



REGIONAL OFFICE  
RAJASTHAN STATE POLLUTION CONTROL BOARD

18, Near Pannadhaya Circle, Azad Nagar, Bhilwara.  
Phone/Fax no. 01482-241159, E-Mail ID : rorpcb.bhilwara@gmail.com

No.: RPCB / RO/BHL/NGT(2019)(L-4)/ 2222  
(Through E-Mail)

Date: 14/08/19

The Registrar,  
National Green Tribunal,  
Principal Bench, New Delhi

Sub: - Regarding Fctual Report in reference to O. A. No. 288/2019, Bal Kishan  
Vyas Versus State of Rajasthan.

Ref:- Order of Hon'ble National Green Tribunal, Principal Bench, New Delhi  
issued vide dated 03.05.2019.

Sir,

With reference to above case matter, Hon'ble National Green Tribunal, Principal Bench, New Delhi vide order dated 03.05.2019 has directed the Rajasthan State Pollution Control Board (may be read as RSPCB) and Sub-Divisional Magistrate (SDM), Bhilwara to look into the matter and furnish a report on the factual aspects by e-mail within two month from date of receipt of copy of this order.

- The matter came into knowledge of RSPCB, Bhilwara on dated 23.07.2019.
- Regional Office, RSPCB, Bhilwara has informed to SDM, Bhilwara vide letter no. RPCB / RO/BHL/NGT(2019)(L-4)/1955-59 dated 23.07.2019 regarding contents of petition in reference to O.A. No.- 288/2019 and requested to direct the concerned department i.e. Department of Mines & Geology, Bhilwara to furnish factual and action taken report at the earliest.
- Member Secretary, RSPCB has appointed Regional Officer, RSPCB, Bhilwara as Nodal Officer & OIC vide letter No. 278 dated 29.07.2019 that the matter pertains under the jurisdiction of Regional Office, RSPCB, Bhilwara vide e-mail dated 01.03.2019.
- Further, Member Secretary, RSPCB has also requested to District Collector, Bhilwara vide letter no. 272 dated 29.07.2019 and Director, Department of



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Mines and Geology, Udaipur vide letter no. 275 dated 29.07.2019 for compliance of aforesaid order of Hon'ble National Green Tribunal.

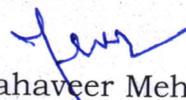
- As per request by RSPCB, Bhilwara, the Hon'ble National Green Tribunal provided the copy of complaint filed by petitioner through e-mail (**judicial-ngt@gov.in**) on dated 09.08.2019 and the same was forwarded to SDM, Bhilwara and Mining Engineer, Department of Mines & Geology, Bhilwara vide e-mail dated 09.08.2019.
- Copies of e-mail correspondences and referred letters are enclosed at **Annexure-I** for ready reference.
- Regional Officer, RSPCB, Bhilwara has received a Factual Report from Sub-Divisional Magistrate, Bhilwara on dated 19.08.2019 (vide letter no. nyay/2019/2711-45 dt. 19.08.2019), which is the part of final Factual Report received from District Magistrate, Bhilwara.
- Further, District Magistrate, Bhilwara has also provided the Final Factual Report vide letter no. nyay/2019/26358 dt. 19.08.2019, supported with the relevant reports of various Agencies and Departments as mentioned in the Factual Report. Copy of the same is enclosed at **Annexure-II** for ready reference.

Submitted for information and further necessary direction please.

Regards.

Encl: As above

Yours Sincerely

  
(Mahaveer Mehta)  
Regional Officer



REGIONAL OFFICE  
RAJASTHAN STATE POLLUTION CONTROL BOARD

18, Near Pannadhaya Circle, Azad Nagar, Bhilwara.  
Phone/Fax no. 01482-241159, E-Mail ID : rorpcb.bhilwara@gmail.com

No. RPCB/RO/BHL/NGT(2019)(L-4)/ 1955-59

Dated : 23/07/19

Urgent/NGT Matter

(Through E-mail also)

To,

Sub-Divisional Magistrate,  
Bhilwara, District-Bhilwara.

