

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
NEW DELHI

O.A.No.304 OF 2019

M. Haridasan ... Applicant in the O.A.

Versus

State of Kerala & Ors. ... Respondents in the O.A.

AND

IN THE MATTER OF:-

M.A.No.95 OF 2021

Crystal Granites Ltd. & Anr. Applicants/Respondents

OBJECTIONS FILED BY CRYSTAL GRANITES LTD. AGAINST THE
REPORT DATED 28.02.2023

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1. The above O.A. was registered on the basis of a copy of a PIL letter sent by the Applicant.
2. These respondents were impleaded in the O.A.No.304 of 2019 by order dated 09.12.2021 in Mis. Application No.95 of 2021. They have also filed Misc. Application No.96 of 2021 in the said O.A.No.304 of 2019, seeking directions and raising contentions in the matter, consequent to the Order and directions of the Hon'ble Supreme Court dated 25.10.2021, in several Civil Appeals in which this respondent was a party.
3. By order dated 09.12.2021, this Hon'ble Tribunal was pleased to constitute a committee, who after study, submitted a Report dated 28.02.2023 to this Hon'ble Tribunal. This respondent begs to

submit the following objections to the said Report for the kind consideration of this Hon'ble Tribunal, before passing any order on the basis of the said Report in O.A.No.304 of 2019.

Objections of this Respondent, Crystal Granites Ltd. against the Report dated 28.02.2023 of the Joint Committee constituted by Hon'ble National Green Tribunal in O.A.304 of 2019

1. The Joint Committee has failed to comply with the direction of this Hon'ble Tribunal vide order dated 09.12.2023 and the committee has not studied the impact of blasting in different soil strata/earth profile. The Committee conducted the blasting study only in 9 quarries situated in 9 districts of the State of Kerala. The committee has omitted to conduct blasting study in Kannur, Malappuram, Kozhikode and Thrissur, which are the districts in State of Kerala, where majority of the Quarries are functioning. As per records there are more than 650 quarries in the State of Kerala and having different soil strata/earth profile, terrain and geological formation/disturbances. The implementation of the recommendations arrived out of the blasting study conducted in 9 quarries out of the 650 quarry in Kerala is illegal, incomplete and highly unreliable. The 9 quarries are not representative of other hundreds of quarries in Kerala and in other States. Since any order passed by this Hon'ble National Tribunal will be applicable to all the States in our Country, any study on quarries shall be nationally based. Even if the study ordered by this Hon'ble Tribunal is

confined to the State of Kerala, the report of the Committee is not representative because out of about 650 quarries in Kerala, only nine have been inspected and the Committee has omitted to make any study in other Districts constituting about 1/3 of the total land area of the State. This defeats the very purpose of the study.

2. The Hon'ble NGT vide its order dated 09.12.2021 had stated as follows:

"The study will include the impact caused by vibrations on different soil strata/earth profile in the area and on noise and air levels, on building and human and wildlife".

The area mentioned by the Hon'ble NGT is the whole of State of Kerala having a total land area of 38,863 sq.km. The Joint Committee had failed to conduct in four districts having a land area of 11,898 sq.km, where majority of granite quarries function. The Joint Committee, in order to study the impact of blasting in quarries having different soil strata/earth profile, terrain and geological formation/disturbances, should at least have conducted blasting study in three quarries in each district. The recommendation of distance criteria by conducting study in just nine quarries in a State is not a reasonable method of fixation of a criteria to be implemented throughout the territory of India. Therefore the report of the Joint Committee is arbitrary, unreasonable unreliable and illegal since the report lacks findings of blast study in different areas and the report does not provide

any impression on the impact of the blasting study in different soil strata/ earth profile.

3. The Committee itself admit the fact that the impact of blasting in different area depend on the nature and characteristics of each land.

As per the report at page 13, the Committee had stated that:

“The vibration level at a distance depends on charge per delay, vibration frequency, rock characteristics (type, unit weight, layering, slope of layers), blast hole conditions, presence of water, propagation of surface and body waves in the ground, and to a lesser extent on method of initiation. Hence, it is important to select study locations in areas having distinct geological/tectonic attributes as it affects propagation of vibration. Thus the blast induced vibration studies need to be carried out in locations with distinct geotechnical profiles.”

