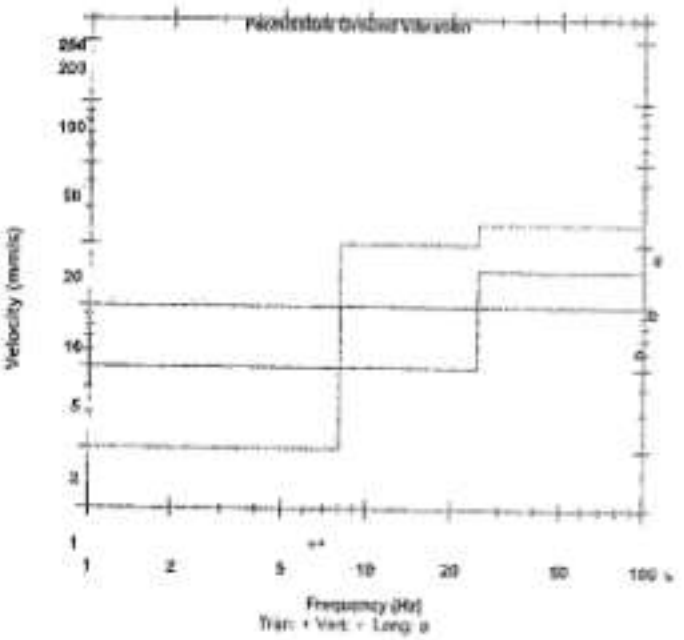
Extended Notes
Recorded at 150 meter back side from the blasting face.

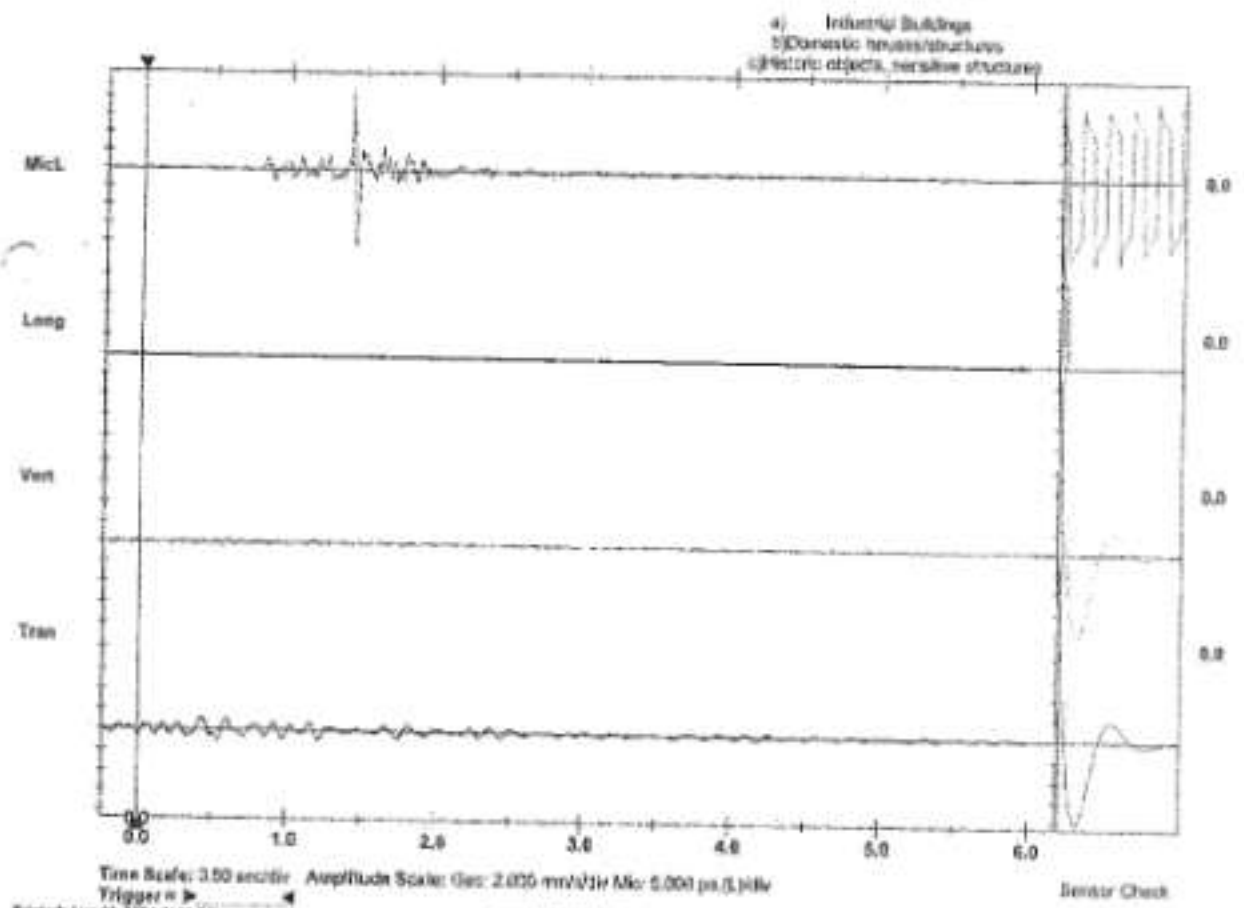
Microphone	Linear Weighting
PSPL	22.36 ps(L) at 1.411 sec
ZC Freq	10 Hz
Channel Test	Passed (Freq = 20.5 Hz, Amp = 1250 mv)

	Tran	Vert	Long	
PPV	1.072	0.434	0.039	mm/s
ZC Freq	7.2	11	>100	Hz
Time (Rel. to Trig)	0.605	0.559	0.147	sec
Peak Acceleration	0.012	0.007	0.005	g
Peak Displacement	0.026	0.007	0.000	mm
Sensor Check	Passed	Passed	Check	
Frequency	7.3	7.3	1004.0	Hz
Overswing Ratio	4.4	4.2	0.0	

Peak Vector Sum 1.150 mm/s at 0.605 sec

DGMS India (A)





Printed: Aug 02, 2024 (V 10.74)

Permit S 1300-1415 Kevala Corporation

FFT Report

Instantel

Date/Time	Tran at 15:24:07 OCT 28, 2024
Trigger Source	Geo: 0.527 mm/s, Mic: 70.93 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	8.0 sec at 1024 sps
Operator/Setup:	Operator/TSL 0.MMB

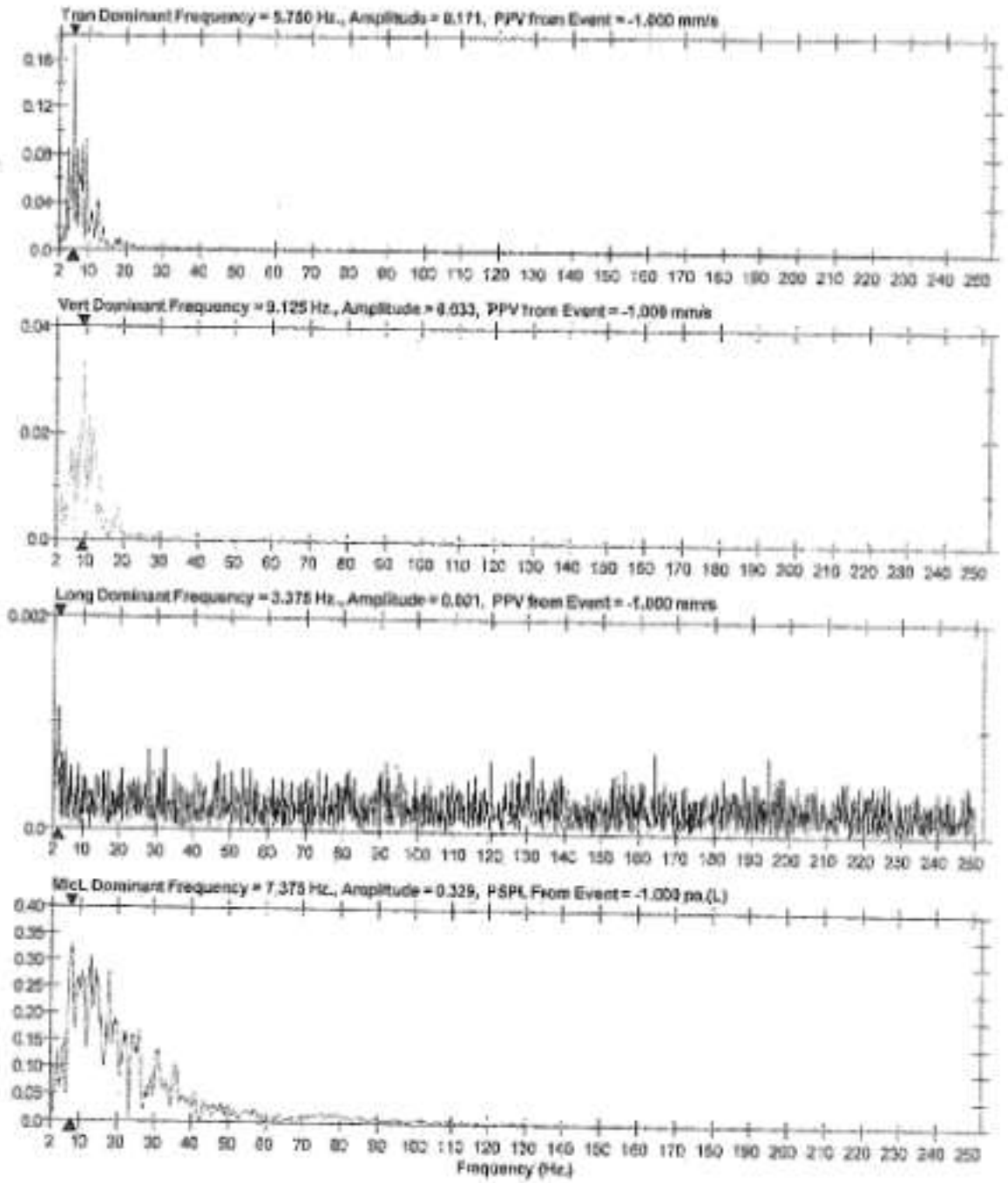
Serial Number	UM21128 V 10-93GC Micromate iSEE
Battery Level	3.5 Volts
Unit Calibration	September 21, 2023 by UES New Delhi
File Name	__TEMP.EVT

Notes

Location	ON GROUND SURFACE
Client	TATA STEEL PVT LTD
User Name:	BLACK DIAMOND EXPLOSIVES PVTLTD
General:	KATAMATI IRON MINES

Extended Notes

Records at 150 meter back side from the blasting face.



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Event Report

Date/Time	Long at 15:23:34 October 28, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

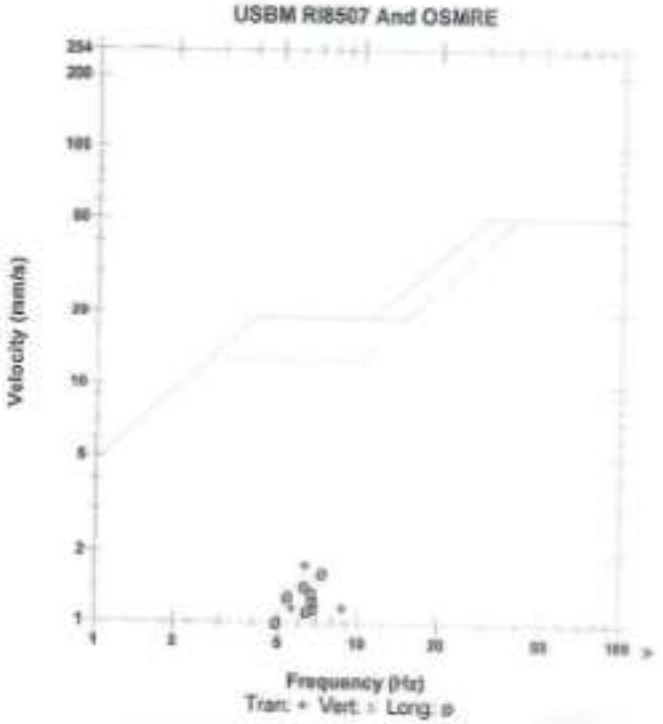
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241028152334.IDFW

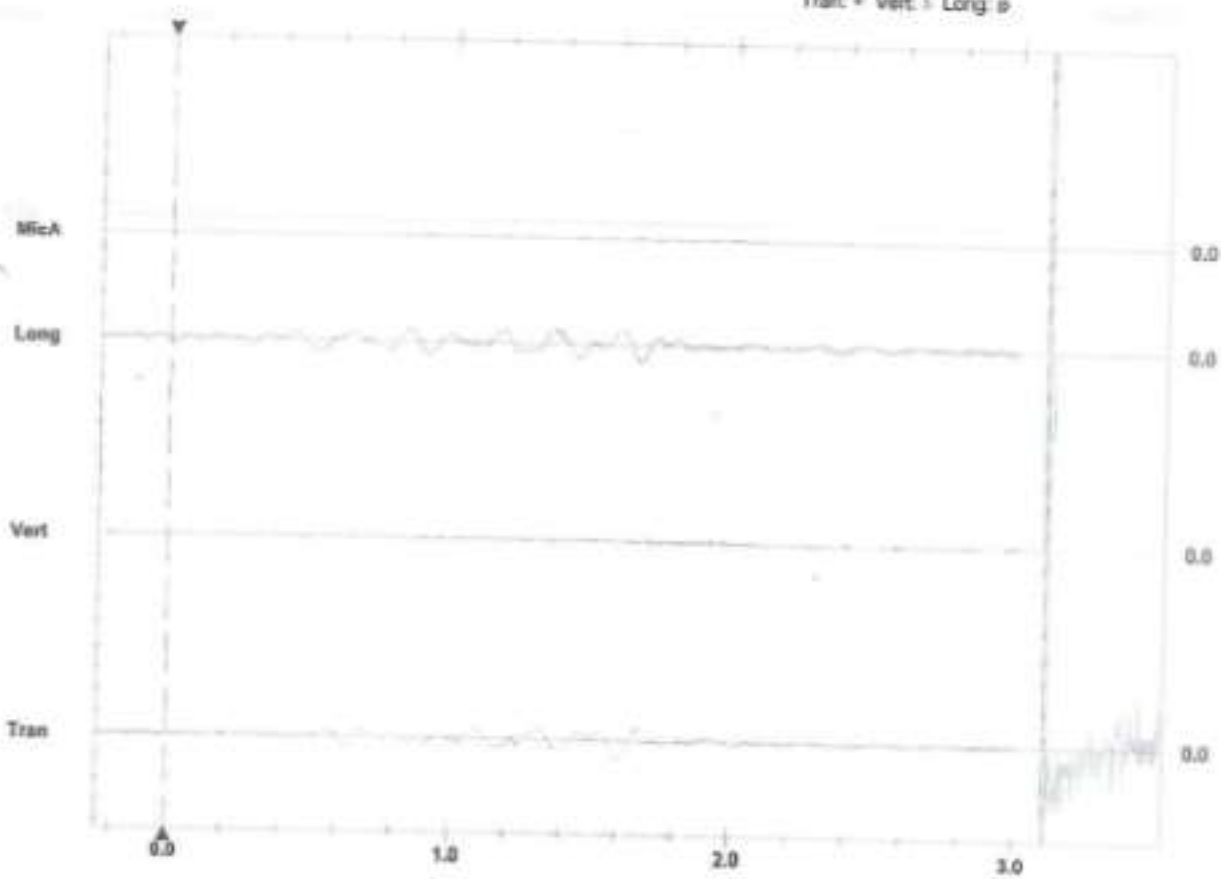
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.750	0.741	1.632	mm/s
ZC Freq	6.3	7.4	7.3	Hz
Time (Rel. to Trig)	1.604	1.671	1.673	sec
Peak Acceleration	0.013	0.012	0.023	g
Peak Displacement	0.041	0.015	0.036	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 2.346 mm/s at 1.605 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

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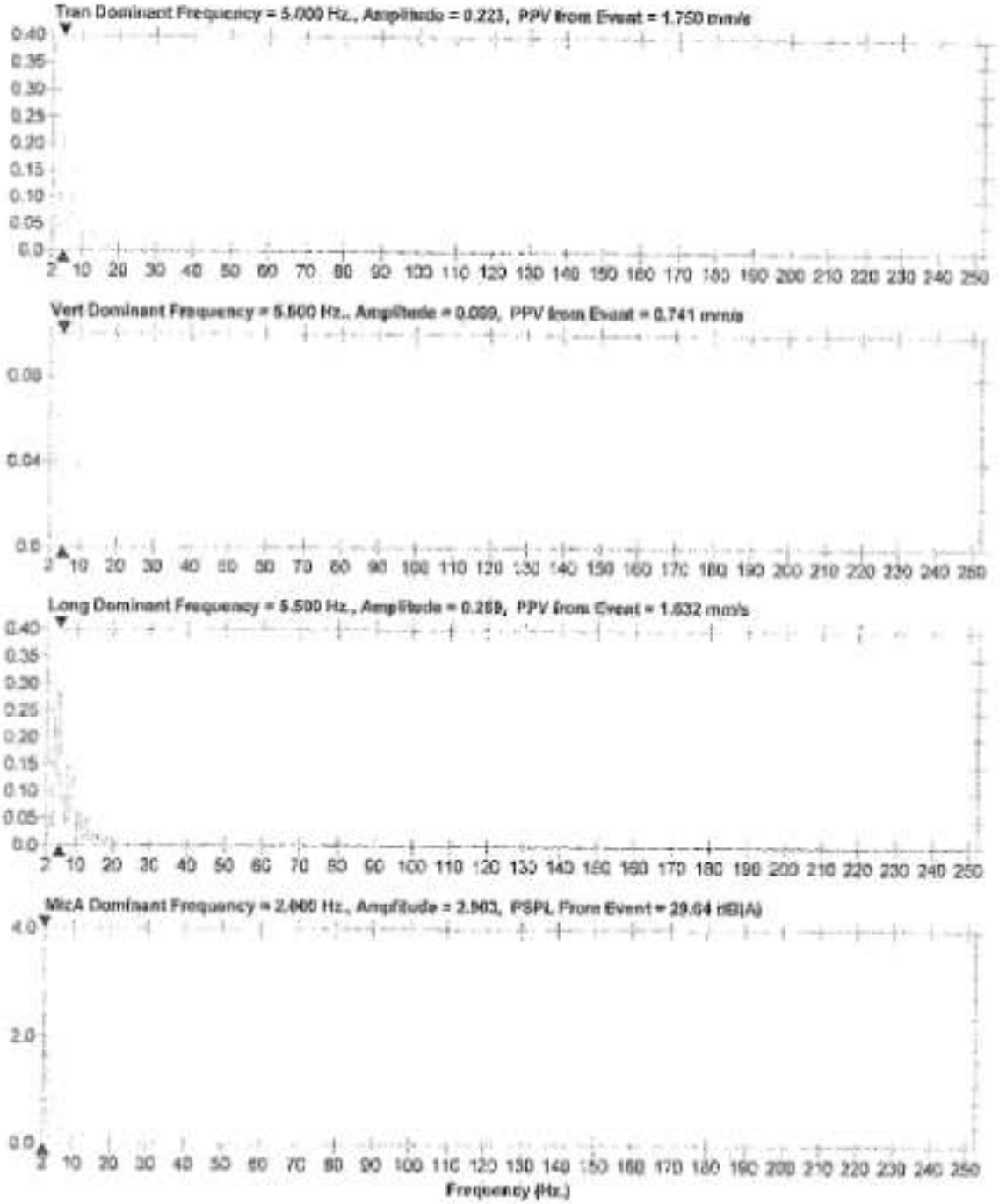
FFT Report

Date/Time	Long at 16:23:34 October 28, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM:15576 V 10-90FB Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM:15576_20241028162334.IDFW

Notes
Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 15:23:37 October 28, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM0

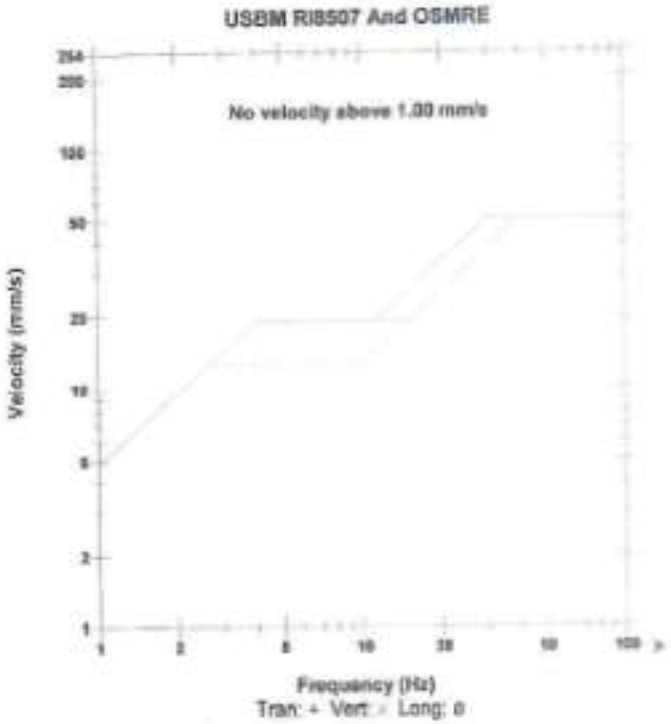
Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241028152337.IDFW

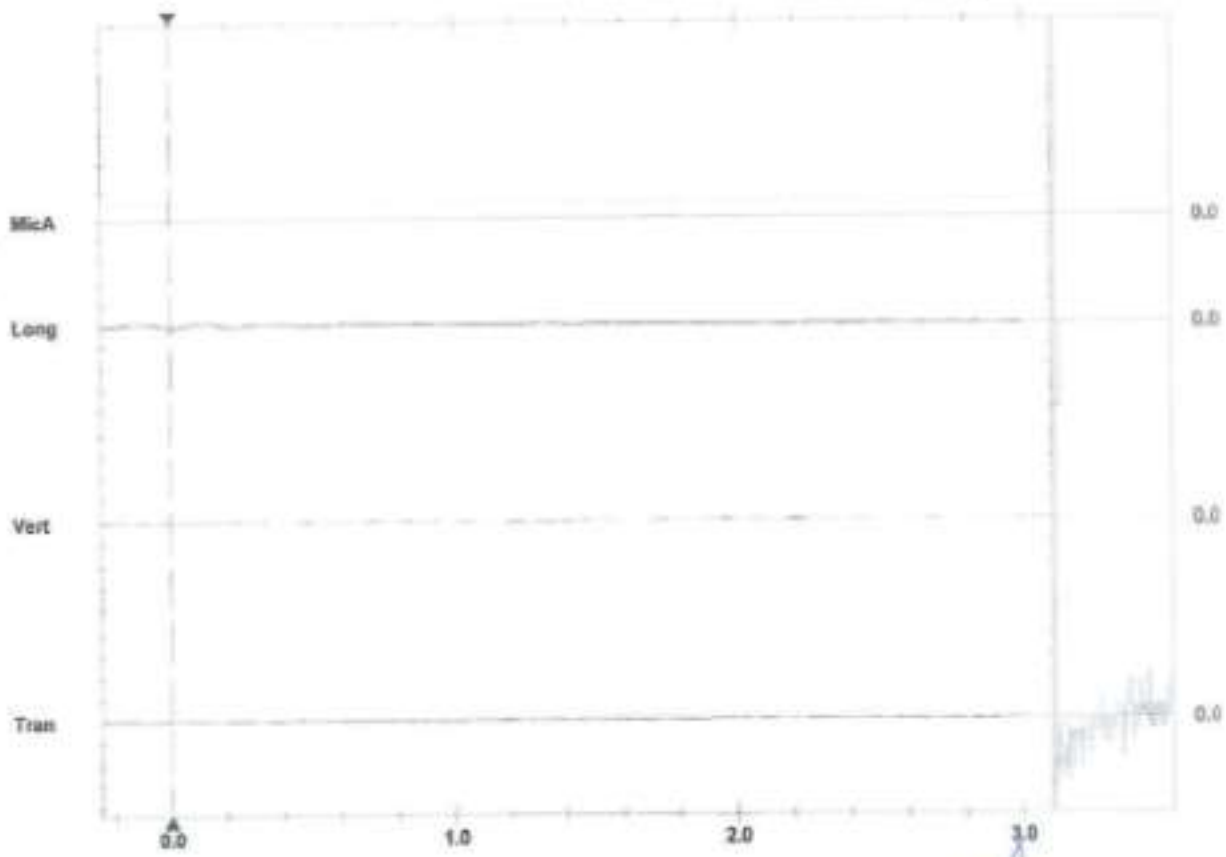
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.181	0.120	0.363	mm/s
ZC Freq	5.0	6.0	4.7	Hz
Time (Rel. to Trig)	-0.090	0.111	0.115	sec
Peak Acceleration	0.008	0.010	0.010	g
Peak Displacement	0.006	0.003	0.012	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 0.378 mm/s at 0.115 sec





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

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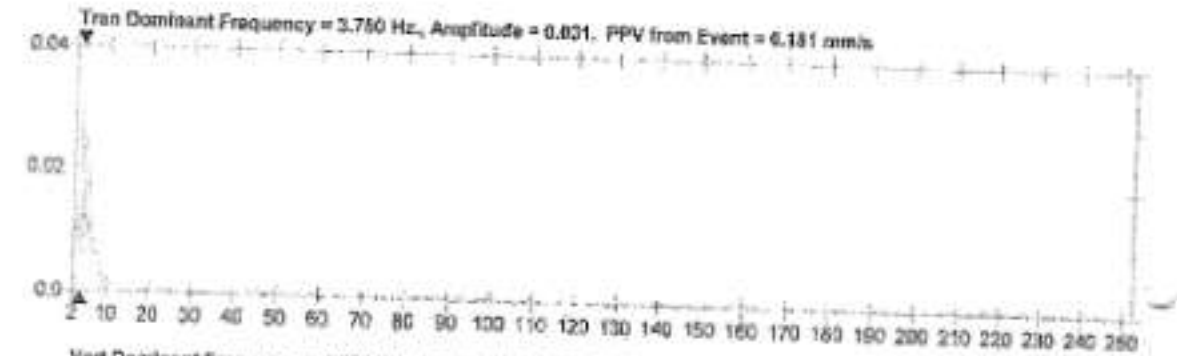
FFT Report

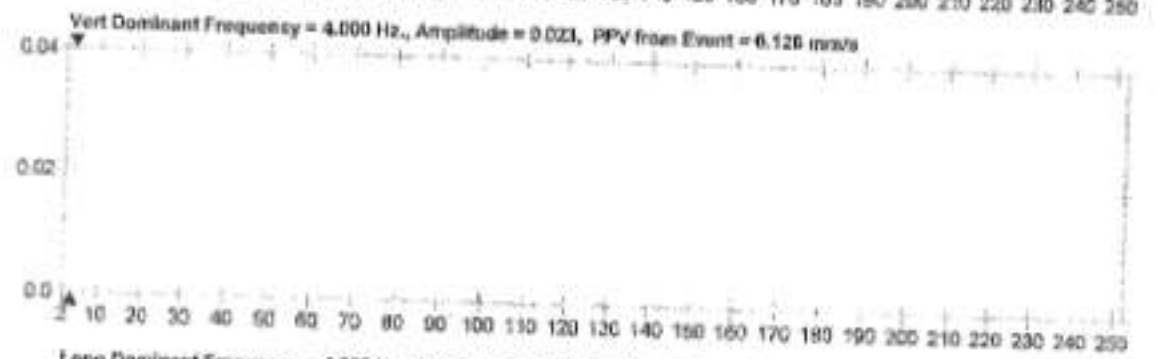
Date/Time	Long at 15:23:37 October 28, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 990.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM8

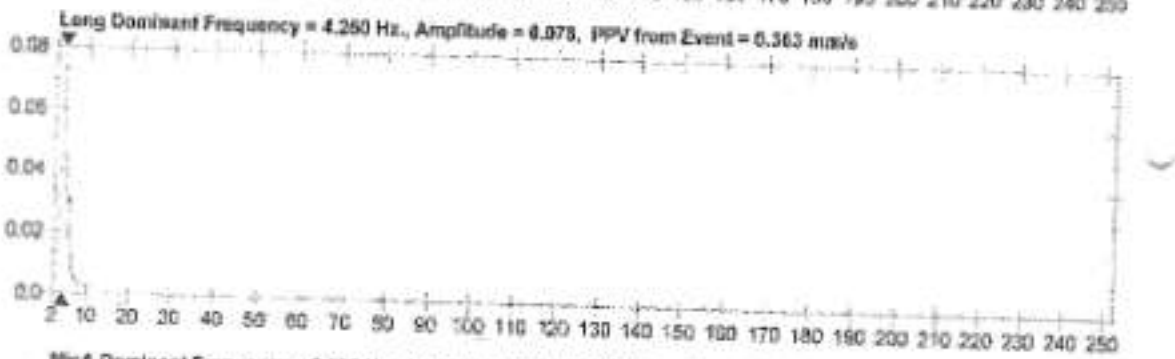
Serial Number	UM15576 V 10-93FB Micromate ISEE
Battery Level	3.5 Volts
Unit Calibration	June 18, 2024 by UES New Delhi
File Name	UM15576_20241028152337.IDFW

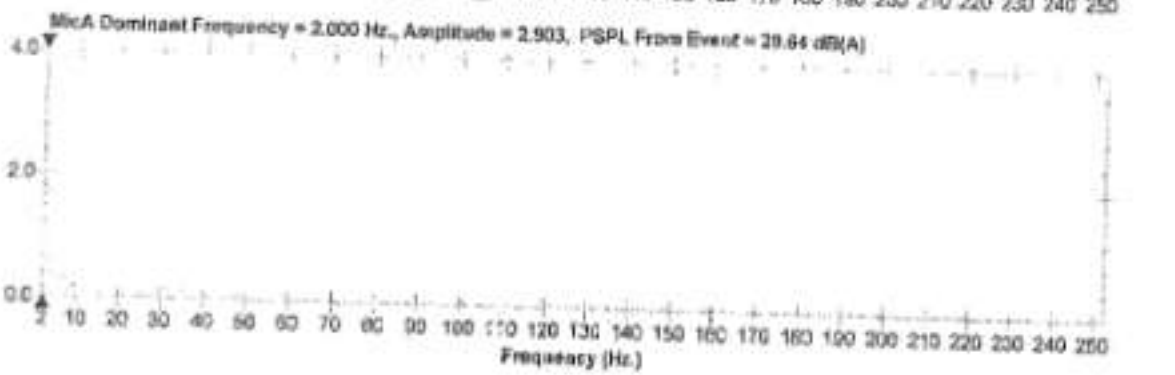
Notes

Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:









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Event Report

Date/Time	Long at 14:09:00 October 21, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.56 pa (L)
Range	Geo: 254.0 mm/s
Record Time	1.0 sec (Auto=1Sec) at 1024 sps
Operator/Setup:	Operator/TARA MMB

Serial Number	UM19506 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	__TEMP.EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

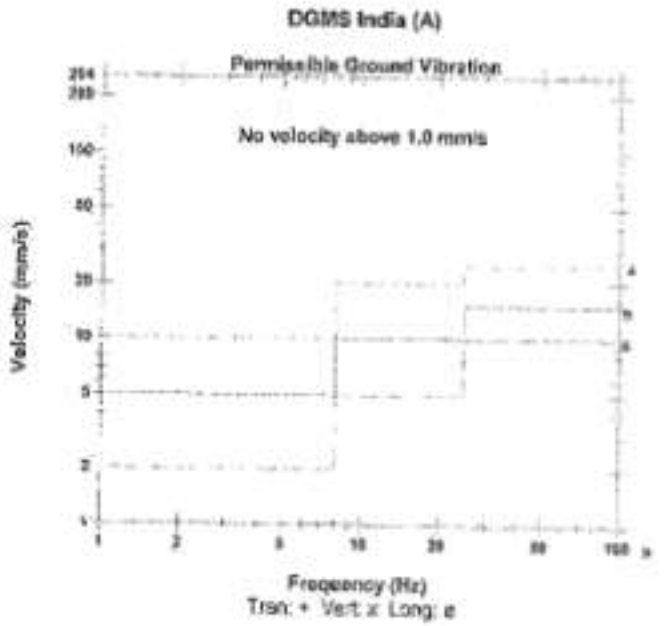
Notes
Location: On Ground Surface
Client: KATAMATI IRON MINE (TSL)
User Name: BDEPL
General:

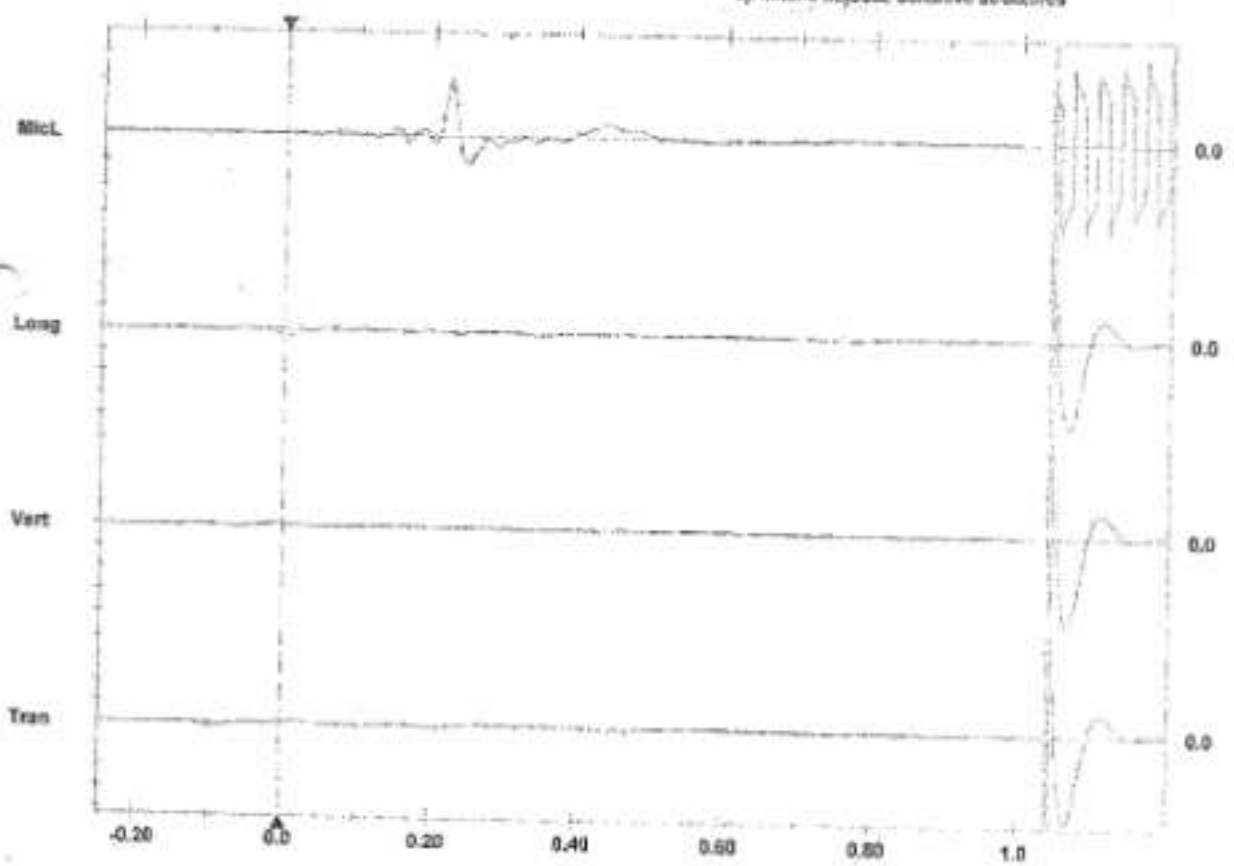
Extended Notes
100 mtrs back from blasting face

Microphone	Linear Weighting
PSPL	2.064 pa (L) at 0.222 sec
ZC Freq	19 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1297 mv)

	Tran	Vert	Long	
PPV	0.385	0.264	0.583	mm/s
ZC Freq	9.7	11	7.4	Hz
Time (Rel. to Trig)	0.206	-0.032	0.095	sec
Peak Acceleration	0.008	0.005	0.007	g
Peak Displacement	0.011	0.004	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.2	Hz
Overswing Ratio	4.1	3.7	4.2	

Peak Vector Sum 0.671 mm/s at 0.205 sec





Time Scale: 0.10 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/d v Mic: 1.000 pa (L)/div
Trigger = ▶ ◀

Sensor Check

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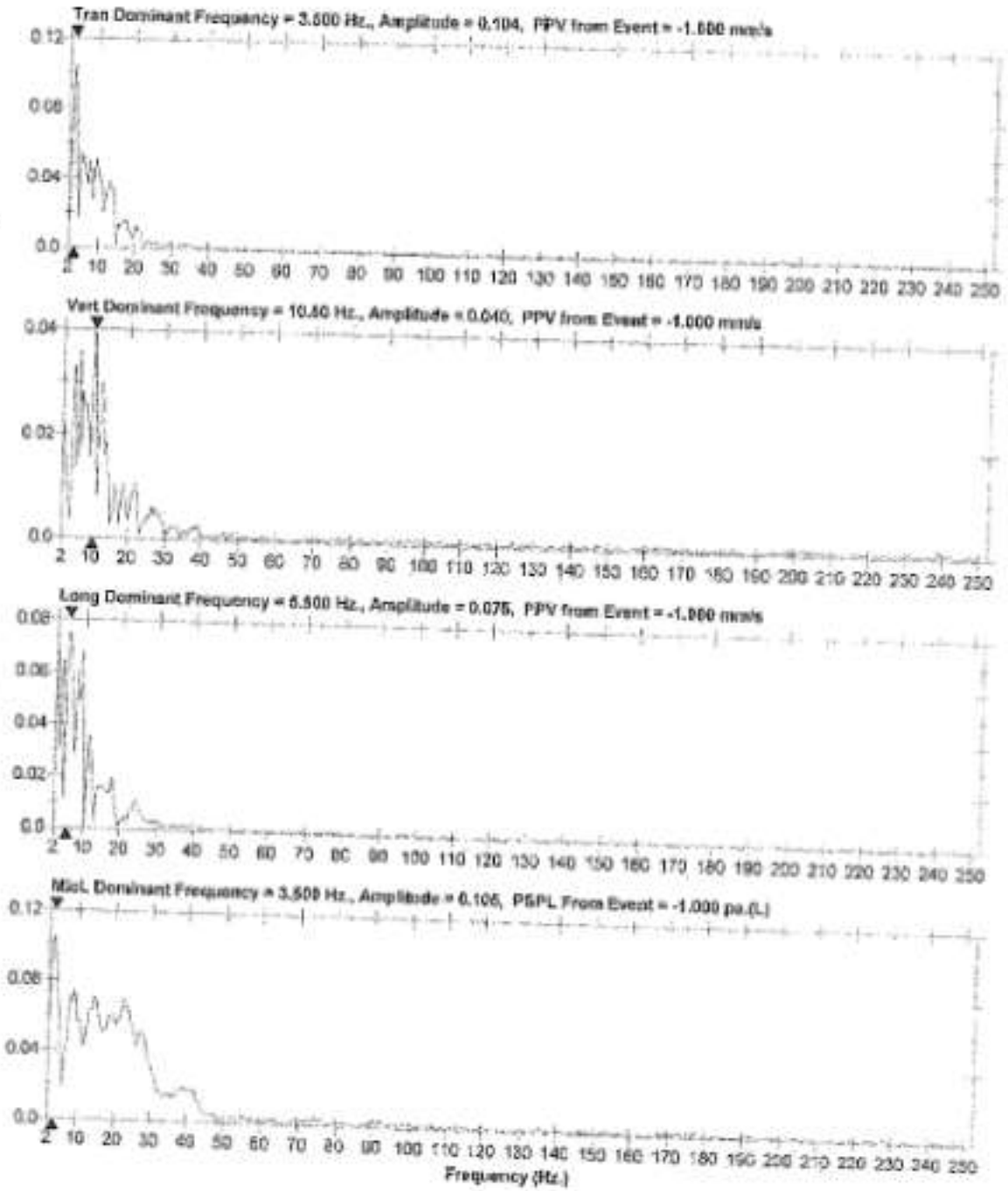
FFT Report

Date/Time	Long at 14:06:50 October 21, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.96 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	1.0 sec (Auto=1Sec) at 1024 sps
Operator/Setup:	Operator/TARA MMB

Serial Number	UM19503 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	__TEMP.EVT
Scaled Distance	25.6 (100.0 m, 15.0 kg)

Notes
Location: On Ground Surface
Client: KATAMATI IRON MINE (TSL)
User Name: BDEPL
General:

Extended Notes
100 mtrs back from blasting face.