**Subject:** Regarding Compliance of directions passed by Hon'ble National Green Tribunal, Principal Bench, and New Delhi in O.A. No. 288 /2019 titled as Shri Balkrishan Vyas V/s State of Rajasthan.

**Reference:** Hon'ble N.G.T., Principal Bench, New Delhi's order sheet dated 03.05.19.

Sir,

Apropos Above, it is submitted that Hon'ble N.G.T., Principal Bench, New Delhi has passed directions in O.A. No. 288/2019, titled as Shri Balkrishan Vyas V/s State of Rajasthan vide order sheet dated 03.05.2019, inter-alia reproduced herein under:-  
**"Allegation in this letter, which has been treated as an application, relates to causing of pollution by M/s Jindal Shah Ltd., Bhilwada, Rajasthan in the process of illegal blasting and illegal mining. Let the SDM, Bhilwada and Rajasthan State Pollution Control Board (State PCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within two months from the date of receipt of copy of this order by e-mail at ngt.filing@gmail.com. The State PCB will be the nodal agency for coordination and compliance"**

To ensure the compliance of above stated directions, it is requested to kindly direct the concerned department i.e Department of Mines & Geology, Bhilwara to constitute a team for the verifications of contents as mentioned in the referred ordersheet dated 03.05.2019 as the matter is related to illegal blasting and illegal mining by M/s Jindal Saw Ltd., Bhilwara; so that timely factual and action taken report may be submitted to the Hon'ble N.G.T., Principal Bench, New Delhi. Further, this office is always eager to assist the matter as per directions.

Submitted for information and necessary action please.

Encl:- Copy of Ordersheet dt 03.05.2019

(Rajeev Pareek)

Regional Officer

Copy to followings: for compliance and necessary action please

1. P.A. to District Collector, Bhilwara
2. Sr. P.A. to MS, RSPCB, Jaipur for information.
3. SME, Department of Mines and Geology, Near Pannadhaya Circle, Bhilwada.
4. Legal Advisor, RSPCB, Jaipur, as per telephonic discussion held on 23.07.2019.

4 23/7/2019  
Regional Officer

7/23/2019

Gmail - To provide copy of complaint filed by applicant Sh.Balkrishan before the National Green Tribunal, Principal bench, New Delhi...



RO RSPCB Bhilwara <rorpcb.bhilwara@gmail.com>

To provide copy of complaint filed by applicant Sh.Balkrishan before the National Green Tribunal, Principal bench, New Delhi in the matter of O.A. No. 288/2019 titled as "Balkrishan Vyas Versus State of Rajasthan"

1 message

Tue, Jul 23, 2019 at 3:52 PM

RO RSPCB Bhilwara <rorpcb.bhilwara@gmail.com>  
To: ngt.filing@gmail.com

To,  
Registrar,  
National Green Tribunal, Principal Bench,  
New Delhi

Sir,  
With reference to above subject matter, it is submitted that undersigned has received today, the order sheet dated 03.05.2019 to look into the matter and take appropriate action in accordance with law and furnish a factual report & ATR to the Hon'ble NGT. It is requested to kindly provide the copy of complaint filed by the applicant for further compliance of the order passed by the Hon'ble NGT please.  
Regards  
Regional Officer,  
Rajasthan State Pollution Control Board  
Bhilwara



राजस्थान राज्य प्रदूषण नियंत्रण मण्डल  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
4, Institutional Area, Jhalana Doongri, Jaipur.  
Phone: 5101871, 5101872, EAPBX: 5159600, 5159699 FAX: 5159694-97

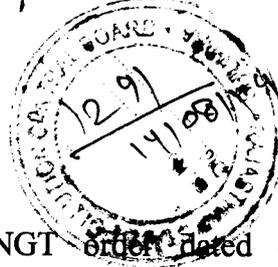
SPEED-POST

NGT-MATTER  
MOST URGENT

No.F.10(264)RPCB/Legal/NGT/2019 / 272

Dated : 29.7.19

District Collector,  
Bhilwara,



Am. 7  
S.O.