Even though the committee had pointed out the importance of selecting more sites of different geotechnical profiles, they had miserably failed to select various locations for conducting the blast study. Expert study was conducted only at 9 stone quarries each in 3 zones which is the northern, central, and southern zones of Kerala as mentioned in the report. There is no such authorized distinct geographical Zones made by any authority regarding different soil strata / Earth profile. The selection of site and limiting it to nine quarries was arbitrary and illegal.

4. The committee in its blasting study has monitored Peak Particle Velocity (PPV) caused by the blasting. The committee itself in its report has stated that "*Peak Particle Velocity (PPV) is generally a good index of damage to structure due to vibration.*"

It is stated in the report itself that maximum permissible value of PPV in blasting more than 25 hertz is 15 mm/s for domestic houses/ structures. This standard was fixed as per Technical Circular No. 7 of 1997 issued by the DGMS, which is the standard approved and published by Government of India after several field studies, which is an approved National Standard. (Please see the table in page 33 of report). Not even in one blasting trial conducted by the Committee, PPV was excess than the permissible value of 15mm/s. As per the standards fixed by DGMS, the maximum safe value for historically important or sensitive structures is 10mm/sec and whereas all structures near the mines, where the studies were conducted falls in the category of domestic houses/structures, the category in which the permissible value is up to 15mm/s as earlier mentioned. The number of holes and total explosive charges where increased as a result of the human response received by the Joint committee, where some of the people claimed to live near vicinity of Quarries exaggerated without any basis like damage to building or injury to humans etc., that the normal practice of blasting by the mine management had a bigger size (higher intensity) than the blasting

conducted on the experimental day. Therefore, the experiments where designed to study the influence even under the worst scenario. The committee had in fact conducted blasting study in the peak level and even then, the values of PPV were within the desirable limit. The Expert Committee itself in its report had stated that the value of vibration in all the blasting trials where within the safe levels as per DGMS ground vibration standards.

5. However, the committee without authority, considering the human response at different Quarries Fixed PPV Value of 5 mm/s as the safe level. The honorable NGT may be pleased to notice that the Joint Committee has no authority to modify a standard fixed by the Government after a detailed study. The standard fixed by the Govt. of India is final and conclusive and it cannot be overlooked, on the basis of purely biased vocal opinion of a few individuals. The Committee without any authority or material has altered the vibration value fixed by the DGMS, Govt. of India. The fixation of vibration value on the basis of human response rather than ignoring the national standard fixed by the government is illegal. The committee conducting blasting study at the peak level (as the was the case scenario) to evaluate the impact of blasting, considering the Human response may be considered; is not conclusive. But the committee has no authority to consider human response as the basis of fixing vibration value ignoring the

vibration value officially fixed by the Govt of India. The report erroneously determines the permissible limit of PPV and modified and fixed to 5mm/sec on the basis of the human response, which is against the standards and the committee has no power to alter the national standard fixed by the DGMS and it is illegal and perverse.

6. Moreover, there is no approved national standard for human response index. Human response is an emotional factor as per perception to any activity or circumstances by individuals and this perception will vary from person to person and this cannot be standardized. Hence the substantial reduction of the permissible PPV limit from 15 mm/sec. to 5mm/sec. is against the officially recognized standard and therefore illegal and also not logical. The recommendation to fix the distance from blasting zone as 150 meters after limiting the vibration value to 5 mm/s is in the circumstances vitiated by illegality and is arbitrary and unreasonable, it is respectfully submitted.
7. The online survey regarding stone quarries in Kerala conducted by the Joint Committee was open for public response by online from 09-08-2022 to 26-08-2022 and a total of 6734 responses were recorded. Out of the total responses (6734) received, 65.3 % of the participants were living near stone quarries. But 74.7% of the responses indicated that they have no grievances related to stone quarries. Hence, this fact that majority of the public had no grievance against stone quarries has not been considered in the

final recommendation of the Joint Committee while increasing the existing statutory safety distance from 50M to 150M arbitrarily. When the recommendation is opposed to the statutory rule in force in Kerala, the Committee should have given cogent evidence, technical details and reasons. This has not been done by the Committee.