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Event Report

Date/Time	Long at 13:44:58 October 21, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241021134458.IDFW

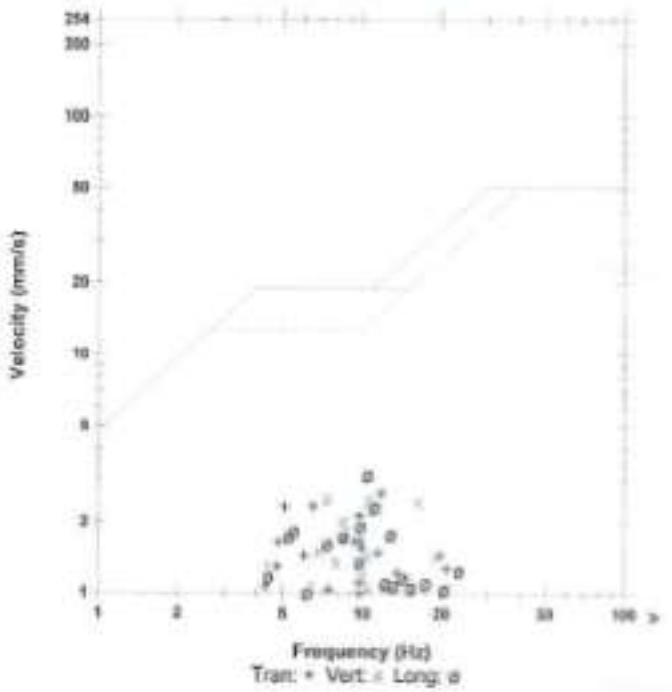
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

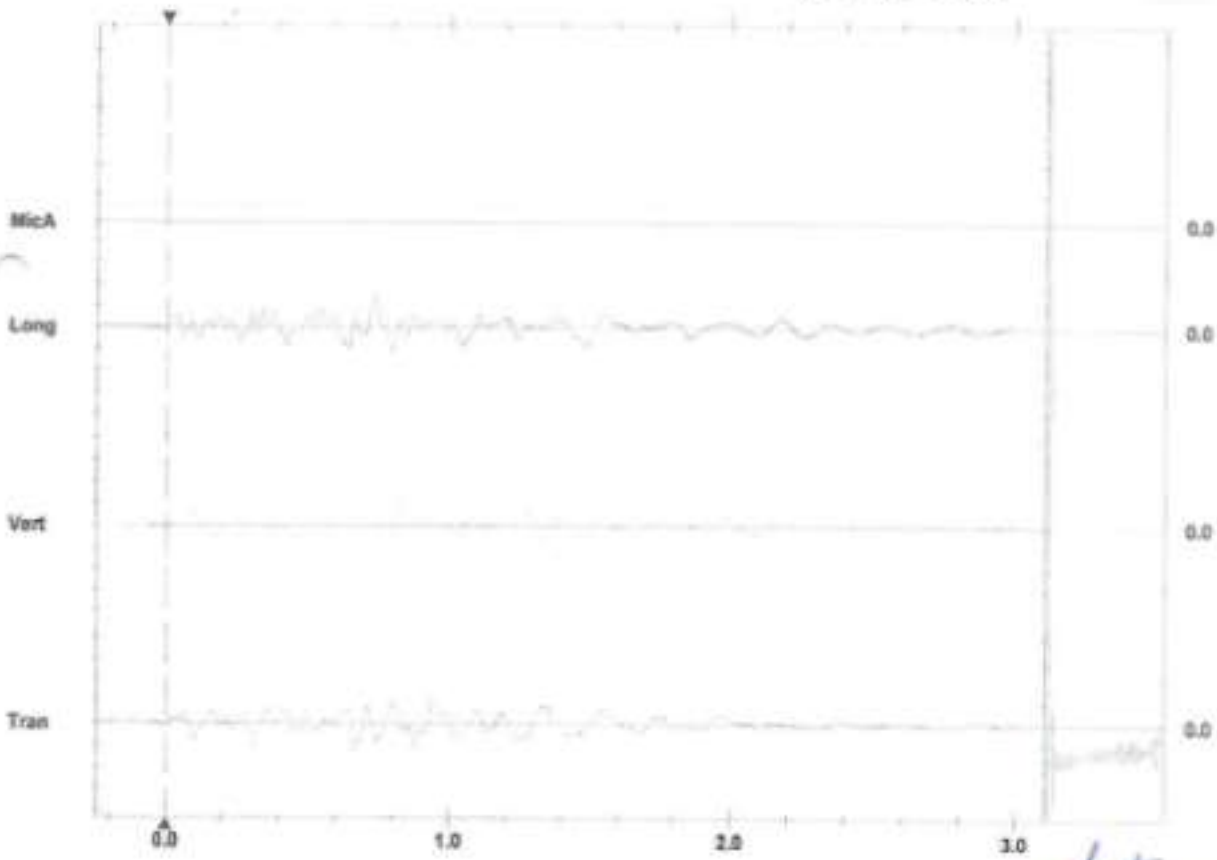
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	2.617	2.491	3.113	mm/s
ZC Freq	11.8	7.3	10.4	Hz
Time (Rel. to Trig)	0.673	0.600	0.733	sec
Peak Acceleration	0.033	0.043	0.038	g
Peak Displacement	0.048	0.050	0.046	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 3.442 mm/s at 0.731 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

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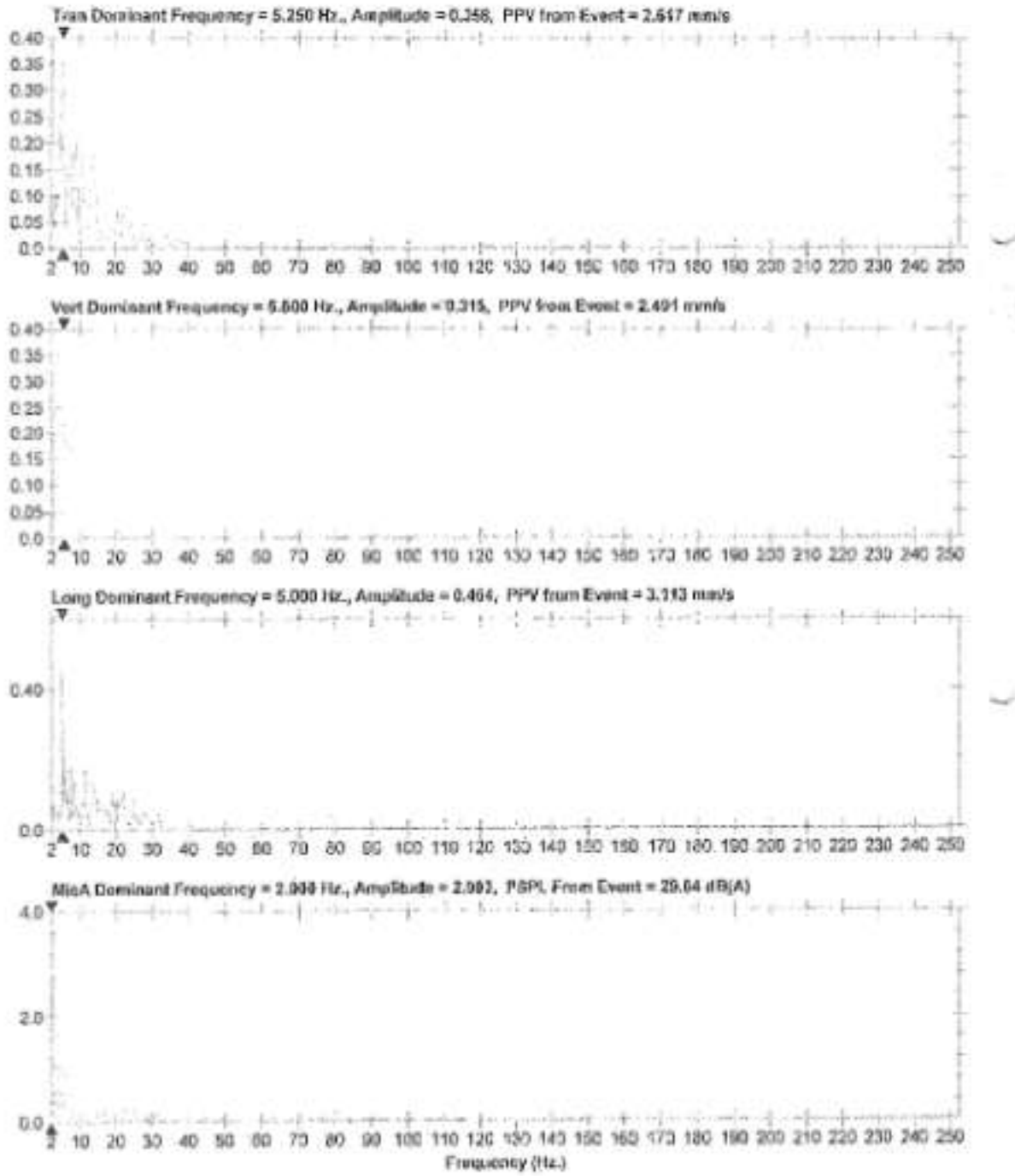
FFT Report

Date/Time	Long at 13:44:56 October 21, 2024	Serial Number	UM15576 V 10.20FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 860.0 dB(A)	Battery Level	3.6 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM15576_20241021134456.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Tran at 14:32:52 October 15, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM8

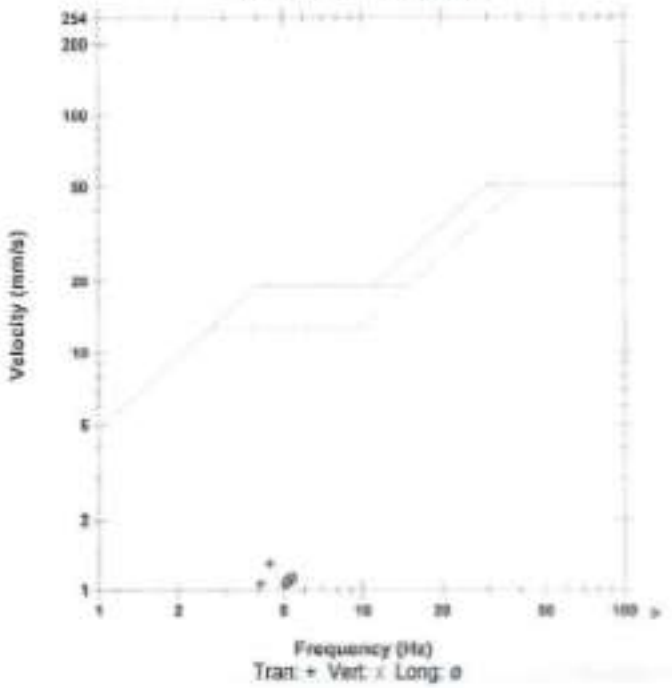
Serial Number	UM20055 V 10-00GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20241015143252.IDFW

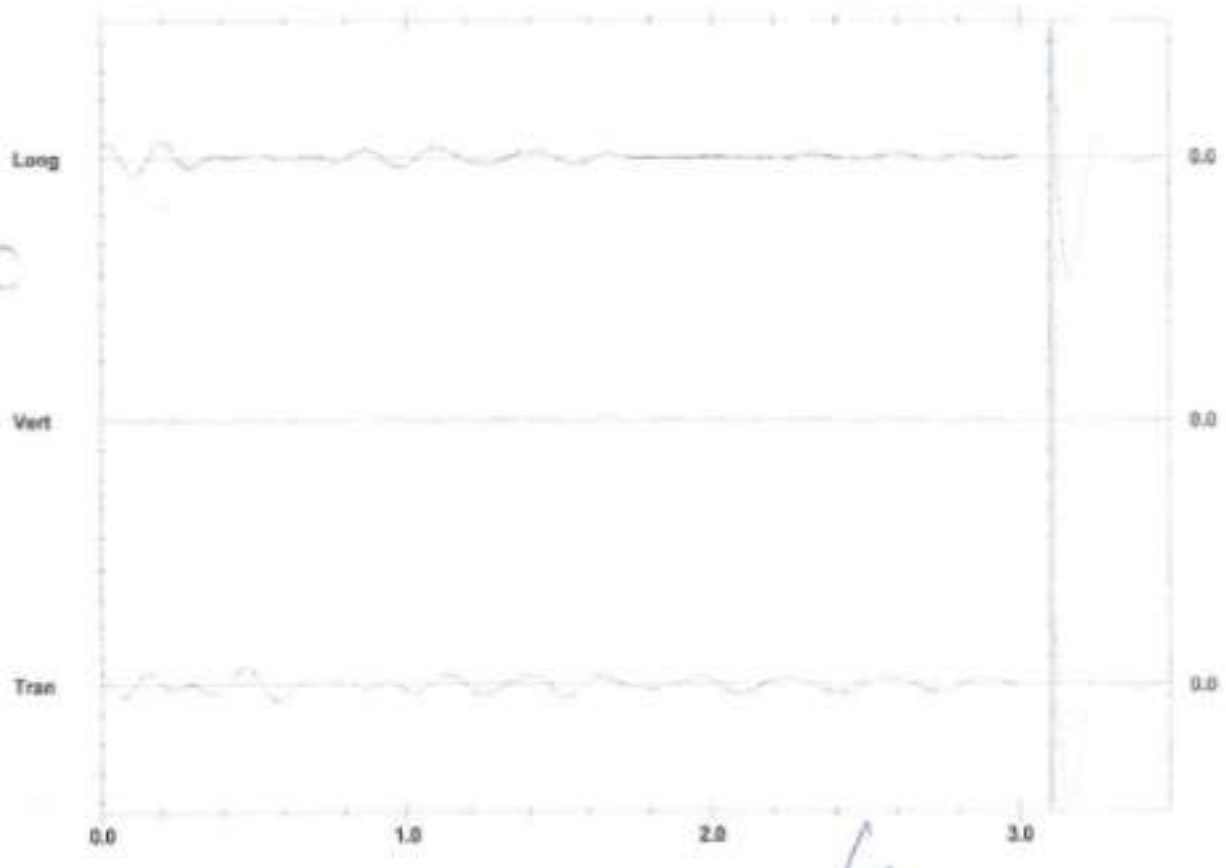
Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

	Tran	Vert	Long	
PPV	1.293	0.688	1.135	mm/s
ZC Freq	4.5	4.7	5.4	Hz
Time (Rel. to Trig)	0.472	0.473	0.105	sec
Peak Acceleration	0.012	0.008	0.010	g
Peak Displacement	0.045	0.022	0.033	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	4.1	4.6	4.6	

Peak Vector Sum 1.456 mm/s at 0.472 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Sensor Check

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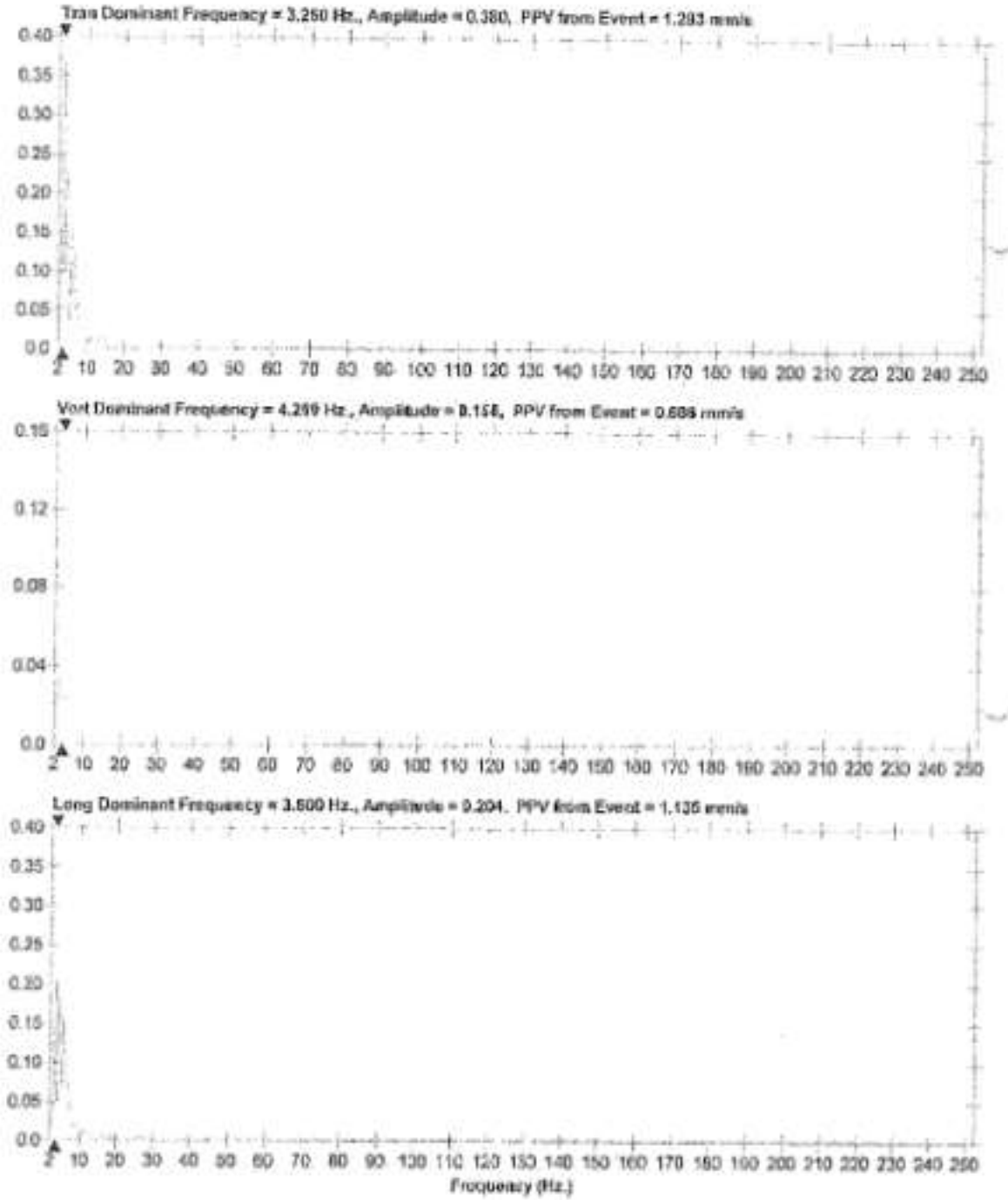
FFT Report

Date/Time	Tran at 14:32:52 October 15, 2024	Serial Number	UM20055 V 10-90GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s	Battery Level	3.8 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM20055_20241015143252.IDFW
Operator/Setup:	Operator/factory MMB		

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:



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Event Report

Date/Time	Long at 14:48:36 October 11, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241011144836.IDFW

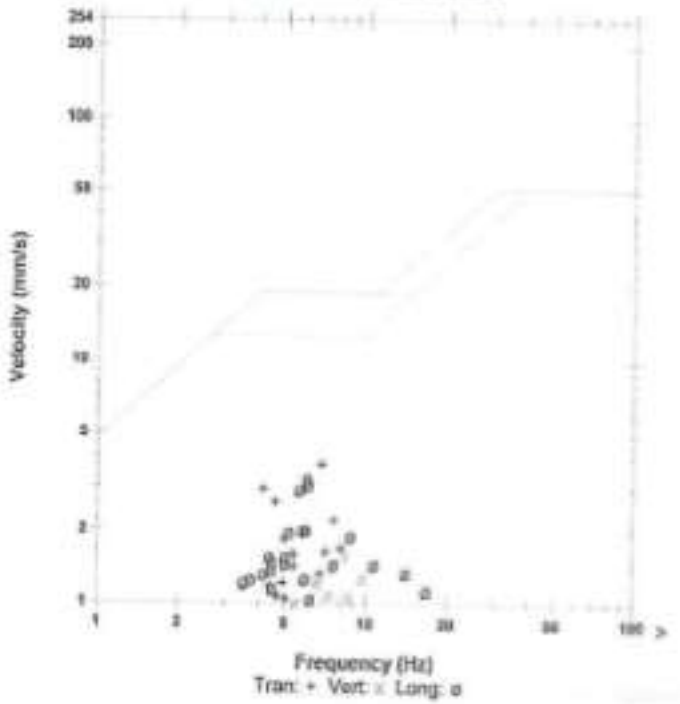
Notes
Location: KTM / Nilli
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

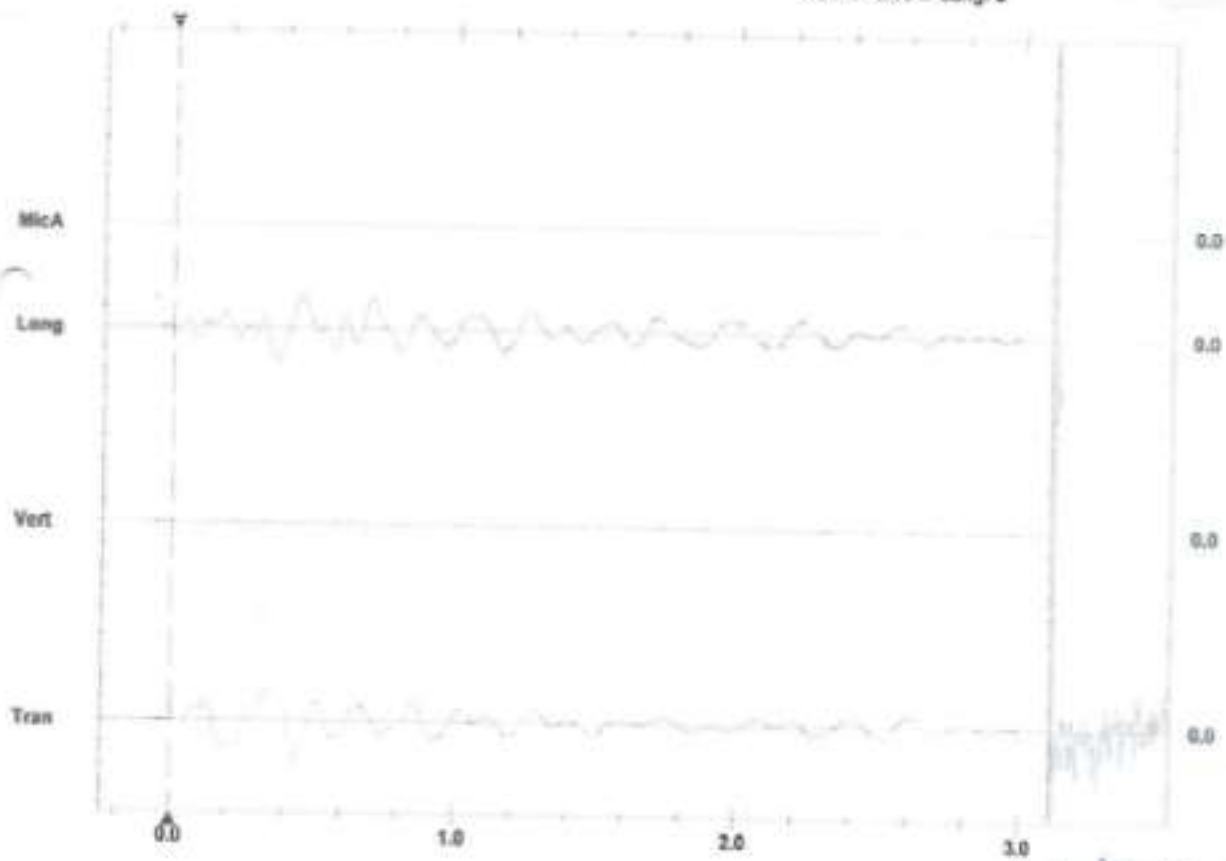
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	3.720	1.576	3.255	mm/s
ZC Freq	6.8	6.4	6.0	Hz
Time (Rel. to Trig)	0.441	0.714	0.369	sec
Peak Acceleration	0.031	0.020	0.023	g
Peak Displacement	0.118	0.037	0.076	mm
Sensor Check	Check	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	0.9	4.1	4.1	

Peak Vector Sum 4.762 mm/s at 0.445 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: October 14, 2024 (V 10.72 - 10.72.1)

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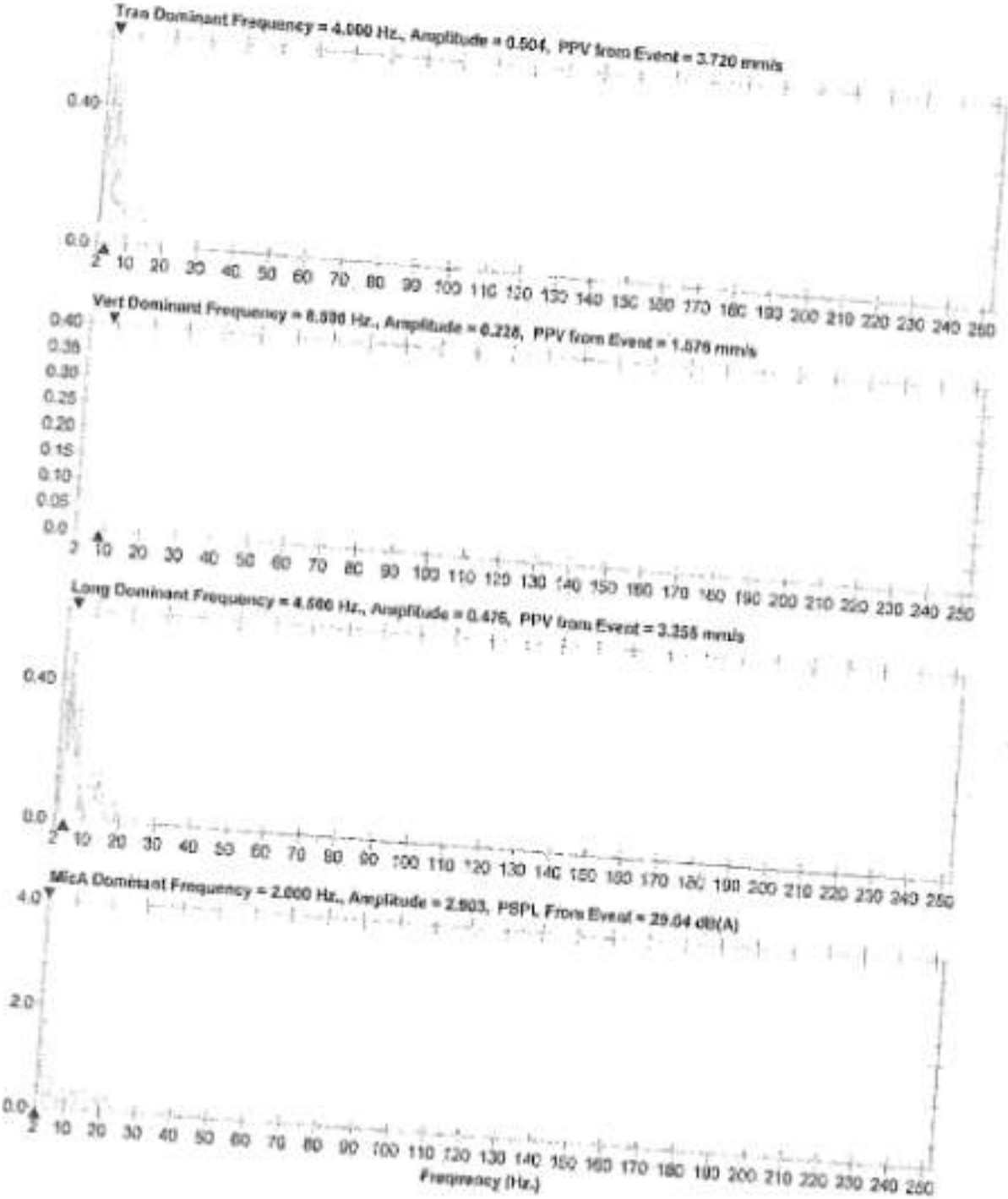
FFT Report

Date/Time	Long at 14: 8:38 October 11, 2024
Trigger Source	Geo: 0.5 mm/s, Mic: 89.0 dB(A)
Range	Geo: 254 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM16576 V 10-30FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM16576_20241011144838.IDFW

Notes
Location: KTM / MM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:48:39 October 11, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241011144839.IDFW

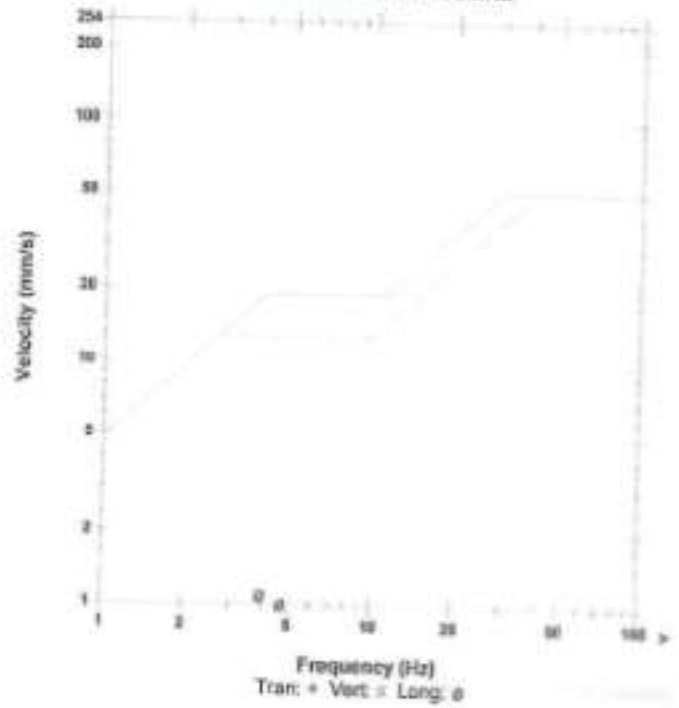
Notes
Location: KTM / NBM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

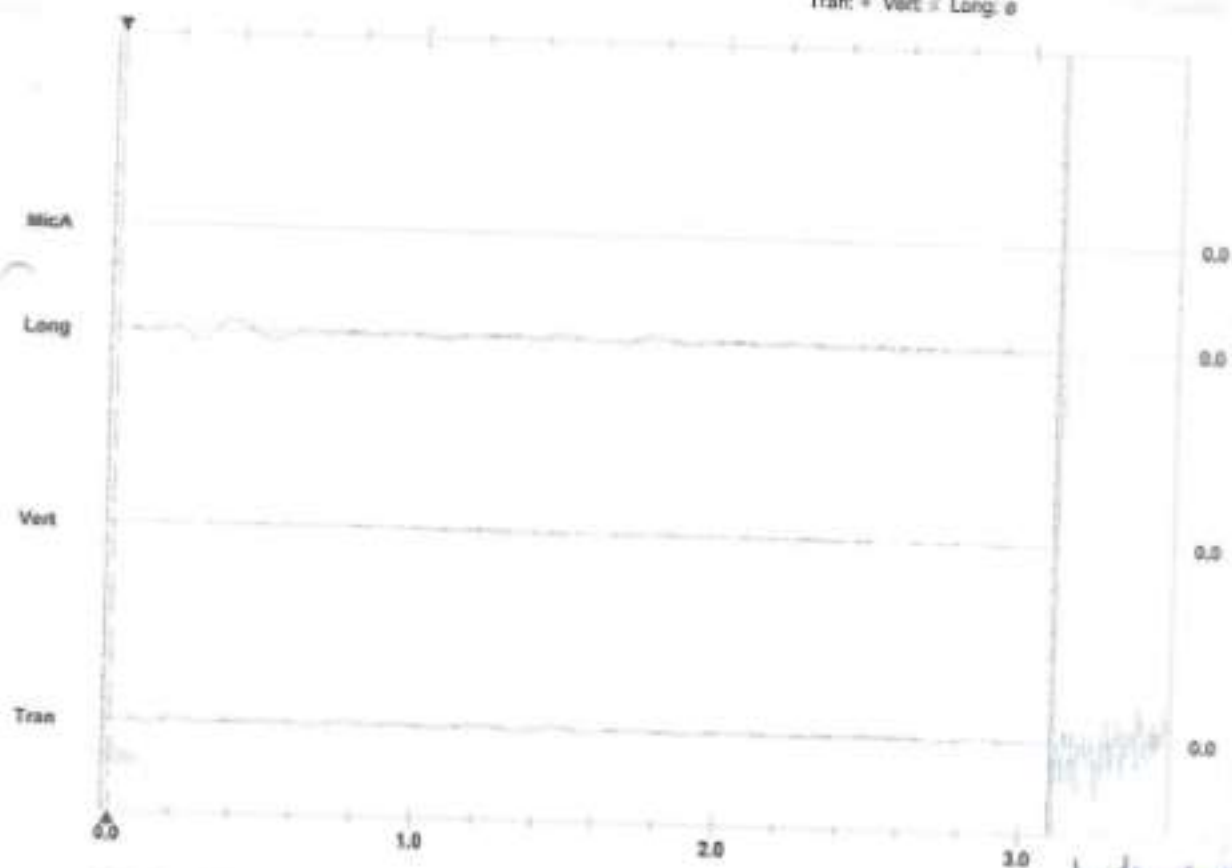
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.489	0.252	1.103	mm/s
ZC Freq	5.2	7.4	3.9	Hz
Time (Rel. to Trig)	0.208	0.038	0.380	sec
Peak Acceleration	0.010	0.012	0.013	g
Peak Displacement	0.015	0.007	0.045	mm
Sensor Check	Check	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	0.9	4.1	4.1	

Peak Vector Sum 1.111 mm/s at 0.380 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: October 14, 2024 (V 10.72 - 10.72.1)

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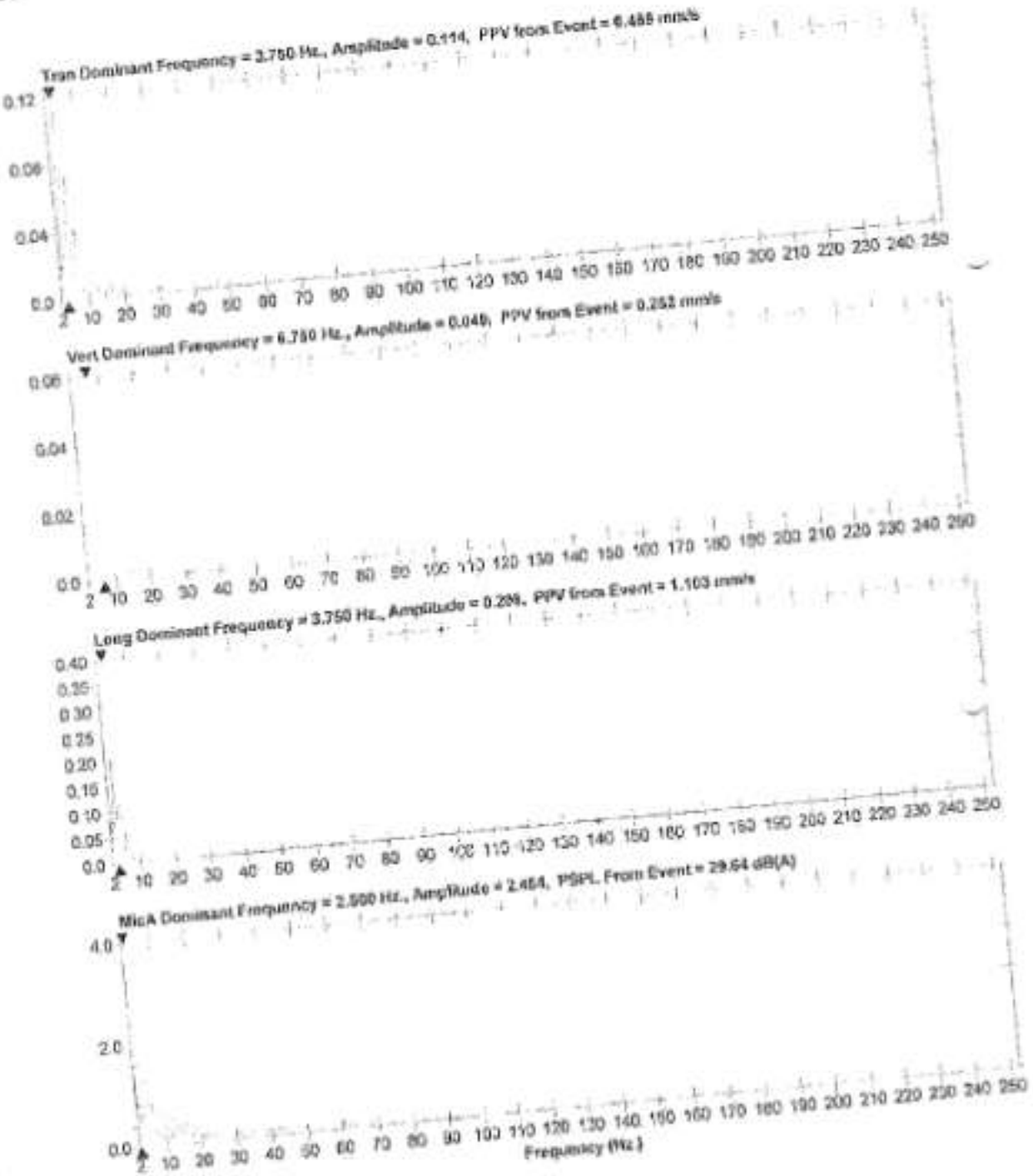
FFT Report

Instantel

Date/Time	Long at 14:48:39 October 11, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MB6

Serial Number	UM15575 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15575_20241011144839.IDFW

Notes
Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

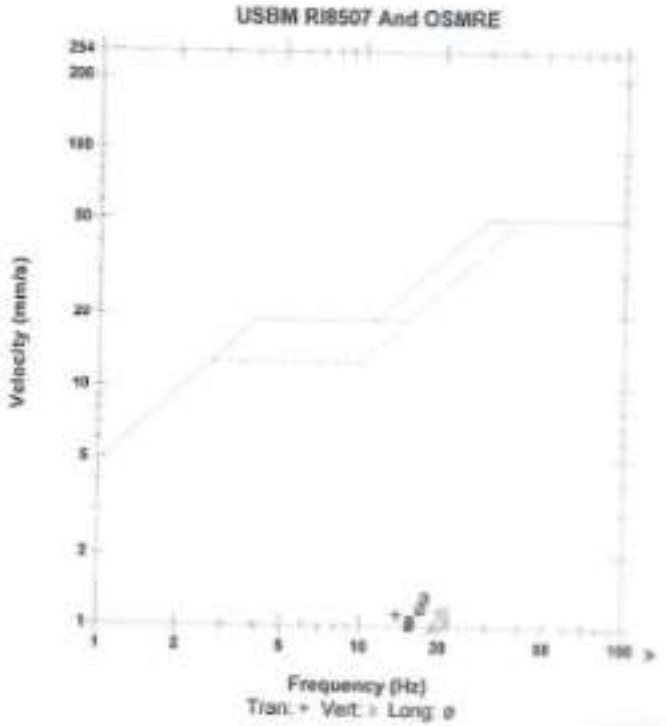
Date/Time	Vert at 13:50:10 October 10, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

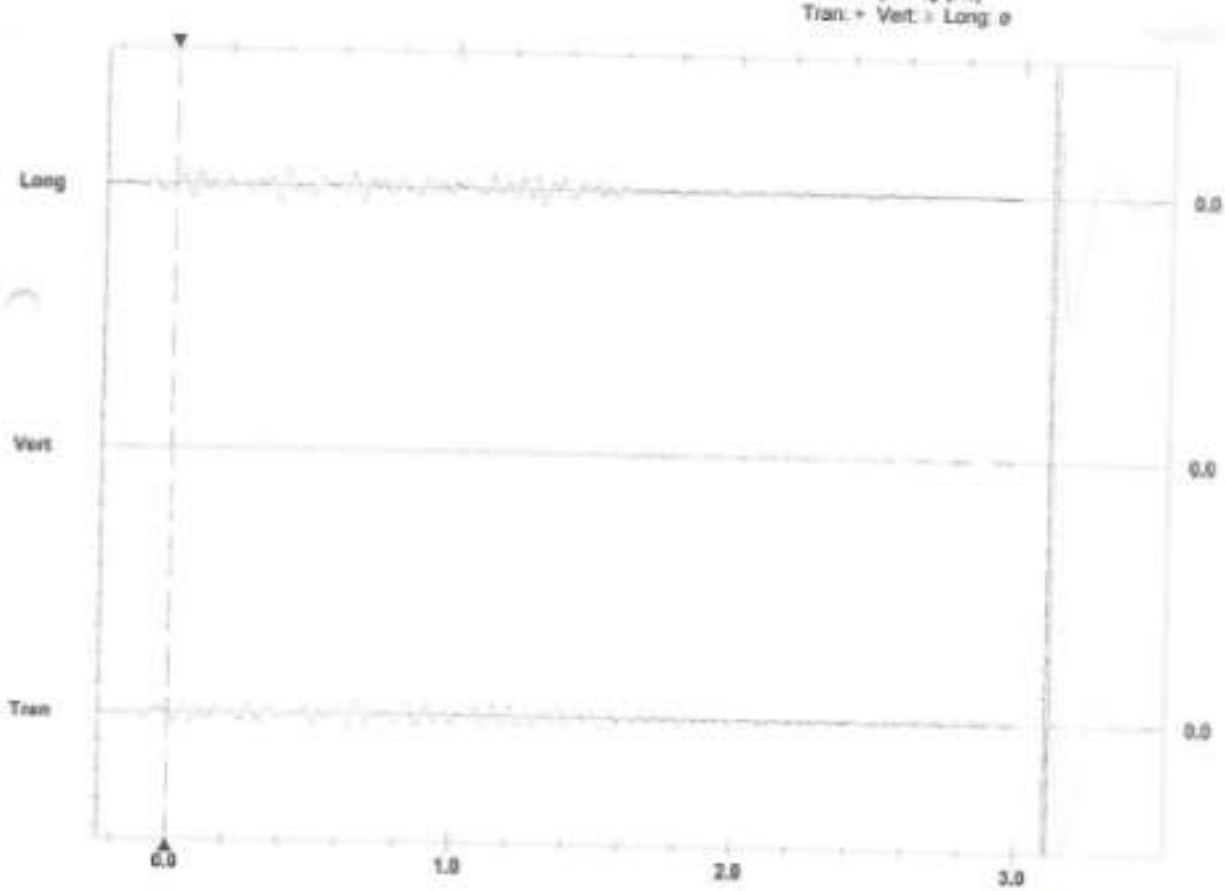
Serial Number	UM20055 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20241010135010.IDFW

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

	Tran	Vert	Long	
PPV	1.111	1.174	1.324	mm/s
ZC Freq	13.8	21	17.7	Hz
Time (Rel. to Trig)	0.669	0.346	0.397	sec
Peak Acceleration	0.016	0.028	0.026	g
Peak Displacement	0.012	0.009	0.011	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.5	Hz
Overswing Ratio	4.0	4.6	4.4	