**Sub.:-** Compliance of Hon'ble NGT order dated 03.05.2019 in Original Application 288/2019 Balkrishna Vyas Vs State of Rajasthan & Others before the Hon'ble NGT, New Delhi.

Sir,

With reference to above subjected matter it is to inform that the Hon'ble Tribunal has passed order dated 03.05.2019 (Copy enclosed for ready reference) inter-alia as follows:-

*“Allegation in this letter, which has been treated as an application, relates to causing of pollution by M/s Jindal Shah Ltd., Bhilwada, Rajasthan in the process of illegal blasting and illegal mining.*

*Let the SDM, Bhilwada and Rajasthan State Pollution Control Board (State PCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within two months from the date of receipt of copy of this order by e-mail at [ngt.filing@gmail.com](mailto:ngt.filing@gmail.com). The State PCB will be the nodal agency for coordination and compliance.”*

It is therefore, requested to direct the concerned officials to ensure the compliance of the directions passed by the Hon'ble Tribunal. Next date of hearing is 21.08.2019.

Yours sincerely,

-SD-  
(Shailaja Deval)  
Member Secretary

Encl: As above

✓ Copy to:- Regional Officer, RSPCB, Bhilwara for information and necessary action.

Member Secretary



राजस्थान राज्य प्रदूषण नियंत्रण मण्डल  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
4, Institutional Area, Jhalana Doongri, Jaipur.  
Phone: 5101871, 5101872, EAPBX: 5159600, 5159699 FAX: 5159694-97

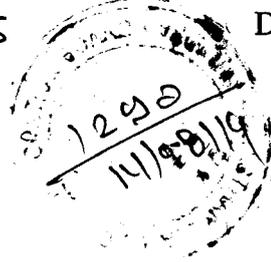
**SPEED-POST**

**NGT-MATTER**  
**MOST URGENT**

No.F.10(264)RPCB/Legal/NGT/2019/275

Dated : 29.7.19

Director,  
Department of Mines and Geology  
Directorate, Khanij Bhawan, Shastri Circle,  
Udaipur (Raj) - 313001



**Sub.:-** Compliance of Hon'ble NGT order dated 03.05.2019 in Original Application 288/2019 Balkrishna Vyas Vs State of Rajasthan & Others before the Hon'ble NGT, New Delhi.

Sir,

With reference to above subjected matter it is to inform that the Hon'ble Tribunal has passed order dated 03.05.2019 (Copy enclosed for ready reference) inter-alia as follows:-

***“Allegation in this letter, which has been treated as an application, relates to causing of pollution by M/s Jindal Shah Ltd., Bhilwada, Rajasthan in the process of illegal blasting and illegal mining.***

***Let the SDM, Bhilwada and Rajasthan State Pollution Control Board (State PCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within two months from the date of receipt of copy of this order by e-mail at [ngt.filing@gmail.com](mailto:ngt.filing@gmail.com). The State PCB will be the nodal agency for coordination and compliance.”***

It is therefore, requested to depute an official for inspection regarding illegal mining & illegal blasting, along with the District Administration and Regional Officer, Bhilwara. Next date of hearing is 21.08.2019.

Yours sincerely,

-Sd-  
(Shailaja Deval)  
Member Secretary

Encl: As above

Copy to following for information and necessary action

1. Mining Engineer, Bhilwara
- ✓ 2. Regional Officer, RSPCB, Bhilwara for information and necessary action.

Member Secretary



राजस्थान राज्य प्रदूषण नियंत्रण मण्डल  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
4, Institutional Area, Jhalana Doongri, Jaipur.  
Phone: 5101871, 5101872, EAPBX: 5159600, 5159699 FAX: 5159694-97

**SPEED-POST**

**NGT-MATTER**  
**MOST URGENT**

No.F.10(264)RPCB/Legal/NGT/2019/278

Dated: 29.7.19

Regional Officer,  
Regional Office,  
Rajasthan State Pollution Control Board,  
Bhilwara,



**Sub.:-** Compliance of Hon'ble NGT order dated 03.05.2019 in Original Application 288/2019 Balkrishna Vyas Vs State of Rajasthan & Others before the Hon'ble NGT, New Delhi.