8. It is of paramount importance to note that the other impacts of blasting which is the Air Over Pressure and Fly Rock are safe within the distance of 50 meters in all the blasting study conducted by the Committee. Observation in the report made on fly rocks is that out of 91 blasting rounds, in only 2 cases there were fly rocks which was again limited up to 25 M, which is well within the existing safe distance of 50 M statutorily fixed after a detailed study. The Air Over Pressure (AOP) values reported are also well within the permissible standards approved by Government of India. In the report itself the committee has stated that as per CPCB standard AOP is permissible to 140 dB and as per standards of United States Bureau of Mines it is 134 dB. The recorded AOP in the study conducted by the Committee are within the permissible limit. The recommendation arrived by the committee by adopting precautionary principle rather than not relying on the values arrived by the committee during the blasting study is not admissible. The Joint Committee was supposed to assess general impacts of granite quarrying on the environment and habitation in

its neighborhood and suggest recommendation for distance criteria as per the outcome of the study. Unfortunately, the Joint committee while suggesting recommendations has not considered the fact that the outcome of all the blasting trials were well within the permissible value; but instead relied on Human response which is illegal and not acceptable for several reasons.

9. As per the report it is the impact of the Noise which is considered as the main factor in suggesting 150 meters as safe for blasting. By virtue of the order notified by the Central Government under Noise Pollution (Regulation and Control) Rules 2000, published in Gazette of India, Extraordinary, Part II – Section 3(ii) vide SO 123(C) dated 14.02.2000, the mining activity falls in the category of Industrial Area and the permissible day time noise level is 75 db(A). As per the rule any increase in ambient noise by 10 dB(A) shall only be deemed as violation. Hence the noise level in a quarry operation needs to be limited within 85 dB(A) for safety. It may be noted that as per the study report at page 36 it is mentioned that maximum noise recorded during operation in 50m was 74.49 dB(A) at Palakkad, in 100m was 75.05 dB(A) at Kollam and in 200m was 64.24 dB(A) at Pathanamthitta. Referring to the same statement, 50m is in close proximity to the mining operations. The Committee has failed to consider the said values while suggesting the final recommendations which is illegal and arbitrary and unreasonable.

10. It is relevant that, as a property of sound, the magnitude of sound decreases with distance, unless there is any amplifier used. Hence the value of Noise recorded at greater distances than 50metres cannot be more than value recorded within 50 meters. The perusal of the value of Noise in the report will reflect that, the value of Noise had increased in greater distance which is evidently incorrect. Even a lay man knows that the frequency of sound is reduced by distance. Apparent error has occurred in the method or procedures adopted by the committee to evaluate Noise impact.
11. The recorded value at 50m distance is again well within the permissible limits as per Indian Standards. The same report also mentions the likelihood of influence from the roads, traffic and public places contributing to the overall ambient noise in few locations which are far away from the site of mining operations. Therefore, it may be considered that the safe noise level does not exceed beyond 50m distance from the mining location. Unlike the PPV and AOP monitoring equipment the readings from noise level monitoring equipment are manually recorded on sheets. Hence chances of human errors are high, which may also be taken into account. In the circumstance it is submitted that the procedure adopted and study conducted by the joint committee has apparent errors and it is not acceptable. It is to be rejected; it is respectfully submitted.

12. The findings of the Committee with regard to the impact of Dust is not the result of a proper procedure. It is important to note that the report itself mention that the accepted practice of dust monitoring is recording it on 24 hours average basis. But in the study conducted by the Committee the time duration was reduced to 12 hours average. This is a deviation from the prescribed procedure of ambient air quality analysis. When the time is reduced by half, the value of intensity gets doubled. The committee has failed to consider this standard and the recommendation to the contrary to the notified standard is liable to be rejected.
13. On detailed analysis of the report, it is found that the highest PM 2.5 value recorded at 50m was $82.73\mu\text{g}/\text{m}^3$ (See page 38 of report). But on the table of values plotted in the page 1092 of report indicates that the maximum PM 2.5 value is just $62.10\mu\text{g}/\text{m}^3$. Whereas, the permissible value of National Ambient Air Quality Standard mentioned in Schedule VII framed under Rule 3(3B) of The Environment Protection Rule is $60\mu\text{g}/\text{m}^3$. The committee had made errors in recording value in the report and the committee has failed to consider that there was only a slight rise in the value of Dust which can be reduced by modern techniques. Moreover, the Committee in its report failed to give the reasoning to suggest the distance to 150 meters as safe for blasting, when even in 50 meters the value of dust was perfectly the desirable level.