Peak Vector Sum 1.705 mm/s at 0.370 sec





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger = ▶ ◀

Sensor Check

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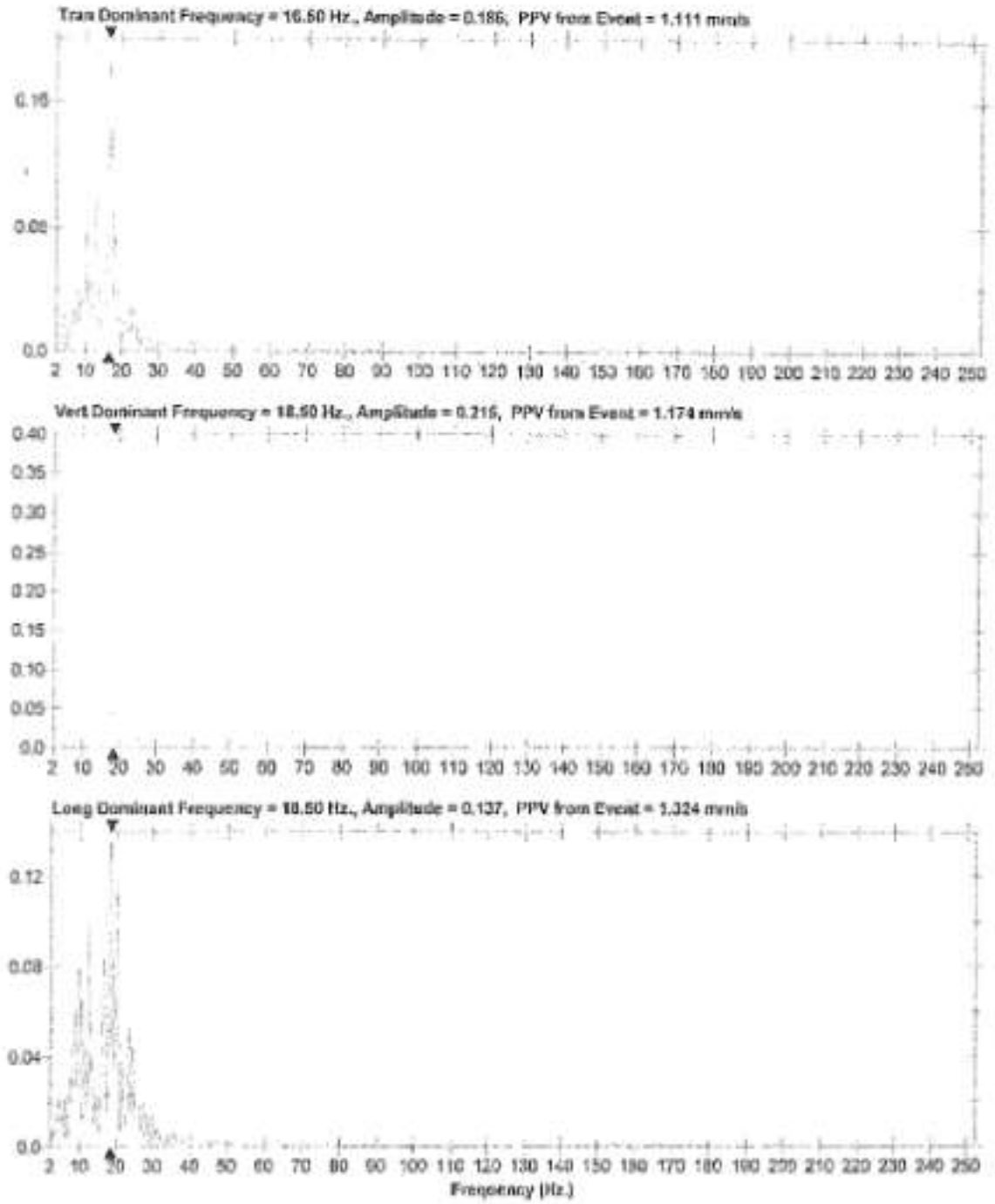
FFT Report

Date/Time	Vert at 13:50:10 October 10, 2024	Serial Number	UM20055 V 10-00GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s	Battery Level	3.7 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM20055_20241010135010.IDFW
Operator/Setup:	Operator/factory.MM8		

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:



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Event Report

Date/Time	Tran at 13:55:00 October 9, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241009135500.IDFW

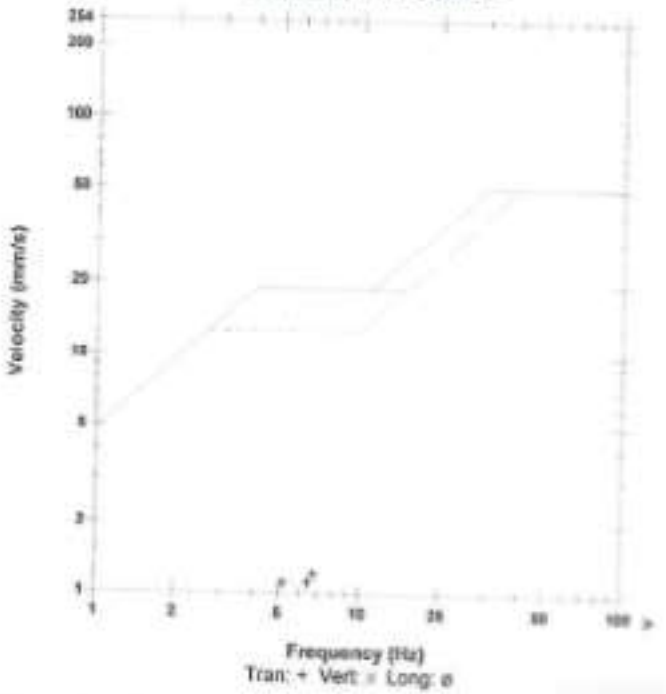
Notes
Location: KTM / NM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

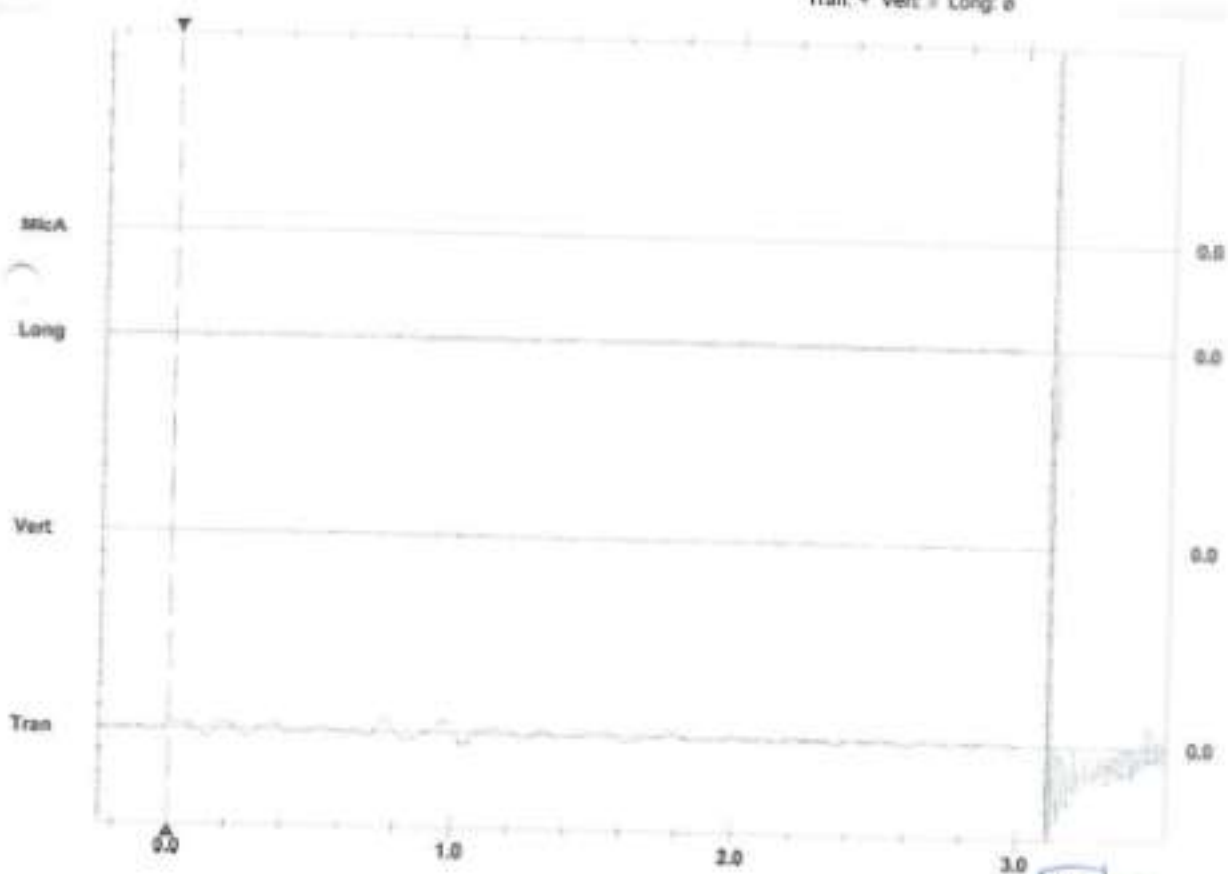
Microphone	'A' Weight - Fast
LMax	<30 dB(A)
Sound (dB)	LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test	Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.206	0.386	0.047	mm/s
ZC Freq	6.8	6.6	>200	Hz
Time (Rel. to Trig)	0.764	0.979	2.218	sec
Peak Acceleration	0.012	0.012	0.010	g
Peak Displacement	0.026	0.008	0.000	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.0	

Peak Vector Sum 1.218 mm/s at 0.764 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

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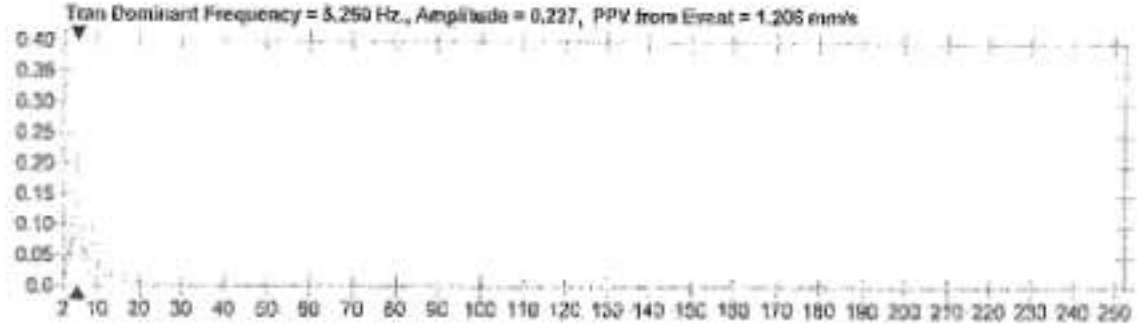
FFT Report

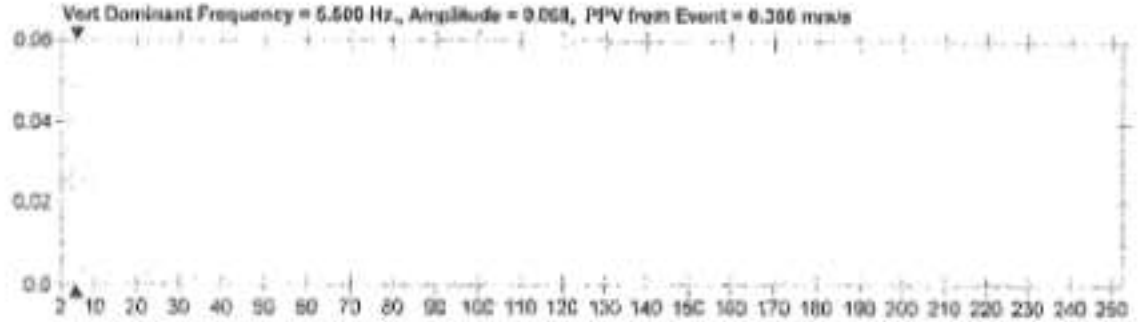
Date/Time	Tran at 13:55:00 October 9, 2024	Serial Number	UM16576 V 10-80FB Micromate ISEE
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)	Battery Level	3.6 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	June 19, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM16576_20241009135500.IDFW
Operator/Setup:	Operator/factory:MMB		

Notes
Location: KTM / NBM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

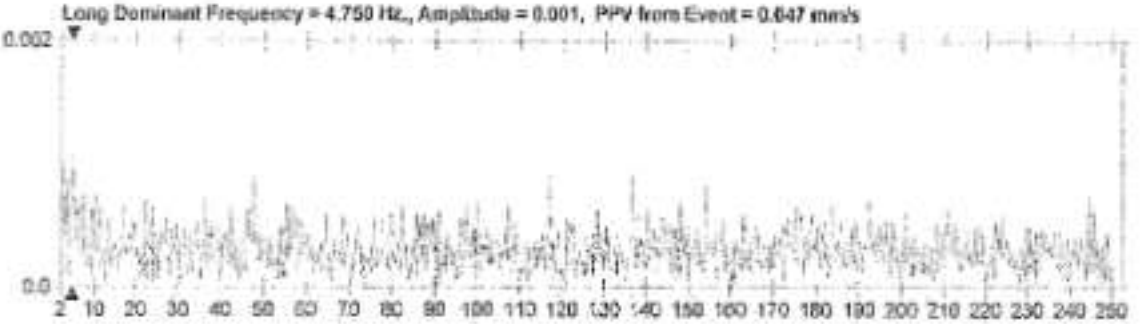
Tran Dominant Frequency = 5.250 Hz., Amplitude = 0.227, PPV from Event = 1.206 mm/s



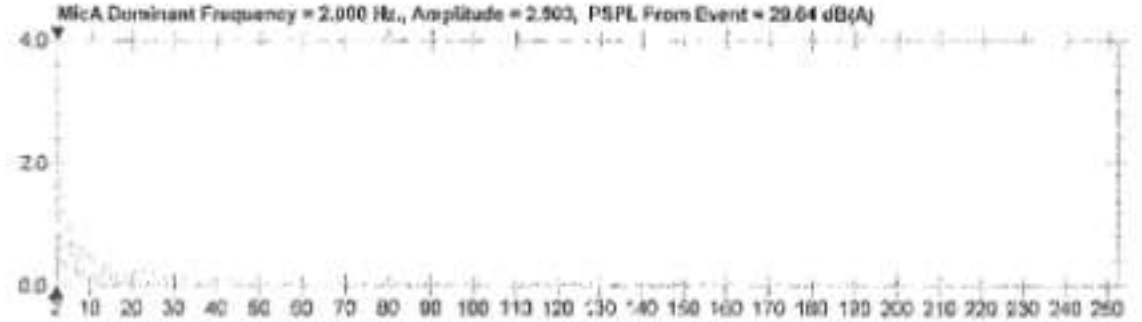
Vert Dominant Frequency = 5.500 Hz., Amplitude = 0.068, PPV from Event = 0.366 mm/s



Long Dominant Frequency = 4.750 Hz., Amplitude = 0.001, PPV from Event = 0.647 mm/s



MicA Dominant Frequency = 2.000 Hz., Amplitude = 2.503, PSPL From Event = 29.64 dB(A)



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Event Report

Date/Time	Long at 14:15:27 October 5, 2024
Trigger Source	Geo: 0.500 mm/s
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

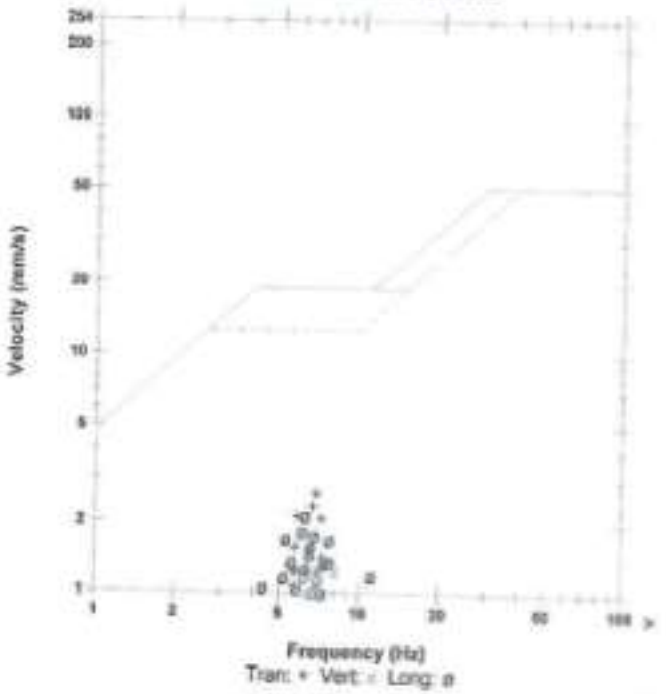
Serial Number	UM20055 V 10-90GC Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	February 26, 2024 by UES New Delhi
File Name	UM20055_20241005141527.IDFW

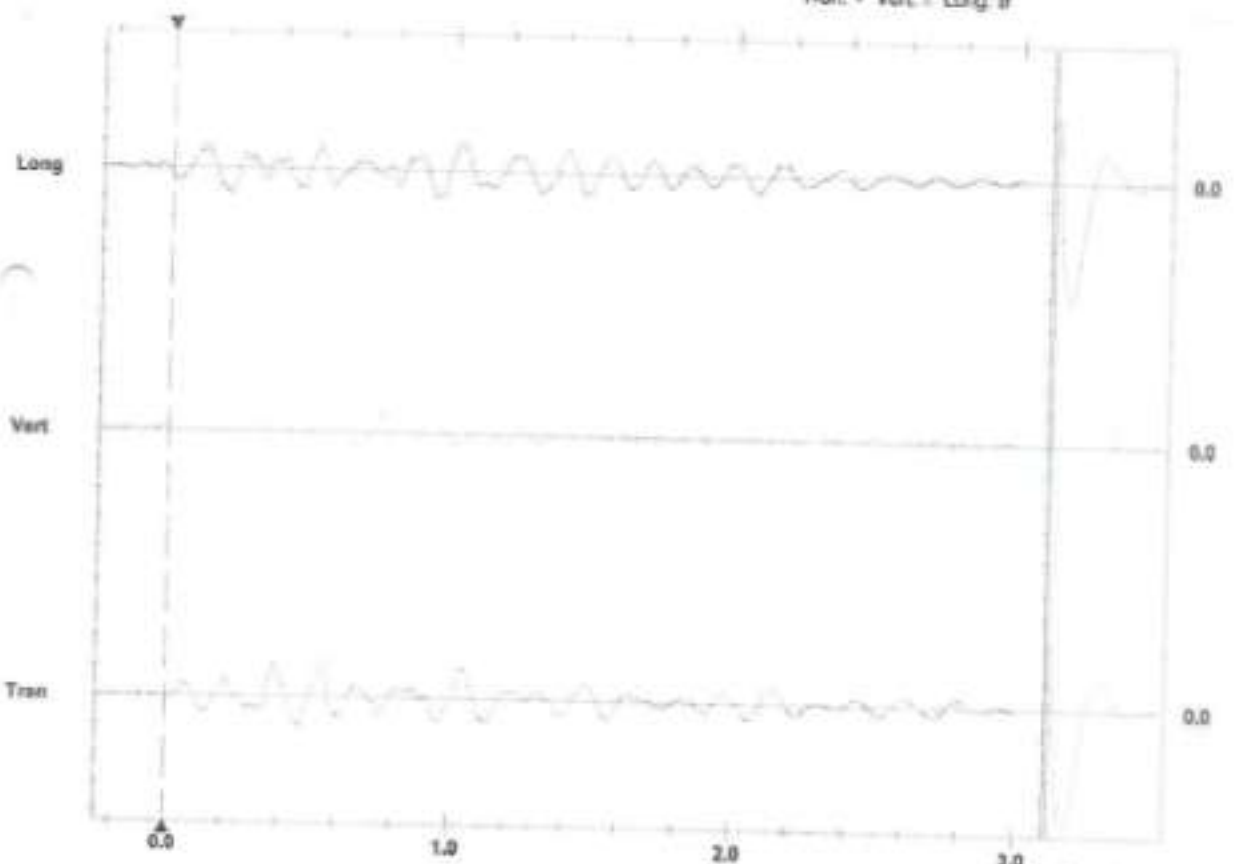
Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:

	Tran	Vert	Long	
PPV	2.625	1.245	2.128	mm/s
ZC Freq	6.9	6.7	6.3	Hz
Time (Rel. to Trig)	0.554	0.664	1.017	sec
Peak Acceleration	0.025	0.018	0.020	g
Peak Displacement	0.049	0.026	0.049	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.3	Hz
Overswing Ratio	4.1	4.6	4.5	

Peak Vector Sum 2.664 mm/s at 0.555 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div
Trigger = ▶ ◀

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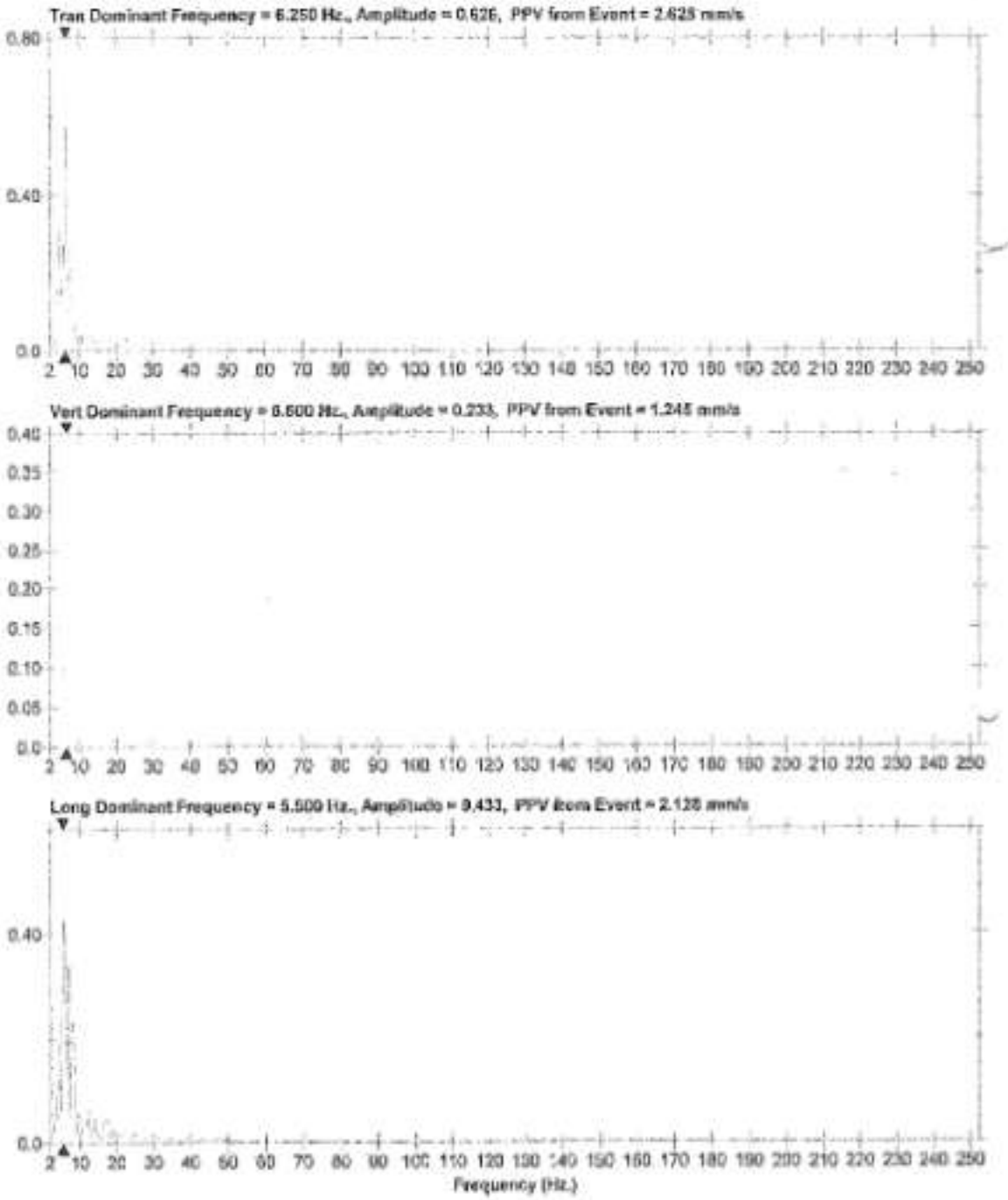
FFT Report

Date/Time	Long at 14:15:27 October 5, 2024	Serial Number	UM20055 V 10-000C Micromate ISEE
Trigger Source	Geo: 0.500 mm/s	Battery Level	3.8 Volts
Range	Geo: 254.0 mm/s	Unit Calibration	February 26, 2024 by UES New Delhi
Record Time	3.0 sec at 2048 sps	File Name	UM20055_20241005141527.IDFW
Operator/Setup:	Operator/factory.MMB		

Notes
Location:
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVE LTD
General:



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Event Report

Date/Time	Long at 13:39:16 October 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241004133916.IDFW

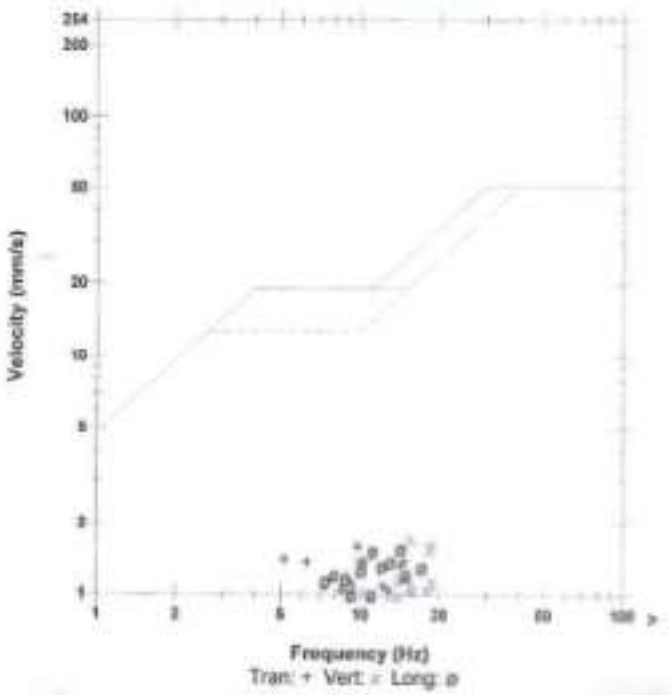
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

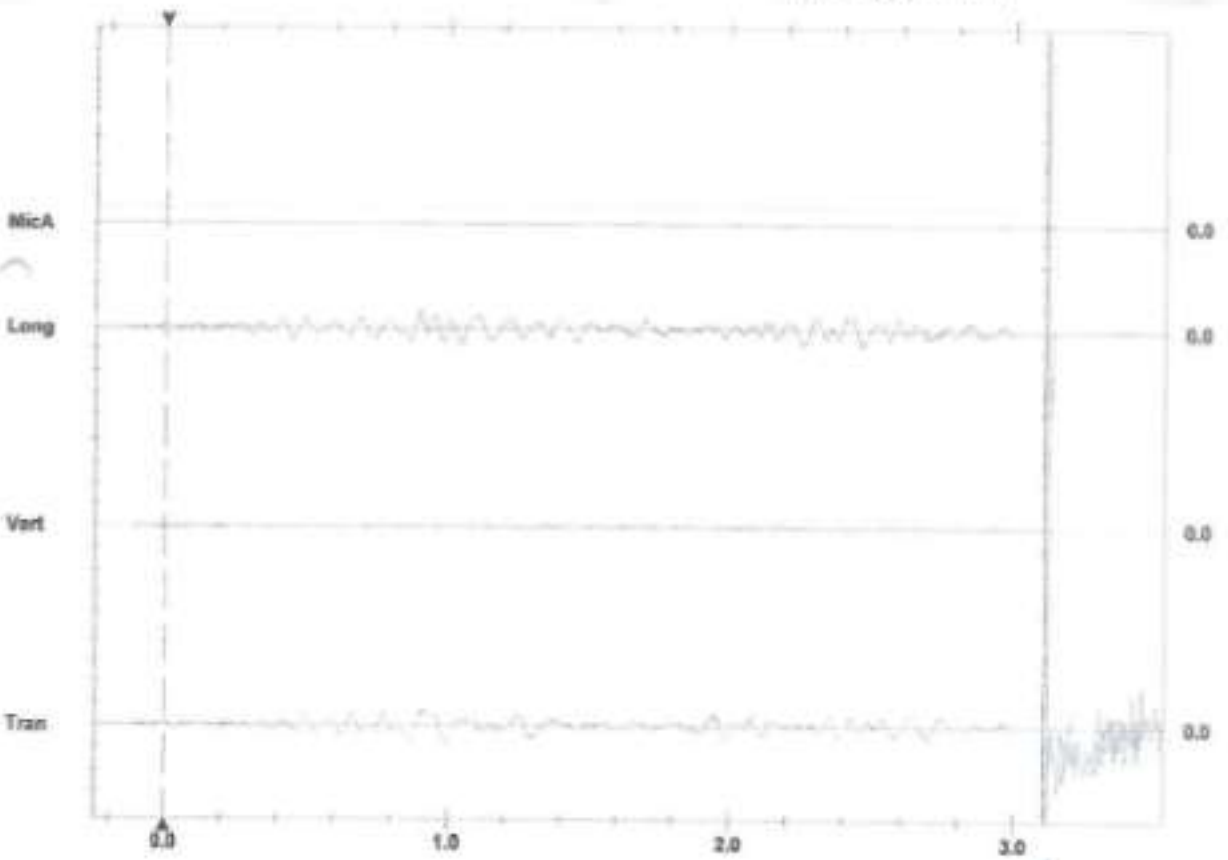
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.592	1.718	1.553	mm/s
ZC Freq	9.8	15.5	14.2	Hz
Time (Rel. to Trig)	0.993	2.859	0.901	sec
Peak Acceleration	0.021	0.026	0.021	g
Peak Displacement	0.035	0.017	0.025	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.0	4.0	

Peak Vector Sum 1.931 mm/s at 2.856 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Sensor Check

For IDL Explosives Limited

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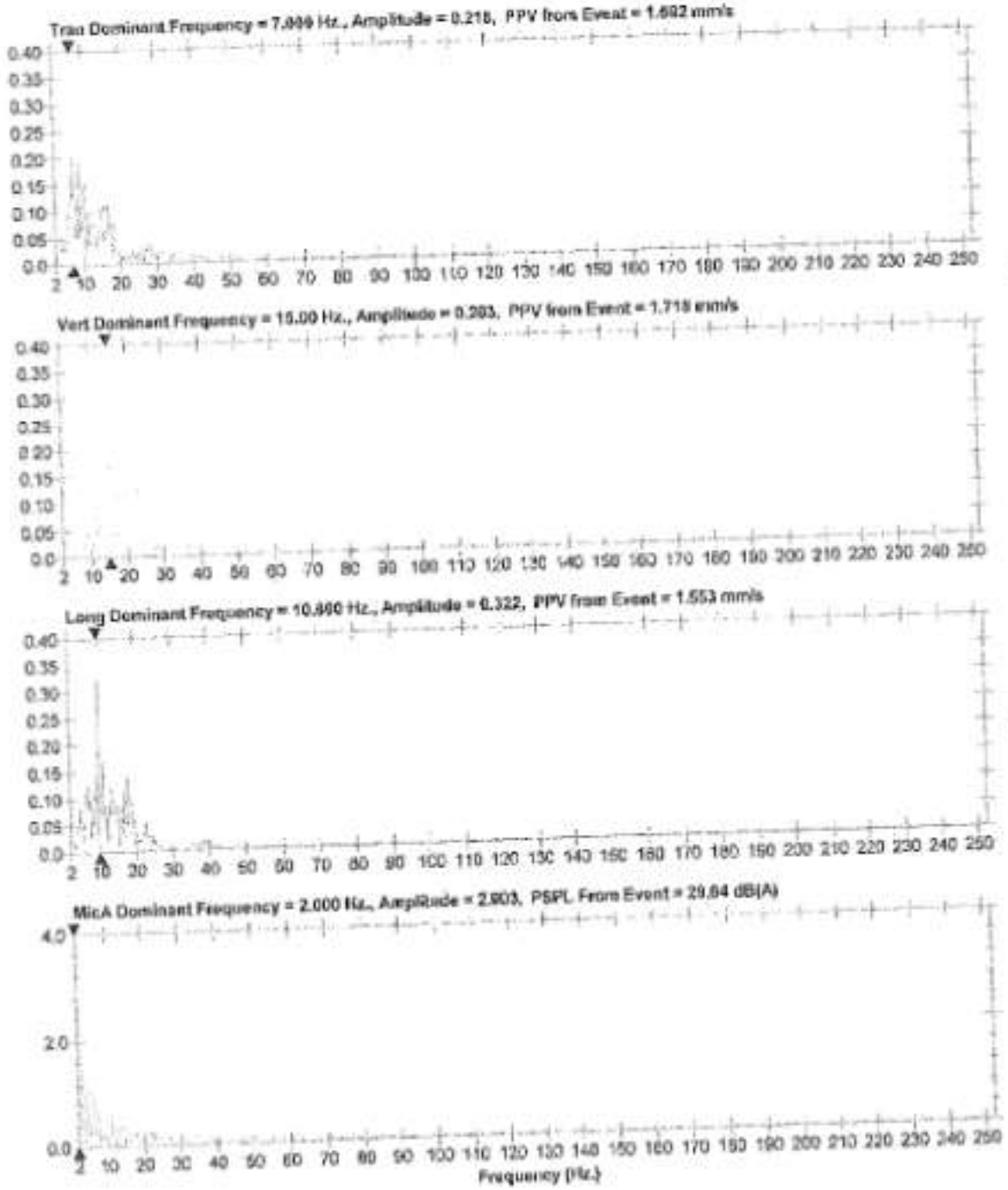
FFT Report

Date/Time	Long at 13:39:16 October 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 650.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-40FB Micronate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241004133916.IDFW

Notes

Location:	KTM / NM
Client:	TATA STEEL LTD
User Name:	IDL EXPLOSIVES LTD
General:	



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Event Report

Date/Time	Tran at 13:39:19 October 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241004133919.IDFW

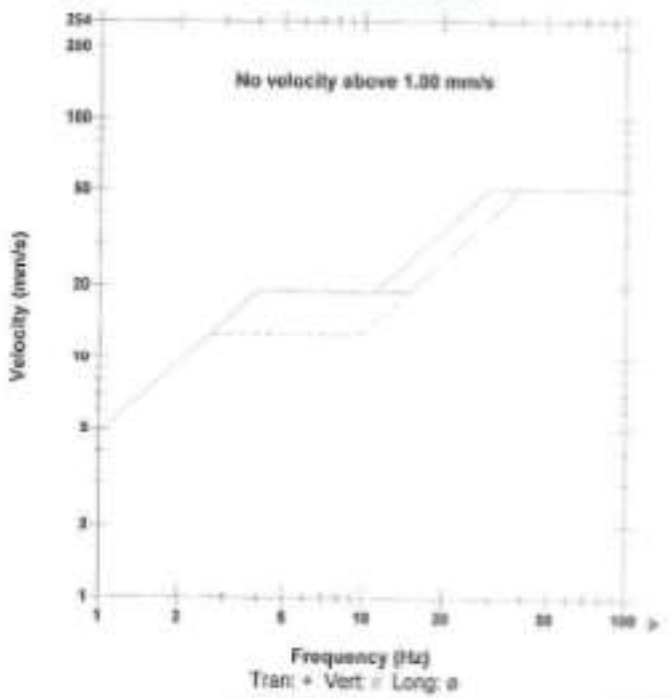
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

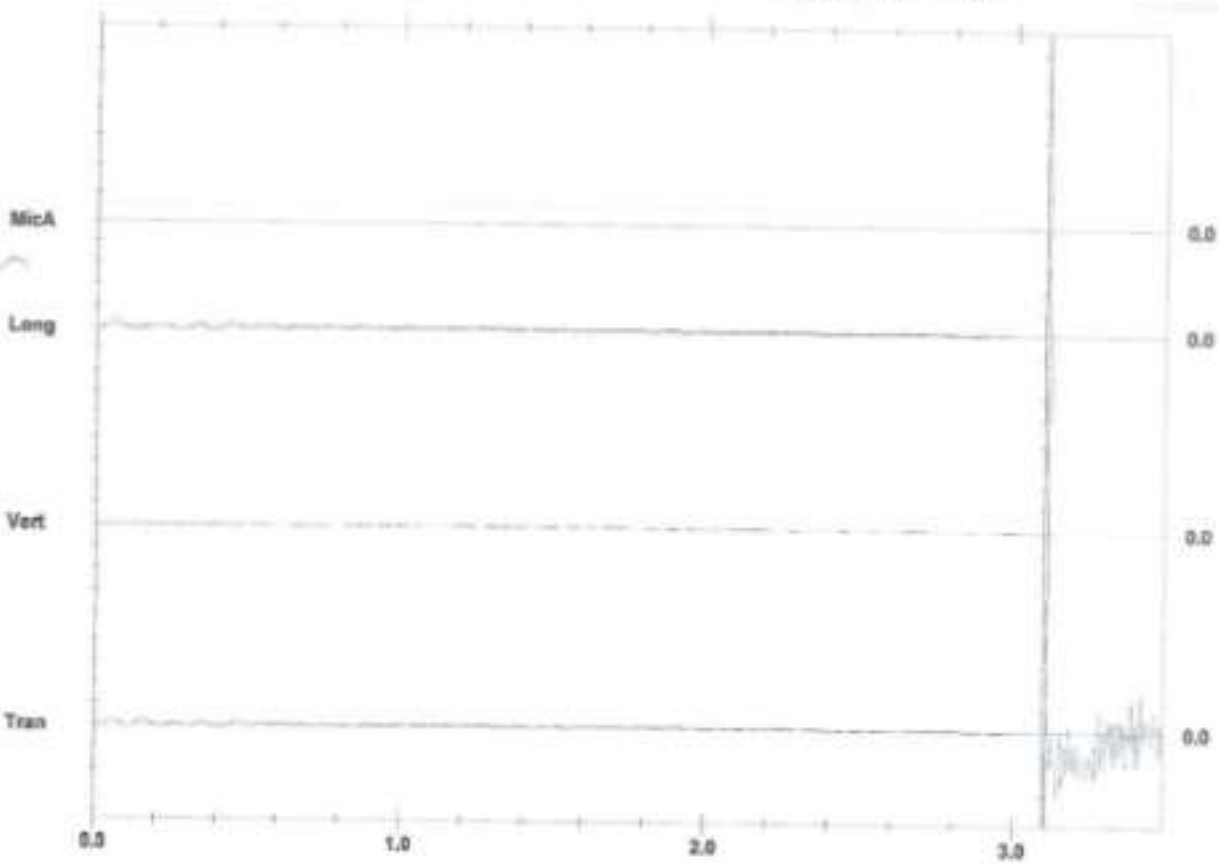
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) **LMin** 1.5 **L10** 29 **L90** 29 **Leq** 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.638	0.410	0.638	mm/s
ZC Freq	16.5	10.9	8.3	Hz
Time (Rel. to Trig)	0.006	0.059	0.057	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.010	0.005	0.010	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.0	4.0	

Peak Vector Sum 0.866 mm/s at 0.057 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div

Sensor Check

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For IDL Explosives Limited

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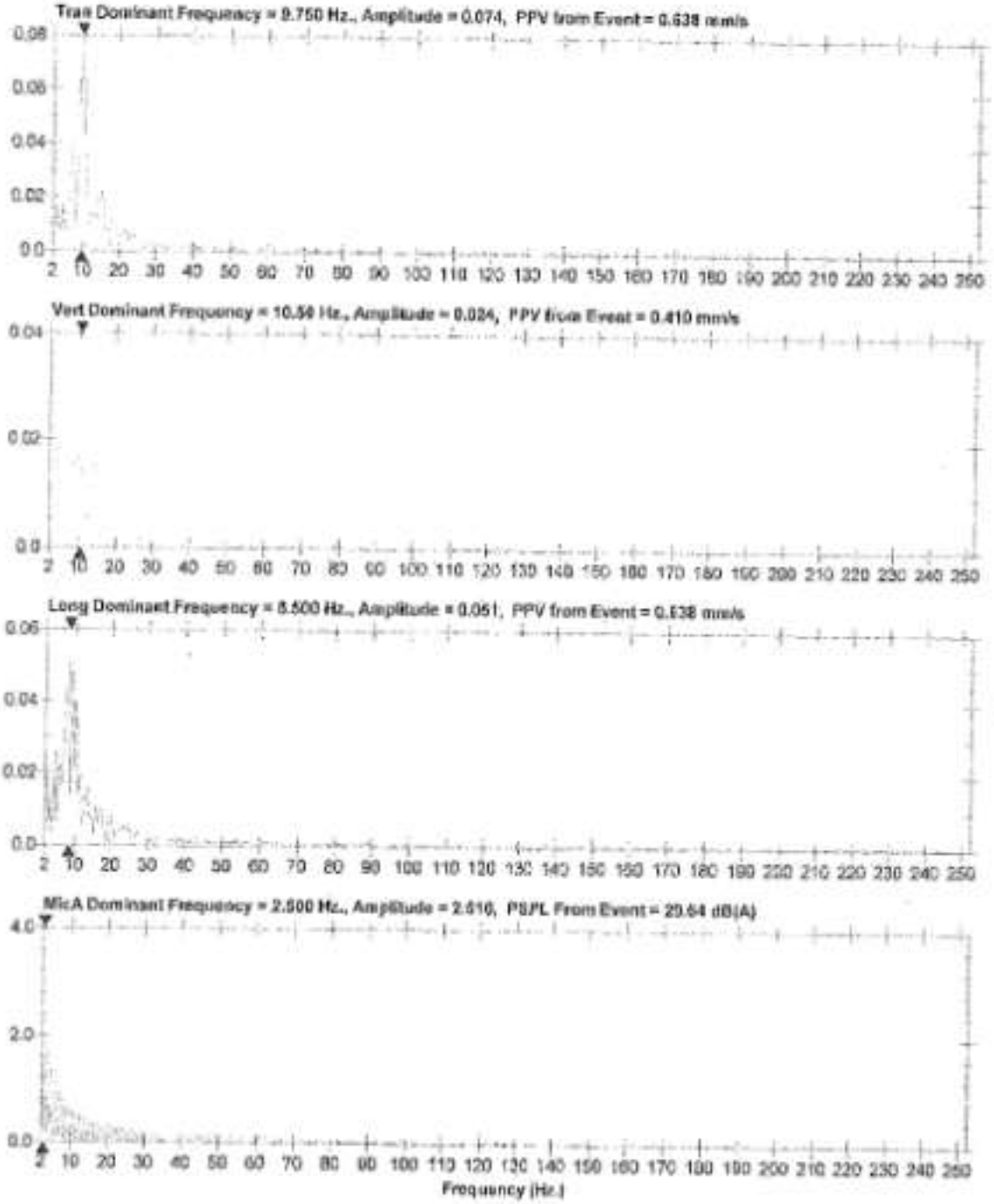
FFT Report

Date/Time	Tran at 13:39:19 October 4, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MM9

Serial Number	UM15576 V 10-00FB Micromate ISEE
Battery Level	3.6 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241004133919.IDFW

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:05:43 October 3, 2024
Trigger Source	Geo: 0.500 mm/s, Mic: 70.86 pa.(L)
Range	Geo: 254.0 mm/s
Record Time	3.469 sec (Auto=1Sec) at 1024 sps
Operator/Setup:	Operator/TARA_MMB

Serial Number	UM19508 V 10-90GC Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	September 17, 2024 by UES New Delhi
File Name	__TEMP EVT
Scaled Distance	25.8 (100.0 m, 15.0 kg)