Sir,

With reference to above subjected matter it is to inform that the Hon'ble Tribunal has passed order dated 03.05.2019 (Copy enclosed for ready reference) inter-alia as follows:-

***"Allegation in this letter, which has been treated as an application, relates to causing of pollution by M/s Jindal Shah Ltd., Bhilwada, Rajasthan in the process of illegal blasting and illegal mining.***

***Let the SDM, Bhilwada and Rajasthan State Pollution Control Board (State PCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within two months from the date of receipt of copy of this order by e-mail at [ngt.filing@gmail.com](mailto:ngt.filing@gmail.com). The State PCB will be the nodal agency for coordination and compliance."***

Therefore, you are appointed as Nodal Officer & OIC with the direction to ensure the compliance of Hon'ble NGT order and file the compliance report as desired by the Hon'ble Tribunal through email [ngt.filing@gmail.com](mailto:ngt.filing@gmail.com). Next date of hearing is 21.08.2019.

Yours sincerely,

  
(Shantaja Deval)  
Member Secretary

Encl: As above

*Urgent*  
*HT*  
*20/8/19*  
*(Shantaja)*



REGIONAL OFFICE  
RAJASTHAN STATE POLLUTION CONTROL BOARD

18, Near Pannadhaya Circle, Azad Nagar, Bhilwara.  
Phone/Fax no. 01482-241159, E-Mail ID : rorpcb.bhilwara@gmail.com

No. RPCB/RO/BHL/NGT(2019)(L-4)/. 2162 - 66

Dated : 01/01/19

Most-Urgent/NGT Matter

(Through E-mail also)

Reminder-I

To,

Sub- Divisional Magistrate,  
Bhilwara, District-Bhilwara.

**Subject:** Regarding Compliance of directions passed by Hon'ble National Green Tribunal, Principal Bench, and New Delhi in O.A. No. 288 /2019 titled as Shri Balkrishan Vyas V/s State of Rajasthan.

**Reference:** 1. Hon'ble N.G.T., Principal Bench, New Delhi's order sheet dated 03.05.19.  
2. This office letter No. 1955-1959 dated 23.07.19.  
3. Head office letter No. 278 dated 29.07.19.

Sir,

Apropos Above, it is submitted that Hon'ble N.G.T., Principal Bench, New Delhi has passed directions in O.A. No.288/2019, titled as Shri Balkrishan Vyas V/s State of Rajasthan and order sheet dated 03.05.2019, inter-alia reproduced herein under:-

**"Allegation in this letter, which has been treated as an application, relates to causing of pollution by M/s Jindal Shah Ltd., Bhilwada, Rajasthan in the process of illegal blasting and illegal mining. Let the SDM, Bhilwada and Rajasthan State Pollution Control Board (State PCB) look into the matter and take appropriate action in accordance with law and furnish a factual and action taken report to this Tribunal within two months from the date of receipt of copy of this order by e-mail at ngt.filing@gmail.com. The State PCB will be the nodal agency for coordination and compliance"**

To ensure the compliance of above stated directions, it is requested to kindly direct the concerned department, i.e Department of Mines & Geology, Bhilwara to constitute a team for the verification of contents as mentioned in the referred ordersheet dated 03.05.2019 as the matter is related to illegal blasting and illegal mining by M/s Jindal Saw Ltd., Bhilwara; so that timely factual and action taken report may be submitted to the Hon'ble N.G.T., Principal Bench, New Delhi. Further, this office is always eager to assist the matter as per directions.