14. The final recommendation of the joint committee fixing 150 meters as distance criteria for safe blasting is illegal and against the findings of the blast study conducted by the committee. The PPV and AOP values are within the permissible limit within 50 meters. The fly rock ejections were less than 25 meters the particulate matter emissions (dust) were only up to 100 meters and the assessment of noise beyond 100 meters were influenced by extraneous noise from other sources which was also admitted by the committee. The committee, ignoring all these values, and the norms prescribed by the Govt., has now recommended 150 meters as safe blasting distance criteria without considering the fact that within 50 meters itself all the parameters were within the permissible limit. The Report is therefore liable to be set aside.
15. The Report is full of factual errors and it is not reliable, which is evident on perusal of page 1069 of Report as an instance. The blasting study pertaining to M/s Cochin Blue Metal quarry unit is listed. However, under clause 1.1 General Information, the information provided is that of Ms Parackal Granites, which is another unit where blast study was conducted. The same information given under Ms Parackal Granites is copied here. Hence, the general information pertaining to Ms Cochin Blue Metal quarry unit is missing. Such factual errors caused by non-application of mind and the manner of preparation of the report,

have vitiated the Report, apart from over ruling the prescribed standards made by study under the Govt. of India.

16. The joint committee has recommended procedures and methods for safe blasting within 50 to 100 meters but erroneously evaded from fixing distance criteria implementing such procedures and methods within such distance and has recommended arbitrary distance without any material on record.
17. The joint committee has omitted to consider the findings in their study conducted within 100 meters and erroneously recommended 150 meters as safe distance for blasting. The recommendation of the joint committee to maintain 150 meters in the periphery/ Boundary of the quarry lease area is not reasonable admissible. The joint committee had failed to consider the aspect that radial distance of 150 meter from the blasting zone in the periphery of the quarry lease will lead to wastage of minerals and land. The Committee has not given importance to the optimization of minerals; rather the suggestion of the committee will only lead to wastage of national wealth in minerals and therefore the recommendation of the committee is illogical and bad in law and will defeat the National Policy on mining minerals. Further, the Committee failed to study the Non-blasting methods and other scientific methods which suits for the optimization of Minerals.
18. The committee failed to consider the fact that when radial distance of 150 meters from blasting zone is maintained as recommended

by the Committee, even in an ideal square plot having a lease area of 15 acres (the maximum extent of land holdings under the Kerala land Reforms Act) no mining can be done.

19. The distance criteria for safe blasting is site specific. It can be fixed considering the nature and other factors of each Quarrying site. Fixing a general Distance criteria is not proper and it will lead to wastage of land and minerals. Mining is an engineering subject which can be safely done by implementing scientific methods. The methods by which safe blasting can be done within 50 to 100 meters are laid down in the report Submitted by the committee but the committee had failed to provide the recommendation as per their findings and on the basis of the methods mentioned by them in the report therefore the recommendations of the committee regarding 150 meter is not reasonable or rational and is opposed to the National Policy on Mining of Minerals.
20. On Page 10 of the Report: Under Table 1: The details of physical hearing, participation and submissions received, it is mentioned that the committee has received only 1 Study Report each from the hearings conducted at Ernakulam on 24.8.22 and Thiruvananthapuram on 25.8.22. This is incorrect; RMCU had put forward a detailed submission at both Ernakulam and Thiruvananthapuram, which contained summary of 11 blast study reports at different stakeholder quarries conducted by prestigious organisations like CSIR-CIMFR (one of the members of the seven-

member joint committee) and National Institute of Technology (NIT) Karnataka, which has highlighted safe blasting within 50M. Hence, these scientific blast study reports have not been considered at all by the Joint Committee.