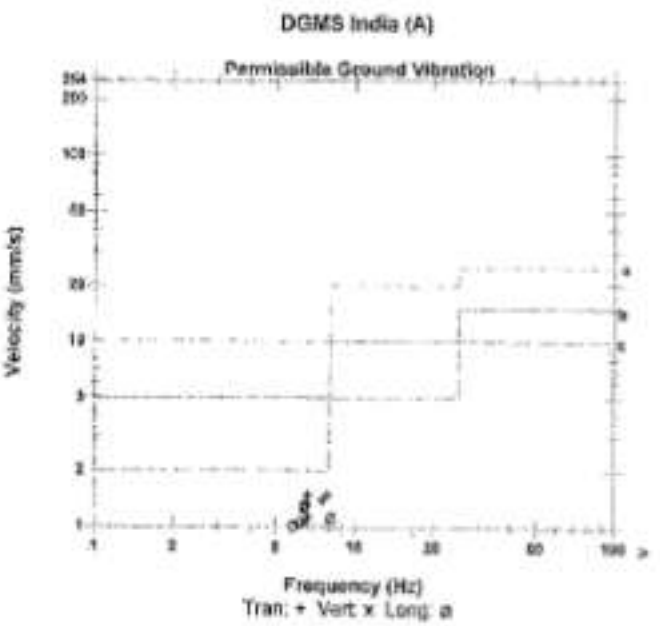
Notes
Location: On Ground Surface
Client: KATAMATI IRON MINE
User Name: BDEPL
General:

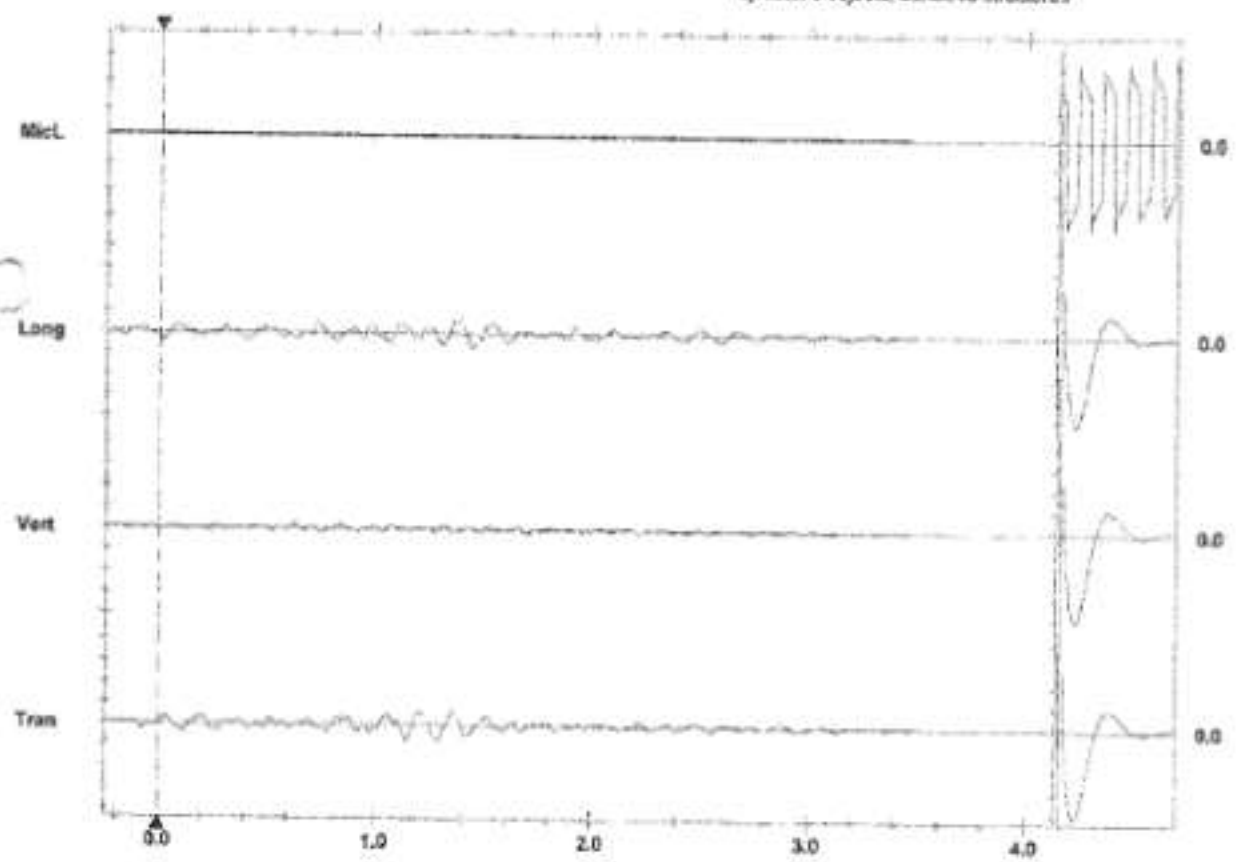
Extended Notes
100 mtrs back from blasting face

Microphone	Linear Weighting
PSPL	<0.500 pa.(L)
ZC Freq	2.5 Hz
Channel Test	Passed (Freq = 28.5 Hz Amp = 1288 mv)

	Tran	Vert	Long	
PPV	1.460	0.428	1.340	mm/s
ZC Freq	7.9	11	6.5	Hz
Time (Rel. to Trig)	1.147	0.530	1.433	sec
Peak Acceleration	0.016	0.008	0.017	g
Peak Displacement	0.032	0.007	0.033	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.5	Hz
Overswing Ratio	4.2	3.6	4.1	

Peak Vector Sum 1.765 mm/s at 1.354 sec
N/A: Not Applicable





Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div
Trigger =

Sensor Check

Printed: October 4, 2024 (V 10.74)

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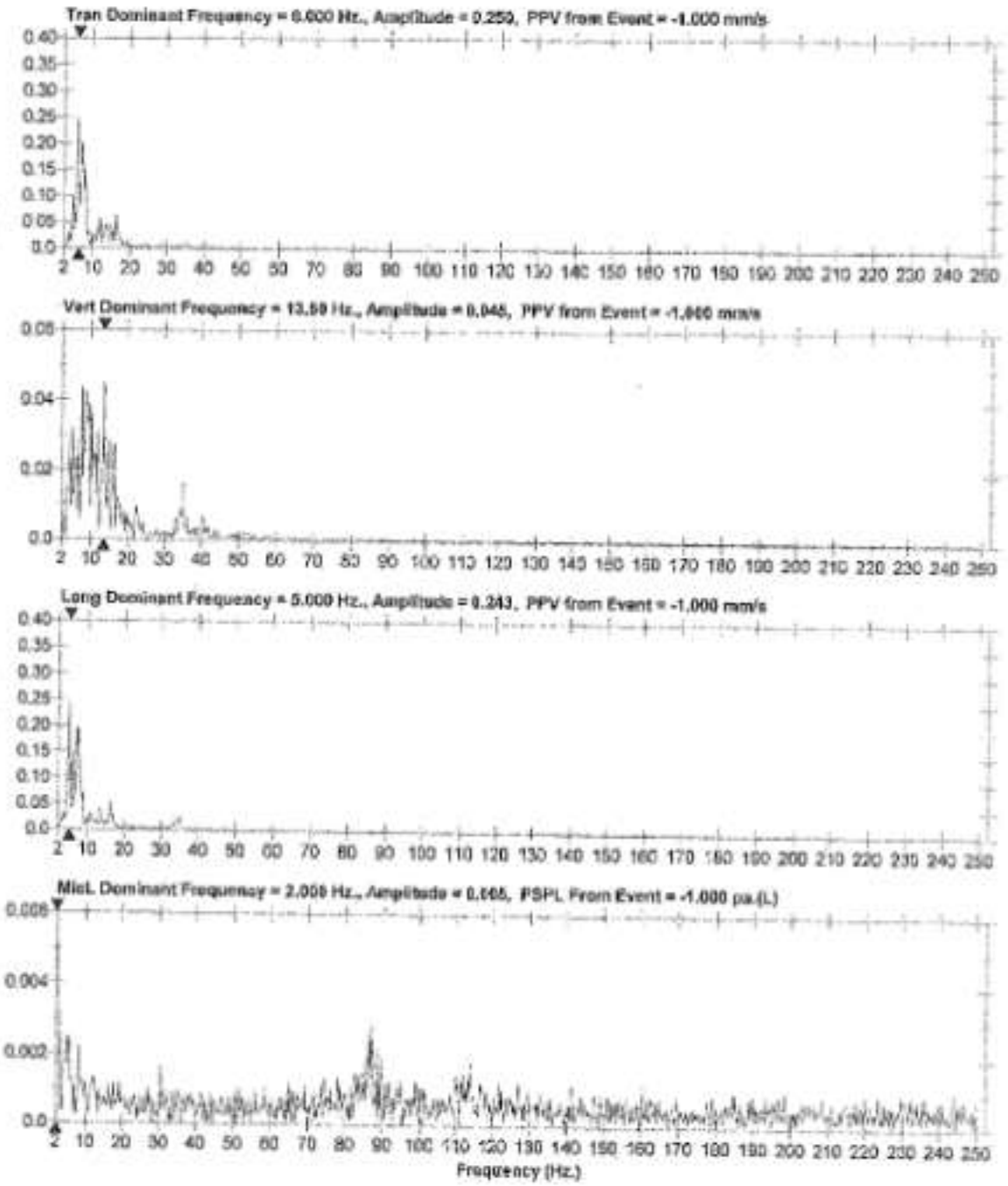
FFT Report

Date/Time	Long at 14:05:43 October 3, 2024	**Serial Number**	UM19508 V 10-00GC Micromate ISEE
Trigger Source	Geo: 0.500 mm/s, Mic: 70.00 pa.(L)	**Battery Level**	3.7 Volts
Range	Geo: 254.0 mm/s	**Unit Calibration**	September 17, 2024 by UES New Delhi
Record Time	3.469 sec (Auto=15sc) at 1024 sps	**File Name**	__TEMP.EVT
Operator/Setup:	Operator/TARA MMS	**Scaled Distance**	25.8 (100.0 m, 15.0 kg)

Notes
Location: On Ground Surface
Client: KATAMATI IRON MINE
User Name: BDEPL
General:

Extended Notes
100 mrs back from blasting face.



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Event Report

Date/Time	Long at 14:05:58 October 1, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241001140558.IDFW

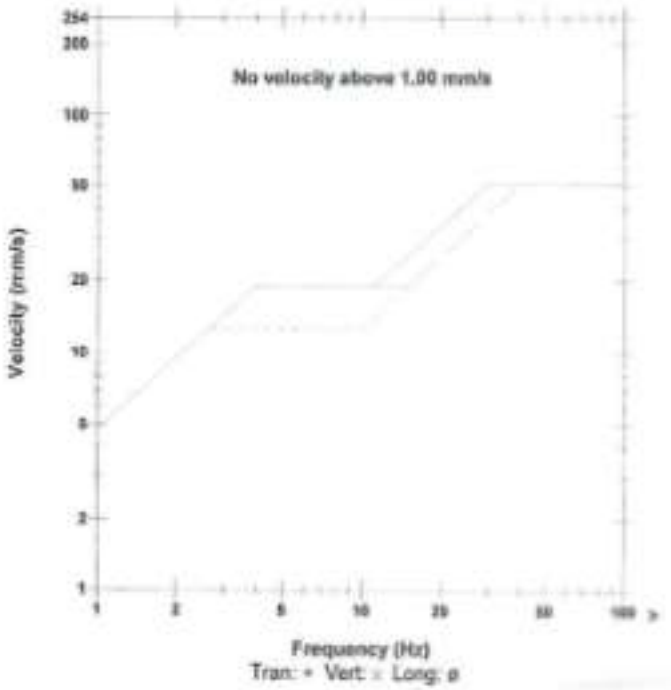
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

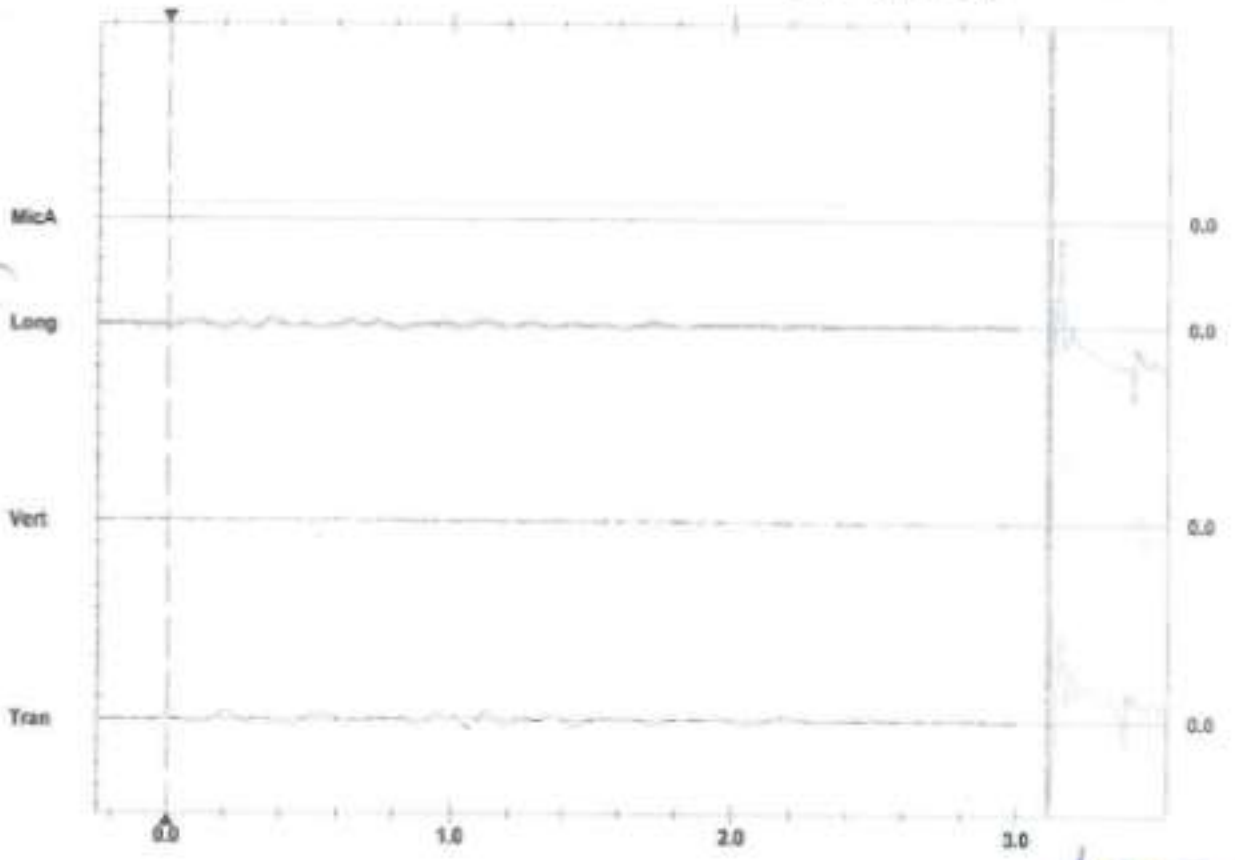
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.757	0.300	0.583	mm/s
ZC Freq	7.2	5.3	6.3	Hz
Time (Rel. to Trig)	1.068	0.798	0.374	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.020	0.009	0.013	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 0.795 mm/s at 0.202 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

for IDL EXPLOSIVES Limited

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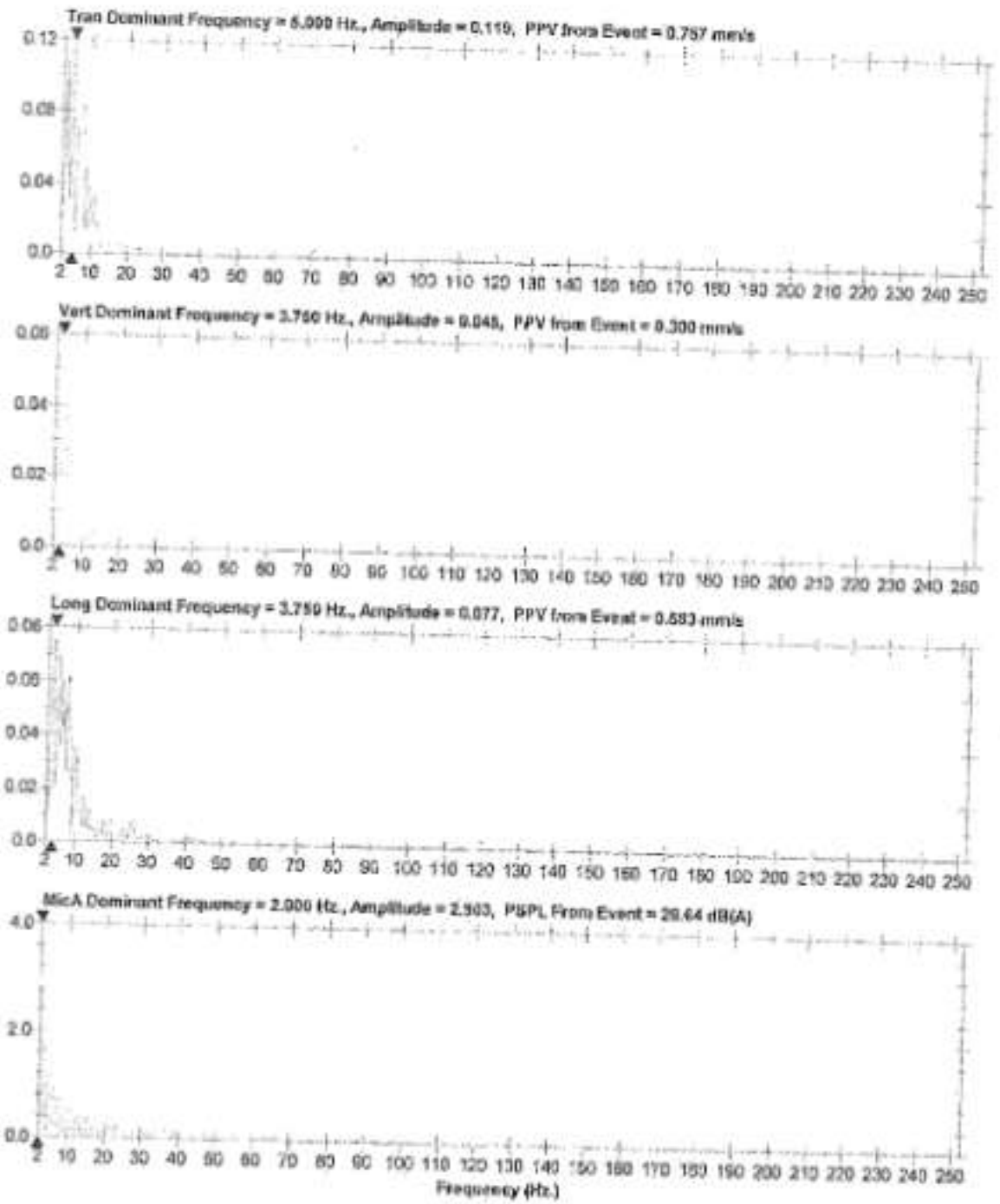
Instantel

FFT Report

Date/Time	Long at 14:05:58 October 1, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 880.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory:MMB

Serial Number	UM15576 V 10-99FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241001140558.IDFW

Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:



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Event Report

Date/Time	Long at 14:05:58 October 1, 2024
Trigger Source	Geo: 0.300 mm/s, Mic: 660.0 dB(A)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/factory.MMB

Serial Number	UM15576 V 10-90FB Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	June 19, 2024 by UES New Delhi
File Name	UM15576_20241001140558.IDFW

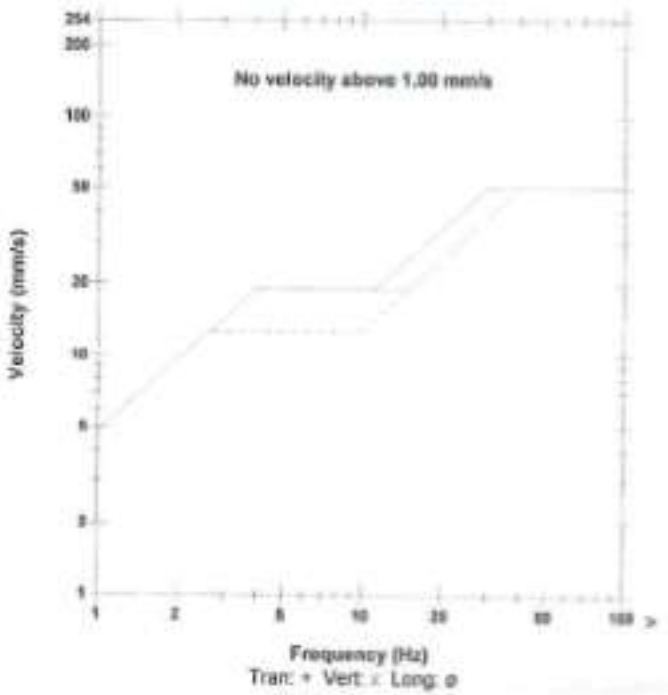
Notes
Location: KTM / NIM
Client: TATA STEEL LTD
User Name: IDL EXPLOSIVES LTD
General:

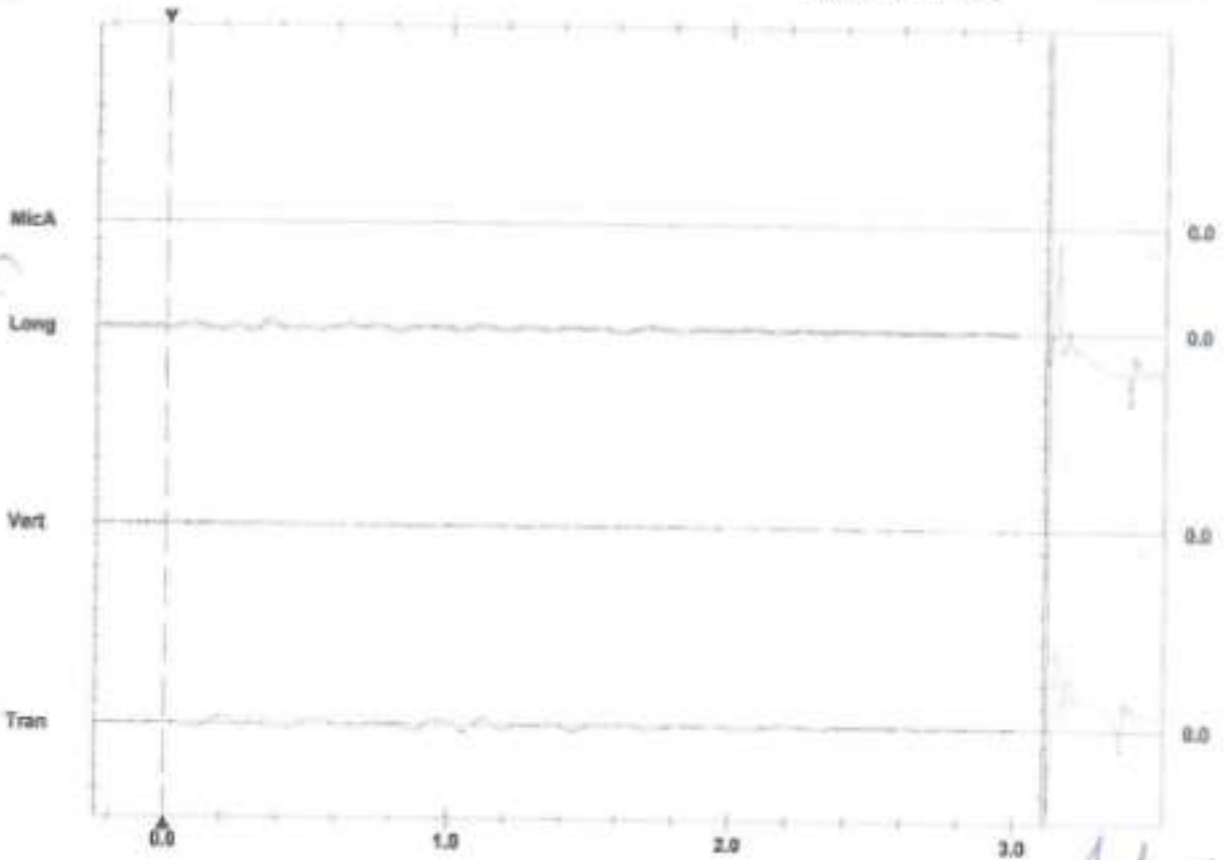
Microphone 'A' Weight - Fast
LMax <30 dB(A)
Sound (dB) LMin 1.5 L10 29 L90 29 Leq 1.5
Channel Test Check (Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.757	0.300	0.663	mm/s
ZC Freq	7.2	5.3	6.3	Hz
Time (Rel. to Trig)	1.058	0.798	0.374	sec
Peak Acceleration	0.010	0.010	0.010	g
Peak Displacement	0.020	0.009	0.013	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.3	7.1	Hz
Overswing Ratio	4.0	4.1	4.1	

Peak Vector Sum 0.795 mm/s at 0.202 sec

USBM RI8507 And OSMRE





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 50.00 dB(A)/div
Trigger = ▶ ◀

Printed: October 2, 2024 (V 10.72 - 10.72.1)

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ANNEXURE-XVI

Summarised Noise Monitoring Report							
Katamati Iron Ore Mine of M/s Tata Steel Limited							
Period: October 2024 to March 2025							
Mine Location	Sampling Location	Month	Unit	Results		Norms	
				Day	Night	Day	Night
Noamundi Iron Ore Mine	Hospital Premises	October 2024	dB(A)	48.6	37.9	50	40
		November 2024	dB(A)	47.3	38.1		
		December 2024	dB(A)	47.8	37.9		
		January 2025	dB(A)	46.3	38.1		
		February 2025	dB(A)	47.2	36.8		
		March 2025	dB(A)	46.1	37.2		
	Training Centres	October 2024	dB(A)	53.1	41.7	65	55
		November 2024	dB(A)	52.9	43.6		
		December 2024	dB(A)	53.6	42.7		
		January 2025	dB(A)	51.7	43.9		
		February 2025	dB(A)	52.1	41.9		
		March 2025	dB(A)	51.9	42.1		
	Township	October 2024	dB(A)	53.9	41.8	55	45
		November 2024	dB(A)	54.7	42.8		
		December 2024	dB(A)	54.6	43.8		
		January 2025	dB(A)	54.1	42.7		
		February 2025	dB(A)	53.7	41.2		
		March 2025	dB(A)	54.6	43.2		
	Chief Office	October 2024	dB(A)	54.6	43.7	65	55
		November 2024	dB(A)	54.2	41.9		
		December 2024	dB(A)	53.9	43.1		
		January 2025	dB(A)	54.6	42.8		
		February 2025	dB(A)	54.7	43.6		
		March 2025	dB(A)	54.6	43.9		
	Mining Area	October 2024	dB(A)	64.9	53.8	75	70
		November 2024	dB(A)	68.3	54.7		
		December 2024	dB(A)	71.6	56.2		
		January 2025	dB(A)	73.1	57.9		
		February 2025	dB(A)	73.8	56.2		
		March 2025	dB(A)	72.1	61.8		
	Plant Area	October 2024	dB(A)	71.2	64.1	75	70
		November 2024	dB(A)	72.6	63.9		
		December 2024	dB(A)	71.3	64.9		
		January 2025	dB(A)	71.6	58.2		
		February 2025	dB(A)	72.8	57.1		
		March 2025	dB(A)	73.6	64.2		

ANNEXURE-XXIII

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: October 2024 to March 2025							
Location		Murga Nallah Upstream					
	Parameters	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25
I	**Biological Testing 1.Water**						
1	Total Colifom	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1.Water**						
2	pH value	6.52	6.62 at 25°C	6.43 at 25°C	6.51	6.48	6.51
3	Colour	32	26	21	32	24	16
4	Dissolved Oxygen	6.7	6.5	6.4	6.7	6.4	6.2
5	Total Suspended Solid (as TSS)	26	21	26	28	26	24
6	BOD (3 days at 27°C)	2.51	2.93	2.74	2.61	2.53	2.59
7	Chemical oxygen demand	7.93	6.82	6.59	6.92	5.91	6.38
8	Total Dissolved Solids (TDS)	1434	1357	1452	1397	1452	1391
9	Copper (as Cu)	0.06	0.05	0.08	0.07	0.06	0.07
10	Chloride (as Cl)	257	264	239	216	237	216
11	Sulphate (as SO4)	193	182	193	176	182	176
12	Nitrate (as NO3)	26.19	27.38	26.43	27.93	26.43	23.91
13	Fluoride (as F)	0.64	0.53	0.56	0.61	0.51	0.43
14	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C6H5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.42	0.41	0.46	0.47	0.41	0.43
18	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr+6)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: October 2024 to March 2025							
Location		Murga Nallah Downstream					
Parameters		Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25
I	**Biological Testing 1.Water**						
1	Total Colifom	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1.Water**						
2	pH value	6.63	6.91	6.58	6.62	6.51	6.82
3	Colour	28	24	16	24	18	12
4	Dissolved Oxygen	6.4	6.1	5.8	6.3	6.1	5.8
5	Total Suspended Solid (as TSS)	22	16	24	26	24	21
6	BOD (3 days at 27°C)	2.47	2.64	2.52	2.54	2.47	2.46
7	Chemical oxygen demand	6.81	5.93	5.81	6.38	4.82	5.94
8	Total Dissolved Solids (TDS)	1293	1182	1397	1168	1297	1176
9	Copper (as Cu)	0.04	0.03	0.06	0.04	0.03	0.04
10	Chloride (as Cl)	216	251	217	192	209	182
11	Sulphate (as SO4)	187	167	182	164	167	148
12	Nitrate (as NO3)	21.58	18.43	21.97	24.78	18.92	17.34
13	Fluoride (as F)	0.42	0.47	0.43	0.52	0.47	0.38
14	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C6H5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.37	0.38	0.42	0.43	0.38	0.38
18	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr+6)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: October 2024 to March 2025							
Location		Jojo Nallah Upstream					
Parameters		Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25
I	**Biological Testing 1.Water**						
1	Total Colifom	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1.Water**						
2	pH value	6.91	6.43	6.28	6.37	6.27	6.91
3	Colour	18	24	21	36	26	18
4	Dissolved Oxygen	6.5	6.4	6.7	6.5	6.4	6.5
5	Total Suspended Solid (as TSS)	24	26	28	26	28	24
6	BOD (3 days at 27°C)	2.31	2.43	2.57	2.47	2.57	2.31
7	Chemical oxygen demand	6.53	6.53	7.36	6.94	6.41	6.53
8	Total Dissolved Solids (TDS)	1297	1382	1391	1427	1394	1297
9	Copper (as Cu)	0.07	0.06	0.07	0.08	0.07	0.07
10	Chloride (as Cl)	216	252	308	317	341	216
11	Sulphate (as SO4)	187	168	176	182	206	187
12	Nitrate (as NO3)	24.52	23.91	24.53	26.91	27.43	24.52
13	Fluoride (as F)	0.36	0.31	0.36	0.37	0.52	0.36
14	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C6H5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.37	0.42	0.42	0.46	0.43	0.47
18	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr+6)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

Summarized Surface Water Quality Monitoring Report							
Katamati Iron Ore Mine of M/s tata steel Limited							
Period: October 2024 to March 2025							
Location		Jojo Nallah Downstream					
Parameters		Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25
I	**Biological Testing 1.Water**						
1	Total Colifom	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1.Water**						
2	pH value	6.43	6.57	6.61	6.42	6.53	6.71
3	Colour	14	18	16	24	21	8
4	Dissolved Oxygen	6.2	6.2	6.3	6.2	6.1	6.2
5	Total Suspended Solid (as TSS)	18	21	24	23	24	24
6	BOD (3 days at 27°C)	2.17	2.37	2.19	2.31	2.42	2.54
7	Chemical oxygen demand	5.91	5.81	6.82	6.17	5.93	6.42
8	Total Dissolved Solids (TDS)	1164	1187	1257	1391	1152	1347
9	Copper (as Cu)	0.03	0.03	0.04	0.07	0.03	0.06
10	Chloride (as Cl)	192	194	291	284	297	286
11	Sulphate (as SO4)	161	152	153	147	182	173
12	Nitrate (as NO3)	21.86	18.76	17.91	21.43	21.98	24.81
13	Fluoride (as F)	0.29	0.27	0.31	0.28	0.47	0.36
14	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
15	Phenolic compounds (as C6H5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
16	Anionic Detergent	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
	Chemical Testing 2. Residues In Water						
17	Iron (as Fe)	0.32	0.36	0.38	0.42	0.37	0.43
18	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Hexa Chromium (as Cr+6)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
24	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
25	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

#Note: BLQ= Below Limit of Quantification

ANNEXURE-XVIA

GROUND WATER QUALITY REPORT (OCTOBER 2024 - NOVEMBER 2025)

KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		NOVEMBER 2024					
I	**Biological Testing 1. Water**						
1	*Escherichia coli*	Absent	Absent	Absent	Absent	Absent	Absent
II	**Chemical Testing 1. Water**						
2	Alkalinity (as $CaCO_3$)	153.92	152.97	192.87	148.39	163.97	182.63
3	Anionic detergent (as MBAS)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
4	Colour	2	1	2	1	1	1
5	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
6	Chloride (as Cl)	32.48	31.46	32.87	26.79	18.42	32.94
7	Calcium (as Ca)	46.73	47.29	51.26	42.81	37.81	48.31
8	Free residual chlorine	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)
9	Fluoride (as F)	0.21	0.31	0.31	0.24	0.17	0.26
10	Magnesium (as Mg)	12.94	12.68	14.27	15.87	8.76	12.97
11	Nitrate (as NO_3)	8.76	7.36	8.16	7.93	4.19	6.81
12	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
13	pH	6.93 at 25°C	7.31	7.93	6.82	7.21	6.91
14	Phenolic compounds (as C_6H_5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
15	Sulphate (as SO_4)	13.81	8.26	12.64	5.93	3.87	7.28
16	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	463	462	463	437	462	463
18	Turbidity	0.1	1	0.1	0.1	1	1
19	Total hardness (as $CaCO_3$)	168	170	186	164	130	174
II	Chemical Testing 2. Residues in Water						
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Aluminium (as Al)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
22	Barium (as Ba)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Boron (as B)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
24	Copper (as Cu)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
25	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
26	Iron (as Fe)	0.21	0.16	0.21	0.24	0.14	0.13
27	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
28	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

GROUND WATER QUALITY REPORT (OCTOBER 2024 - NOVEMBER 2025)

KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		NOVEMBER 2024					
29	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
30	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
31	Total Chromium (as Cr)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
32	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
33	Polynuclear aromatic hydrocarbon (PAH)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
34	Mineral Oil	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
II	**Chemical Testing 2. Residue In Water**						
35	**Pesticide Residues Organochlorine**						
i	Alpha-HCH	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
ii	Beta HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iii	Gamma - HCH (Lindane)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iv	Delta- HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
v	Alachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vi	Aldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vii	Dieldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
viii	Butachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
ix	p,p'-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
x	o,p'-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xi	p,p'-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xii	o,p'-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiii	o,p'- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiv	p,p'- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xv	Monocrotophos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvi	Atrazine	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvii	Parathion methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xviii	Paraoxon methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xix	Malathion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xx	Malaoxon	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxi	Ethion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxii	Chlorpyrifos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)

GROUND WATER QUALITY REPORT (OCTOBER 2024 - NOVEMBER 2025)
KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		FEBRUARY 2025					
I	**Discipline: Biological**						
1	*Escherichia coli*	Absent	Absent	Absent	Absent	Absent	Absent
II	**Discipline: Chemical**						
2	Alkalinity (as $CaCO_3$)	184.26	162.38	155.29	147.39	168.39	187.26
3	Anionic surface active agents (as MBAS)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
4	Colour	1	1	BLQ (LOQ-0.1)	1	1	1
5	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
6	Chloride (as Cl)	26.52	32.68	17.39	32.51	32.58	31.27
7	Calcium (as Ca)	54.93	55.19	41.68	47.39	52.51	49.52
8	Free residual chlorine	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)	BLQ (LOQ-0.1)
9	Fluoride (as F)	0.21	0.21	0.21	0.18	0.18	0.31
10	Magnesium (as Mg)	14.53	14.73	12.64	12.67	12.47	11.64
11	Nitrate (as NO_3)	7.68	9.47	9.51	7.52	8.29	7.24
12	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
13	pH	7.12	6.81	6.73	6.94	6.93	6.84
14	Phenolic compounds (as C_6H_5OH)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
15	Sulphate (as SO_4)	21.43	21.47	21.93	18.76	18.73	16.43
16	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
17	Total dissolved solids	462	417	461	481	463	462
18	Turbidity	1	0.1	0.1	0.1	1	0.1
19	Total hardness (as $CaCO_3$)	196	194	156	170	182	172
II	**Discipline: Chemical**						
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Aluminium (as Al)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
22	Barium (as Ba)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Boron (as B)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
24	Copper (as Cu)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
25	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
26	Iron (as Fe)	0.17	0.16	0.16	0.16	0.16	0.24
27	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
28	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

GROUND WATER QUALITY REPORT (OCTOBER 2024 - NOVEMBER 2025)
KATAMATI IRON MINE

	Parameters	Mahadev Nasha Village	Dalfiri-2 Village	Dalfiri-1 Village	Village Nr. Tata Sponge	Near Metso Plant	Nr. Pit Office
		FEBRUARY 2025					
29	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
30	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
31	Total Chromium (as Cr)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
32	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
33	Polynuclear aromatic hydrocarbon (PAH)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
III	**Discipline: Chemical**						
34	Mineral Oil	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
IV	**Discipline: Chemical**						
35	**Pesticide Residues Organochlorine**						
i	Alpha-HCH	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
ii	Beta HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iii	Gamma - HCH (Lindane)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
iv	Delta- HCH	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
v	Alachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vi	Aldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
vii	Dieldrin	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
viii	Butachlor	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
ix	p,p'-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
x	o,p'-DDE	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xi	p,p'-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xii	o,p'-DDD	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiii	o,p'- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xiv	p,p'- DDT	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xv	Monocrotophos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvi	Atrazine	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xvii	Parathion methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xviii	Paraoxon methyl	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xix	Malathion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xx	Malaoxon	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxi	Ethion	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)
xxii	Chlorpyrifos	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)	BLQ (LOQ-0.03)

ANNEXURE-XVIII B

Summarised Ground Water Level Report				
Katamati Iron Ore Mine of M/s Tata Steel Limited				
Period: October 2024 to March 2025				
Month	Locations wise Ground Water Level in Mtrs. - mbmp- magl			
	Mahadev Nasha	Daladiri-1	Tata Sponge	Daladiri-2
October 2024	2.98	3.51	3.41	3.39
November 2024	3.02	3.61	3.51	3.54
December 2024	3.14	3.74	3.72	3.66
January 2025	3.46	3.87	3.83	3.82
February 2025	3.17	3.51	3.41	3.23
March 2025	3.21	3.67	3.71	3.39

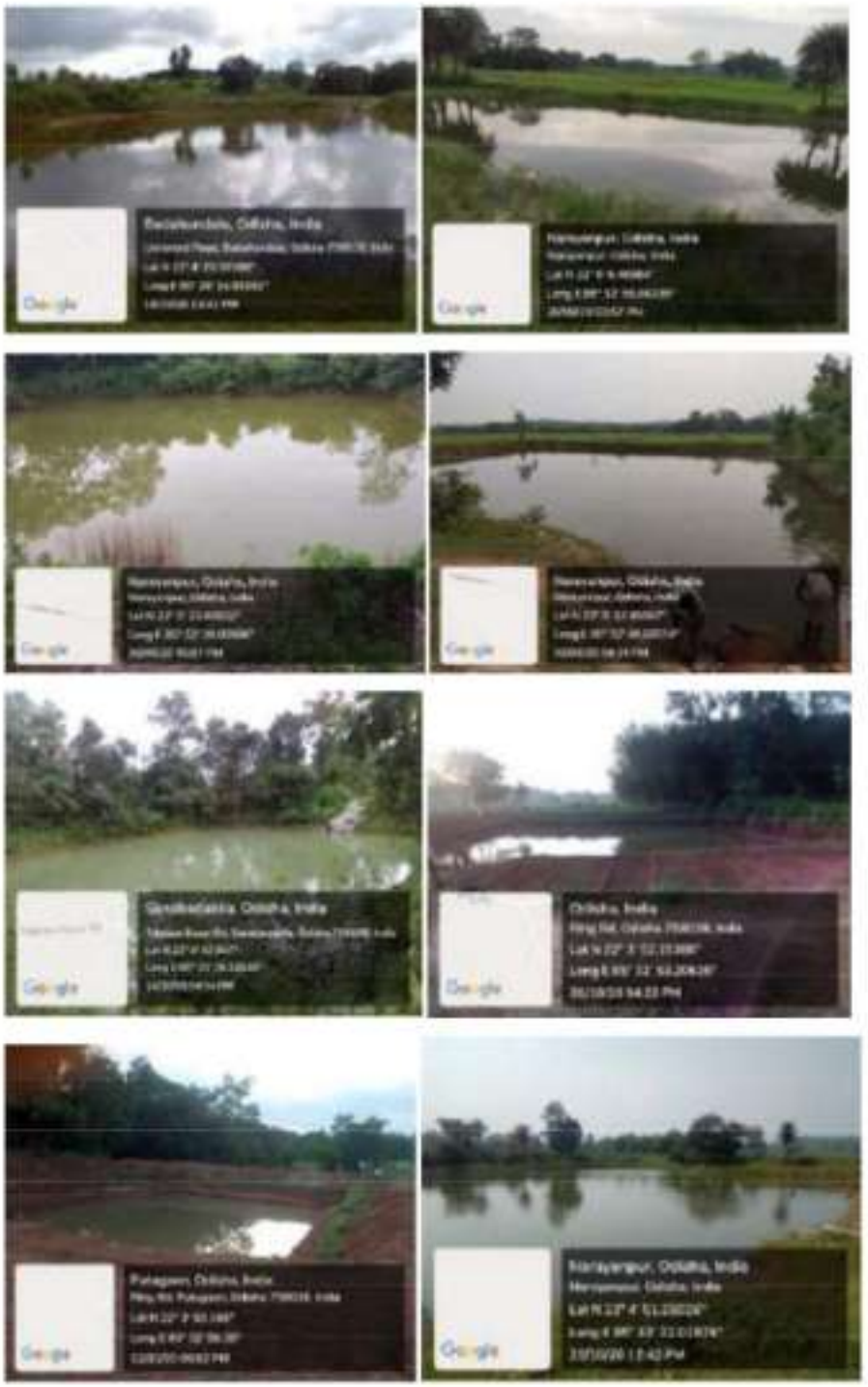

Figure 6.4: Geo-tagged photographs of recharge ponds-A.