Submitted for information and necessary action please.

Encl- Copy of Order-sheet dated 03.05.2019

(Mahaveer Mehta)

Regional Officer

Copy to followings: for compliance and necessary action please

1. P.A. to District Collector, Bhilwara
2. Sr. P.A. to MS, RSPCB, Jaipur for information.
3. SMI, Department of Mines and Geology, Near Pannadhyay Circle, Bhilwada.
4. Legal Advisor, RSPCB, Jaipur.

Regional Officer



RO RSPCB Bhilwara &lt;rorpcb.bhilwara@gmail.com&gt;

**To provide copy of complaint filed by applicant Sh.Balkrishan before the National Green Tribunal, Principal bench, New Delhi in the matter of O.A. No. 288/2019 titled as "Balkrishan Vyas Versus State of Rajasthan"**

1 message

RO RSPCB Bhilwara &lt;rorpcb.bhilwara@gmail.com&gt;

Thu, Aug 8, 2019 at 6:04 PM

To: ngt.filing@gmail.com

Cc: member-secretary@rpcb.nic.in, sdo bhilwara &lt;sdobhilwara@gmail.com&gt;, sdo-bhi-rj@nic.in

To  
Registrar,  
National Green Tribunal, Principal Bench,  
New Delhi

**MOST URGENT**

Sir,  
With reference to above subject matter, it is submitted that undersigned has received today, the order sheet dated 03.05.2019 to look into to the matter and take appropriate action in accordance with law and furnish a factual report & ATR to the Hon'ble NGT. It is requested to kindly provide the copy of complaint filed by the applicant for further compliance of the order passed by the Hon'ble NGT as the next date of hearing is 21.08.2019. Please treat it as most urgent.

Regards  
Regional Officer,  
Rajasthan State Pollution Control Board

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*08/08/2019*  
*SO*

NGT MATTER

MOST URGENT

राजस्थान-सरकार

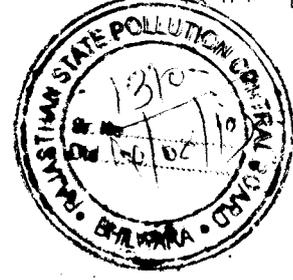
**कार्यालय जिला मजिस्ट्रेट, भीलवाडा**

क्रमांक : न्याय / 2019 / 26327

दिनांक : 08.08.2019

प्रेषित,

1. उपखण्ड मजिस्ट्रेट,  
भीलवाडा
2. क्षेत्रीय अधिकारी,  
राजस्थान राज्य प्रदूषण नियंत्रण मण्डल,  
भीलवाडा



विषय :- प्रार्थना पत्र 288/2019 श्री बालकिशन व्यास बनाम राजस्थान राज्य व अन्य में माननीय एन0 जी0 टी0 न्यायालय, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना के संबंध में।

प्रसंग :- सदस्य सचिव, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल जयपुर के पत्र क्रमांक 271 दिनांक 29.7.2019 के क्रम में।

उपर्युक्त विषयान्तर्गत प्रासंगिक पत्र द्वारा प्रार्थना पत्र 288/2019 श्री बालकिशन व्यास बनाम राजस्थान राज्य व अन्य में माननीय एन0 जी0 टी0 न्यायालय, नई दिल्ली के आदेश दिनांक 03.05.2019 की प्रति पालना हेतु प्राप्त हुई है, जिसका प्रति संलग्न है। उक्त प्रकरण में पेशी दिनांक 21.08.2019 नियत है।

अतः उक्त प्रासंगिक पत्र में अंकित माननीय एन0 जी0 टी0 न्यायालय, नई दिल्ली के निर्देशों के क्रम में नियमानुसार कार्यवाही की जाकर, की गई कार्यवाही की वस्तुस्थिति की रिपोर्ट अविलम्ब इस कार्यालय को भिजवाना सुनिश्चित करें।