21. On Pages 10 & 11 of the Report: The online survey regarding stone quarries in Kerala conducted by the Joint Committee was open for public response online from 09.08.2022 to 26.08.2022 and a total of 6734 responses were recorded. Based on the total responses (6734) received, 65.3% of the participants were living near stone quarries. But 74.7% of the responses indicated that they have no grievances related to stone quarries. Hence, this fact that majority of the public had no grievance against stone quarries has not been factored into the final recommendation of the Joint Committee in increasing the existing safety distance from 50M to 150M arbitrarily.
22. Page 26 of the Report: Under 6.1: Blast trials and assessment of vibration it is mentioned that the experiments were designed to study the influence even under the worst case scenario 'The number of hotels and total explosive charges were increased as a result of human response study where some of the people living in the vicinity of quarries claimed that the normal practice of blasting by the mine management had a bigger size (higher intensity) than that blasting conducted on the experimental day. Therefore, the experiment were designed to study the influence even under the

worst scenario. The committee has misrepresented the normal blasting practise and conducted blasting at higher-than-normal intensity, this itself is also a pointer that the study results will not be reflective of the normal/standard practise/scale of blasting adopted by majority quarries in Kerala, but are exaggerated results obtained by conducting blasting at a higher-than-normal intensity as worst scenario cases. The safe permissible vibration level (Peak Particle Velocity, PPV) as per the DGMS Ground Vibration Standards for all the experimental sites is 10 mm/s as the frequency levels recorded for most of the blasts is above 25 Hz. Please refer Page 33 of the report: 'Table 6: Permissible peak particle velocity (mm/sec) as per Directorate General of Mine Safety (DGMS) in India (Technical Circular Number 7 of 1997).

23. Further, on Page 26, the Report goes on to state: 'Considering the peak dominant frequency of ground vibration wave, the ground vibration data recorded at different quarries (even ground vibration value of 10.42 mm/s recorded at 28 m distance from the blast) were all within the safe level as per DGMS Ground Vibration Standards. However, due to human response studies at different quarries, PPV value of 5 mm/8 has been considered as the safe level.
24. This is completely arbitrary and unsound. The current safe permissible vibration level/standard by DMGS (PPV of 10 mm/s for blasts above 25 Hz) is applicable throughout India. There cannot be

any change to existing standard as determined by any other agencies based on human response. This is objectionable because there is no such established standards as Human response standard. This will vary from person to person. Hence a scientifically established and approved standard should not be overlooked or superseded by a human response standard. Further, in stating that a different ground vibration limit/standard may be considered for Kerala is totally arbitrary and is discriminating against the State. At best, each quarry operation is site-specific and not State specific.

25. On Page 32 in the report, it states: 'The maximum value of vibration recorded at a distance of 50 m from the blasting face was 8.21 mm/s having dominant excitation frequency of 230 Hz. Further, the summary of the ground vibrations for the maximum and minimum values is on Page 33 of the report under 'Table 5: Minimum and Maximum values of PPV and AOP recorded during experimental trials at different stone quarries of Kerala. It can be seen that all the P.P.V values are within permissible limit of 10 mm/s by DGMS standard for distances of 50M and above. Hence, the current safety distance of 50M is sufficient as per the results of blast study conducted by the joint committee study if the DGMS standard are adhered to in Kerala. As mentioned before, it is also important to reiterate that all these values were within permissible levels of DGMS standards even considering the fact blasting studies

were conducted at a much higher level of intensity of worst-case scenario blasting.

26. On page 27 in the report, it states: 'AOP limit as per United States Bureau of Mines (USBM) standard is 134 dB(L) and as per CPCB standard is 140 dB with 100 impulses/day based safe distance criteria'. Refer Page 33 of the report for 'Table 5: Minimum and Maximum Values of PPV and AOP recorded during experimental trials at different stone quarries of Kerala'. Some key findings from the above table is on Page 34 of the Report, and states:

- The air-overpressures (AOP) data recorded were in the range of 91.48 dB(L) to 128.6 dB(L).
- The dominance of AOP data recorded at a distance of 50 m was in the range of 110 to 120 dB(L) (Table 5)

Hence, as per the Air Overpressure Standards and as per the results from the blast study conducted by the Joint Committee, blasting with current safety distance of 50m is safe. As mentioned before, it is also important to reiterate that all these values were within permissible levels/standards considering that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting.