Figure 6.5: Geo-tagged photographs of recharge ponds-B.

Figure 6.6: Geo-tagged photographs of recharge ponds-C.

Figure 6.7: Geo-tagged photographs of recharge ponds-D.

ANNEXURE-XVII

Settling Pond

Garland Drain & retaining wall

Check Dam

The Member Secretary
State Pollution Control Board, Odisha
Parivesh Bhawan, A/118, Nilakantha Nagar
Unit-VIII, Bhubaneswar-751012

MD/ ENV/1111/122/2024
Date: 18th June 2024

Subject: Submission of Annual Return of Hazardous Waste in the prescribed format (Form-IV), as per Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 for a period April 2023 to March 2024 of Katamati Iron Mine, M/s Tata Steel Limited.

Ref.: Hazardous Waste Authorization of Katamati Iron Mine, M/s Tata Steel Limited, vide letter no. IND-IV-HW-1099/15712, dated: 11.11.2021 valid till 31.03.2025.

Dear Sir,

Kindly find attach the Annual Return of Hazardous Waste in the prescribed format (Form-IV), as per Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 for a period April 2023 to March 2024 of Katamati Iron Mine, M/s Tata Steel Limited.

The detailed summary sheet of Hazardous waste disposal manifest (Form-10) generated from site is attached for kind information along with a copy **(Annexure-1)**.

We trust the information furnished is in line with your requirement. Kindly acknowledge the same.

Thanking you.

Yours sincerely,
f: M/s Tata Steel Limited

Head (Planning), OMQ

Encl.: As above

C.c.: Regional officer. State Pollution Control Board, Odisha, Baniapata, College Road, Keonjhar – 758 001, Odisha

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILLING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1.	Name and address of facility	:	Katamati Iron Mine, Tata Steel Ltd., P.O: Deojhar, Dist.: Keonjhar, Odisha
2.	Authorisation No. and Date of issue:		IND-IV-HW-1099/15712 dated 11.10.2021 valid till 31.03.2025.
3.	Name of the authorized person & Full address with telephone	:	Mr. Raval Akshaykumar Nileshkumar Asst. Mgr. (IBMD), OMQ Division Tata Steel Limited, P.O: Noamundi, Dist.: Singhbhum (West), Jharkhand Phone: (O) : 9065515646
4.	Production during the year (product wise), Wherever applicable	:	Iron Ore (ROM) : 11.68 MTPA

Part A, To be filled by hazardous Waste generators

1.	Total quantity of waste generated category wise		
	5.1 Used oil	:	Nil
	5.2 Wastes or residues containing oil	:	Nil
	9.1 Lead bearing residues	:	Nil
	33.1 Ferrous Drums /containers/ Liners, Contaminated with Hazardous chemicals/wastes	:	Nil
2.	Quantity dispatched		
	i. To disposal facility	:	Nil
	ii. To re-cycler or co-processors Or processor	:	Nil
	iii. Others	:	Nil
3.	Quantity utilized in-house, if any	:	Nil
4.	Quantity in-storage at the end of the year :		Nil

Part B. To be filled by Treatment, Storage and disposal facility operators

Not Applicable

1. Total quantity received –
2. Quantity in Stock at the beginning of the year –
3. Quantity treated –
4. Quantity disposed in landfills as such and after treatment –
5. Quantity incinerated (if applicables) –
6. Quantity processed other than specified above –
7. Quanity in storage at the end of the year –

Part C. To be filled by Treatment, Storage and disposal facility operators

Not Applicable

1. Quantity of waste received during the year -
   (i) Domestic sources
   (ii) Imported (if applicable)
2. Quantity in Stock at the beginning of the year –
3. Quantity recycled or co-processed or used –
4. Quantity of product dispatched (wherever applicable) -
5. Quantity of waste generated –
6. Quantity of waste disposed –
7. Quanity re-exported (wherever applicable) –
8. Quanity in storage at the end of the year

Date: 18th June 2024
Place: Katamati Iron Mine,
M/s Tata Steel Limited

Signature of the Occupier or Operator of the disposal facility

Plantation Details at Katamati Iron Mine					
Year of Plantation	Number of Plantation	Survival Rate	Location of Plantation	Area Covered	Species Planted
2024-2025	11276	83%	Waste Dump & Safety Zone & gap filling	1.244	Sal, Amaltas, Karanj, Kusum, Mahua, Baheda, Kumbhi, Kachnar, Tecoma, Neem, Shisham, Phasi, Arjun, Siris, Jarul, Segwan, Chakundi, Chhatim, Gulmohar, Peltophorum, Peepal, Bargad, Mango, Jamun, Jack fruit, Amla, Ankool, Ambada, Bael, Ber, Dhau, Gamhar & other etc
2023-2024	3440	85%	Waste dump & Safety Zone Area	1.1696	
2022-2023	7580	87%	Waste dump & Safety Zone Area	2.636	
2021-2022	6634	86%	Waste dump & Safety Zone Area	2.282	
Total	28930	85.25%		7.3336	

ତା/ପ ସଭା

ତା 22/05/2024 ରିଖ ସକାଳ ୧୦ ଘଣ୍ଟା [redacted] ଉପସ୍ଥିତ ପଞ୍ଚାୟତ - ବେଳଦିଗ ଜୁନି - ଲୋବା - ବିଜୁ - ଜେଜିଟି ପ୍ରମାଣିକୀ ଥିଲି । ଏହି ସଭା ସଭାପତି ଅଧିନେ ସମସ୍ତ ସଦସ୍ୟ ଏବଂ ସୁଧୁଟୋକି ଉପସ୍ଥିତିରେ ଆଲୋଚନାକୁ ଆସିଥିଲା ଯାହା ସମସ୍ତଙ୍କ ଏକ ମତରେ ସ୍ଥିର ହୋଇଥିଲା ଏହି ସଭାରେ ଯାହାକି ଛାତ୍ର ଜଣେ ସଦସ୍ୟ ଅନୁପସ୍ଥିତ ଥିଲେ ଏହି ସଭାରେ ଆଲୋଚନା ହୋଇଥିଲା ।

1. ଜଣାଶୁଣା ଚରେଇବା
2. ସମସ୍ତ ଗରୁ ଚରେଇବା
3. Sanjeeta
4. Rajit Mahakud
5. ସୁଦିଷ୍ଟା ମହାନ୍ତି
6. ଶିଶିରା ବାରିକ
7. ମାନୋଜ ବାରିକ
8. ଆଲିସା ବାରିକ
9. ସୁନୀଲ ବାରିକ
10. ଅଞ୍ଜିତ ମହାକୁଡ
11. Sujit Mahakud
12. [redacted] Sangyukta mahakud
13. Reena Behera
14. [redacted] Bhurat mahud
15. [redacted] Bhagam munda
16.
17. [redacted] LTH Rupamani maherra
18.
19. [redacted] LTH ଶୁନୁ
20.
21. [redacted] LTH ସବିତା ବାରିକ
22.
23. [redacted] LTH ସମସ୍ତ ଯେ ଚରେଇବା
24. [redacted] LTH
25.
26. Krishan munda

27 Barsha Munda
28 Karan Champiya
29 Dibakar Munda
30 Pulmani munda
31 [illegible]
32 [illegible]
33 Laxmi Benkar
34 Soma Munda.
35 Ajay Benker
36 [illegible]
37 [illegible]
38 Sonamuni Munda.
39 Soni Munda.
40 [illegible]
41 [illegible]
42 Abenkar.
43 [illegible]
45 [illegible]
46 [illegible]
47 [illegible]
48
49
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Activity-10

Swachhata Avhiyan

ଆଜିର କାର୍ଯ୍ୟକ୍ରମ 14.8.2024 ରିଖ 10 ଘଣ୍ଟିକା ସମୟରୁ ଆମ ବିଦ୍ୟାଳୟ ପରିସରରେ ପରିମ୍ବା ଓ ସ୍ୱଚ୍ଛତା କାର୍ଯ୍ୟକ୍ରମ ଚଳାଯାଇଥିଲା ।
ଛତ୍ରୀ S.H.G ରୁ ମୋଟ 25 ଜଣ ମା' ଉପସ୍ଥିତ ଥିଲେ ।

Padmavati Barik
Sandhya rani Dash

1. Tharana Naik
2. Rajani Naik
3. Poornila Dash
4. Rajani Naik
5. Basanti Naik
6. Padmabati Barik
7. Chandini Behera
8. Kalikalya Barik
9. Sujata Naik
10. Tapaswini Naik
11. Sabita Rani Gope
12. Karakalata Barik
13. Sulochana Barik
14. Priyatama Behera
15. Renuka Mahanta
16. Asherita Munda
17. Sushama Mahanta
18. Jyotshna Rani Dash
19. Sasmita Naik
20. Khageswari Gope
21. Pabitra Rani Dash
22. Trishi Munda
23. Anjana Naik
24. Sabita Naik
25. Punam Barik

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Activity - 7
Helth camp

ତାରିଖ ତାରିଖ - 5.1.2024 ରିଖ 2 ଘଣ୍ଟିକା ସମୟରେ ଆମ ଗାଁରେ ପଶ୍ଚିମୁଡ଼ ଏବଂ ଶବୁ ଥାଆ ମାଁ ମାନଙ୍କ Helth camp କରାଯାଇଥିଲା ।70 ଟି S.H.G ରୁପ୍ ରୁ 150 ମାଁ ଉପସ୍ଥିତ ଥିଲେ

(1)

Padmabati Barik
ପଦ୍ମାବତୀ ବାରିକ
ବ୍ୟବସ୍ଥା ସମ୍ପାଦକ ସ୍ୱୟଂ ସହାୟକ ଗୋଷ୍ଠୀ

Sandhyarani Dash
ସନ୍ଧ୍ୟାରାଣୀ ଦାଶ
ବ୍ୟବସ୍ଥା ସମ୍ପାଦକ ସ୍ୱୟଂ ସହାୟକ ଗୋଷ୍ଠୀ

(1) Bhanu priya Naik
(2) Padmani Dash
(3) Punam Barik
(4) Sabita Naik
(5) Anjana Naik
(6) Taichi Munda
(7) Pabitra Rani Dash
(8) Khageswari Gope
(9) Sasmita Naik
(10) Jyotshna Rani Dash
(11) Sushama Mahanta
(12) Dharana Naik
(13) Ashrita Munda
(14) Renuka Mahanda
(15) Sulochana Barik
(16) Priyatama Behera
(17) Salidamani Apat
(18) Rajani Naik
(19) Kanakalata Barik
(20) Sabita Rani Gope
(21) Tapaswini Naik
(22) Sujata Naik
(23) Kauchalya Barik
(24) Chandini Behera
(25) Padmabati Barik
(26) Rajani Naik
(27) Parmila Naik
(28) Arati Gope
(29) Babi Mahakud

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Activity - 6

Bank Linkage camp

ଆଜିର ତାରିଖ - 29.11.2023 ଇଂ ୩୦ ତାରିକା ସମୟରେ ଦେଉଳିଝର ପଞ୍ଚାୟତ ଅଫିସ୍‌ରେ ବ୍ୟାଙ୍କ ଲାଇକାଜ୍‌ କ୍ୟାମ୍ପ ଥିଲା ସେଥିରେ ମୋ ସହିତ ମୋର ଅନ୍ୟ ସାଥୀମାନେ ଯୋଗଦେଇଥିଲେ । ଏହା ମୋଳାରେ 27 ଟି S.H.G ରୁ 65 ଜଣ SH.G ସଦସ୍ୟ ଉପସ୍ଥିତ ଥିଲେ ।

Padmavati Bank

Sandhya Rani Dash

1) Bhanu Priya Naik
2) Padmani Dash
3) Punam Barik
4) Sabita Naik
5) Anjana Naik
6) Tirshi Munda
7) Pabitra Rani Das
8) Khageswari Gope
9) Sasmita Naik
10) Jyotshna Rani Dash
11) Sushama Mahanta
12) Jharana Naik
13) Ashrita Munda
14) Renuka Mahanta
15) Salochana Barik
16) Priyatama Behera
17) Soudamani Apat
18) Rajani Naik
19) Kanakalata Barik
20) Sabita Rani Gope
21) Tapaswini Naik
22) Sujata Naik
23) Kaushalya Barik
24) Chandini Behera
25) Padmabati Barik
26) Rajani Polei
27) Parmita Naik

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Activity-5
Plantation Awareness

ତାରିଖ ତାରିଖ - 28-10-2023 ବିଷୟ ଦିନ 10 ଘଣ୍ଟିକା ସମୟରେ ଆମ ଗ୍ରେଡିଂ ପଞ୍ଚାୟତ ଅଫିସରେ ଥିବା CLF ରେ ମାସିକ ସାଧାରଣ କାର୍ଯ୍ୟ କୁନ କାର୍ଯ୍ୟାଳୟ ପକ୍ଷ ଓ SHG ର 15 ଜଣ ଉପସ୍ଥିତ ଥିଲେ ।

Padmakali Barik
CRP

Sandhyarani Dash
Block Coordinator

(1) Kaushalya Barik
(2) Sujata Naik
(3) Tapaswini Naik
(4) Sabita Ravi Gope
(5) Kanakalata Barik
(6) Rajani Naik
(7) Soudamini Apat
(8) Priyatama Behera
(9) Sulochana Barik
(10) Renuka M. Mahanta
(11) Ashrita Munda
(12) Jharana Naik
(13) Sushama Mahanta
(14) Tirshi Munda
(15) Anjana Naik
(16) Padmani Dash
(17) Bhanu Priya Naik
(18) Punam Barik

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Activity - 4

Cyber ~~Crime~~ Crime Awareness

ଆଜି ତାରିଖ - 4.10-2023 ମିଳିତ ଦିନ 12 ଘଣ୍ଟିକା ସମୟରୁ ଅପରାହ୍ନ 1 ଘଣ୍ଟିକା ପର୍ଯ୍ୟନ୍ତ ମିଳିତ ଥାନା ଠାରେ Cyber Crime Awareness କାର୍ଯ୍ୟକ୍ରମ। LCd ସାଧ୍ୟମରେ ଦେଖାଗଲା। ଏଥିରେ ମିଳିତା ଓ ତେତୁଡିହର 16 ଟି S.H.G ର 67 ଜଣ ମହିଳା ଯୋଗଦେଇଥିଲେ।

Radharani Barik
ପ୍ରାଦେ
ଦସ୍ତଖତ ଦେବାକୁ ବାକି ଅଛି

1. Sabita Ravi Gope
2. Surjya Mani Das
3. Rena Das
4. Laxmipriya Das
5. Dadimbo Das
6. Mita Dash
7. Sunita Mishra
8. Diekhani Mahakud
9. Lata Maha Kud
10. Tulshi Mahakud
11. Subhadhra Mahad
12. Tillottama Malik
13. Rasmi Rekha Malik
14. Mohini Misra
15. Barash Rani Dash
16. Mokabati Dash
17. Narbada Dash
18. Parmila Dash
19. Pabitira Rani Dash
20. Kalpana Dash
21. Beidehi Dash
22. Kashturi Dash
23. Puspanjali Dash
24. Kaimani Dash
25. Khiromani Dash
26. Tikli Dash
27. Kauchalya Barik
28. Rinki Mahakuk
29. [illegible] Naik

Sandhya rani Dash
ପ୍ରାଦେ
ଦସ୍ତଖତ ଦେବାକୁ ବାକି ଅଛି

30. Taposwini Munda
31. Deepitimeye Barik
32. Mamata Dash
33. Champa Dash
34. Sabita Naik
35. Parmila Naik
36. Kuni Naik
37. Saraciwati Naik
38. Susmita Mahakud
39. Juneli Munda
40. Jyotshna Rani Dash
41. Suparbha Dash
42. Jumpa Munda
43. Janbi Munda
44. Nerosho Munda
45. Priyanka Dash
46. Rebati Naik
47. Acha Mani Dash
48. Renuka Mahanta
49. Lipika Mahanda
50. Tharana Naik
51. Kanakalata Barik
52. Rajani Naik
53. Rajani Pali
54. Soudamani Apat
55. Sabita Pali
56. Manbi Behera
57. Reeta Naik

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Activity -3

Swachhata Abhiyan

ଆଜି ତାରିଖ - 2.10.2023 ମିଶ୍ର ଆମ ଗଡ଼ତଡ଼ିର ଗ୍ରାମଗୁଡ଼ାକୁ ସ୍ୱଚ୍ଛ ରଖିବା ପାଇଁ ଆମ ଗଡ଼ତଡ଼ିର ଚାଷୀଭଉଣୀ ମାନେ CLF ର S.H.G ରୁ କିଛି କିଛି S.H.G ମାନେ ଉପସ୍ଥିତ ହୋଇଥିଲେ Total - 35 ଜଣ ମାନେ ହୋଇଛନ୍ତି ।

1. Kadambini Naik
2. Laxmi Munda
3. Sujata Naik
4. Banabasi Naik
5. Rebati Naik
6. Sukanti Munda
7. Banita Behera
8. Manju Munda
9. Sabita Rani Gope
10. Shirani Mahakud
11. Dasami Mahakud
12. Laxmi priya Gope
13. Malabati Barik
14. Chandini Behera
15. Rajani Palei
16. Rajani Naik
17. Kanakalata Barik
18. Punam Barik
19. Padmabati Barik
20. Saraswati Naik
21. Sukanti Naik
22. Sumita Rani Gope
23. Pabitra Rani Dash
24. Padmini Dash
25. Jyotsna Rani Dash
26. Sushma Mahanta
27. Soudamani Mahanta
28. Ashrita Munda
29. Kaushalya Barik
30. Ranjita Naik
31. Tapaswani Naik
32. Rena Dash
33. Mamata Dash
34. Sugandha Das
35. Tikli Das

Rebati Barik
ଗ୍ରାମର ନାମ
ଗଡ଼ତଡ଼ି ଗ୍ରାମର ସ୍ୱଚ୍ଛତା ଦୂତ

Sandhyarani Dash
ଗ୍ରାମର ନାମ
ଗଡ଼ତଡ଼ି ଗ୍ରାମର ସ୍ୱଚ୍ଛତା ଦୂତ

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Activity -3

Swachhata Abhiyan

ଆଜି ତାରିଖ - 2.10.2023 ମିଶ୍ର ଆମ ଗଡ଼ତଡ଼ିର ଗ୍ରାମଗୁଡ଼ାକୁ ସ୍ୱଚ୍ଛ ରଖିବା ପାଇଁ ଆମ ଗଡ଼ତଡ଼ିର ଚାଷୀଭଉଣୀ ମାନେ CLF ର S.H.G ରୁ କିଛି କିଛି S.H.G ମାନେ ଉପସ୍ଥିତ ହୋଇଥିଲେ Total - 35 ଜଣ ମାନେ ହୋଇଛନ୍ତି ।

1. Kadambini Naik
2. Laxmi Munda
3. Sujata Naik
4. Banabasi Naik
5. Rebati Naik
6. Sukanti Munda
7. Banita Behera
8. Manju Munda
9. Sabita Rani Gope
10. Shirani Mahakud
11. Dasami Mahakud
12. Laxmi priya Gope
13. Malabati Barik
14. Chandini Behera
15. Rajani Palei
16. Rajani Naik
17. Kanakalata Barik
18. Punam Barik
19. Padmabati Barik
20. Saraswati Naik
21. Sukanti Naik
22. Sumita Rani Gope
23. Pabitra Rani Dash
24. Padmini Dash
25. Jyotsna Rani Dash
26. Sushma Mahanta
27. Soudamani Mahanta
28. Ashrita Munda
29. Kaushalya Barik
30. Ranjita Naik
31. Tapaswani Naik
32. Rena Dash
33. Mamata Dash
34. Sugandha Das
35. Tikli Das

Rebati Barik
ଗ୍ରାମର ନାମ
ଗଡ଼ତଡ଼ି ଗ୍ରାମର ସ୍ୱଚ୍ଛତା ଦୂତ

Sandhyarani Dash
ଗ୍ରାମର ନାମ
ଗଡ଼ତଡ଼ି ଗ୍ରାମର ସ୍ୱଚ୍ଛତା ଦୂତ

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Activity - 1

Swachhata Abhiyan

ବ୍ୟସ୍ତ ତାରିଖ 27-9-2023 ଦିନ ବିଦ୍ୟାଳୟ ପରିସରରେ ଆମ ଗାଁରେ ଏବଂ ସୁନ୍ଦର ସହରର ପାଖେ ଏକ ସ୍ୱଚ୍ଛତା ଅଭିଯାନ କାର୍ଯ୍ୟକ୍ରମ କରାଯାଇଥିଲା ସୁନ୍ଦର 7 ଟି ଗ୍ରୁପ୍‌ରେ 20 ଜଣ ମା ଉପସ୍ଥିତ ଥିଲେ ।

1) Sujata Barik
2) Kanakalata Barik
3) Rajani Naik
4) Sandhya Rani Dash
5) Padmini Dash
6) Punam Barik
7) Kaushalya Barik
8) Padmabati Barik
9) Sulochna Barik
10) Anjana Naik
11) Sujata Naik
12) Tapaswani Naik
13) Chandani Behera
14) Sunita Naik
15) Trishi Munda
16) Pabitra rani Dash
17) Sabita Naik
18) Bhanupriya Naik
19) Priyatma Behera
20) Renuka Mahanta

Parbati Barik Sandhyarani Dash

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Activity - 12
Swachhata Abhiyan

ଆଜି ତାରିଖ 2.10.2024, ଗାନ୍ଧି ଜୀ 10 ଜୟନ୍ତୀ ଅବସରରେ
ଆମ ଗାଁରେ ପରିଷ୍କାର ଅଭିଯାନ କରିବା ପାଇଁ ଯାଇଥିଲୁ । 12 ଟି SHG
ର 30 ଜଣ ଉପସ୍ଥିତ ଥିଲୁ

Padmati Barik
ANGANWADI WORKER
GOURA GRAM PANCHAYAT

Sandhyarani Dash
ASHA WORKER
GOURA GRAM PANCHAYAT

(1) ~~Ref~~ Rebati Naik
(2) Fullmani Munda
(3) Kadambini Naik
(4) Laxmi Munda
(5) Banita Behera
(6) Rasmita Mahanta
(7) Kalicharan Barik
(8) Pabitra Rani Dash
(9) Jyotshna Rani Dash
(10) Sabita Rani Gope
(11) Ashrita Munda
(12) Trishi Munda
(13) Renuka Mahanta
(14) Padmani Dash
(15) Sabita Naik
(16) Bhanupriya Naik
(17) Priyadarsini Behera
(18) Khageswari Gope
(19) Sujata Naik
(20) Chandini Behera
(21) Rajani Naik
(22) Rajani Poli
(23) Soudamani Apat
(24) Jasna Gope
(25) Punam Barik
(26) Sulochana Barik
(27) Kanakalata Barik
(28) Susmita Naik
(29) Tapaswini Naik
(30) Ajaya Naik

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Govt Schemes of 2023-2025

1.	Pinki Nath	Govt scheme	Private	38	
2.	Rabindranath Nath	"	"	48	
3.	Sudhakar Nath	"	"	30	
4.	Viki Nath	"	village Panch	47	
5.	Kaushiya Nath	"	Private	40	
6.	Pawan Nath	"	"	27	
7.	Abhishek Nathwani	"	"	25	
8.	Ashwani Nath	"	"	49	
9.	Radhamani Nath	"	Sahabha Panch	50	
10.	Pinki Nath	"	"	29	
11.	Sandhyarani Nath	"	"	50	
12.	Viki Nath	"	"	35	
13.	Kaushiya Nath	"	"	40	
14.	Pawan Nath	"	"	27	
15.	Manoharani Nath	"	"	32	
16.	Jyotshnarani Nath	"	"	30	
17.	Anita Munda	"	Private	32	
18.	Anita Munda	"	"	38	
19.	Mridu Naik	"	"	32	
20.	Channa Munda	"	"	27	
21.	Nitin Munda	"	"	25	
22.	Tina Naik	"	"	29	
23.	Gopal Purty	"	"	32	
24.	Ramesh Nath	"	"	30	
25.	Sonu Munda	"	"	27	
26.	Manu Mahanti	"	"	31	

Gen	Saibaba	Nandkishor	Others	Govt	Indra
"	Sudarshi	Nandlal	"		
"	Saibaba	"	"		
"	Sudarshi	"	"		
OBC	Jaiswal	"	Ambedkar		
"	Rahul	"	"		
SC	Sambodhi		Ambedkar		
Gen	Sudarshi	Nandkishor	"		
"	Saibaba	"	"		
"	Saibaba	"	"		
"	Jaiswal	"	"		
"	Rahul	"	"		
OBC	Nandkishor	Nandkishor	Mahatma		
"	Nandkishor	"	"		
Gen			Ambedkar		
"	Saibaba	Govt	"		
ST			Prabhat		
"			"		
"			"		
"			"		
"			"		
"			"		
"			"		
"			"		
Gen			Ambedkar		

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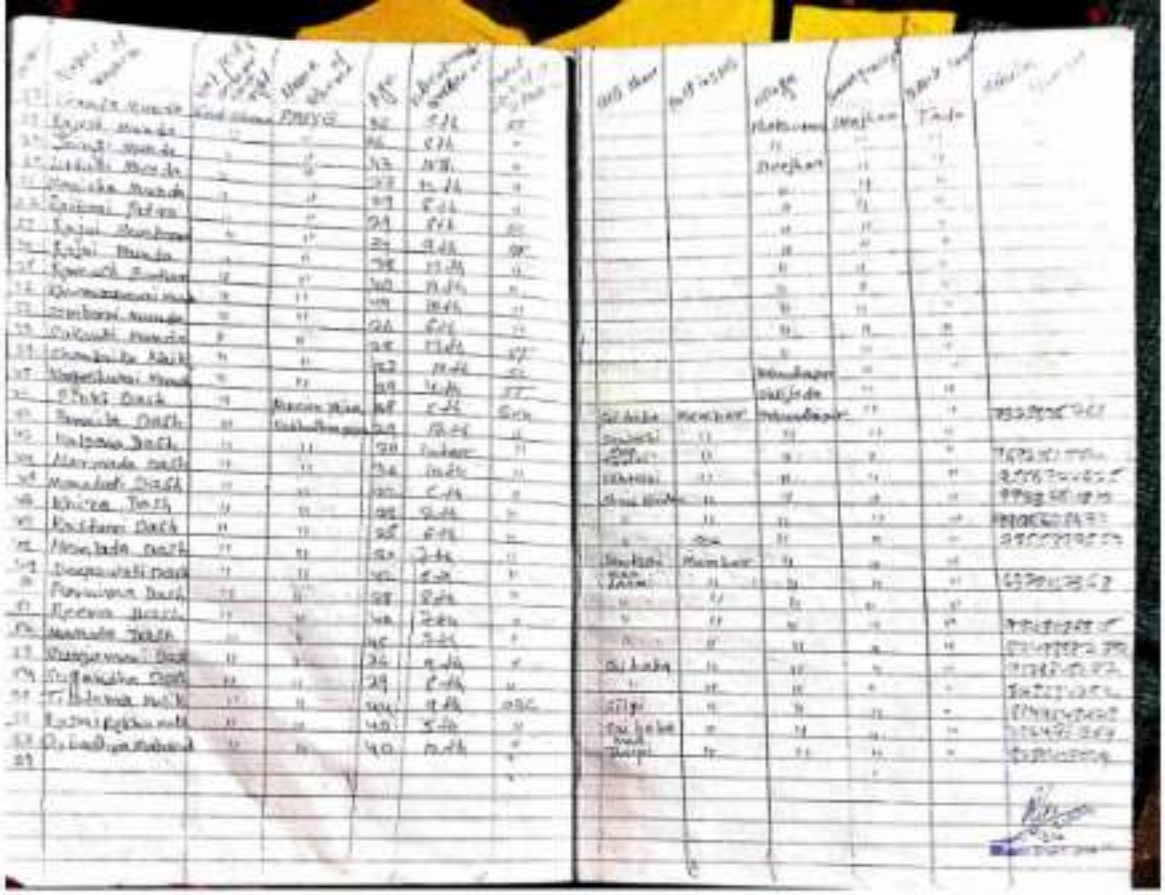

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ଅଧ୍ୟକ୍ଷ - ଜଗନ୍ନାଥ ପ୍ରସାଦ ପାତ୍ର - ସମ୍ପାଦିକା
ତା - 25.9.2024
ସଭାପତି - 100
ସଭା ତା 25.9.2022 ଇଂ ସକାଳ 10:30 ଘଣ୍ଟିକା ସମୟରେ
ଆଜି ଅନୁଷ୍ଠିତ ହୋଇଥିବା ସ୍ୱୟଂ ସହାୟକ ଗୋଷ୍ଠୀ ସଭାରେ ଉପସ୍ଥିତ
ଥିବା ସମସ୍ତ ସଭ୍ୟା ଓ ସଭ୍ୟାମାନଙ୍କୁ ସ୍ୱାଗତ କରାଯାଉଛି ।
ଆଲୋଚ୍ୟ ବିଷୟ :- ୧) ଗତ ସଭାର କାର୍ଯ୍ୟବିବରଣୀ ପାଠ ଓ ଅନୁମୋଦନ ।
୨) ସଞ୍ଚୟ ଓ ଋଣ ସମ୍ପର୍କରେ ଆଲୋଚନା ।
୩) ବ୍ୟାଙ୍କ Linkage ସମ୍ପର୍କରେ ଆଲୋଚନା ।
୪) ଅନ୍ୟ ବିଷୟରେ ବିବେଚନା ପରେ ।
ପ୍ରସ୍ତାବ ନଂ ୧ :- ଗତ EC, CRP, & MBK ବୈଠକର କାର୍ଯ୍ୟବିବରଣୀ
ସମସ୍ତେ ପଢ଼ି ଶୁଣାଇଲେ । ଏହାକୁ ସମସ୍ତେ ସମର୍ଥନ କରିଥିଲେ ।
ପ୍ରସ୍ତାବ ନଂ - ୨ - Block ରୁ BPA Sen ଆଜିର meeting ରେ
ଯୋଗଦେବା ବାବଦରେ ଆଲୋଚନା ହେଲା । Sen Bank Linkage ସମ୍ପର୍କରେ
ସମସ୍ତଙ୍କୁ ଜଣାଇଲେ । Sponsor ଏବଂ Loan Sanction ସମ୍ପର୍କରେ
ମଧ୍ୟ BPA Sen ସୂଚନା ଦେଇଥିଲେ ।
ପ୍ରସ୍ତାବ ନଂ - ୩ - BPA Sen livelihood ଏବଂ ବିଭାଗରୁ ମଧ୍ୟ
ଯେଉଁ ସମସ୍ତ କାର୍ଯ୍ୟକ୍ରମ ରହିଛି ସେ ସମ୍ପର୍କରେ ସୂଚନା ଦେଇଥିଲେ ଏବଂ Loan
ନେଉଥିବା SHG group ଗୁଡ଼ିକ ସୁଧ ସୁବିଧା ସମ୍ପର୍କରେ
ଅବଗତ କରାଇଲେ । ଏହାକୁ ସମସ୍ତେ ସମର୍ଥନ କରିଥିଲେ ।
ପ୍ରସ୍ତାବ ନଂ - ୪ - ଆସନ୍ତା CRP, EC ଏବଂ MBK ସମୟରେ ନିଜ ନିଜ CLF ରେ
SHG group ଥିବା meeting ଗୁଡ଼ିକରେ Loan
ଏବଂ Sponsor ସମ୍ପର୍କରେ ସମସ୍ତଙ୍କୁ Sen କରିବେ ।
ପ୍ରସ୍ତାବ ନଂ - ୫ -
୧) ସମସ୍ତ CRP ମାନେ ନିଜ ନିଜ ଅଞ୍ଚଳରେ ଥିବା ସ୍ୱୟଂ ସହାୟକ ଗୋଷ୍ଠୀଗୁଡ଼ିକର
କାର୍ଯ୍ୟ ତଦାରଖ କରିବେ ଏବଂ ସେମାନଙ୍କୁ ସମସ୍ତ ସୂଚନା ଦେବେ ।
୨) ସମସ୍ତ ସଭ୍ୟା ଓ ସଭ୍ୟାମାନେ Bank Linkage, livelihood, ଏବଂ ଅନ୍ୟାନ୍ୟ
ସମସ୍ତ ସୁବିଧା ସମ୍ପର୍କରେ ଜାଣିବେ, ସୁବିଧା ନେବେ, ଏବଂ ଏହା
ଅନ୍ୟମାନଙ୍କୁ ମଧ୍ୟ ଜଣାଇବେ ।
୩) BPA Sen ଏକ ନିର୍ଦ୍ଦିଷ୍ଟ କାର୍ଯ୍ୟ ପ୍ରଣାଳୀରେ କାର୍ଯ୍ୟ କରିବେ ।
ସଭାପତି ଧନ୍ୟବାଦ ଅର୍ପଣ କରିବା ପରେ ସଭା ସମାପ୍ତ ହେଲା ।

ଗୁରୁବାର - ସନ୍ଧ୍ୟ 25.9.24ମସିହା ଅନ୍ସେକଲାରେ ସମସ୍ତ MBK, CRP ଏବଂ EC ଙ୍କ ଉପସ୍ଥିତିରେ Annamantrala TSF କର୍ମକର୍ତ୍ତୀ Bijoni କର୍ମକର୍ତ୍ତୀ ଯୋଗଦେଇଥିଲେ ।

ଆଲୋଚନା କରିବା ବିଷୟରେ ପ୍ରଥମେ TSF ତରଫରୁ Anseikala G.P.G ରେ ଚାଲୁଥିବା କାର୍ଯ୍ୟକ୍ରମ ବିଷୟରେ କହିବାକୁ । ତାପରେ ଏମାନଙ୍କୁ ଆମେ Anseikala GPLF କୁ ବୁଝାଇବୁ । GPLF ର ସମସ୍ତ members ମାନେ ଏହାକୁ ବୁଝିଥିବୁ । ତାପରେ GPLF ରୁ CLF ରୁ ନଡିଆଖୋଲାର SHG କୁ ଦେଖାଯାଇଁ ନଥିଲେ ।

ଏହାପରେ Tata Steel ର କର୍ମକର୍ତ୍ତୀ ମାନେ ଏ ବିଷୟରେ ଆମକୁ ନଡିଆଖୋଲାର SHG କୁ ଦେଖାଯାଇଁ ହୋଇଥିଲେ

ସର୍ବଶେଷରେ ଏତଦ୍ଭିନ୍ନ ଆଉ କିଛି ନଥିବା ଜଣାପଡିଲା ।

Rama Hatuaal

Sabitri Naik
Secretary
Anseikala G.P.L.F
Anseikala

Rajasri Mohapatra
President
Anseikala G.P.L.F
Anseikala

Padmini Behera (MBK)
Basanti Oram (EC)
ସାନ୍ତୁନିଭ ଜି (EC)
Lalita Oram (CRP cm)
Tapasvini Behera (CRP cm)

Subhadra Patra (C.R.P.C.M)
Meeta Mazada (CRP cm)
Chandrabati Behera (C.R.P.C.M)
Lipika Barik (CRP(cm)
Sulochana Patra (CPP (cm)
Bhrodi Barik (CRP cm)
Jashoda patra (CRP) c.m
Bharati Pattea (E.C)
6 [illegible] (E.C)
Monata Mahakud (E.C)
Rangabati Mahakud (EC)
Sarojinee Behera (E.C)
Monikarani Behera (E.C)
Sumitra Purty (E.C)
Sakuntala Patra (EC)

(Jandan Vr Mithun 'TSF)
Kulpataru Nayak (BPA. M.S, Jodi)
Sandhyarani Barik

ତାରିଖ ସହ ଦିବସ

ବିଷୟ : ଗ୍ରାମ ସଭା ଆୟୋଜନ ସମ୍ପର୍କରେ ତା-୨୨.୧୦.୨୦୨୪

ଆଜାରୁ ୨୨।୧୦।୨୦୨୪ ତାରିଖ ଦିନ ଅପରାହ୍ନ 2 ଘଣ୍ଟା ସମୟରେ ଗ୍ରାମ ପଞ୍ଚାୟତ ଅଫିସ ପରିସରରେ ଏକ ଗ୍ରାମ ସଭା ଅନୁଷ୍ଠିତ ହେବାକୁ ରହିଛି । ଏହି ଗ୍ରାମସଭାରେ ଗ୍ରାମର ସମସ୍ତ ମହିଳା, ପୁରୁଷ, ଯୁବକ, ଯୁବତୀ ତଥା ବାଳକ ଓ ବାଳିକା ଆପଣଙ୍କ ସମସ୍ତଙ୍କୁ ଯଥାସମୟରେ ଉପସ୍ଥିତ ରହିବାକୁ ଅନୁରୋଧ ଜଣାଯାଉଛି । ଏହାଦ୍ୱାରା ସମସ୍ତଙ୍କୁ ସୂଚନା ଜଣାଯାଉଛି ।

ଉପସ୍ଥିତି ସଭ୍ୟ, ସଭ୍ୟା, ମହିଳା ଓ ଅନ୍ୟାନ୍ୟ ବିଶିଷ୍ଟ ବ୍ୟକ୍ତିଙ୍କ ତାଲିକା

1 - Bhraba charan Naik (Sarpanch)
2. Laxmi munda (P.S. member)
3. Radhashini Naik (Naik Sarpanch)
4. Ajay Kumar Naik (W.M-1)
5. Sunita Naik (W.M-9)
6 ଶିବପ୍ରସାଦ ସାହୁ (WM 11)
7 Rebati Naik (Ward member-2)
8 Sukumati munda (Ward member-5)
9 Banita Behera (W.M-10)
10 Manju Munda
11 Subita Rani Gope (CRP-CM)
12 Shirani Mahakud
13 Jasami mahakud
14 Laxmi Priya Gope
15 malabati Basik
16 - Chandini Behera
17 Rajani Palei (E.C)
18 Rajani Naik (CRP.CM)
19 Kanakalata Basik (CRP.CM)
20 Punam Basik (E.C)
21 Padmabati Basik (Sec. G.P)
22 ଶାରଦା ନାୟକ
23 ସୁଦୀପ୍ତି ମାଝି

Sushmita Rani Gope

L.T.I ର ଗୁରୁମହାନ୍ତୁ

ଶ୍ରୀଯୁକ୍ତ ଗଦାଧର ଦାସ

କାରୁନକର ମହାନ୍ତି

ଗୋଦାବରୀଶ ମହାନ୍ତି

Godadhara Dasa
Karunakar Mohanty

ଶ୍ରୀଯୁକ୍ତ ମୁକୁନ୍ଦ ମହାନ୍ତି

Mukunda Mohanty

ଆମଠାରେ ଥାଉଛନ୍ତି

ପୁରୁଣି ମହାବିଦ୍ୟୁତି

ଘୁଣ୍ଟି ନାଚନି

ଆଖରେ ନାଚନି

ଦୁଇ ଚାଖି

ପୁରୁଣା ମହାନ୍ତ

ଥାଉଥିବା ମନ୍ତ୍ରୀ

ଆମଠାରେ ମହାବିଦ୍ୟୁତ

Samabasi Naik

L.T.1 ଦାଣ୍ଡା ଗାଈ

L.T.1 ବେଣ୍ଡୁଣୀ ଗାଈ

L.T.1 ଘୁମିତ୍ର ଗାଈ

L.T.2 ଜୋମଘାଣୀ ଅନ୍ତାଇଁ

L.T.1 ଗାଳ ମୁଣ୍ଡା

ଫୁଲାଡା ଗାଈ

ଘୁଡୁଳୀ ଗାଈ

L.T.1 ଚିମା ଗାଈ

ପଙ୍ଖୁଳୀ ଅନ୍ତାଇଁ

Subhanta Kumar Naik (Aspire)
Labanya Naik (Aspire)

ତୁଳସିଦା ଅନ୍ତାଇଁ

Tulasi Basik

ଗ୍ରାମ ସଭା ନୋଟିସ

ସୂଚନା : ବ୍ଲକ ଗ୍ରା.ଉ. କାର୍ଯ୍ୟାଳୟ, ତା- 26.11.2024

ଆମ ଗ୍ରା.ପ. ର ୨୦୨୫-୨୬ ମସିହା ସମନ୍ୱିତ ଗ୍ରାମ ଉନ୍ନୟନ ଯୋଜନା ପ୍ରସ୍ତୁତି ନିମନ୍ତେ ଆଜ୍ଞା ମୋ ପତ୍ର ସଂଖ୍ୟା-୩୧୧୧ ତା. ୩୦/୦୨/୨୦୨୪ ମୁତାବକ ଆମ ପଞ୍ଚାୟତ ଗ୍ରା.ଉ. କାର୍ଯ୍ୟାଳୟ ଦ୍ୱାରା ଗ୍ରା.ଉ. ଅନୁଯାୟୀ ଗ୍ରାମ ସଭା ଆୟୋଜନ କରାଯିବ । ଆସନ୍ତା ୨୦୩୦ ସୁଦ୍ଧା ଗ୍ରା.ପ.ର ଏହି ଦୁଇଟି ଗୋଲ୍ (Sustainable Development Goals) ଘୋଷଣା ଓ ଗ୍ରାମ ସ୍ତରୀୟ ଜଳବାୟୁ ପରିବର୍ତ୍ତନ ଜନିତ ପ୍ରଭାବ ହ୍ରାସ କରିବାକୁ ଲକ୍ଷ୍ୟ (Theme) ସ୍ଥିର ପାଇଁ ଗ୍ରାମ ପଞ୍ଚାୟତ ସ୍ତରୀୟ ଯୋଜନା ୨୦୨୫-୨୬ ରେ ସାମିଲ କରିବାକୁ ନିମନ୍ତେ ସ୍ଥାନ ଓ ସମୟ ଅନୁଯାୟୀ ଉପସ୍ଥାପିତ ହେବା ।

ଉପରୋକ୍ତ ସଭା/ସଭା, ନିର୍ଦ୍ଦେଶିତ ପ୍ରତିନିଧି, ଅଧ୍ୟକ୍ଷ ଏବଂ ସଦସ୍ୟମାନଙ୍କ ସହିତ ଗ୍ରାମବାସୀଙ୍କ ଉପସ୍ଥିତି ।

1.