संलग्न:- उक्तानुसार

जिला मजिस्ट्रेट  
भीलवाडा

प्रतिलिपि:- सूचनार्थ / आवश्यक कार्यवाही हेतु

1. अधीक्षण अभियंता, खनिज विभाग भीलवाडा को सूचनार्थ / आवश्यक कार्यवाही हेतु प्रेषित है।

जिला मजिस्ट्रेट  
भीलवाडा

13/08.  
T50 (P)

राजस्थान सरकार  
कार्यालय जिला मजिस्ट्रेट, भीलवाड़ा

क्रमांक / न्याय / 2019 / 26358

दिनांक :- 14.08.2019

प्रेषित:-

✓ क्षेत्रीय अधिकारी,  
प्रदूषण नियंत्रण मण्डल,  
भीलवाड़ा

विषय:- प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना में तथ्यात्मक प्रतिवेदन प्रस्तुत करने के संबंध में।

उपरोक्त विषयान्तर्गत लेख है कि माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना में प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में तथ्यात्मक प्रतिवेदन प्रस्तुत करना है। प्रकरण में पेशी दिनांक 21.08.2019 नियत है। तथ्यात्मक प्रतिवेदन की प्रति संलग्न कर भिजवाई जा रही है।

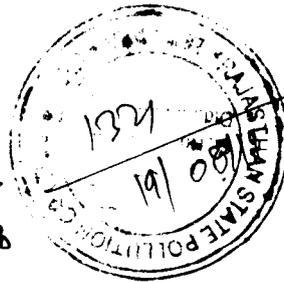
अतः माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली में पेशी दिनांक से पूर्व तथ्यात्मक प्रतिवेदन प्रस्तुत कर अधोहस्ताक्षरकर्ता को अवगत करावें।

संलग्न:- उपरोक्तानुसार

  
जिला मजिस्ट्रेट  
भीलवाड़ा

प्रतिलिपि:-निम्न को उक्त प्रतिवेदन की प्रति संलग्न कर प्रेषित है।

01. सदस्य सचिव महोदय, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जयपुर
02. उपखण्ड मजिस्ट्रेट, भीलवाड़ा
03. अधीक्षण खनि अभियंता, भीलवाड़ा
04. तहसीलदार, भीलवाड़ा



जिला मजिस्ट्रेट  
भीलवाड़ा

राजस्थान सरकार  
कार्यालय जिला मजिस्ट्रेट, भीलवाड़ा

प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 के सम्बन्ध में तथ्यात्मक प्रतिवेदन निम्नानुसार है :-

1. मेसर्स जिन्दल शॉ लिमिटेड के पक्ष में खनन पट्टा संख्या 631/2005 निकट ग्राम डेडवास तहसील व जिला भीलवाड़ा में क्षेत्रफल 1556.7817 हैक्टर खनिज लेड, जिंक, कॉपर, आयरन, गोल्ड, सिल्वर, कोबाल्ट एवं एसोसिएटेड खनिजों के लिये स्वीकृत होकर प्रभावशील हैं। पट्टाधारी कम्पनी द्वारा उक्त खनन पट्टा क्षेत्र में खनन कार्य हेतु की जा रही ब्लास्टिंग के लिये खान सुरक्षा निदेशालय अजमेर के पत्र दिनांक 06.12.2016 से ब्लास्टिंग की अनुमति प्राप्त की हुई है।

2. उक्त खनन पट्टा क्षेत्र के समीप स्थित ग्राम पुर के ग्रामीणों द्वारा शिकायत की गई कि पट्टाधारी कम्पनी द्वारा क्षेत्र में खनन कार्य हेतु की जा रही ब्लास्टिंग से उनके रहवासी मकानों में दरारे आ रही हैं, जिससे जान-माल का खतरा बना रहता है।