27. As per clause 7 (1) of 'The Noise Pollution (Regulation and Control) Rules, 2000', the permissible limit or standards for the Ambient Noise for the different zones (during day-time) are as follows:

Industrial area – 75 Db(A)

Commercial area – 65dB (A)

Residential area – 55 dB (A)

Silent zone – 50 dB (A)

As per the 'The Noise Pollution (Regulation and Control) Rules, 2000', the Ambient Air Noise Standards Limits in the Category of Industrial Area/Zone is 75dB (A) in the Day Time and 70 dB (A) in the Night Time. As per the clause 7(1) of the Noise Pollution (Regulation and Control) Rules, 2000, complaints can be made to the authority if the noise levels exceed the ambient standards by 10dB(A) or more in any area or zone. As per the Clause 12 of the 'The Noise Pollution (Regulation and Control) Rules, 2000' the noise level at the boundary of the public place, where loudspeaker or public address system or any other noise source is being used shall not exceed 10 dB (A) above the ambient noise standards for the Industrial area, or 75dB (A) whichever is lower. On observations on Noise Pollution on Page 36 of the Report, it states: 'Ambient noise standards of 55 dB (A) for residential areas are applicable from the boundary of quarry/lease area and any increase in ambient noise by 10 dB (A) shall be deemed as violation/exceedance in noise'.

Hence, in the report, the ambient noise standards of 55 dB (A) for the Residential Areas is considered when determining whether noise levels exceeded by 10 dB(A) as a case of violation. If the ambient noise standards of 75 dB(A) for Industrial Area had been used, there would not have been any case of violation at all even

for a safety distance of 50 meters, as is seen in the Report on Page 37: 'Figure 3: Difference in noise dB Leq (A) values at 50, 100 & 200 m station.' All the values recorded at 50m was lower than the ambient value standard of 75 dB(A) for Industrial Zone. It is further stated in the report on Page 36 that: 'Maximum noise recorded during operation in 50m was 74.49 dB(A) at Palakkad' Further, from the 'Figure 3: Difference in noise dB Leq (A) values at 50, 100 & 200m station', it is clear that the noise levels is not necessarily decreasing in linear pattern as the distance increases. Please refer Annexure 1, which is the summary of the actual values of the noise levels recorded at the quarry units as per graphical representation in Figure 3. These actual values have been taken from detailed part of the report itself under study results of each quarry unit. Noise levels recorded at four quarries out of nine quarries at 100m is more than the noise levels recorded at 50m during mining operations. This seems illogical in every sense, and hence the results seem to be inaccurate.

Hence, determining a safety distance based on the noise level observations made by the Joint Committee seem to be fraught with errors and inconsistencies, which is explained below:

- (i) The category of the area/zone where the study undertook should be considered as the Industrial Area rather than Residential as there are just few houses in the nearby zones of 50-150m.

(ii) The area/zone should be logically considered as Mixed Area/Zone as both Residential & Industrial areas are involved and the Noise level limits should be of Ambient standards of industrial Area.

(iii) The noise levels monitored were not of mining related alone. There were contributions from public roads, public spaces, and public& private transportation system etc. the same was also mentioned in the report. Refer Page 28 of the Report, wherein it states 'Noise contributions from public roads, public spaces, and safety sirens were noticed at these locations.' There could have been many such external noises not related to mining activity which could have been captured either in the ambient noise levels or while the mining operations noise levels were being monitored or both. There has been no definite or scientific measure undertaken to negate the impacts of these external noise influences from the study, thus the current observations need not be accurate of the impact of blasting/mining activities.

(iv) The details of Leq (A), the energy mean of the noise level over a specified period of the noise levels or the time weighted average of sound level, is not mentioned in the report. As per the statutory limits, the maximum noise levels near the construction site should be limited to 75 dB (A) Leg (5 min) in industrial areas and to 65 dB (A)Leg (5 min) in other areas. In this context, it is important to mention that blasting activity is an instantaneous activity which lasts only few seconds, which cannot be taken into account.