2. Jamni Munda

3. Kadambini Naik

4. Ramesh Kumar Naik (W.No.8)

5. Rebati Naik (W.M-2)

6. Kunjabihari Mahanta (P.E.O)

7. Sukumati Munda - (W.M.-5)

8. ଜଗବନ୍ଧୁ ମାଝି - (W.M-11)

9. Sukanti Munda (W.M.4)

10. Sujata Naik (EC)
11. Pabitra rani Das (EC)
12. Padmini Dash. (CRP-CM)
13. Jyotshna Rani Dash (CRP-CM)
14. Renuka Maharti Mahanta (EC)
15. Sushama Mahanta (EC)
16. Jharana Naik (CRP-CM)
17. Anjana Naik (EC)
18. Soudamini APkt (CEC)
19. Sulochana Barik (CEC)
20. Ashrita munda (EC)
21. Tapaswini Naik (CRP-CM)
22. Kanakalata Barik (CRP-CM)
23. Chandini Behera. (EC)
24. Priyatama Behera (EC)
25. Kaushalya Barik (MBK)
26. Sandhya rani Dash (GPLF President)
27. Padmabati Barik (GPLF Secretary)

ଗ୍ରାମସଭା ବୈଠକ

ସ୍ଥାନ : ଘେଡ଼ାଇ ଗ୍ରାପ. କାର୍ଯ୍ୟାଳୟ ତା. ୦୨.୧୦.୨୦୨୪

ଆଜି ତା. ୦୨.୧୦.୨୦୨୪ ତାରିଖରେ ଗାନ୍ଧିଜୟନ୍ତୀ ଅବସରରେ ଗ୍ରାପ କାର୍ଯ୍ୟାଳୟରେ ଏକ ସୁନ୍ଦର ଗ୍ରାମସଭା ବୈଠକ ଅନୁଷ୍ଠିତ ହୋଇଥିଲା । ଉକ୍ତ ବୈଠକରେ ଆସନ୍ତା ୨୦୨୫-୨୬ ଆର୍ଥିକ ବର୍ଷ ପାଇଁ CFC, SFC ଓ MGNREGA ର ବାର୍ଷିକ କାମର ପ୍ରସ୍ତାବ ଉପସ୍ଥିତ ମହିଳାମାନଙ୍କ ସମକ୍ଷରେ ଆଲୋଚନା କରାଯାଇଥିଲା । ସମ୍ପୃକ୍ତ ବିଷୟ ଉପରେ ସମସ୍ତ ସଦସ୍ୟା ମତାମତ ଦେଇ ଓ ପ୍ରସ୍ତାବ ପ୍ରସ୍ତୁତ କରି ସହାକର୍ମୀଙ୍କୁ ବୁଝାଇଲେ ।

ଉପସ୍ଥିତ ଥିବା ସଦସ୍ୟା/ସହାୟା ଏବଂ ଗ୍ରାମକର୍ମୀଙ୍କ ତାଲିକା :

1. Tamimunda
2. Kadambini Naik (N.S.)
3. Kunjabihari Mohanta (PEO)
4. Biswaranjan Baidya (CAOEO)
5. Sukumoli munda (w.m5)
6. Sukanti Munda (WM-1)
7. ଶକୁନ୍ତଳା ଟୁଡୁ (WM11)
8. Rebati Naik (wm-2)
9. Fulmani Munda (w.m 12)
10. Sunita Naik (W.M.9)
11. Barita Behera (w.m-10)
12. Kaushalya Barik (M.Bk)
13. Sujata Naik (Pesamobilizar)
14. Sebati Dehury
15. Sandhya rani Dash (GPLF President)
16. Anjana Naik (E.C)
17. Kanakalata Barik (CRP-CM)
18. padmabati Barik (GPLF Sec)
19. padmini Dash. (CRP-CM)
20. Basmita Naik (CRP-CM)
21. Sabita Rani Gope (CRP-CM)
22. Sumi mandia (S.H.G)
23. Jyotshna rani Dash (CRP-CM)

Fr. Naida dt: 02/10/2024

FO Baidyanath

24. Lipika Mahanta (Jindal Asha)
25 - Rasmita Nayak (Swasthya Sangini/Jindal Asha)
26 - Lili Mahakud
27 Mamata Naik
28 [illegible]
29 [illegible]
30 Sulochana Naik
31 [illegible]
32 Renuka manjari mahanta
33 sushama Mahanta (E.C)
34) Jharana Naik (CRP. CM)
35 [illegible]
36 Geetanjali Mahakud
37. [illegible]
38 [illegible]
39 [illegible]
40 Jagat Naik Mahaniveshi
D. S, Rama.
41 - Sushanta kumar Naik (Aspire)
[illegible]
42 [illegible]
43 Labanya Naik (GPCM Aspire)
44 - Ajay kumar Naik (W.M-1)
45 - Sambadi Naik
46 [illegible]

ନିମ୍ନଲିଖିତ ଗୁଡ଼ିକୁ ଦୁଇଟି ଶବ୍ଦରେ ବାକ୍ୟ ତିଆରି କରି ଉତ୍ତର ଦିଅନ୍ତୁ (ANSWER ANY) ଯେକୌଣସି ଦଶଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅନ୍ତୁ । ପ୍ରତି ପ୍ରଶ୍ନ ପାଇଁ ଦୁଇ ନମ୍ବର ରହିଛି ।

ଇଂରାଜୀରେ ଗୁଡ଼ିକୁ :

1. Imp. of road from Bhakta Mahakud house to Bidya Purdy house at Gobardhanpur.
2. Imp. of road from Bhakta Behera house to Bhaja Naik house at Mancuibeda Sahi.
3. Imp. of road from Tesaburu main road to Selie Munda house at Sialijoda.
4. Repairing of check dam at Bergo Sahi, Sialijoda.
5. Imp. of road from Baragachha to Purna Naik house at Deojhar
6. Imp. of road from Baragachha to Kaibaia house at Daladiri Sahi, Deojhar
7. Imp. of road from Narayana Naik house to Gopa Munda house at, Daladiri Sahi, Deojhar
8. Imp. of road from Bimal Munda house to temple at Murgabeda, Deojhar.
9. Imp. of road from Bharat Naik house to Subash ch. Naik house at Mahadevnasa.
10. Completion of check dam at Rabeu Sahi, Mahadevnasa.
11.

ଓଡ଼ିଆରେ ଗୁଡ଼ିକୁ :

Categories of individuals
Cond. of goat shed at Nasuribeda;

1. Banabasi Naik
2. Sibanath Barik
3. Bilasa Naik
4. Panka Barik
5. Karunakar Naik
6. Susama Barik
7. Mangulu Naik
8. Sabitya Barik
9. Bikram Naik
10. Chakra Munda
11. Manicha Naik
12. Bira Naik
13. Sampa Barik
14. Hari Lohar

Cond. of cow shelter of individuals at Nasuribeda

1. Sibanath Barik
2. Saiba Barik
3. Bhagaban Naik

Cond. of goat shed of individuals at Kitabeda.

1. Arun Prachad Giap
2. Malli Palei
3. Jayakrushna Behera
4. Jagadish Giap.

Cond. of cow shelter of individuals at Kitabeda.

1. Bibhisana Palei
2. Guru Gurucharan Palei
3. Bailochan Apat.
4. Maheswar Giap.
5. Indramani Palei
6. Abhimanyu Palei

Const. of goat shed of individuals of Gobardhan.

1. Binod Naik
2. Dhulamani Naik
3. Sanjay Naik
4. Trilochan Naik
5. Basanti Naik
6. Gura Munda.
7. Tikil Dash
8. Ganeswar Dash
9. Mani Dash
10. Bidya Purty
11. Daktar Naik
12. Bidyadhar Naik

Cow shelter:-

1. Mangulu Naik
2. Raghunath Dash
3. Balkiram Munda
4. Hamar Singh Munda
5. Gura Munda
6. Bamia Munda
7. Bidya Purty,
8. Sricharan Das
9. Bata Munda.

Const. of goat shed & cow shelter of individuals at Sialijoda:-

Goat shed:

1. Pramod Mahakud
2. Ranjit Munda
3. Bamungia Munda
4. Kande Munda
5. Driver Munda
6. Manoj Munda
7. Gura munda.
8. Kandaram Munda
9. Sukulal Munda
10. Sebi Munda
11. Sudhan Munda
12. Nania Munda.

Cow shelter:

1. Nandi Munda.
2. Jagannath Mahakud.
3. Radheshyam Munda
4. Raghu Mahakud.
5. Budhiram Munda.
6. Rasika Munda.
7. Raghu Gagrai
8. Basu Munda.
9. Raya Munda.
10. Kuni Munda.

Land development projects of individuals at Tesaburu & Sialijoda.

1. Jagmohan Munda
2. Sunaram Munda
3. Gama Munda
4. Bisan Munda.
5. Gurucharan Munda
6. Jayaram Gagrai
7. Naria Munda
8. Birsingh Munda
9. Dubulia Munda.
10. Sikur Munda.
11. Kisan Munda.
12. Jayakrishna Munda.
13. Manoj Munda.
14. Ram Munda.
15. Gapinath Munda.
16. Syamsundar Munda.

ଅଧିନସ୍ଥ ଗ୍ରାମ୍ୟ ଅଞ୍ଚଳ ପାଇଁ ସି.ସି.ରାସ୍ତା ଏବଂ ଅନ୍ୟାନ୍ୟ ଉନ୍ନୟନମୂଳକ କାର୍ଯ୍ୟର ତାଲିକା ନିମ୍ନରେ ଦିଆଯାଇଛି ।

1. Installation of street light from Mohanta Sahi to Gauda Sahi at Nasuribeda.
2. Repairing of bathing ghat of Gauda Sahi pond at Nasuribeda.
3. Const. of Kitchen & toilet at Station Sahi Anganwadi center, Gobardhanpur.
4. Const. of Kalyan Mandap at Gobardhanpur Station Sahi.
5. Const. of boundary wall of Mission Shakti Griha at Gobardhanpur.
6. Const. of C.C. road from Dillip Munda house to Chatekanu Munda house.
7. Const. of C.C. road from main road to Anganwadi center at Gobardhanpur.
8. Const. of boundary wall at back side of Gobardhanpur school.
9. Const. of CC road from Tesaburu colony to KandeMunda house at Sialijoda.
10. Repairing of CC road from Anganwadi center to Some house at Gopala Sahi.
11. Const. of CC road from Resang house to Nandalal Gagrai house at Gagrai Sahi.
12. Const. of CC road from main road to Gurucharan house at Sialijoda.
13. CC road repairing from Yudhisthir Polei house to Gonacam Munda house at Sialijoda.
14. Const of canal from Anganwadi to Pond at Tesaburu.
15. Const of bathing ghat at Munda Sahi Pond, Sialijoda.

16. Const. of bathing ghat at Bengo Sahi pond, Sialijoda.
17. Installation of 08 Nos. of Street lights at Anandabazar Chowk.
18. Const. of CC road from Purna Mahakud house to Jagannath Munda house at Deojhar.
19. Const. of CC road from Jagannath Munda house to Barogachha at Deojhar.
20. Const. of CC road from Rasika Munda house to Arun Naik house at Deojhar.
21. Const. of community center at Munda Sahi Thakurani
22. Installation of solar light at Thakurani
23. Const. of CC road from Odia Sahi to Budha Sahi at Thakurani
24. Const. of new Anganwadi centre at Mahadevnasa.
25. Cond. of drain at Rabru Sahi.
26. Cond. of drain from Rama Barik house to Laxman Barik house at Mahadevnasa
27. Const. of drain from Bhagaban Naik house to Pardish Naik house.
28. Const. of Bathing ghat & change room at Rabru Sahi.
29. Boundary wall height & ground concrete at Anganwadi centers, Mahadevnasa.
30. Const. of drain from Kathi Sahi to Bhagaban Naik house at Mahadevnasa.

ଗ୍ରାମସଭା ବୈଠକ

ସ୍ଥାନ : ଘେଡ଼ାଇ ଗ୍ରାପ. କାର୍ଯ୍ୟାଳୟ ତା. ୦୨.୧୦.୨୦୨୪

ଆଜି ତା. ୦୨.୧୦.୨୦୨୪ ତାରିଖରେ ଗାନ୍ଧିଜୟନ୍ତୀ ଅବସରରେ ଗ୍ରାପ କାର୍ଯ୍ୟାଳୟରେ ଏକ ସୁନ୍ଦର ଗ୍ରାମସଭା ବୈଠକ ଅନୁଷ୍ଠିତ ହୋଇଥିଲା । ଉକ୍ତ ବୈଠକରେ ଆସନ୍ତା ୨୦୨୫-୨୬ ଆର୍ଥିକ ବର୍ଷ ପାଇଁ CFC, SFC ଓ MGNREGA ର ବାର୍ଷିକ କାମର ପ୍ରସ୍ତାବ ଉପସ୍ଥିତ ମହିଳାମାନଙ୍କ ସମକ୍ଷରେ ଆଲୋଚନା କରାଯାଇଥିଲା । ସମ୍ପୃକ୍ତ ବିଷୟ ଉପରେ ସମସ୍ତ ସଦସ୍ୟା ମତାମତ ଦେଇ ଓ ପ୍ରସ୍ତାବ ପ୍ରସ୍ତୁତ କରି ସହାକର୍ମୀଙ୍କୁ ବୁଝାଇଲେ ।

ଉପସ୍ଥିତ ଥିବା ସଦସ୍ୟା/ସହାୟା ଏବଂ ଗ୍ରାମକର୍ମୀଙ୍କ ତାଲିକା :

1. Tamimunda
2. Kadambini Naik (N.S.)
3. Kunjabihari Mohanta (PEO)
4. Biswaranjan Baidya (CAOEO)
5. Sukumoli munda (w.m5)
6. Sukanti Munda (WM-1)
7. ଶକୁନ୍ତଳା ଟୁଡୁ (WM11)
8. Rebati Naik (wm-2)
9. Fulmani Munda (w.m 12)
10. Sunita Naik (W.M.9)
11. Barita Behera (w.m-10)
12. Kaushalya Barik (M.Bk)
13. Sujata Naik (Pesamobilizar)
14. Sebati Dehury
15. Sandhya rani Dash (GPLF President)
16. Anjana Naik (E.C)
17. Kanakalata Barik (CRP-CM)
18. padmabati Barik (GPLF Sec)
19. padmini Dash. (CRP-CM)
20. Basmita Naik (CRP-CM)
21. Sabita Rani Gope (CRP-CM)
22. Sumi mandia (S.H.G)
23. Jyotshna rani Dash (CRP-CM)

Fr. Naida dt: 02/10/2024

FO Baidyanath

24. Lipika Mahanta (Jindal Asha)
25 - Rasmita Nayak (Swasthya Sangini/Jindal Asha)
26 - Lili Mahakud
27 Mamata Naik
28 [illegible]
29 [illegible]
30 Sulochana Naik
31 [illegible]
32 Renuka manjari mahanta
33 sushama Mahanta (E.C)
34) Jharana Naik (CRP. CM)
35 [illegible]
36 Geetanjali Mahakud
37. [illegible]
38 [illegible]
39 [illegible]
40 Jagat Naik Mahaniveshi
D. S, Rama.
41 - Sushanta kumar Naik (Aspire)
[illegible]
42 [illegible]
43 Labanya Naik (GPCM Aspire)
44 - Ajay kumar Naik (W.M-1)
45 - Sambadi Naik
46 [illegible]

ନିମ୍ନଲିଖିତ ଗୁଡ଼ିକୁ ଦୁଇଟି ଶବ୍ଦରେ ବାକ୍ୟ ତିଆରି କରି ଉତ୍ତର ଦିଅନ୍ତୁ (ANSWER ANY) ଯେକୌଣସି ଦଶଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅନ୍ତୁ । ପ୍ରତି ପ୍ରଶ୍ନ ପାଇଁ ଦୁଇ ନମ୍ବର ରହିଛି ।

ଇଂରାଜୀରେ ଗୁଡ଼ିକୁ :

1. Imp. of road from Bhakta Mahakud house to Bidya Purdy house at Gobardhanpur.
2. Imp. of road from Bhakta Behera house to Bhaja Naik house at Mancuibeda Sahi.
3. Imp. of road from Tesaburu main road to Selie Munda house at Sialijoda.
4. Repairing of check dam at Bergo Sahi, Sialijoda.
5. Imp. of road from Baragachha to Purna Naik house at Deojhar
6. Imp. of road from Baragachha to Kaibaia house at Daladiri Sahi, Deojhar
7. Imp. of road from Narayana Naik house to Gopa Munda house at, Daladiri Sahi, Deojhar
8. Imp. of road from Bimal Munda house to temple at Murgabeda, Deojhar.
9. Imp. of road from Bharat Naik house to Subash ch. Naik house at Mahadevnasa.
10. Completion of check dam at Rabeu Sahi, Mahadevnasa.
11.

ଓଡ଼ିଆରେ ଗୁଡ଼ିକୁ :

Categories of individuals
Cond. of goat shed at Nasuribeda;

1. Banabasi Naik
2. Sibanath Barik
3. Bilasa Naik
4. Panka Barik
5. Karunakar Naik
6. Susama Barik
7. Mangulu Naik
8. Sabitya Barik
9. Bikram Naik
10. Chakra Munda
11. Manicha Naik
12. Bira Naik
13. Sampa Barik
14. Hari Lohar

Cond. of cow shelter of individuals at Nasuribeda

1. Sibanath Barik
2. Saiba Barik
3. Bhagaban Naik

Cond. of goat shed of individuals at Kitabeda.

1. Arun Prachad Giap
2. Malli Palei
3. Jayakrushna Behera
4. Jagadish Giap.

Cond. of cow shelter of individuals at Kitabeda.

1. Bibhisana Palei
2. Guru Gurucharan Palei
3. Bailochan Apat.
4. Maheswar Giap.
5. Indramani Palei
6. Abhimanyu Palei

Const. of goat shed of individuals of Gobardhan.

1. Binod Naik
2. Dhulamani Naik
3. Sanjay Naik
4. Trilochan Naik
5. Basanti Naik
6. Gura Munda.
7. Tikil Dash
8. Ganeswar Dash
9. Mani Dash
10. Bidya Purty
11. Daktar Naik
12. Bidyadhar Naik

Cow shelter:-

1. Mangulu Naik
2. Raghunath Dash
3. Balkiram Munda
4. Hamar Singh Munda
5. Gura Munda
6. Bamia Munda
7. Bidya Purty,
8. Sricharan Das
9. Bata Munda.

Const. of goat shed & cow shelter of individuals at Sialijoda:-

Goat shed:

1. Pramod Mahakud
2. Ranjit Munda
3. Bamungia Munda
4. Kande Munda
5. Driver Munda
6. Manoj Munda
7. Gura munda.
8. Kandaram Munda
9. Sukulal Munda
10. Sebi Munda
11. Sudhan Munda
12. Nania Munda.

Cow shelter:

1. Nandi Munda.
2. Jagannath Mahakud.
3. Radheshyam Munda
4. Raghu Mahakud.
5. Budhiram Munda.
6. Rasika Munda.
7. Raghu Gagrai
8. Basu Munda.
9. Raya Munda.
10. Kuni Munda.

Land development projects of individuals at Tesaburu & Sialijoda.

1. Jagmohan Munda
2. Sunaram Munda
3. Gama Munda
4. Bisan Munda.
5. Gurucharan Munda
6. Jayaram Gagrai
7. Naria Munda
8. Birsingh Munda
9. Dubulia Munda.
10. Sikur Munda.
11. Kisan Munda.
12. Jayakrishna Munda.
13. Manoj Munda.
14. Ram Munda.
15. Gapinath Munda.
16. Syamsundar Munda.

ଅଧିନସ୍ଥ ଗ୍ରାମ୍ୟ ଅଞ୍ଚଳ ପାଇଁ ସି.ସି.ରାସ୍ତା ଏବଂ ଅନ୍ୟାନ୍ୟ ଉନ୍ନୟନମୂଳକ କାର୍ଯ୍ୟର ତାଲିକା ନିମ୍ନରେ ଦିଆଯାଇଛି ।

1. Installation of street light from Mohanta Sahi to Gauda Sahi at Nasuribeda.
2. Repairing of bathing ghat of Gauda Sahi pond at Nasuribeda.
3. Const. of Kitchen & toilet at Station Sahi Anganwadi center, Gobardhanpur.
4. Const. of Kalyan Mandap at Gobardhanpur Station Sahi.
5. Const. of boundary wall of Mission Shakti Griha at Gobardhanpur.
6. Const. of C.C. road from Dillip Munda house to Chatekanu Munda house.
7. Const. of C.C. road from main road to Anganwadi center at Gobardhanpur.
8. Const. of boundary wall at back side of Gobardhanpur school.
9. Const. of CC road from Tesaburu colony to KandeMunda house at Sialijoda.
10. Repairing of CC road from Anganwadi center to Some house at Gopala Sahi.
11. Const. of CC road from Resang house to Nandalal Gagrai house at Gagrai Sahi.
12. Const. of CC road from main road to Gurucharan house at Sialijoda.
13. CC road repairing from Yudhisthir Polei house to Gonacam Munda house at Sialijoda.
14. Const of canal from Anganwadi to Pond at Tesaburu.
15. Const of bathing ghat at Munda Sahi Pond, Sialijoda.

16. Const. of bathing ghat at Bengo Sahi pond, Sialijoda.
17. Installation of 08 Nos. of Street lights at Anandabazar Chowk.
18. Const. of CC road from Purna Mahakud house to Jagannath Munda house at Deojhar.
19. Const. of CC road from Jagannath Munda house to Barogachha at Deojhar.
20. Const. of CC road from Rasika Munda house to Arun Naik house at Deojhar.
21. Const. of community center at Munda Sahi Thakurani
22. Installation of solar light at Thakurani
23. Const. of CC road from Odia Sahi to Budha Sahi at Thakurani
24. Const. of new Anganwadi centre at Mahadevnasa.
25. Cond. of drain at Rabru Sahi.
26. Cond. of drain from Rama Barik house to Laxman Barik house at Mahadevnasa
27. Const. of drain from Bhagaban Naik house to Pardish Naik house.
28. Const. of Bathing ghat & change room at Rabru Sahi.
29. Boundary wall height & ground concrete at Anganwadi centers, Mahadevnasa.
30. Const. of drain from Kathi Sahi to Bhagaban Naik house at Mahadevnasa.

ଗ୍ରାମ ସଭା
ଘଟଣ୍ଡିହି ଗ୍ରାମ ପଞ୍ଚାୟତ କାର୍ଯ୍ୟାଳୟରେ

ତା. ୨୫.୦୮.୨୦୨୨ ଆଦିବାସୀ ଉତ୍ସବ ପାଳନ ଓ ଗ୍ରାମସଭା

ଆଜି ତା. ୨୫.୦୮.୨୦୨୨ ତାରିଖ ଘଟଣ୍ଡିହି Pesmo ଅଡିଶା ଅଞ୍ଚଳରେ ଗ୍ରାମର ଅନୁସୂଚୀତ ଜନଜାତୀୟ ମାନଙ୍କ ଏହି ଅଞ୍ଚଳଟିକୁ ଶୋଷଣ ଓ ଗ୍ରାମ ସଭା ହାତୁଛାଡ଼ି ଦେଇଥିଲା । ଏହାକୁ ସଂରକ୍ଷଣ କରିବା ଭୁଲି ଅନୁଷ୍ଠାନ ପାଇ, ANM, ହାତିବାଡ଼ି ଜଣେ, ମାଇନ୍ସ, GPLF ଅପରେଟର୍ସ, MBK, ସାଉଥ ଇଷ୍ଟର୍ଣ୍ଣ ଜିଲ୍ଲା ଅଞ୍ଚଳଗୁଡ଼ିକୁ ଆଣିବା ଗ୍ରାମ ସଭାକୁ ଶୋଷଣ କରିବାକୁ ଗ୍ରାମସଭା ଦ୍ୱାରା ଆଦେଶ କରାଯାଇଛି ।

ଉପସ୍ଥିତ ସଭ୍ୟ/ସଭ୍ୟା ଏବଂ ଗ୍ରାମବାସୀଙ୍କ ତାଲିକା;

1. Sumitra Munda
2. Kanjabihari Mohanta (PSO)
3. Biswaranjan Baidya (AMEO)
4. Radambini Naik (Naib Sarpanch)
5. Ajay Kumar Naik (W.M-1)
6. Rakesh Kumar Naik (W.M-3)
7. ଜୟନ୍ତୀ ଗଡ଼ତ (W.M-11)
8. Sukanti Munda (W.M-4)
9. Sujata Naik (Pesa mobilizer)
10. Rebati Naik (W.M-2)
11. Sumi Munda (S.H.G)
12. Fulmani Munda (W.M-12)
13. Sasmita Munda (S.H.G)
14. Anjana Naik (E.C)
15. LTI of Banabasi Mahanta
16. ଘାଟଶାଳିଆ ଗୁରୁ
17. Kaushalya Barik (M.B.K)
18. Sabita Rani Gope (ERP-CM)

Tapaswini Naik (CRP-CM)
padmabati Baik (SEY)
Kanakalata Baik (CRP-CM)
Jyotsnmarani Dash (CRP-CM)
Rupeli Baruk

(CLTi) ଅଙ୍ଗନବାଡି କାର୍ଯ୍ୟକର୍ତ୍ରୀ
ସରସ୍ୱତି ନାୟକ
ଦୁଇଟା ଲାଗି ଆସିଛନ୍ତି
ଯାଗା ଲାଗି ମହାନ୍ତି
Lija Naik
ଅନ୍ତି ଲାଗି ମହାନ୍ତି
Sabitra Naik (E.C)
Padhmin Dash (C.R.P)
Manoj Kumar Naik
Bikram Mundo
ଦୁଇଜଣ ମହାନ୍ତି
Sandhya rani Dash (GPF-Pre)
purnima Baik (EC)
Sulochana Baik (EC)
ସମିତି ସଭ୍ୟ

ନିମନ୍ତ୍ରିତ ପ୍ରମୁଖ ଭୂମିକା ଏହି ସଭାରେ କେଉଁ ଭୂମିକା ନେଇଛନ୍ତି ।

ପ୍ରଥମ ପ୍ରସ୍ତାବ :
ଆଜିକାର ବିଷୟରେ ସମିତିର କାର୍ଯ୍ୟାଳୟରେ ସମ୍ପାଦକ ପ୍ରଥମ ସଭାର ଆରମ୍ଭରେ ~~Tata~~ Tata Steel, Katamali Company ତରଫରୁ ~~Tata~~ Canteen ଭୂମି ନିର୍ମାଣ ବିଷୟରେ ଏହି ସଭାରେ କେଉଁ ପ୍ରସ୍ତାବ ଦେଇଛନ୍ତି ।

ANNEXURE-XXIV

Compliance Report of MoEFCC's Office Memorandum No. Z-11015/57 /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".

Sl. No.	Condition	Compliance
A	the project authority shall adopt best mining practice for the given mining conditions. In the mining area, adequate number of check dams, retaining walls/structures, garland drains and settling ponds should be provided to arrest the wash-off with rain water in catchment area.	Complied. Mining is strictly being carriedout as per the Approved Mining Plan by IBM. We have constructed retaining walls, garland drains, settling ponds at appropriate locations inside mines area to arrest the run-off with rainwater in catchment area.
B	the natural water bodies and or streams which are flowing in and 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 authorities have to provide water to villagers for their use, a provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table.	Being complied. No natural water bodies or streams are flowing within the mining lease area. For augmentation of ground water table, we have constructed water harvesting ponds. Water level is monitored on regular basis by installation of automatic piezometers in core zone area & manual water level meter in buffer zone area.
C	the illumination and sound at night at project sites distribute the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night, the project proponents (PPs) must ensure that the biological clock of the villagers is not disturbed by orienting the floodlights/masks away from the villages and keeping the noise levels well within the prescribed limits for day/night hours.	Being complied. No mining activities are carriedout within an area of 500 meters from village boundary. Blasting is being carriedout during day time only. And latest controlled blasting technologies by using NONEL to control noise & vibration are being carriedout. Lighting arrangements is done towards active mining areas away from village areas/ forest areas, there is no disturbance caused to nearby villages/ forest due to illumination and noise during night time.
D	the project authority shall make necessary alternative arrangements, where required, in consultation with the State Government to provide alternate areas for livestock grazing. In this context, project Authority should implement the directions of the hon'ble Supreme Court with regard to acquiring grazing land, the spares trees on such grazing ground, which provide mid-day shelter from the scorching sun should be scrupulously guarded against felling lest the cattle abandon the grazing ground or return home by noon.	No grazing land present within the mining lease area.

E	where ever blasting is undertaken as part of mining activity, the project authority 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 neighbourhood. within 500 meters of such sites vulnerable to blasting vibrations, avoidance of use of explosives and adoption of alternative means of mineral extraction, such as ripper/dozer combination/ rock breakers/ surface miners etc. should be seriously considered. and practical wherever practicable. a provision for monitoring of each blast should be made so that the impact of blasting on nearby habitation and dwelling units should be ascertained. the covenant of lease deed under Rule 31 of MCR 1960 provides that no mining operations shall be carriedout within 50 meters of public works such as public roads and buildings or inhabited sites except with the prior permission from the competent authority.	Being Complied. No blasting is being carriedout within an area of 500 meters near habitats or other public buildings. Additionally, controlled blasting techniques with latest blasting technologies by using non-electric down detonators with hole delay system and non-electronic trunk line delay system at surface which gives minimum vibration level as well as low value of air blast on the surface. ground vibration is being regularly monitored with the help of latest minimate/micromate Seismograph.
F	main haul road in the mine should be provided with permanent sprinklers and other roads should be regularly watred with water tankers fitted with sprinklers. Crusher and 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.	Being complied. Fixed water sprinklers installed at permanent haul road. Additionally, water sprinkling is carriesout on haul road, loadin unloading points with help of mobile water tankers. Primary Crusher is also fitted with dry-fog system. The iron ores are transported to the railway siding through conveyor belts.
G	the project authority shall ensure that the productivity of agricultural crops is not affected due to mining operations. Crop liability insurance policy has to be taken by the PP as a precaution to compensate for any crop loss. The impact zone shall be 5km from the boundary of mine lease area for such insurance policy. in case, several mines are located in a cluster, the associations of owners of the cluster mines, formed inter-alia, to sub-serve such an objective, shall take responsibility for securing such crop liability policy.	Being Complied. A General Public Liability Insurance is made in which crop damage is also covered. The copy of Insurance copy is attached as AnnexureXXVII.
H	in case any village is located within the mining leasehold which is not likely to be affected due to mining activities during the life of mine, the expert appraisal committee (EAC) should consider the proposal of environment clearance (EC) for reducing mining area. the mining lease may be executed for the area for which EC is accorded. the mining plan may also be accordingly revised and required stipulated stipulations under the MMDR Act, 1957 and MCR,1960 met.	Not Applicable: As no village present within the mining lease area.
I	transportation of the minerals by road passing through the village shall not be allowed. A 'bypass' road should be constructed (say, leaving a gap of at least 200 meters) for the purpose of transportation of the minerals so that the impact of sounds dust and accidents could be mitigated. the PP shall bear the cost towards the widening and strengthening of existing public road network in case the same is proposed to be used for the project. no road movement should be allowed on existing village road network without appropriately increasing the carrying capacity of such roads.	Being Complied. However, More than 70% Mineral transportation is done through conveyor belts to railway siding and further the products are transported to destination through rail.
J	likewise, alteration or re-routing of foot paths, pagdandies, cart roads, the villages infrastructure/public utilities or roads (for purposes of land acquisition for mining) shall be avoided to the extent possible and in case such acquisition is inevitable, alternative arrangements shall be made first and then only the area acquired. in these types of cases, inspection reports by site visit by experts may be insisted upon which should be done through reputed institutes.	Being complied.

8.	As CSR activities by companies including the mining Establishments has become mandatory upto 2% of their financial turnover, Socio Economic Development of the neighbourhood Habitats could also be planned and executed by the PPs more systematically based on the 'need based door to door survey' by established Social Institutes/ Workers on the lines as required under 3108. "R&R plan/compensation details for the project affected people (PAP) should be furnished, while preparing the R&R plan, the relevant state/National Rehabilitation ? Resettlement Policy should be kept in view. In respect of SC's/ST's and other weaker sections of the society in the study area, a need based sample survey, family wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line department of the state government. it may be clearly brought out whether the village located in the mine lease area will be shifted or not. the issue relating to shifting of village including their R&R and social economic aspects should be discussed in the EIA report.	Being Complied.

Sarpanch
Deojhar Panchayat Office
Deojhar

Ref: MD/ENV/ 173 / 110 / 2021

Dated: 10.08.2021

Sub: Environment Clearance of M/s Tata Steel Limited for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha

Ref: Vide letter no. IA-J-11015/63/2018-IA-II (M) dated 05.08.2021.

Dear Sir,

This is to inform you that Environment Clearance has been granted for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha. A copy of EC is enclosed for reference.

Thanking you,

Yours sincerely,
f: Tata Steel Limited

Pinky Kumari
Head Planning (OMQ)

Encl: As above

Received
Mangal Munda
Sarpanch 10-11-2021
Deojhar Grampanchayat
Block-Joda, Dist-Keonjhar

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Tel 91 9234301340 Fax 91 6596 290737
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

Sarpanch
Anseikala Panchayat Office
Anseikala

Ref: MD/ENV/ 174 / 110 / 2021

Dated: 10.08.2021

Sub: Environment Clearance of M/s Tata Steel Limited for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha

Ref: Vide letter no. IA-J-11015/63/2018-IA-II (M) dated 05.08.2021.

Dear Sir,

This is to inform you that Environment Clearance has been granted for expansion of Katamati Iron Mine from 8 MTPA to 13.5 MTPA (ROM) with total excavation of 15 MTPA along with mineral beneficiation plant of 4 MTPA in the mining lease area of 403.3238 ha located at Deojhar and Thakurani village, District Keonjhar, Odisha. A copy of EC is enclosed for reference.

Thanking you,

Yours sincerely,
f: Tata Steel Limited

Pinaki Kumar
Head Planning (OMQ)

Encl: As above

Received
Sarapanch 11/08/21
Anseikala G.P.

TATA STEEL LIMITED
Mines Division Noamundi 833 217 India
Tel 91 9234301340 Fax 91 6596 290737
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001
Tel 91 22 66658282 Fax 91 22 66657724
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com

Regional Office
Ministry of Environment, Forest & Climate Change
Regional Office (EZ), A/3
Chandrasekharpur
Bhubaneswar - 751023

MD/ENV/ 187-A / 98 /2021
Date: 16.08.2021

Sub: Advertisement regarding grant of Environmental Clearance for expansion of Katamati Iron Mine of M/s Tata Steel Limited.

Ref: Environmental Clearance letter no. IA-J-11015/63/2018.IA.II (M) dated: 05.08.2021.

Dear Sir,

In compliance to the standard condition no. 7 in EC granted with vide letter no. IA-J-11015/63/2018.IA.II (M) dated: 05.08.2021 which states that *"The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of clearance letter mentioning that the instant project has been accorded EC and copy of EC letter is available with the State Pollution Control Board/Committee and website of Ministry of Environment, Forest and Climate Change (www.parivesh.nic.in). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional office for compliance and record"* we hereby advertised in two newspapers i.e Orissa Post(English) and Prameya(Odiya) on 11.08.2021. A copy is enclosed as **Annexure.**

Thanking you,

Yours faithfully,
F. Tata Steel Limited

Chief (Mine Planning & Projects), OMQ

Encl: As above

ଭକ୍ତଙ୍କ ପାଇଁ ଖୋଲିଲା ମା'ଙ୍କ ଦୁଆର

ବୁଢ଼ାଣି ନଦୀରେ ଘେରିଲେ ବାଉରିପଡାବାସୀ

ଓଭରଲୋଡିଂ ଯୋଗୁ ଓଲଟିଲା ୧୪ ଚକିଆ

୨ ବାଇକ୍ ଧକ୍କା, ମହିଳା ମୃତ

ବଲି ବୋଟରେ ଜାଇଣ୍ଟ୍ସ ଜବତ

TATA STEEL

ସୂଚନା

ODISHA JOINT ENTRANCE EXAMINATION-2021
(OJEE-2021)

DIRECTORATE OF HIGHER SECONDARY EDUCATION, ODISHA

OrissaPOST
downtown

NEW ENTRANTS

Over a hundred Congress and BJP workers from Kalahandi, Nuapada and Sonepur join Biju Janata Dal at the regional party's headquarters in Bhubaneswar, Tuesday

COVID-19 TRACKER

Project Tiger sees 50% cut in central funds

Over ₹ 80 crore has been sanctioned by Union govt for tiger and elephant projects in these years

Internal assessment system for Classes IX, X

Soumya Ranjan takes a dig at Naveen's style of functioning

Man held for firearms as wife tips off cops

₹374cr spl assistance for Odisha

Panchayat polls to be held on time: Election commission

Mandaviya urged to implement Ayushman Bharat in Odisha

DECLARATION OF WILFUL DEFAULTER

TATA STEEL

TATA

NOTICE

ANNEXURE - XXVII

Surface Water Flow Rate Measurement Report				
Katamati Iron Ore Mine of M/s tata Steel Limited				
Period: October 2024 to March 2025				
Mine Location	**Sample Location**	**Month**	**Unit**	**Results**
Katamati Iron Mine	Jojo Nalla	October 2024	Cu.m/hr	615
		November 2024	Cu.m/hr	547
		December 2024	Cu.m/hr	510
		January 2025	Cu.m/hr	389
		February 2025	Cu.m/hr	280
		March 2025	Cu.m/hr	258

Summarized Mine Run-Off Water Quality Monitoring Report						
Katamati Iron Ore Mine of M/s tata steel Limited						
Period: April 2024 to March 2025						
Location		Mine Pit Water				
Parameters		May 24	Jun 24	Jul 24	Aug 24	Sep 24
I	Biological Testing 1.Water					
1	Total Colifom	Absent	Absent	Absent	Absent	Absent
II	Chemical 1.Water					
2	pH	6.91	7.21	7.93	7.38	6.82
3	Colour	16	24	16	28	18
4	Total Dissolved Solids (TDS)	1397	1436	1297	1356	1257
5	Chloride (as Cl)	246	217	306	241	216
6	Sulphate (as SO4)	317	186	192	183	176
7	Nitrate (as NOJ)	14.91	16.32	14.53	16.24	14.32
8	Fluoride (as F)	0.56	0.41	0.26	0.32	0.26
9	Cyanide (as CN)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)	BLQ (LOQ-0.005)
10	Phenolic compounds	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
11	Anionic Detergents (as MBAS)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
II	Chemical : Water					
12	Dissolved Oxygen	6.1	6.3	6.5	6.4	5.8
13	Total Suspended Solid (as TSS)	28	32	28	26	24
14	BOD (3 days at 27°C)	2.67	2.73	2.47	2.81	2.61
15	Chemical oxygen demand	8.19	9.16	7.52	9.26	7.93
III	Chemical : Residues In Water					
16	Hexa Chromium (as Cr+6)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
IV	Chemical : Residues In Water					
17	Iron (as Fe)	0.36	0.43	0.46	0.37	0.42
18	Cadmium (as Cd)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)	BLQ (LOQ-0.002)
19	Selenium (as Se)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
20	Arsenic (as As)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
21	Lead (as Pb)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)	BLQ (LOQ-0.01)
22	Zinc (as Zn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
23	Mercury (as Hg)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)	BLQ (LOQ-0.001)
24	Manganese (as Mn)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)
25	Copper (Cu)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)	BLQ (LOQ-0.02)

TATA STEEL LIMITED

Your (Half Yearly Compliance Report) has been Submitted with following details

Proposal No	IA/OR/MIN/123668
Compliance ID	110525413
Compliance Number(For Tracking)	EC/M/COMPLIANCE/110525413/2024
Reporting Year	2024
Reporting Period	01 Dec(01 Apr - 30 Sep)
Submission Date	29-11-2024
RO/SRO Name	ARTATRANA MISHRA
RO/SRO Email	jhk109@ifs.nic.in
State	ODISHA
RO/SRO Office Address	Integrated Regional Offices, Bhubaneswar

Note: SMS and E-Mail has been sent to ARTATRANA MISHRA, ODISHA with Notification to Project Proponent.

Date: 31.03.2024

OMQ/EMP/02/2024

DECLARATION

Formation of Environment Management Cell

Location: Ore Mines & Quarry Division which includes following locations→

1. Noamundi Iron Mine, over 1160.06 Ha located at Mahul, Balijore, Korta, Noamundi, Sarbil &Balijori villages, West Singhbhum District, Jharkhand.
2. Katamati Iron Mine, over 403.3238 Ha. At village Deojhar & Thakurani RF, Keonjhar District, Odisha.
3. Joda East Iron Mines, over 671.093 Ha. Located in village Joda, Kamarjoda, Banspani, Khuntpani &Baitarani RF in Barbil Taluka, Keonjhar District, Odisha.
4. Khondbond Iron & Mn. Mines, over 978 Ha. Located in village Khondbandh, Tehsil Barbil, Keonjhar District, Odisha.
5. Vijaya-II Iron Ore Mines, over 155.078 Ha. Located in village Ghatkuri, Tehsil: Noamundi, West Singhbhum District, Jharkhand.
6. Kalamang West (Northern Part) Block Iron Ore Mines, over 92.875 Ha. Located at village Gandalpada, Keonjhar District in villages Kalamang & Ghodabudani, Sundargarh Districts, Odisha.
7. Neelachal Iron Ore Mines, over 874.290 Ha. Located at Keonjhar & Sundargarh Districts, Odisha.
8. Gandhalpada Iron Ore Mine, over 241.10 Ha. At atGandhalpada, Guali and Barpada Villages, Barbil Tehsil, Keonjhar District, Odisha.

A separate Environment Management Cell has been formed, with suitable qualified personnel, under the control of Chief Mine Planning & Projects, who reports directly to the General Manager of Ore Mines & Quarry Division. The environment Management Cell will ensure compliance of following Acts & Rules but not limited to:

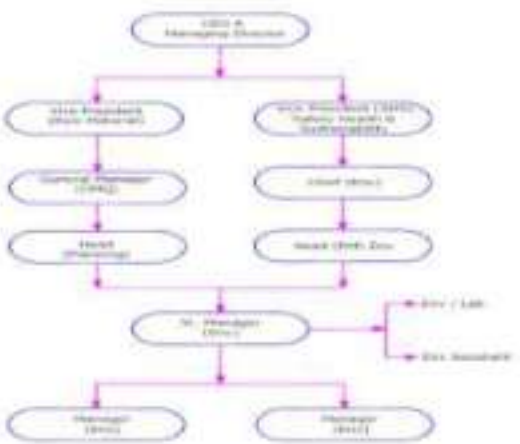
1. The Environment (Protection) Act, 1986.
2. Environmental Impact Assessment Notification, 14th Sep-2006.
3. Wildlife Protection Act 1972
4. Air (Prevention and Control of Pollution) Act, 1981
5. Water (Prevention and Control of Pollution) Act1974
6. Noise Pollution (Regulation and Control Act) 1990
7. Public Liability and Insurance Act 1991
8. The Forest (Conservation) Act. 1980
9. Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016.
10. E-waste Management Rules, 2022
11. Bio-medical Waste Management Rules, 2016
12. Battery Waste Management Rules, 2022

13. Plastic Waste Management Rules, 2022

The Environment Management Cell Consists of Following Personnels:

1. Shri. Awnish Kumar (Chief-Mine Planning & Projects)
2. Shri. Mukesh Kumar Prasad (Head-Environment Management)
3. Shri. Pinku Kumar (Head- Mine Planning)
4. Shri. Vivek Kumar Agarwal (Senior Area Manager- Planning)
5. Shri. Abinash Das (Area Manager- Environment)
6. Shri. Gaurav Dubey (Area Manager- Environment)
7. Shri. Roshan Singh (Area Manager- Horticulture)
8. Shri. Gaurav Mukherjee (Area Manager- Planning)
9. Shri. Vishal Kumar Singh (Area Manager- Planning)
10. Shri. Debasish Das (Senior Manager- Environment)
11. Shri. Sudhanshu Ranjan (Manager- Environment)
12. Shri. Shubham Singh (Manager-Environment)
13. Shri. Rishi Raj Kashyap (Manager-Environment)
14. Shri. Ramendra Kumar (Officer- Environment)
15. Shri. Jhasketan Pradhan (Senior Environment Assistant)
16. Shri. Soumyak Palei (Environment Assistant)
17. Shri. Pragyan Prakash Mohanto (Environment Assistant)
18. Shri. Ganesh Karua (Environment Assistant)
19. Shri. Bharat Pan (Environment Assistant)
20. Shri. Gurucharan Laguri (Environment Assistant)
21. Shri. Gayatri Behera (Environment Chemist)
22. Shri. Jarsaniya Harshkumar Dayabhai

The detailed Organogram is as follows:



f: Tata Steel Limited

Awnish Kumar

Chief- Mine Planning & Projects (OMQ)

GM(OMO'S) OFFICE
RECEIVED ON
323
16 AUG 2010
TATA STEEL (MINES DIVN)
NOAMUNDI

BY REGD POST

OFFICE OF THE
STATE POLLUTION CONTROL BOARD, ORISSA

Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII,
Bhubaneswar - 751 012

No 12850 / IND-II-NOC- **5109** Date 04.08.10

OFFICE MEMORANDUM

In consideration of the application for obtaining Consent to Establish **for M/s Katamati Iron Mine of Tata Steel Limited** the State Pollution Control Board has been pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for increase in production of **Iron Ore from 2.0 Million Ton /Annum to 8.0 Million Ton/Annum (Over mine lease hold area of 403.3238 ha) At/Po: Deojhar,** in the district of **Keonjhar** with the following conditions.

GENERAL CONDITIONS.

1. This Consent to establish is valid for the product, quantity, manufacturing process and raw materials as mentioned in the application and for a period of five years from the date of issue of this letter, provided commencement of production of the proposed project has not taken place in the meantime.
2. If the proponent fails to start operation of the project within five years but substantial physical progress has been made then a renewal of this consent shall be sought by the proponent.
3. Adequate effluent treatment facilities are to be provided such that the quality of sewage and trade effluent satisfies the standards as prescribed under Environment Protection Rule,1986 or as prescribed by the Central Pollution Control Board and/or State Pollution Control Board or otherwise stipulated in the special conditions.
4. All emission from the industry as well as the ambient air quality and noise shall conform to the standards as laid down under Environment (Protection) Act, 1986 or as prescribed by Central Pollution Control Board/State Pollution Control Board or otherwise stipulated in the special conditions.
5. Appropriate method of disposal of solid waste is to be adopted to avoid environmental pollution.
6. The industry shall comply to the provisions of Environment Protection Act, 1986 and the rules made there under with their amendments from time to time such as the Hazardous Waste (Management & Handling) Rules 1989, Hazardous Chemical Rules /Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 etc. and amendments there under. The industry shall also comply to the provisions of Public Liability Insurance Act, 1991, if applicable.

7. The industry is to apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of Pollution)Act, 1981 at least 3 (three) months before the commercial production and obtain Consent to Operate from this Board.

8. **This consent to establish is subject to statutory and other clearances from Govt. of Orissa and/or Govt. of India, as and when applicable.**

SPECIAL CONDITIONS : -

1. **The mine has to seek environmental clearance as per the EIA notification 2006 and mining activity for proposed mining project shall commence after obtaining environmental clearance.**

2. **A bank guarantee commensurate with the production level will be taken by the Board for continuous satisfactory environmental compliance of the mine during the period for which consent to operate is granted as and where required.**

3. **The mine is operating under provisions of deemed extension of mining lease since 17.1.2003. Consent to establish for the proposal is subject to grant of mining lease from Steel & Mines Department, Govt. of Orissa.**

4. **The mine shall obtain permission for drawl of water from Water Resource Deptt., Govt. of Orissa before implementation of this expansion project.**

5. **The mine has proposed for increase of height of dyke of tailing pond of beneficiation plant of Nuamundi iron ore mine for tailing disposal. Consent to establish for the proposal is subject to permission from concerned authority for increase of height of dyke of tailing pond.**

6. The mine shall achieve the production target by deployment of following equipment and machineries

Sl No.	Equipment	Capacity	Number
1.	Shovels	(3.5/6.0) m^3	4-5
2.	Drills	(100-150) mm	4-5
3.	Dumpers	25 T/50T/60T/100T	18-22
4.	Dozer	300KW	04
5.	Grader	16 feet blade	02
6.	Mining Loader	10 m^3	02
7.	Water Sprinkler	28KL	02
8.	Pit Vehicles	-	03
9.	Maintenance van	-	01
10.	Diesel tanker	10 KL	01
11.	Jack Hammer	32mm	03

7. No change in mining technology and scope of working shall be made without prior approval of the Board.

8. Top soil should be stacked properly with proper slope at earmarked site(s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas.

9. Concurrent back-filling should be started from the fourth year of operation. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests with a copy to the Board on yearly basis.

10. Reclamation programme alongwith the post closure plan is to be submitted within 06 months from the date of issue of this order. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50% safety margin over and above the peak sudden rainfall 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.

11. Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data. The detail specification shall be worked out and submitted to the Board.

12. At stockpile and loading plant area, a net work of drains with concrete bottom shall be constructed at a depth of 1.5 meter below the lowest level on the sites parallel to the stockpile area with interconnected box culverts. The sloping of surface shall be given inward to the stockpiles so that surface water will only infiltrate in to the drain.

13. Surface run-off from OB dump area, mineral stock yard, top soil storage area and rain water to be pumped from quarry shall be routed through adequate settling pond (designed maximum hourly rain fall basis) to meet prescribed standard of SS-50 mg/l and O& Grease-5 mg/l before discharge into natural stream/water courses during monsoon.

14. Regular monitoring of ground water level and quality should be carried out by establishing a net work 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. Following heavy metals need to be monitored at least once during post monsoon period whose values shall not exceed as per following standard.

i)	Cd	-	2.0 mg/l
ii)	Cr+6	-	0.10 mg/l
iii)	Copper	-	3.0 mg/l
iv)	Lead	-	0.10 mg/l
v)	Mercury	-	0.01 mg/l
vi)	Nickel	-	0.50 mg/l
vii)	Zinc	-	5.0 mg/l

15. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.

16. Wastewater (workshop, wastewater from the mine i.e. pit water, check dams or any other discharge leaving lease boundary of the mine) should be properly collected, treated so as to conform the prescribed standard i.e. pH = 6 – 9.0, SS = 50 mg/l, & O & G = 5 mg/l as amended from time to time. Oil and grease trap should be installed before discharge of effluents from workshop.

17. Drill should be wet operated or with dust extractors and controlled blasting should be practices.

18. Six ambient air quality monitoring stations for 24 hours operation should be established in the core zone as well as in the buffer zone for RPM, SPM, SO_2, NOx and CO monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

19. Data on ambient air quality (PM10, PM2.5 SPM, SO_2, NOx and CO) should be regularly submitted to the State Pollution Control Board once in six months.

20. Adequate measures to control fugitive emission shall be taken during loading and transportation of minerals, haul roads, drilling, excavation, ore stack pile and truck loading areas.

21. The speed of dumpers / trucks on haul roads shall be controlled as increased speed increases dust emission. Overloading of transport vehicles shall be avoided.

22. Drilling operation need to be conducted as per the recommendations of the manufacturer using sharp drill bits. Applying sufficient thrust on the drill bit and providing dust hood at the mouth of drill hole collar to prevent the generation of dust to be air-borne.

23. Pre-wetting of blasting site shall be practiced.

24. Optimized blasting methods shall be practiced i.e. matching the explosive to the drilling pattern, rock characteristics and proper stemming of the holes. Site specific drilling pattern, optimum charging of explosives, adequate stemming and introduction of delays shall be practiced.

25. During transportation of ore by trucks through public roads, the truck shall be properly covered with tarpaulin sheets / leak proof coverings and shall ply at safe speed.

26. Dust suppression on mine haul roads, active OB dumps and mine working benches shall be done by spraying water through water sprinklers along with chemical binders/wetting agents at frequent interval in order to reduce water consumption and to improve retention and re-absorption capacity of water. The additive chemicals should not have any adverse impact on the environment. Water sprinklers of fixed type shall also be provided at the mine HEMM maintenance shop, other service centers and approach roads from mines to raw material handling & product handling area to prevent the generation of dust to be air borne.

27. The mine shall provide dry fog as well as dust extraction system in the potential dust generating points of crusher and screening plants to control fugitive emission.

28. Regular collection of spilled over raw material from haul roads shall be practiced to prevent the generation of dust due to movement of dumpers /truck.

29. **A green belt of adequate width and density preferably with local species along the periphery of the mine shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area shall be under permanent green cover. The proponent shall ensure the maintenance of green belt throughout the year and for all time to come. It is advised that they may engage professionals in this field for creation and maintenance of the green belt. An action plan for this purpose shall be prepared and shall be submitted accordingly.**

30. Noise is best abated at source by selecting right machinery and equipment by proper mounting of equipment by providing noise insulating enclosures or padding as far as possible.

31. Noise barriers shall be constructed between sources and affected areas (thick belt of trees around mine boundaries, waste dumps, hills and mountainous land forms can act as such barrier).

32. 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 M.L area shall not exceed 75 dB(A) during day time (6 AM to 10 AM) and 70 dB(A) during night time (10. PM to 6 AM).

33. The waste dumps shall be located away from the natural nallas, rivers in the area and on an impervious & non-mineralised area to minimize the water pollution.

34. The OB/waste dumps shall be properly dressed benched stopped at low angle with terracing and bamboo barricades in the slopes making retaining walls stone barriers at the toe of the dumps gully plugging etc to prevent the solid erosion during monsoon, besides establishing vegetation on dump top as well as its slope surface. In difficult cases, hydro-seedling technique or use of geo-tiles mat embedded with seeds shall be adopted.

35. The completed out slope of the waste dumps should not exceed 37degrees from horizontal to avoid excessive erosion and easy vegetation.

36. Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

37. 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.

38. All efforts shall be taken to protect the existing water bodies in the surrounding. A definite plan in this regard shall be submitted to the Board within 06 month from the date of issue of this order.

39. This consent to establish is granted subject to grant of Explosive License from competent Authority. The valid Explosive License must be submitted to this Board while applying for consent to operate to this Board.

40. The mine shall obtain forest clearance under Forest (Conservation) Act. 1980 if there is involvement of forest land in the mining lease area.

41 The Board may impose further conditions or modify the conditions stipulated in this order during installation and/or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented.

42 The above conditions will be enforced, inter-allia, under the provisions of the water (Prevention & Control of pollution) Act, 1974 and Air(Prevention & Control of Prevention)Act 1981 and Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rule.

MEMBER SECRETARY

To,

The General Manager (OMQ)
Katamati Iron Mine of Tata Steel Ltd.,
At/PO: Noamundi, Dist: Singhbhum(W)
Jharkhand- 833217

Memo No _____/Dt.

Copy forwarded to:

1. The Secretary Steels & Mines, Govt. of Orissa, Bhubaneswar
2. The Collector, Keonjhar
3. The Director, Factories & Boiler, Bhubaneswar
4. Regional Officer, S.P.C.Board, Keonjhar
5. DFO, Keonjhar
6. Copy to Guard file/Consent section

SR. ENV. ENGINEER (N)

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ORISSA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955

REVISED CONSENT ORDER

No. 1202 /IND-I-CON-185 Dt. 24.01.2011

CONSENT ORDER NO. 114

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 plant under section 21 of Air (PCP) Act, 1981.**

Ref : Your letter No. MD/ENV/317/110/2010, Dtd. 23/10/2010

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 Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry Katamati Iron Ore Mines (Tata Steel Ltd)

Name of the Occupier & Designation Rajesh Patel, Head (Planning) OMQ

Address At/Po – Joda, Dist – Keonjhar

This consent order is valid for the period up to 31.03.2011

This consent order is valid for the product quantity specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein. ***This order supersede earlier consent order issued vide letter No. 6570, dtd. 24/3/2007 & No. 6572, dtd. 24/3/2007.***

A. Details of Products Manufactured

Sl.No.	Product	Quantity
1.	Iron Ore	8.0 MTPA

P.T.O.

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

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Pre-scribed Standard			
				pH	TSS mg/l	Oil & Grease mg/l	BOD mg/l
01.	Domestic effluent	Septic tank & soak pit	--	5.5 to 9.0	200	--	100
2.	Mine drainage water / surface runoff / other wastewater	Nearby land/ inland surface water	--	5.5 to 9.0	50 (Non-rainy day) 100 (Rainy day)	10	--

C. 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	SO_2	NO_x		

D. 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 / Overburden	As per approved mining plan	--	--	--	As per approved mining plan

E. 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 alteration or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & 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 rate 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.

8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of the 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 tapped 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 site where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating thereon 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 pollution control equipment shall be treated in the manner and to con of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).

28 The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.

29 There shall not be any fugitive or episodic discharge from the premises.

30 In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in consultation/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.

31 The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

32 Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of this Board by fax / speed post within 24 hours of its occurence.

33 The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

34 The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.

35 All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :

i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
ii) Controlled incineration, wherever possible in case of combustible organic material.
iii) Composting, in case of bio degradable material.

36 Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of the Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorisation shall be obtained for handling and disposal of hazardous wastes.

37 If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

38 The applicant, his/her/its/ legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

39 The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

40 Notwithstanding anything contained in this conditional letter of consent, the Board does reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

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

42 In case the consent fee is revised upwards during the period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board, the consent order will be revoked without prior notice.

43 The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional 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 shall analyse the emissions every month for the parameters indicated in TABLE :B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.

2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.

4 The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Orissa, Bhubaneswar regularly

a Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
b Progress on planting of trees quarterly.

5 The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

6 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.

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

iii) 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.

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

v) 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 approved 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 shoveling 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 saline. 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 house keeping 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 Office and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

F. **SPECIAL CONDITIONS :**

1) Grant of consent to operate order is subject to grant of forest clearance under the Forest (Conservation) Act, 1980 from the competent authority.

2) Grant of consent to operate is subject to clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.

3) A copy of the annual return (annual return submitted to IBM, Govt. of India/ Directorate of Mines, Govt. of Orissa) shall be submitted every year.

4) The environmental statement report shall be submitted to the Board in proper format every year.

5) Drills shall either be operated with dust extractors or equipped with water injection system.

6) Controlled blasting shall be practiced. No blasting shall be carried out after the sunset.

7) The top soil shall be stored at earmarked site (s) only and stabilized or shall be used for land reclamation and plantation.

8) The over burden generated during the course of mining shall be stacked at earmarked dump site (s) and stabilized or used for reclamation of excavated land followed by plantation.

9) The project proponent shall ensure that no natural water course and / or water resources are obstructed due to any mining operations.

10) Catch dams with siltation ponds shall be constructed at appropriate places of the mine lease area to prevent run off of water and flow of sediment directly into nearby water bodies. The water so collected shall be utilized for watering the mine area, roads, green belt development etc.

11) Retention wall shall be constructed at the toe of topsoil dump and OB dump. Garland drain shall be constructed around topsoil dumps, over burden dumps and mineral dumps terminating at settling pit to prevent run off of water and flow of sediments directly into nearby water bodies. Garland drain and sedimentation pit shall be desilted at regular intervals.

12) Regular water sprinkling shall be carried out in critical areas prone to air pollution such as around crushing and screening plant. Water sprinkling shall be carried out on haul roads at desired intervals. Adequate sprinkling arrangement shall be made for control of fugitive dust emission.

13) Mineral handling plant (crusher, screening plant and beneficiation plant) 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 shall also have efficient dust suppression arrangements. These shall be properly maintained and operated. The tailings generated from the beneficiation plant shall be disposed of in a pond of adequate size.

14) The mine shall take necessary action for compliance of the following air and water quality standards. Emission and wastewater quality monitoring shall be

done by the lessee twice in a week and report shall be submitted once in six months to the Board.

Industry	Parameters	Standard
Iron ore mining & ore processing	**A. Emission standards for stack for De-dusting unit**	
	Particulate matter	100mg/Nm^3
	Stack height **	15.0m
	** Stack height for De-dusting unit shall be calculated as H=74 Q $^{0.27}$, where H and Q are stack height in metre and particulate matter (PM) emission in tonne / hr respectively, i.e.,	
	Q (kg/hr)	H (metre)
	Up to 2.71 2.72-7.86 7.87-17.96 17.97-35.29	15 20 25 30
	Note : - Stack attached to De-dusting unit shall have minimum height of 15.0 meters and would be atleast 2.50 meters above the top-most point of the nearby building / shed or plant in the mine	
	B. Fugitive Emission Standards	
	Particulate Matter	1200 µg/m^3
	Note : Fugitive emission shall be monitored in the predominant downwind direction at a distance 25.0 ± 2.0 metres from the source of fugitive emission as per following :	
	Area	**Monitoring Location**
	Mine face / Benches	Drilling, excavation and loading applicable for operating benches above water table
	Haul Roads/ Service Roads	Haul roads to ore processing plant, waste dumps and loading areas and service road.
	Crushing plant	Run-off mine unloading at hopper, crushing areas, screens and transfer points.
	Screening plant	Screens, conveying and transportation of ore discharge points.
	Ore storage and loading	Intermediate stock bin / pile areas, ore stock bin / pile areas, wagon / truck loading areas.
	Water dump	Active waste / reject dumps
	C. Effluent Standards	
	pH	5.5-9.0
	Suspended solids (non-rainy day)	50 mg/l
	Suspended solids (rainy day)	100 mg/l
	Oil & Grease	10 mg/l
	Note : (i) All efforts shall be made to reuse and re-circulate the treated effluent. (ii) The aforesaid effluent standards shall be complied with for sewage, service water, beneficiation of ore wash water and surface run -off put together"	

15) Adequate **Ambient Air Quality Monitoring Stations** shall be established and location of the 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.

16) **Monitoring of Ambient Air Quality** of the mine shall be done twice in a week (24 hourly) **at a particular site** and data shall be submitted to the State Pollution Control Board, once in six months.

17) It shall be ensured that the **Ambient Air Quality Parameters** conform to the norms prescribed for Industrial Area (**prescribed in the consent order**).

18) Regular monitoring of water quality of upstream and downstream of the nearby water bodies if any shall be carried out and record of monitored data shall be maintained and submitted to the State Pollution Control Board once in every year.

19) Appropriate mitigative measures shall be taken to prevent pollution of the nearby water bodies.

20) Sewage treatment plant shall be installed for the colony if any. Other domestic wastewater shall be discharged to soak pit through septic tank constructed as per BIS specification.

21) ETP shall also be provided for the wastewater generated during the mining operation. Oil and grease trap with sedimentation pit shall be provided for treatment of workshop effluent.

22) Measures shall be taken for control of noise levels below 85 dBA in the work environment.

23) Mine shall abide-by the Environment (Protection) Act, 1986 and rules framed thereunder.

24) Plantation shall be raised around the mining lease, backfilled and reclaimed area, around crusher, screen, beneficiation plant, roads etc. by planting the native species in consultation with the local DFO/ Agriculture Department.

25) The mine shall submit a declaration by 30th April every year that all pollution control systems are in good condition, operated and emission / air quality / ambient air quality and wastewater quality conform to the prescribed standards.

26) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and other action as deemed fit.

The occupier must comply with the conditions stipulated in section A,B,C,D,E and F to keep this consent order valid.

To,

The Manager,
Katamati Iron Mine, TISCO, Mines Division,
Noamundi - 833 217,
Singhbhum, West- Jharkhand

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ORISSA

Memo No. _____ /Dt

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, Keonjhar
ii) District Collector Keonjhar
iii) D.F.O Keonjhar
iv) Deputy Director of Mines Joda
(For Mines and Minerals Processing Unit only)
v) Cess Section (Head Office)
vi) Consent Register

ENV. SCIENTIST
STATE POLLUTION CONTROL BOARD, ORISSA

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENT 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 practible	------	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process 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	Shall not exceed 5°C above the receiving water temperature	------	------	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	----	------	1.0
9.	Ammonical nitrogen (as N) mg/l 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°C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	----	------	250
14.	Arsenic (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/l max.	2.0	1.0	------	2.0
18.	Hexavalent Chromium (as Cr + 6) mg/l max.	0.1	2.0	-------	1.0
19.	Total Chromium (as Cr) mg/l max.	2.0	2.0	-------	2.0
20.	Copper (as Cu) mg/l max.	3.0	3.0	-------	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	-------	15
22.	Selenium (as Sc) mg/l max.	0.05	0.05	-------	0.05
23.	Nickel (as Nil) 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/l 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. Alpha emitter micro curie/ml. b. Beta emitter micro curie/ml.	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 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
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/l
34	Nitrate Nitrogen	10 mg/l	-------	-------	20 mg/l

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), µg/m³	Annual *	50	20	- Improved west and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), µg/m³	Annual *	40	30	- Modified Jacob & Hochheiser (Na-Arsenate)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM_{10}µg/m³	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ µg/m³	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O_3) µg/m³	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	- Chemical Method
6.	Lead (Pb) µg/m³	Annual *	0.50	0.50	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 Hours **	1.0	1.0	
7.	Carbon Monoxide (CO) mg/m³	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR) Spectroscopy
		1 Hours **	04	04	
8.	Ammonia (NH_3) µg/m³	Annual*	100	100	-Chemiluminescence - Indophenol Blue Method
		24 Hours**	400	400	
9.	Benzene (C_6H_6) µg/m³	Annual *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)- Particulate phase only, ng/m³	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m³	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m³	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

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

** 24 hourly or 08 hourly or 01 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.

Environment Expenditure Katamati Iron Mine of Tata Steel Limited For the period April 2024 to March 2025			
		Expenses in Lakh	
Sl No.	Activities	Capital	Recurring
1	Deployment of Mobile water tankers	0	89.72
2	Installation of DFDS in Crushing & Screening Plants	15.00	5.12
3	Installation of fixed water sprinklers	5.00	3.53
5	Maintenance of CAAQMS	0	28.80
6	Construction of RWH ponds in villages	0	15.00
7	Greenbelt development	0	38.78
8	Water recycling, Cleaning of garland drain & settling pits, Toe wall extension, HEMM maintenance and Housekeeping	0	176.52
9	Installation of Meteorological station	2.00	0
10	Installation of online noise monitoring system	8.00	0
11	Environment Monitoring	0	8.85
12	Dump stabilization	0	36.12
13	Back filling	0	3017.71
14	Scientific study	0	36
	Sub Total	**30.00**	**3456.15**
	Grand Total	**3486.15**	

Sent through courier

The Sarpanch
Ansaikala Gram Panchyat
AT : Ansaikala
Keonjhar, Odisha

MD/ENV/ 415/139/2010
Date: 01/12/2010

Dear Sir

Sub : Submission of copy of EC for expansion project of Katamati Iron Mine

Katamati Iron Mine has been accorded Environmental Clearance for enhancement of iron ore production from 2.0 Million TPA to 8 Million TPA, vide MoEF letter No. J-11015/63/2008-IA.II(M), dated : 26th November, 2010. A copy of this letter is attached herewith for your kind perusal and necessary action.

Thanking you.

Yours faithfully,

Rajesh Patel
Head (planning), OMQ

Encl : As above

Sent through courier

The Sarpanch
Deojhar Gram Panchyat
AT/PO : Deojhar
Keonjhar, Odisha

MD/ENV/ 414/110/2010
Date: 01/12/2010

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Thanking you,

Yours faithfully,

Rajesh Patel
Head (planning), OMQ

Encl : As above

The President
Zila Parisad
Keonjhar, Odisha

MD/ENV/ 413 /110/2010
Date: 01/12/2010

Dear Sir

Sub : Submission of copy of EC for expansion project of Katamati Iron Mine

Katamati Iron Mine has been accorded Environmental Clearance for enhancement of Iron ore production from 2.0 Million TPA to 8 Million TPA, vide MoEF letter No. J-11015/63/2008-IA.II(M), dated : 26th November, 2010. A copy of this letter is attached herewith for your kind perusal and necessary action.

Thanking you,

Yours faithfully,

Rajesh Patel
Head (planning), OMQ

Encl : As above

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BY REGISTERED POST WITH A.D.

STATE POLLUTION CONTROL BOARD, ORISSA

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012

6845

CONSENT ORDER

No 114 APC/

No SPCB/BBSR-I-IND (CON) – 185

Dated 30-3-06

Sub : Consent for Existing / New operation of the plan under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981.

Ref : Your Application No. ..... – ..... *dtd.* 23.11.2005

CONSENT is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act,1983 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made thereunder to M/s Tata Steel Mines, Katamati Iron Ore Mines represented through its occupier Mr/~~Ms/M/s~~ M.C. Thomas Designation Agent Address Keonjhar (hereinafter referred as "The Applicant") authorising him/her/them to operate his/her/their industrial plant in the Air Pollution Control area as notified by the Government and to continue to make existing discharge of emissions / make new discharge of emissions from the stacks / chimneys.

This Consent is subject to the provision of the Act and the rules and orders made thereunder and is further subject to the product quantity, specified chimney/stack, discharge and quality of emissions as specified below. This Consent is also subject to special condition, ambient air quality (Annexure-I) and General Conditions (Annexure-II)

The CONSENT is valid for the period ~~from~~ up to 31.03.2006

(A) DETAILS OF PRODUCTS MANUFACTURED

Sl.No.	Description	Quantity
1.	Iron Ore.	2.0 Million Tonne/ Annum.
2.	–	
3.	–	
4.	–	
5.	–	

Contd.Pg/2

B. **EMISSION IS PERMITTED THROUGH THE FOLLOWING CHIMNEYS / STACKS**

Chimney/Stack No.	Description of Chimney / Stack	Point of Discharge (Height)

C. **THE DAILY DISCHARGE OF EMISSIONS THROUGH THE FOLLOWING CHIMNEYS/ STACKS SHALL NOT EXCEED THE FIGURES MENTIONED BELOW :**

Sl. No.	Chimney/Stack No.	Description of Chimney/Stack	Maximum Discharge M^3/Hour

D. **THE EMISSION SHALL NOT CONTAIN CONSTITUENTS IN EXCESS OF THE TOLERANCE LIMITS AS LAID DOWN HERE UNDER.**

Sl No.	Parameters	Unit	Limit Prescribed Chimney / Stack Number					
(1)	(2)	(3)	1	2	3	4	5	6
1	Co_2							
2	CO							
3	Nox							
4	Particulate matter							
5	Others							

Contd.Pg/3

E. SPECIAL CONDITIONS

1. Adequate dust suppression measures like water spraying arrangement shall be provided at transportation road, stack yard of products & other dust generating points to suppress fugitive dust emission.
2. Drilling machine shall be wet operated with dust excavators, and controlled blasting shall be practiced.
3. Wetting of surface of active OB dumps shall be done to prevent dust by wind action.
4. Ambient air quality shall be maintained to conform to the NAAQMs for industrial area prescribed under EP Act, 1986.
5. The OB material before reclamation shall be dumped in such a manner there shall be least damage to the natural forest cover.
6. In no case slope of the OB dump shall exceed the angle of repose.
7. Broad thick leaf indigenous trees shall be planted along the side of haulage road, over & around OB dumps, over reclaimed pits, in residential colony and vacant space where ever available @ 10000 trees per Acre.
8. Iron Ore crusher within the premises shall not be established without the prior permission from the Board.
9. The mine shall abide by EP Act, 1986 & rules framed there under.

To

The Chief Planning (CMQ),
M/s.Tata Steel ~~kkx~~ Mines,
Katamati Iron Ore Mines,
Mine Divn.,Nuamundi - 833 217,
Dist: Singhbhun-West, Jharkhand.

22/03/02

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ORISSA

Contd.Pg/4

Memo No. ..... / Dt. ..... /

i) Secretary, Department of Forest & Environment, Government of Orissa.

ii) Secretary, Industries Department, Government of Orissa.

iii) Regional Officer, State Pollution Control Board Keonjhar

iv) Cess Section (Head Office)

v) Guard File (Head Office)

vi) EIA cell / Awareness cell

SR. ENV. ENGINEER / ENV. ENGINEER
STATE POLLUTION CONTROL BOARD, ORISSA

...TTERED POST WITH A.D.

ANNEXURE - I

AMBIENT AIR QUALITY STANDARDS

Pollutant	Time Weighted Average	Concentration in Ambient Air			Method of Measurement
		Industrial Area	Residential Rural & Other	Sensitive Area	
1	2	3	4	5	6
Sulphor Dioxide (SO2)	Annual Av.	80 µg/m³	60 µg/m³	15/ µg/m³	1. Improve West and Gaeke method
	24 Hours	120 µg/m³	80 µg/m³	30 µg/m³	2. Ultraviolet flourescence
Oxides of Nitrogen as NO_2	Annual Av.	80 µg/m³	60 µg/m³	15 µg/m³	1. Jacob & Hcchheiser Modified) (Na-Argenite Method)
	24 Hours	120 µg/m³	80 µg/m³	30 µg/m³	2. Gas Phase Chemiluminescene
Suspended Particulate Matter (SPM)	Annual Av.	360 µg/m³	140 µg/	70 µg/m³	
	24 Hours	500 µg/m³	200 µg/m³	100 µg/m³	Avg. flow rate not less than 1.1 m³/minute
Respirable Particulate Matter (Size less than 10 um) (RPM)	Annual Avg.	120 µg/m³	60 µg/m³	50 µg/m³	
	24 Hours	150 µg/m³	100 µg/m³	75 µg/m³	
Lead (Pb)	Annual Avg.	1.0 µg/m³	0.75 µg/m³	0.50 µg/m³	ASS Method after
	24 Hours	1.5 µg/m³	1.0 µg/m³	0.75 µg/m³	sampling using EPM 2000 of equivalent filter paper.
Carbon Monoxide (Co)	8 Hours	5.0 µg/m³	2.0 µg/m³	1.0 µg/m³	Non dispersive
	1 Hour	10.0 µg/m³	4.0 µg/m³	2.0 µg/m³	Infrared spectroscopy

* Annual Aritmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.

** 24 hourly / 8 hourly values should be met 98% of the time in a year. However, 2% of the time, it may exceed but not on two consecutive days.

ANNEXURE - II

GENERAL CONDITIONS

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

2. The applicant shall analyse the emissions every month for the parameters indicated in the No.4(a) and shall furnish in triplicate the report thereof to the Board by the 10th of the succeeding month.

3. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review / variation / revocation of the Consent Order under Section 21 of the Act to make such deviations as deemed fit for the purpose of the Act.

4. 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.

5. The applicant shall provide and maintain at his own cost one/two/three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monixide and monitor the same once in a day/week/fortnight/ month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

6. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.

7. The applicant shall forward the following information to the Member Secretary State Pollution Control Board, Orissa, Bhubaneswar regularly before 10th of every month.

   (a) Progress on installation of air pollution control equipments.

   (b) Progress on the procurement and installation of equipments for monitoring ambient air quality, stacks/chimneys and meteorological data.

   (c) Monthly extract of daily discharge of emission through each chimney/stack.

Contd.Pg/2

(d) Report of analysis of stack monitoring, ambient air quality monitoring, meteorological data as required under conditions as serial 4 of Consent Order.

(e) Progress on planting of trees and plants as referred to under General Conditions No 4.

8. Any upset condition in any of the plant / plants of the factory which is likely to result in increased emissions and/or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board telegraphically.

9. The applicant shall furnish to the Visiting Officer of the Board any information regarding the stack monitoring system/or operation of the plant or any other particulars as may be pertinent in preventing and controlling of pollution of Air.

10. The applicant shall submit process flow sheet and particulars of proposed control equipments monitoring equipments and time schedule for completing the installation of the same as to reach the Board within 30 days from the date of receipt of this consent.

11. The conditions imposed as above shall continue in force until revoked under Section 21 of the Act.

12. The applicant shall make an application for grant of fresh consent atleast 90 days before the date of expiary of this consent orders.

13. The necessary fee, as prescribed for obtaining consent, shall be paid for by the applicant along with the application for consent.

14. The industry shall immediately submit the revised application for consent to this Board in the event of any change in the quantity/quality of raw material, manufacturing process, rate of emissions, air pollution control equipments etc.

15. The applicant shall :

(a) **Not later than 30 days** from the date of issue of this consent order certify in writing to the Member Secretary that the applicant has installed or provided for an alternate electric power source sufficient to operate all facilities installed by the applicant to maintain compliance with the terms and conditions of the consent.

(b) **Not later than 30 days** from the date of issue of this consent certify in writing to the Member Secretary that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities installed by the applicant to maintain compliance with production and/or all emissions in order to maintain compliances with the terms and conditions of this consent.

Contd Pg/3

16. 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.

17. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as ammended).

18. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as not to cause fugitive emission, dust problems through leaching etc., of any kind.

19. The applicant shall plant a minimum of three varieties of trees at the density of not less than 1000 trees per acre. This plantation is situated over and above the bulk plantation of trees in that area and maintain them.

20. The applicant shall provide all facilities for collection of sample to the Board staff.

21. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.

22. There shall not be any fugitive or episodal discharge from the premises.

23. In case of such episodal discharge / emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in condition.

24. The applicant shall at all times maintain in good working order and operate as efficiently as possible all pollution control facilities to achieve the terms and conditions of the consent.

25. The issue of this consent does not convey any property right in either real or personal property or any exclusive previleges nor does it authorise any injury to private properly or any invasion of personal rights, or any infringment of Central, State laws or regulations.

26. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

Contd Pg/4

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

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

29. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

30. The applicant, his heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

31. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

32. Any change in occupier shall be informed to the Board forthwith.

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BY REGISTERED POST WITH A.D.

STATE POLLUTION CONTROL BOARD, ORISSA

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012

No 114 WPC/

CONSENT ORDER

No 6847 SPCB/BBSR-I-IND (CON) – 185

Dated 30-3-06

Sub : Consent for discharge of Sewage and / or trade effluent under section 25/26 of water (prevention & control of pollution) Act, 1974

Ref : Your Application No. – dtd 23.11.2005

CONSENT is hereby granted under Section 25/26 of the Water (PCP) Act,1974 (Central Act 6 of 1974) hereinafter referred to as the Act and the rules and orders made thereunder to M/s Tata Steel Mines, Katamati Iron Ore Mines represented through its occupier Mr/Ms Mr. C. Thomas Designation Agent Address Keonjhar (hereinafter referred as "*the applicant*") authorising him/her to continue to or bring into use any new or altered outlet or begin to make any new discharge of sewage and/or trade effluent.

This Consent is subject to the provision of the Act and the rules and orders thereunder and further subject to the product capacity, specified outlet/outlets, discharge quantity and quality and special conditions mentioned therein. This Consent is also subject to the general conditions (Annexure-I) and general standard for discharge of pollutants (Effluents) (Annexure-II)

The CONSENT is valid for the period from up to 31.03.2006

(A) DETAILS OF PRODUCTS MANUFACTURED

Sl No.	Description	Quantity
1.	Iron Ore.	2.0 Million Tonne/Annum.
2.	–	
3.	–	
4.	–	
5.	–	

Contd Pg/2

B. **DISCHARGE OF EFFLUENT PERMITTED FROM THE FOLLOWING OUTLETS**

Outlet No.	Description of the Outlet	Point of Discharge
1.		
2.		
3.		
4.		
5.		

C. **QUANTITY OF EFFLUENT DISCHARGED NOT TO EXCEED THE FIGURES MENTIONED BELOW.**

Outlet No.	Maximum hourly discharge (lit/hr)	Maximum Daily Discharge (lit/day)
1.		
2.		
3.		
4.		
5.		

D. **EFFLUENT DISCHARGED SHALL NOT CONTAIN CONSTITUENT IN EXCESS OF THE FOLLOWING AS LAID DOWN HEREUNDER. (Parameters not mentioned here shall be referred to the General Standards Annexed)**

Sl. No.	Parameters	Unit	Limit Prescribed				
			Outlet 1	Outlet 2	Outlet 3	Outlet 4	Outlet 5
1.							
2.							
3.							
4.							
5.							
6.							

Contd Pg/3

:: 3 ::

D. SPECIAL CONDITIONS

1. The topsoil shall be stacked properly with proper slope at earmarked site with adequate measures and shall be used for reclamation of mined out area.
2. The mine water (if any) and surface run off from the OB dumps area shall be treated in a settling tank and conform to the prescribed standard before discharge to nearby water body.
3. Catch drains & siltation ponds of appropriate size shall be constructed to arrest silt and sediment flow from soil, OB & mineral dumps. The drains shall be regularly desilted & maintained properly.
4. The sludge excavated from the tailing pond shall be properly disposed off in order to avoid surface water contamination.
5. Garland drain / ~~xxrx~~ check dam shall be constructed around OB dump and run off collected ~~xx~~ shall be treated in settling to conform to the prescribed standard before discharge to inland surface water.
6. Effluent generated from workshop (if any) shall be treated in O&G trap cum sedimentation tank before discharge to inland surface water.
7. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.
8. Pitch / terracing / matting of toe of OB dump shall be done to chek erosion of dumps.
9. The mined out areas shall be technically & biologically reclaimed.

To

The Chief Planning (CMQ)
M/s. Tata Steel Mines,
Katamati Iron Ore Mines,
Mines Division, Nuamundi - 833 217
Dist: Singhbhum-West, Jharkhand.

22/05/06

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ORISSA

Contd Pg/4

Contd Pg/2

Memo No ..... / Dt. .....

i) Secretary, Department of Forest & Environment, Government of Orissa.

ii) Secretary, Industries Department, Government of Orissa

iii) Regional Officer, State Pollution Control Board Keonjhar

iv) Cess Section (Head Office)

v) Guard File (Head Office)

vi) EIA cell / Awareness cell

SR. ENV. ENGINEER
STATE POLLUTION CONTROL BOARD, ORISSA

ANNEXURE - I

GENERAL CONDITIONS

1. 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 utilisation for any purposes whatsover.

2. 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

   (d)

   (e)

3. The applicant shall install mechanical composite sampling equipment and continuous flow measuring/recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

4. The consent 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 / variation / revocation of the consent order under Section 27 of the Act and to make such variations as deemed fit for the purpose of the Act.

5. 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.

6. The applicant shall comply with and carry out directives / orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. The applicant shall be liable for such legal action as per provisions of the Law/Act 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.

Contd Pg/2

7. 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) Status of the installation of mechanical composite sampling equipment and continuous flow recording and measuring devices.

   (c) Monthly statement of daily discharge of domestic and/or trade effluent.

8. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge and/or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board telegraphically.

9. 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 and any other particulars as may be pertient to preventing and controlling pollution of water.

10. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power undeer Section 27(2) of the Water (Prevention and Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

11. The conditions imposed as above shall continue to be in force until revoked under Section 27(2) of the Act.

12. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the Industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

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

14. The industry would immediately submit revised application for consent 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 etc.

Contd Pg/3

15. The applicant shall display suitable caution board at the place 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.

16. The applicant shall either :

(a) **Not later than 30 days** from the date of issue of this consent order certify in writing to the Member Secretary that the applicant has installed or provided for an alternate electric power source sufficient to operate all facilities installed by the applicant to maintain compliance within the terms and conditions of the consent.

(b) **Not later than 30 days** from the date of this consent certify in writing to the Member Secretary that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities installed by the applicant to maintain compliance with the terms and conditions of this consent, the applicant shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the terms and conditions of this consent.

17. The applicant shall not allow the discharge from other premises to mix with the discharge from his premises.

18. 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.

19. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :

i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.

ii) Controlled incineration, wherever possible in case of combustible organic material.

iii) Composting, in case of bio-degradable material.

20. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing any burying shall be carried out in the presence of Board's authorised persons only. Letter of authorisation shall be obtained for handling and disposal of hazardous wastes.

Contd Pg/4

21. 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.

22. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples.

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

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

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

26. **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 informations in writing within 5days of such notification.

i) Causes of non-compliance.

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

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

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

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

Contd Pg/3

(b) The applicant shall take all reasonable steps to minimise 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 penalities 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.

27. The diversion or by-pass of any discharge from facilities utilised by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except;

i) Where it becomes unavoidable to prevent loss of life or severe property damage, or

ii) Where excessive storm drainage or run-off would damage any facilities necessary for compliance with the terms and conditions of this consent, the applicant shall immediately notify the Board in writing of each such diversion or by-pass in accordance with the procedure specified as under Item No.26.

28. 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.

29. 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 tricking of acids or alkalies arbitrarily and utilising poles for stirring etc. should not be resorted to.

30. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilised 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.

31. The utilisation 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.

Contd Pg/6

Contd Pg/2

32. 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.

33. 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 satisfacotry treatment and disposal measures.

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

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

    i) Rotation of crops

    ii) Change of point of application of effluent on land

    iii) A portion of land kept fallow

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

36. 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.