(v) If the recorded noise is due to drilling and mucking, it should have been almost similar for all the mines as the activity in all the mines was same, however it is observed that it is different for different mines. This indicate that the noise levels recorded were affected by other noises other than mining.

(vi) Moreover, if the noise levels are a problem there are ways and means to reduce it by placing of acoustic barriers like plantation and other means.

(vii) The safe distance cannot be decided just on the basis of Noise, when all other crucial parameters like PPV, AOP and Fly rock are within the limits. That is the reason why the DGMS vibration as the criterion has not even fixed the statutory limits for Air overpressure.

(viii) A Heavy Truck can generate the noise of 90 dB (A) than a rockdrill 87 dB (A) (at 50 feet). Whereas when there are no issues for Truck to move, it seem illogical that there should be any issues for rock-drill which produces relatively lesser noise.

(ix) Intensity/Attenuation of 'Noise' is affected by many parameters like

- Traffic Conditions
- Roadway Configuration like Grade and Vertical Alignment, Horizontal Alignment
- Altitude of site
- Wind direction
- Shielding and Ground Cover

The above are different for different mines and hence categorising all the mines into one and having a single standard is not appropriate and the conclusions / recommendations should be mine & site specific.

(x) Indian statutory body DGMS on the basis of scientific studies, accords permission under Regulation 196 (3) of the Coal Mines Regulations, 2017 for near field blasting upto 100 m distance from structures. DGMS also accords permission under Regulation 196(3) of the Coal Mines

Regulations, 2017 for blasting upto 50 m distance from structures in case electronic delay initiation is used.

(xi) Rock blasting is being conducted at the closed distances of 20-50m in Metro Rail Projects by controlling all the above blast effects of Vibration, Air-overpressure and Fly rock. Similarly, it can be conducted at 50-100 m distances as per the DGMS guidelines by adopting controlled blasting measures suggested by scientific institutes.

(xii) Nowhere in world, the safe distance criteria is based on the 'Noise' as it is not a significant parameter which can cause structural damage. Moreover, the local public grievances are not related to 'Noise' levels.

For all the reasons stated above, determining a safety distance of 150M based on the noise level observations made by the Joint Committee is vitiated by errors and inconsistencies and not aligning with the existing standards and statues. The current safety distance of 50M is sufficient when considering the zone of mining as Industrial Area/Zone when considering noise level pollution. As mentioned before, it is also important to reiterate that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting, hence need not be reflective of the standard practices used by mine owners in Kerala which could also lead to inaccurate and exaggerated readings and results.

28. In the report of the joint committee on Page 28, the following is observed: 'Effect of particulate matter/ dust is limited to a distance of 100 m from the blasting point, though dust generation can happen anywhere in the lease area. Due to the undulating topography the placement of instruments was challenging and the structures inside the quarry also act as barriers or deposition surfaces. Based on the assessment, the influence zone of dust/particulate matter is up to 100 m, beyond this point there were no drastic increases in the dust concentration. The micro weather conditions in quarry area also changes instantaneously and heavily influences the pollution transport phenomena.' Further, on page 39 of the report, in Figure 4: Difference in PM 2.5 values at 50 and 100 m stations are given and page 40 of the report, Figure 5: Difference in PM 10 values at 50 & 100m stations are given. Please refer Annexure 2, which is the summary of the actual values of the dust levels recorded at the quarry units as per graphical representation in above Figures 4 & 5. These actual values have been taken from detailed part of the report itself under study results of each quarry unit. On closer perusal of the actual values related to these graphs taken from the later parts of the report, it is clear that the observational values mentioned in these graphs seem inconsistent and fraught with errors. While the dust quality values should improve with increase in safety distance, this is not

happening in many of the observed values in the report in many of the locations. Few inconsistencies are mentioned below:

- The PM 10 values recorded at 200M is higher than recorded at 100M in 3 out of the 9 quarry units.
- The PM 10 values recorded at 200M is higher than recorded at 50M 3 out of the 9 quarry units.
- The PM 2.5 values recorded at 200M is higher than recorded at 100M in 3 out of the 9 quarry units
- The PM 2.5 values recorded at 200M is higher than recorded at 50M 5 out of the 9 quarry units.