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

38. The fact of commissioning of the industry shall be intimated to this office in time.

39. Any change in the occupier shall be informed to the Board forthwith.

Contd.Pg/7

ANNEXURE - II

General Standards for discharge of environment pollutants Part - A : Effluents

Sl. No.	Parameters	Standards			
		Inland Surface	Public Sewers	Land for Irrigation	Marine Costal Areas
1	2	3			
		(a)	(b)	(c)	(d)
1.	Colour & Odour	Colourless/Odourless as far as practible	....	See 6 of Annex-I	See 6 of Annex-I
2.	Suspened Solids(mg/1)	100	600	200	a. For process waste water - 100 b. For cooling water effluent 10% above total suspended matter of influent
3.	Particular size of SS	Shall pass 850	....	.....	a. Footable solids max. 3 mm b. Settleable solids, max 850 microns.
4.	.....	.....	.....	.....	.....
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	Shall not exceed 5°C above the receiving water temperature	.....	.....	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/1 max.	10	20	10	20
8.	Total residual chlorine	1.0	.....	.....	1.0
9.	Ammonical nitrogen (as N) mg/1 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 Demand (5days at 20°C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	.....	.....	250

Contd Pg/8

Contd Pg/2

1	2	3			
		(a)	(b)	(c)	(d)
14.	Arsenic (as As) mg/1max.	0.2	0.2	0.2	0.2
15.	Mercury(as Hg)mg/1max.	0.01	0.01	.....	0.01
16.	Lead (as Pb) mg/1max.	0.1	1.0	.....	2.0
17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	.....	2.0
18.	Hexavelent Chromium (as Cr + 6) mg/1 max.	0.1	2.0	.....	1.0
19.	Total Chromium (as Cr) mg/1 max.	2.0	2.0	.....	2.0
20.	Copper (as Cu) mg/1max.	3.0	3.0	.....	3.0
21.	Zinc (as Zn) mg/1max.	5.0	15	.....	15
22.	Selenium(as Sc)mg/1max.	0.05	0.05	.....	0.05
23.	Nickel (as Nil) mg/1max.	3.0	3.0	.....	5.0
24.	Cyanide (as CN) mg/1 max.	0.2	2.0	0.2	0.02
25.	Flouride (as F) mg/1max.	2.0	15	.....	15
26.	Dissolved Phosphates (as P) mg/1 max.	5.0	.....	.....	.....
27.	Sulphide (as S) mg/1 max.	2.0	.....	.....	5.0
28.	Phenolic compounds (as C_6H_5OH) mg/1 max.	1.0	5.0	.....	5.0
29.	Radioactive Materials				
	a. Alpha emitter micro curie/ml	10^{-7}	10^{-7}	10^{-8}	10^{-7}
	b. Beta emitter micro curie/ml	10^{-6}	10^{-6}	10^{-7}	10^{-6}
30.	Bio-assay test	90% Survival of fish after 96 hours in 100% affluent	90% Survival of fish after 96 hours in 100% effluent	90% Survival of fish after 96 hours in 100% effluent	90% Survival of fist after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/1	2 mg/1	.....	2 mg/1
32.	Iron (as Fe)	3 mg/1	3 mg/1	.....	3 mg/1
33.	Vanadium (as V)	0.2 mg/1	0.2 mg/1	.....	0.2 mg/1
34.	Nitrate Nitrogen	10 mg/1	.....	.....	20 mg/1

These general standards are for parameters other than those mentioned in the main consent order.

(This Document Contains ..... Pages)

BY REGISTERED POST WITH A.D.

STATE POLLUTION CONTROL BOARD, ORISSA

Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII, Bhubaneswar - 751 012

No 114 WPC/

CONSENT ORDER

No. 6847 SPCB/BBSR-I-IND (CON) – 185

Dated 30-3-06

Sub : Consent for discharge of Sewage and / or trade effluent under section 25/26 of water (prevention & control of pollution) Act, 1974

Ref. : Your Application No. – dtd 23.11.2005

CONSENT is hereby granted under Section 25/26 of the Water (PCP) Act,1974 (Central Act 6 of 1974) hereinafter referred to as the Act and the rules and orders made thereunder to M/s Tata Steel Mines, Katamati Iron Ore Mines represented through its occupier Mr/Ms M. C. Thomas Designation Agent Address Keonjhar (hereinafter referred as "*the applicant*") authorising him/her to continue to or bring into use any new or altered outlet or begin to make any new discharge of sewage and/or trade effluent.

This Consent is subject to the provision of the Act and the rules and orders thereunder and further subject to the product capacity, specified outlet/outlets, discharge quantity and quality and special conditions mentioned therein. This Consent is also subject to the general conditions (Annexure-I) and general standard for discharge of pollutants (Effluents) (Annexure-II)

The CONSENT is valid for the period from up to 31.03.2006

(A) DETAILS OF PRODUCTS MANUFACTURED

Sl.No.	Description	Quantity
1.	Iron Ore.	2.0 Million Tonne/Annum.
2.	–	
3.	–	
4.	–	
5.	–	

Contd.Pg/2

B. DISCHARGE OF EFFLUENT PERMITTED FROM THE FOLLOWING OUTLETS

Outlet No.	Description of the Outlet	Point of Discharge
1.		
2.		
3.		
4.		
5.		

C. QUANTITY OF EFFLUENT DISCHARGED NOT TO EXCEED THE FIGURES MENTIONED BELOW.

Outlet No.	Maximum hourly discharge (lit/hr.)	Maximum Daily Discharge (lit/day)
1.		
2.		
3.		
4.		
5.		

D. EFFLUENT DISCHARGED SHALL NOT CONTAIN CONSTITUENT IN EXCESS OF THE FOLLOWING AS LAID DOWN HEREUNDER. (Parameters not mentioned here shall be referred to the General Standards Annexed)

Sl. No.	Parameters	Unit	Limit Prescribed				
			Outlet 1	Outlet 2	Outlet 3	Outlet 4	Outlet 5
1.							
2.							
3.							
4.							
5.							
6.							

Contd Pg/3

D. SPECIAL CONDITIONS

1. The topsoil shall be stacked properly with proper slope at earmarked site with adequate measures and shall be used for reclamation of mined out area.
2. The mine water (if any) and surface run off from the OB dumps area shall be treated in a settling tank and conform to the prescribed standard before discharge to nearby water body.
3. Catch drains & siltation ponds of appropriate size shall be constructed to arrest silt and sediment flow from soil, OB & mineral dumps. The drains shall be regularly desilted & maintained properly.
4. The sludge excavated from the tailing pond shall be properly disposed off in order to avoid surface water contamination.
5. Garland drain / ~~xxxx~~ check dam shall be constructed around OB dump and run off collected ~~xx~~ shall be treated in settling to conform to the prescribed standard before discharge to inland surface water.
6. Effluent generated from workshop (if any) shall be treated in O&G trap cum sedimentation tank before discharge to inland surface water.
7. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.
8. Pitch / terracing / matting of toe of OB dump shall be done to chek erosion of dumps.
9. The mined out areas shall be technically & biologically reclaimed.

To

The Chief Planning (OMQ)
M/s. Tata Steel Mines,
Katamati Iron Ore Mines,
Mines Division, Nuamundi - 833 217
Dist: Singhbhum-West, Jharkhand.

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ORISSA

Contd Pg/4

Memo No. ..... / Dt. .....

i) Secretary, Department of Forest & Environment, Government of Orissa.

ii) Secretary, Industries Department, Government of Orissa

iii) Regional Officer, State Pollution Control Board Keonjhar

iv) Cess Section (Head Office)

v) Guard File (Head Office)

vi) EIA cell / Awareness cell

SR. ENV. ENGINEER
STATE POLLUTION CONTROL BOARD, ORISSA

ANNEXURE - I

GENERAL CONDITIONS

1. 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 utilisation for any purposes whatsover.

2. 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

   (d)

   (e)

3. The applicant shall install mechanical composite sampling equipment and continuous flow measuring/recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

4. The consent 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 / variation / revocation of the consent order under Section 27 of the Act and to make such variations as deemed fit for the purpose of the Act.

5. 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.

6. The applicant shall comply with and carry out directives / orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. The applicant shall be liable for such legal action as per provisions of the Law/Act 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.

Contd.Pg/2

7. 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) Status of the installation of mechanical composite sampling equipment and continuous flow recording and measuring devices.

   (c) Monthly statement of daily discharge of domestic and/or trade effluent.

8. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge and/or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board telegraphically.

9. 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 and any other particulars as may be pertient to preventing and controlling pollution of water.

10. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power undeer Section 27(2) of the Water (Prevention and Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

11. The conditions imposed as above shall continue to be in force until revoked under Section 27(2) of the Act.

12. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the Industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

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

14. The industry would immediately submit revised application for consent 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 etc.

Contd Pg/3

er Secretary on or before 10th of

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(or trade effluent

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raphically

id any information regarding the
luent treatment system and any
lling pollution of water

r of consent, the Board hereby
o Water (Prevention and Control
is imposed herein above and to
d by the Board.

rce until revoked under Section

ees are planted at the density of
ing boundaries of the industries
ove the bulk plantation of trees

15. The applicant shall display suitable caution board at the place 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.

16. The applicant shall either

(a) **Not later than 30 days** from the date of issue of this consent order certify in writing to the Member Secretary that the applicant has installed or provided for an alternate electric power source sufficient to operate all facilities installed by the applicant to maintain compliance within the terms and conditions of the consent.

(b) **Not later than 30 days** from the date of this consent certify in writing to the Member Secretary that upon the reduction, loss or failure of one or more of the primary sources of electric power to any facilities installed by the applicant to maintain compliance with the terms and conditions of this consent, the applicant shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the terms and conditions of this consent.

17. The applicant shall not allow the discharge from other premises to mix with the discharge from his premises.

18. 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.

19. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :

i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.

ii) [illegible]

21. 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.

22. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples.

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

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

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

26. **Non-Compliance with effluent limitations**

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

i) Causes of non-compliance.

ii) A description of the non-compliance discharge including its impact on the receiv waters.

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

iv) Steps taken by the applicant to reduce and eliminate the non-complying discha

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

Cont

(b) The applicant shall take all reasonable steps to minimise 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.

27. The diversion or by-pass of any discharge from facilities utilised by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except:

i) Where it becomes unavoidable to prevent loss of life or severe property damage, or

ii) Where excessive storm drainage or run-off would damage any facilities necessary for compliance with the terms and conditions of this consent, the applicant shall immediately notify the Board in writing of each such diversion or by-pass in accordance with the procedure specified as under item No.29.

28. 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.

29. 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 tricking of acids or alkalies arbitrarily and utilising poles for stirring etc. should not be resorted to.

30. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilised 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

32. 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.

33. 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 satisfacotry treatment and disposal measures.

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

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

    i) Rotation of crops

    ii) Change of point of application of effluent on land

    iii) A portion of land kept fallow

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

36. 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.

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

38. The fact of commissioning of the industry shall be intimated to this office in time.

39. Any change in the occupier shall be informed to the Board forthwith.

Contd.Pg/7

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ANNEXURE - II

General Standards for discharge of environment pollutants Part - A : Effluents

Sl. No	Parameters	Standards			
		Inland Surface	Public Sewers	Land for irrigation	Marine Coastal Areas
1	2			3	
		(a)	(b)	(c)	(d)
1.	Colour & Odour	Colourless/Odourless as far as practica	....	See 6 of Annexure-I	See 6 of Annexure-I
2.	Suspened Solids(mg/l)	100	600	200	a.For process waste water - 100 b.For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	....	....	a.Floatable solids max. 3 mm b.Settleable solids, max 850 microns.
4.	....	....	....	....	....
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	Shall not exceed 5°C above the receiving water temperature	....	....	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	....	....	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	....	50
10.	Total Kjeldahl nitrogen (as NH_3) mg/l max	100	....	....	100
11.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1	2	3			
		(a)	(b)	(c)	(d)
14.	Arsenic (as As) mg/1max.	0.2	0.2	0.2	0.2
15.	Mercury(as Hg)mg/1max	0.01	0.01	.....	0.01
16.	Lead (as Pb) mg/1max.	0.1	1.0	.....	2.0
17.	Cardmium (as Cd) mg/1 max.	2.0	1.0	.....	2.0
18.	Hexavelent Chromium (as Cr + 6) mg/1 max.	0.1	2.0	.....	1.0
19.	Total Chromium (as Cr) mg/1 max.	2.0	2.0	.....	2.0
20.	Copper (as Cu) mg/1max.	3.0	3.0	.....	3.0
21.	Zinc (as Zn) mg/1max.	5.0	15	.....	15
22.	Selenium(as Sc)mg/1max.	0.05	0.05	.....	0.05
23.	Nickel (as Nil) mg/1max.	3.0	3.0	.....	5.0
24.	Cyanide (as CN) mg/1 max.	0.2	2.0	0.2	0.02
25.	Flouride (as F) mg/1max.	2.0	15	.....	15
26.	Dissolved Phosphates (as P) mg/1 max.	5.0	.....	.....	.....
27.	Sulphide (as S) mg/1 max.	2.0	.....	.....	5.0
28.	Phenoile compounds (as C_6H_5OH) mg/1 max.	1.0	5.0	.....	5.0
29.	Radioiactive Materials				
	a. Alpha emitter micro curle/ml	10^{7}	10^{7}	10^{8}	10^{7}
	b. Beta emitter micro curle/ml	10^{6}	10^{6}	10^{7}	10^{6}
30.	Bio-assay test	90% Survival of fish after 96 hours in 100% affluent	90% Survival of fish after 96 hours in 100% effluent	90% Survival of fish after 96 hours in 100% effluent	90% Survival of fist after 96 hours in 100% effluent
31.	Manganese (as Mn)	2 mg/1	2 mg/1	.....	2 mg/1
32.	Iron (as Fe)	3 mg/1	3 mg/1	.....	3 mg/1
33.	Vanadium (as V)	0.2 mg/1	0.2 mg/1	.....	0.2 mg/1
34.	Nitrate Nitrogen	10 mg/1	.....	.....	20 mg/1

These general standards are for parameters other than those mentioned in the main consent order

Sent through courier

The President
Zila Parisad
Keonjhar, Odisha

MO/S&EM/ 667-C /139/2005
Date : 07.07.2005

Dear Sir

Sub : Submission of copy of EC for expansion project of Katamati Iron Mine.

Katamati Iron Mine has been accorded Environmental Clearance for enhancement of Iron Ore production from 2477 TPA to 2.0 Million TPA, vide MoEF Letter No. J-11015/120/2003-IA.II(M), dated : 06th May 2005. A Copy of this letter is attached herewith for your kind perusal and necessary action.

Thanking You

Yours faithfully,

Tarapada

(Tarapada Mohapatra)
Chief (Planning)

Encl: As above

Sent through courier

The Sarpanch
Ansaikala Gram Panchayat
AT : Ansaikala
Keonjhar, Odisha

MD/S&EM/ 667-A /139/2005
Date : 07.07.2005

Dear Sir

Sub : Submission of copy of EC for expansion project of Katamati Iron Mine.

Katamati Iron Mine has been accorded Environmental Clearance for enhancement of Iron Ore production from 2477 TPA to 2.0 Million TPA, vide MoEF Letter No. J-11015/120/2003-IA.II(M), dated : 06th May 2005. A Copy of this letter is attached herewith for your kind perusal and necessary action.

Thanking You

Yours faithfully,

(Tarapada Mohapatra)
Chief (Planning)

Encl: As above

Sent through courier

The Sarpanch
Deojhar Gram Panchayat
AT : Deojhar
Keonjhar, Odisha

MD/S&EM/ 667-B /139/2005
Date : 07.07.2005

Dear Sir

Sub : Submission of copy of EC for expansion project of Katamati Iron Mine.

Katamati Iron Mine has been accorded Environmental Clearance for enhancement of iron Ore production from 2477 TPA to 2.0 Million TPA, vide MoEF Letter No. J-11015/120/2003-IA.II(M), dated : 06th May 2005. A Copy of this letter is attached herewith for your kind perusal and necessary action.

Thanking You

Yours faithfully,

Tarapadar

(Tarapadar Mohapatra)
Chief (Planning)

Encl: As above

TATA STEEL

TATA

NOTICE

Vide MoEF letter No. **J-11015/63/2008 – IA, II (M)** dated 26th November 2010, Katamati Iron Mine of M/S. Tata Steel Ltd. has been granted environmental clearance for its expansion project to increase Iron Ore production from 2.0 Million TPA to 8.0 Million TPA. The copy of the clearance letter is available with the State Pollution Control Board, Odisha and also at website of the MoEF at *http://envfor.nic.in*

NEW INDIA EXPRESS - 03/11/10

TATA STEEL

TATA

ସୂଚନା

ଭାରତ ସରକାରଙ୍କ ଜଙ୍ଗଲ ଓ ପରିବେଶ ମନ୍ତ୍ରଣାଳୟର ଚିଠି ସଂଖ୍ୟା **J-11015/63/2008 - IA. II (M)** ତା: ୨୬/୧୧/୨୦୧୦ ଦ୍ୱାରା ଟାଟା ଷ୍ଟିଲ୍ ଲିମିଟେଡ୍‌ର କାଟାମାଟି ଖଣିରୁ ବାର୍ଷିକ ୨.୦ ନିୟୁତ ଟନରୁ ୮.୦ ନିୟୁତ ଟନ୍‌କୁ ଲୁହାପଥର ଖନନର ଉତ୍ପାଦନ କ୍ଷମତା ବଢ଼ାଇବା ପାଇଁ ପରିବେଶ ମଂଜୁରୀ ପ୍ରଦାନ କରାଯାଇଅଛି । ଏହି ପରିବେଶ ମଂଜୁରୀର ନକଲ ରାଜ୍ୟ ପ୍ରଦୂଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ, ଓଡ଼ିଶାଙ୍କ ଅଫିସ୍ ଓ ଜଙ୍ଗଲ ଓ ପରିବେଶ ମନ୍ତ୍ରଣାଳୟର website: http://envfor.nic.in ରେ ଉପଲବ୍ଧ ।

110

PRAGATI VADI - 02.12.10

TATA

Chief Conservator of Forests,
Regional Office (Eastern Zone)
Ministry of Environment and Forests,
Government of India
A/3, Chandrasekharpur,
Bhubaneswar – 751 023

G2.83/02877/05
14th May 2005

Dear Sir,

Sub: Compliance of Public Notice in the News Paper for Environmental Clearance of Katamati Iron Mine.

Kindly refer to the letter no. J-11015/120/2003.IA.II(M) dated 6.05.2005 from Additional Director, Ministry of Environment and Forests, Government of India, New Delhi granting Environmental Clearance to the Katamati Iron Mine of Tata Steel.

In compliance with the general condition stipulated in the part B (xv) of the above referred clearance letter dated 6.05.2005, we have published the Public Notice in the local newspapers on 12.05.2005 as per details given below:

In English - Sambad dated 12.05.2005
In Oriya - Pragatibadi dated 12.05.2005

We enclose the copies of newspaper clippings of the above notices for your kind perusal.

Thanking you,

Yours faithfully,

S.C.Sahoo
Resident Executive.

Encl:- As above
Copy to:Member-Secretary, State Pollution Control Board, Bhubaneswar for kind information.
copy to: GM(OMA) with enclosure for information & record.
This is as per your mail dt. 9th May, 2005.

Sri Sahu
Pl. photocopy
& file in 110

TATA STEEL
The Tata Iron and Steel Company Limited
Office of the Chief Resident Executive 2/3 Bhoruka Nagar P.O. Bhubaneswar 751 001 India
Tel 91 674 2410575 2513101 Fax 91 674 2513169

ଜ୍ଞାପନୀ

କେନ୍ଦୁଝର ଜିଲ୍ଲା (ଓଡ଼ିଶା) ତହସିଲ- ବଡଚିଲ, ଗ୍ରାମ- ଡେଓଙ୍ଗରଡେ ଥିବା ଟାଟା ଷ୍ଟିଲର ଜଟାମାଟି ଆଇରନ୍ ମାଇନ୍ସକୁ ଭାଲନ ସରକାର, ନୂଆଦିଲ୍ଲୀଙ୍କ ପରିବେଶ ଓ ଜଙ୍ଗଲ ମନ୍ତ୍ରଣାଳୟ ପକ୍ଷରୁ ବାର୍ଷିକ ୪.୫ ନିୟୁତ ଟନ୍ (ଏମ୍‌ଟିପିଏ) ଲୁହାପଥର ଉତ୍ପାଦନ ପାଇଁ ଚିଠି ନଂ-ଜେ-୧୫୦୧୫/୧୨୦/୨୦୦୩-ଆଇ.ଏ.-II (ଏମ୍) ତା୬.୫.୨୦୦୫ ମାଧ୍ୟମରେ ପରିବେଶ ମଞ୍ଜୁରୀ ପ୍ରଦାନ କରାଯାଇଛି ।

ପରିବେଶ ମଞ୍ଜୁରୀ ସମ୍ବନ୍ଧୀୟ ପତ୍ରର ଏକ ନକଲ ରାଜ୍ୟ ପ୍ରଦୂଷଣ ନିୟନ୍ତ୍ରଣ ବୋର୍ଡ଼, ଏ/୧୧୮, ନୀଳକଣ୍ଠ ନଗର, ୟୁନିଟ୍-୮, ଭୁବନେଶ୍ୱର- ୭୫୧୦୧୨ (ଓଡ଼ିଶା) ନିକଟରେ ରହିଛି । ଏହାକୁ ମଧ୍ୟ ପରିବେଶ ଓ ଜଙ୍ଗଲ ମନ୍ତ୍ରଣାଳୟର ୱେବସାଇଟ୍ http://envfor.nic.in ଜରିଆରେ ଦେଖାଯାଇପାରିବ ।

ପରିବେଶ ଓ ଜଙ୍ଗଲ ବିଭାଗ, ଭାରତ ସରକାର, ନୂଆଦିଲ୍ଲୀଙ୍କ ଉପରୋକ୍ତ ଚିଠିର ନିର୍ଦ୍ଦେଶନାମା ଅନୁସାରେ ଏହି ବିଜ୍ଞାପନ ପ୍ରକାଶ କରାଗଲା ।

ପ୍ରକଳ୍ପ କର୍ତ୍ତୃପକ୍ଷ,
ଜଟାମାଟି ଆଇରନ୍ ମାଇନ୍ସ, ଟାଟା ଷ୍ଟିଲ

ପୁଣଶ୍ଚି ମାର୍କ - ୧୨/୪/୨୦୦୫

NOTICE

Katamati Iron Mine of Tata Steel in Village Deojhar, Tehsil Barbil, Keonjhar District (Orissa) has been accorded Enviornment Clearance by the Ministry of Environment & Forests, Government of India, New Delhi vide their Letter No.J-11015/120/2003-IA, II(M) dated 06.05.2005 for production of 4.5 million tonnes per annum (MTPA).

A copy of the clearance letter is available with the Orissa Pollution Control Board, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012 (Orissa) and can also be seen at Website of Ministry of Environment & Forests at http://envfor.nic.in

This advertisement is published as directed by the Ministry of Environment & Forests, Government of India, New Delhi in the above referred letter.

Project Authority,
Katamati Iron Mine,
Tata Steel

Sambad - 12/5/05

Date: 29/01/2025

TATA STEEL LIMITED
BOMBAY HOUSE, 24, HOMI MODY STREET, FORT,
MUMBAI - 400001
MUMBAI
MAHARASHTRA
INDIA
27AAACT2803M2ZA(GSTIN Number)

Policy No : 0304009684
Renewal : 02
Endorsement : 00

Dear Sir / Madam,

We thank you for choosing **Tata AIG General Insurance Company Ltd.** as your preferred insurer. Your Policy No. is 0304009684 02 00.

We are glad that you have chosen our product **PUBLIC LIABILITY ACT** and given us an opportunity to be your risk carrier for this Product.

'Casualty Line' caters to most of the Enterprises / Industries in India, whether Large, Medium or Small. As one of the India's most established insurance companies, we understand these unique needs of coverage. At Tata AIG we care for you and would strive to offer convenience coupled with a range of products that cater continously to your ever increasing needs.

Enclosed please find your policy docket based on the information furnished by you in the Proposal.

We look forward to a long and mutually beneficial relationship and providing you wider range of benefits in the years to come.

Yours Sincerely,
For Tata AIG General Insurance Company Limited

Authorized Signatory

Insurance is the subject matter of the solicitation. For more details on risk factors, terms and conditions, please read sales brochure carefully before concluding a sale.
TATA AIG General Insurance Company Ltd. Regd. Office: 15th floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Off Senapati Bapat Marg, Lower Parel, Mumbai- 400 013.
IRDA Registration No.108, CIN No : U85110MH2000PLC128425, PAN : AABCT3518Q, UIN No : IRDAN108CP0005V01201819
Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

PUBLIC LIABILITY ACT POLICY
POLICY SCHEDULE

Agent/Broker Name -DIRECT
Agent/Broker License Code - NA:Agent/Broker :Contact No - 24*7 Tollfree Helpline 1800-266-7780

Attaching to and forming part of Policy No.	0304009684 02 00
Name of Insured Owner:	TATA STEEL LIMITED
Business:	Manufacture of Steel & Steel related finished products (Coils, Sheets, Billets, Pipes, Tubes, Bearings, Wires, growth shops, Agricultural tools tackles & equipment, etc), By-Products, Ferro Chrome & Ferro Manganese, Chrome Ore, Chrome Concentrate (Beneficiated Chrome Ore), Manganese Ore, Mining & Washing of Coal, Iron Ore & Limestone for captive use & Trading, any other related activities including the new activities taken up during the policy period and supporting activities anywhere in India. Please also refer to https://www.tatasteel.com/ and the business activities as per MOA and respective subsidiaries website.
Address:	BOMBAY HOUSE, 24, HOMI MODY STREET, FORT, MUMBAI - 400001 MUMBAI MAHARASHTRA INDIA 27AAACT2803M2ZA(GSTIN Number) Place of supply -MAHARASHTRA State code -27
Territorial limits:	Anywhere in India

Policy Period: **From:** 01/01/2025 12:00 AM/ PM
To Midnight of: 31/12/2025 12:00 AM/ PM

Indemnity limit:Rs 50,000,000.00 in respect of any one accident and not exceeding 3 times thereof in the aggregate during the policy period.

Service Tax Registration No:

Premium	₹ 12,000.00
UGST/SGST @9 %	₹ 1,080.00
CGST @9 %	₹ 1,080.00

Contribution to the Environment Relief Fund:₹ 12,000.00

Date of Proposal and declaration:29/01/2025

In witness whereof the undersigned being duly authorized by the company and on behalf of the company has hereto set his hand at MUMBAI on 29/01/2025

The stamp duty of 0.25 paid in cash or demand draft or by pay order,vide Receipt/Challan no: LOA/ENF1/CSD/55/2024/4453 dated the 14/09/2024

For Tata AIG General Insurance Company Limited

Authorized Signatory

Date :29/01/2025
Place :MUMBAI

Policy Servicing Office
Tata AIG General Insurance Company Limited
BUILDING NO. 28,GROUND AND MEZZANINE FLOOR, DR. ERNEST BORGES ROAD, PAREL EAST, OPP. SHIRODKAR HIGH,MUMBAI,MAHARASHTRA,MUMBAI-400012
Tel No:22-22-62606600

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IRDA Registration No.108, CIN No : U85110MH2000PLC128425, PAN : AABCT3518Q, UIN No : IRDAN108CP0005V01201819
Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

TATA AIG INSURANCE
WITH YOU ALWAYS

RECEIPT

Receipt No. : 102001097252978

Receipt Date : 01/01/2025

Policy No : 0304009684 02 00

Received with thanks from TATA STEEL LTD a sum of ₹ **26,160.00** (Rupees Twenty Six Thousand One Hundred Sixty And Paise Zero Only)

Sr. No.	Policy Number	Total Premium (₹)	Utilized from the receipt for policy (₹)	Balance (₹)
1	0304009684 02 00	26,160.00	26,160.00	0.00

Note:

1. This is a computer generated receipt and does not require a signature.
2. Upon issuance of this Receipt, all previously issued temporary receipts, if any, related to this Policy shall be considered null and void.
3. Amounts received by cheque shall be subject to realisation.
4. Any amount received in excess of the Premium is being/shall be refunded by the Company.

GSTIN : 27AABCT3518Q1ZW - MAHARASHTRA Service Accounting Code : 997139

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Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

TATA AIG INSURANCE
WITH YOU ALWAYS

LIABILITY INSURANCE POLICY
(UNDER PUBLIC LIABILITY INSURANCE ACT 1991)

1.OPERATIVE CLAUSE

Whereas the Insured Owner named in the schedule hereto and carrying on business described in the said schedule has applied to the Tata AIG General Insurance Company Limited (hereinafter called the Company) for the indemnity hereinafter contained and has made a written proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein and has paid the premium and statutory contribution towards the Environment Relief Fund as per the provisions of the Public Liability Insurance Act and the rules framed thereunder.

NOW THIS POLICY WITNESSETH that subject to the terms, exceptions and conditions contained herein or endorsed hereon, the company will indemnify the insured owner against the statutory liability arising out of accidents occurring during the currency of the policy due to handling hazardous substances as provided for in the said Act and the Rules framed thereunder.

2.DEFINITIONS:

a)"ACT" unless otherwise specifically mentioned shall mean the Public Liability Insurance Act 1991 as amended from time to time;

b) "Accident" means an accident involving a fortuitous, sudden or unintentional occurrence while handling any hazardous substance resulting in continuous, intermittent or repeated exposure to death of, or injury to any person or damage to any property but does not include an accident by reason only of war or radioactivity;

c) "Handling" in relation to any hazardous substance means the manufacture, processing, treatment, package, storage, transportation by vehicle, use, collection, destruction, conversion, offering for sale, transfer or the like of such hazardous substance;

d) "Hazardous Substance" means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act, 1986, and exceeding such quantity as may be specified, by notification, by the Central Government;

e)"Owner" means a person who owns, or has control over handling any hazardous substance at the time of accident and includes:
i) in the case of a firm any of its partners;
ii) in the case of an association, any of its members, and
iii) in the case of a company, any of its directors, managers, secretaries or other officers who is/are directly in charge of, and is/are responsible to the company for the conduct of the business of the company;

f) "Turnover" shall mean
i) Manufacturing units-Annual Gross Sales of all goods including all levies and taxes
ii) Godowns/ warehouse owners-Total Annual rental receipts.
iii)Transport Operators-Total Annual freight receipts.
iv)Others-Total Annual gross receipts.

3. EXCLUSIONS:

(1) arising out of wilful or intentional non-compliance of any Statutory provisions.

(2) in respect of fines, penalties, punitive and/or exemplary damages.

(3) arising under any other legislation except in so far as provided for in Section 8 Sub Section (1) and (2) of the Act.

(4) in respect of damage to property owned, leased or hired or under hire purchase or on loan to the Insured or otherwise in the Insured Owner's control, care or custody.

(5) directly or indirectly occasioned by, happening through or in consequence of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power;

(6) directly or indirectly caused by or contributed to by.

(a) ionising radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel

(b) the radioactive, toxic, explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.

4. CONDITIONS:

(1) The Insured owner shall give written notice to the Company as soon as reasonably practicable of any claim made against the Insured Owner or of any specific event or circumstance that may give rise to a claim. The Insured Owner shall immediately give to the Company copies of notice of applications forwarded by the Collector and all

such additional information and or assistance that the company may require.

(2) No admission, offer, promise or payments shall be made or given by or on behalf of the Insured owner under this policy without the written consent of the Company.

(3) The Company shall not be liable for any claim for relief made after five years from the date of occurrence of the accident.

(4) The Insured Owner shall keep record of annual turnover, and at the time of renewal of insurance declare such turnover and all other details as may be required by the Company. The Company shall at all reasonable times have full rights to call for and examine such records.

(5) If at the time of happening of any accident resulting in a claim under this policy there be any other insurance covering the same liability, then the Company shall not be liable to pay or contribute more than its ratable proportion of such liability.

(6) This policy may be cancelled by the Insured Owner by giving 30 days notice in writing to the company in which event the Company will retain premium at short period scale subject to there not having occurred an accident during the policy period which may give rise to a claims(s), failing which no refund of premium shall be allowable.

(7) This Policy may also be cancelled by the Insurer by giving 30 days notice in writing to the Insured Owner in which event the Company shall be liable to repay on demand a ratable proportion of the premium for the unexpired term from the date of cancellation.

(8) If the Company shall disclaim liability to the Insured Owner for any claim hereunder and such claim shall not within 12 calendar months from the date of such disclaimer have been made the subject matter of a suit in a competent court of law, then the claim for the practical purposes shall be deemed to have been abandoned and shall not thereafter be recoverable hereunder or be made the subject matter of any suit.

(9) The Company shall not be liable to make any payment in respect of any claim if such claim shall be in any manner fraudulent or supported, by any person on behalf of the Insured Owner and/or if the insurance has been continued in consequence of any material misstatement or non-disclosure of any material information by or on behalf of the Insured Owner. In such a case if the Company pays any amount to the claimant due to any statutory provision such amount shall be recoverable from the Insured Owner.

(10) The Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been assigned in the Act and the Rules framed thereunder or in this Policy shall bear such specific meaning.

(11) Any dispute regarding interpretation of the terms, conditions and exclusions of this Policy shall be determined in accordance with the law and practice of a court of competent jurisdiction within India.

GRIEVANCE REDRESSAL POLICY

Grievance Lodgment Stage

The Company is committed to extend the best possible services to its customers. However, if you are not satisfied with our services and wish to lodge a complaint, please feel free to contact us through below channels:

Call us 24X7 toll free helpline 1800 266 7780
Email us at customersupport@tataaig.com

Write to us at : Customer Support, Tata AIG General Insurance Company Limited
A-501 Building No.4 IT Infinity Park, Dindoshi, Malad (E), Mumbai - 400097
Visit the Servicing Branch mentioned in the policy document

Nodal Officer

Please visit our website at www.tataaig.com to know the contact details of the Nodal Officer for your servicing branch.
After investigating the grievance internally and subsequent closure, we will send our response within a period of 10 days from the date of receipt of the complaint by the Company or its office in Mumbai. In case the resolution is likely to take longer time, we will inform you of the same through an interim reply.

Escalation Level 1

For lack of a response or if the resolution still does not meet your expectations, you can write to manager.customersupport@tataaig.com. After investigating the matter internally and subsequent closure, we will send our response within a period of 8 days from the date of receipt of your complaint.

Escalation Level 2

For lack of a response or if the resolution still does not meet your expectations, you can write to the Head-Customer Services at head.customerservices@tataaig.com. After examining the matter, we will send you our response within a period of 7 days from the date of receipt of your complaint. Within 30 days of lodging a complaint with us, if you do not get a satisfactory response from us and you wish to pursue other avenues for redressal of grievances, you may approach Insurance Ombudsman appointed by IRDA under the Insurance Ombudsman Scheme. Given below are details of the Insurance Ombudsman located at various centers.

List of Insurance Ombudsman Offices

Office of the Ombudsman	Address & Contact details	Jurisdiction of Office Union Territory, District
AHMEDABAD	Office of the Insurance Ombudsman, Jeevan Prakash Building, 6th Floor, Tilak Marg, Relief Road, Ahmedabad - 380 001. Tel.: 079 - 25501201/02/05/06 Email: bimalokpal.ahmedabad@ecoi.co.in	Gujarat, Dadra & Nagar Haveli, Daman and Diu.
BENGALURU	Office of the Insurance Ombudsman, Jeevan Soudha Building, PID No. 57-27-N-19 Ground Floor, 19/19, 24th Main Road, JP Nagar, 1st Phase, Bengaluru – 560 078. Tel.: 080 - 26652048 / 26652049 Email: bimalokpal.bengaluru@ecoi.co.in	Karnataka
BHOPAL	Office of the Insurance Ombudsman, Janak Vihar Complex, 2nd Floor, 6, Malviya Nagar, Opp. Airtel Office, Near New Market, Bhopal – 462 003. Tel.: 0755 - 2769201 / 2769202 Fax: 0755 - 2769203 Email: bimalokpal.bhopal@ecoi.co.in	Madhya Pradesh Chattisgarh
BHUBANESHWAR	Office of the Insurance Ombudsman, 62, Forest park, Bhubneshwar - 751 009. Tel.: 0674 - 2596461 /2596455 Fax: 0674 - 2596429 Email: bimalokpal.bhubaneswar@ecoi.co.in	Orissa
CHANDIGARH	Office of the Insurance Ombudsman, S.C.O. No. 101, 102 & 103, 2nd Floor, Batra Building, Sector 17 – D, Chandigarh - 160 017. Tel.: 0172 - 2706196 / 2706468 Fax: 0172 - 2708274 Email : bimalokpal.chandigarh@ecoi.co.in	Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Chandigarh
CHENNAI	Office of the Insurance Ombudsman, Fatima Akhtar Court, 4th Floor, 453, Anna Salai, Teynampet, CHENNAI - 600 018. Tel.: 044 - 24333668 / 24335284 Fax: 044 - 24333664 Email : bimalokpal.chennai@ecoi.co.in	Tamil Nadu, Pondicherry Town and Karaikal (which are part of Pondicherry).
DELHI	Office of the Insurance Ombudsman, 2/2 A, Universal Insurance Building, Asaf Ali Road, New Delhi – 110 002. Tel.: 011 - 23239633 / 23237532 Fax: 011 - 23230858 Email: bimalokpal.delhi@ecoi.co.in	Delhi
GUWAHATI	Office of the Insurance Ombudsman, Jeevan Nivesh, 5th Floor, Nr. Panbazar over bridge, S.S. Road, Guwahati – 781001(ASSAM). Tel.: 0361 - 2132204 / 2132205 Fax: 0361 - 2732937 Email : bimalokpal.guwahati@ecoi.co.in	Assam, Meghalaya, Manipur, Mizoram, Arunachal Pradesh, Nagaland and Tripura
HYDERABAD	Office of the Insurance Ombudsman, 6-2-46, 1st floor, "Moin Court", Lane Opp. Saleem Function Palace, A. C. Guards, Lakdi-Ka-Pool, Hyderabad - 500 004. Tel.: 040 - 65504123 / 23312122 Fax: 040 - 23376599 Email : bimalokpal.hyderabad@ecoi.co.in	Andhra Pradesh, Telangana, Yanam and part of Territory of Pondicherry.
JAIPUR	Office of the Insurance Ombudsman, Jeevan Nidhi – II Bldg., Gr. Floor, Bhawani Singh Marg, Jaipur-302 005. Tel.: 0141 - 2740363 Email: Bimalokpal.jaipur@ecoi.co.in	Rajasthan
ERNAKULAM	Office of the Insurance Ombudsman, 2nd Floor, Pulinat Bldg., Opp. Cochin Shipyard, M. G. Road, Ernakulam - 682 015. Tel.: 0484 - 2358759 / 2359338 Fax: 0484 - 2359336 Email : bimalokpal.ernakulam@ecoi.co.in	Kerala, Lakshadweep, Mahe-a part of Pondicherry
KOLKATA	Office of the Insurance Ombudsman, Hindustan Bldg. Annexe, 4th Floor, 4, C.R. Avenue, KOLKATA-700 072. Tel.: 033 - 22124339 / 22124340 Fax : 033 - 22124341 Email: bimalokpal.kolkata@ecoi.co.in	West Bengal, Sikkim, Andaman & Nicobar Islands
LUCKNOW	Office of the Insurance Ombudsman, 6th Floor, Jeevan Bhawan, Phase-II, Nawal Kishore Road, Hazratganj, Lucknow - 226 001. Tel.: 0522 - 2231330 / 2231331 Fax: 0522 - 2231310 Email : bimalokpal.lucknow@ecoi.co.in	Districts of Uttar Pradesh : Laitpur, Jhasi, Mahoba, Hamirpur, Banda, Chitrakoot, Allahabad, Mirzapur, Sonbhabdra, Fatehpur, Pratapgarh, Jaunpur, Varanasi, Gazipur, Jalaun, Kanpur, Lucknow, Unnao, Sitapur, Lakhimpur, Bahraich, Barabanki, Raebareli, Sravasti, Gonda, Faizabad, Amethi, Kaushambi, Balrampur, Basti, Ambedkarnagar, Sultanpur, Maharajgang, Santkabirnagar, Azamgarh, Kushinagar, Gorkhpur, Deoria, Mau, Ghazipur, Chandauli, Ballia, Sidharathnagar

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TATA AIG General Insurance Company Ltd. Regd. Office: 15th floor, Tower A, Peninsula Business Park, Ganpatrao Kadam Marg, Off Senapati Bapat Marg, Lower Parel, Mumbai- 400 013.
IRDA Registration No.108, CIN No : U51100MH2000PLC128425, PAN : AABCT3518Q, UIN No : IRDAN108CP0035V01201819
Website: www.tataaig.com 24X7 Tollfree Helpline 1800-266-7780 E-mail: customersupport@tataaig.com

MUMBAI	Office of the Insurance Ombudsman, 3rd Floor, Jeevan Seva Annexe, S. V. Road, Santacruz (W), Mumbai - 400 054. Tel.: 022 - 26106552 / 26106960 Fax: 022 - 26106052 Email : bimalokpal.mumbai@ecoi.co.in	Goa, Mumbai Metropolitan Region excluding Navi Mumbai & Thane
NOIDA	Office of the Insurance Ombudsman, Bhagwan Sahai Palace, 4th Floor, Main Road, Naya Bans, Sector 15, Distt: Gautam Buddh Nagar, U.P-201301. Tel.: 0120-2514250 / 2514252 / 2514253 Email : bimalokpal.noida@ecoi.co.in	State of Uttaranchal and the following Districts of Uttar Pradesh : Agra, Aligarh, Bagpat, Bareilly, Bijnor, Budaun, Bulandshehar, Etah, Kanooj, Mainpuri, Mathura, Meerut,Moradabad, Muzaffarnagar, Oraiyya, Pilibhit, Etawah, Farrukhabad, Firozbad, Gautambodhanagar, Ghaziabad, Hardoi, Shahjahanpur, Hapur, Shamli, Rampur, Kashganj, Sambhal, Amrohia, Hathras, Kanshiramnagar, Saharanpur
PATNA	Office of the Insurance Ombudsman, 1st Floor,Kalpana Arcade Building, Bazar Samiti Road, Bahadurpur, Patna 800 006. Tel.: 0612-2680952 Email:bimalokpal.patna@ecoi.co.in	Bihar, Jharkhand
PUNE	Bhagwan Sahai Palace , 4th Floor, Main Road, Naya Bans, Sector 15, G.B. Nagar, Noida. NOIDA – 201301 Tel: 0120-2514250/51/53 Email: bimalokpal.noida@gbic.co.in	Maharashtra, Area of Navi Mumbai and Thane excluding Mumbai Metropolitan Region

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