Hence, if the dust quality is worse at 200M than 50M during the mining operation, it could be other factors than mining contributing to increased dust in outer areas like dust generated by vehicular traffic from nearby roads, other factories and establishments in the area, or maybe even micro weather conditions that could be contributing to these as well. The study has not taken into account these factors when determining the safety distance criteria based on these inconsistent readings. Based on the above inconsistent results, the joint committee in its recommendation in its report has mentioned: 'Effect of particulate matter/ dust is limited to a distance of 100 m from the blasting point, though dust generation can happen anywhere in the lease area'. However, there are cases in the study report (Eg. - Quarry owned by George Kochuparambiln at Vazhithala in Idukki District), wherein the effect of particulate

matter/ dust is limited to permissible limit even at a distance of 50M from the blasting point in both the case of PM 2.5 and PM 10. Hence, it is possible that with adequate dust suppression and control measures, safety distance of 50M is sufficient in the case of Dust Pollution. As mentioned before, it is also important to reiterate that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting, hence need not be reflective of the standard practices used by mine owners in Kerala which could also lead to inaccurate and exaggerated readings and results. Our member stakeholders are prepared to follow any instructions suggested by Pollution Control Board to control propagation of dust particles to limit to 50M. Our member stakeholders are also willing to install air quality monitoring equipment of latest technology approved by pollution control board at their mine boundaries to ensure that dust from our mining operations are not carried away to nearby habitations.

29. Considering all the above factors affecting safety distance criteria, the joint committee recommendation is based on outdated general precautionary principle rather than proposing mitigation measures using technological advancement for operating stone quarries. Their technical study had highlighted infact that the adverse impacts of quarrying operation is limited to a safety distance of 50m in almost all the parameters considered for study. Few other parameters where it has exceeded 50M seem fraught with

inconsistencies and errors in the observations and recommendations. As mentioned before, it is also important to reiterate that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting, hence need not be reflective of the standard practices used by mine owners in Kerala which could also lead to inaccurate and exaggerated readings and results. If the suggested recommendation of 150 m safe distance is implemented in Kerala, it will jeopardize the very existence of minor mineral mining industry which provides maximum employment in Kerala & revenue to government. It will also hamper the infrastructural developments happening in the State of Kerala.

Drawn on:03.04.2023

Filed by:

(E.M.S.ANAM)
Advocate for the Respondents in the O.A.

Place: New Delhi
Dated:02.05.2023

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL**NEW DELHI****O.A.No.304 of 2019****IN THE MATTER OF:-**

M. Haridasan

...Applicant in the O.A.

Versus

State of Kerala & Ors.

...Respondents in the O.A.

AND**IN THE MATTER OF:****M.A.No.95 OF 2021**

Crystal Granites Ltd. & Anr.

.... Applicants

AFFIDAVIT

I, George Antony, S/o Kora Antony, aged 68 years, Managing Partner, Crystal Granites Ltd., residing at Kureekkal House, Kizhakambalam P.O., Ernakulam District, Kerala State do hereby solemnly affirm and state as under:-

1. I am the applicant in the aforesaid M.A.No.95 of 2021. That I am conversant with the facts of the case and am competent to swear to this affidavit.
2. That I have read and understood the contents of the accompanying objection and state that the facts stated in the objection are true to my knowledge and belief.

All the fact above stated are true and correct to the best of my knowledge and belief.

For GK GRANITES

George Antony

Managing Partner
DEPONENT

VERIFICATION:

I, George Antony the above named deponent, do hereby verify that the contents of the above affidavit para 1 to 3 are true and correct. No part of it is false and nothing material has been concealed there from.

Verified at Aluva on this the 8th day of April, 2023.

For GK GRANITES

George Antony

Managing Partner
DEPONENT

Solemnly affirmed and signed before me by the deponent on this the 8th day of April, 2023 in my office at Aluva

ADVOCATE

8/4/2023

M.A.JAWAHARUDDIN MA, LLB
ADVOCATE & NOTARY
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