3. क्षेत्र के ग्रामीणों द्वारा की गई शिकायतों के सम्बन्ध में अधीक्षण खनि अभियन्ता, भीलवाड़ा वृत्त, भीलवाड़ा, प्रशिक्षु आई.ए.एस. श्री उत्सव कौशल एवं क्षेत्रिय अधिकारी राजस्थान राज्य प्रदुषण नियंत्रण मण्डल भीलवाड़ा द्वारा दिनांक 17.12.2018 को क्षेत्र का निरीक्षण किया गया। उक्त निरीक्षण रिपोर्ट के अनुसार क्षेत्र में ब्लास्टिंग करने के पश्चात उसकी तीव्रता को सिस्मोग्राफ नामक यंत्र से नापा गया, जिसका मापन करने पर Frequency 10-20 हर्टज के मध्य में पीक वेक्टर सम (पी.वी.सी.) 1, 2, 3 की कुल मात्रा 1.562 मिलीमीटर प्रति सैकण्ड आंकी गई, जो कि खनन सुरक्षा महानिदेशालय, अजमेर द्वारा जारी अनुमति में निर्धारित मापदण्ड के अनुसार बहुत सुरक्षित थी, जबकि पुर कस्बा ब्लास्टिंग क्षेत्र से करीब 2 किलोमीटर से अधिक दूरी पर है। अतः यह कहा जाना सम्भव नहीं है कि पुर में मकानों में पाई गई दरारों का कारण जिन्दल शॉ लिमिटेड के द्वारा की गई ब्लास्टिंग से हुआ हो।

4. तत्पश्चात दिनांक 19.12.2018 से पांच अभियन्ताओं की कमेटी का गठन कर क्षेत्र के मकानों में आई दरारों का क्या कारण है ? की रिपोर्ट प्रस्तुत करने हेतु लिखा गया। उक्त आदेश की पालना में अभियन्ताओं द्वारा क्षेत्र का निरीक्षण दिनांक 20.12.2018 को किया गया। जिसकी रिपोर्ट निम्नानुसार है :-

क्र०सं०	विभाग का नाम	प्रस्तुत रिपोर्ट का विवरण
01	अधीक्षण अभियन्ता, जलदाय विभाग, भीलवाड़ा	इन दरारों का कारण इस क्षेत्र में कम्पन के कारण क्षेत्र की जमीन में सेटलमेन्ट होना प्रतीत होता है।
02	अधीक्षण अभियन्ता, सा०नि०वि० भीलवाड़ा	मकानों में दरारों का कारण जमीन का बैठना या कम्पन से होना प्रतीत होता है।

03	अधीक्षण अभियंता, जल संसाधन विभाग, भीलवाडा	स्कूल के मैदान में पानी निकलना भी किसी तलाब से संबंधित नहीं है, क्योंकि स्कूल का लेवल भी तालाब के लेवल के आस-पास है।
04	अधीक्षण अभियंता, आर.यू.आई.डी.पी. भीलवाडा	मकानों में दरारों का कारण:- 1. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना। 2. वाईब्रेशन के कारण मकानों की फाउण्डेशन में असमान सेटलमेन्ट होना।
05	अधीक्षण अभियंता, खनिज विभाग, भीलवाडा	1. भूमि के अन्दर स्थित मिट्टी का सेटलमेन्ट होना। 2. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना है।

उक्त निरीक्षण रिपोर्ट अनुसार भी यह स्पष्ट नहीं हो सका कि पुर क्षेत्र में दरारे आने का वास्तविक कारण क्या है।

5. अतः क्षेत्र में आने वाली दरारों के कारणों की स्पष्ट जानकारी नहीं हो पाने से दिनांक 15.01.19 से निदेशक महोदय, अतिरिक्त निदेशक (भू-विज्ञान), उदयपुर एवं अधीक्षण भू-वैज्ञानिक, भीलवाडा, श्री एस. के. परिहार विभागाध्यक्ष, एम.बी.एम. इन्जीनियरिंग कॉलेज, जोधपुर एवं निदेशक खान सुरक्षा महानिदेशालय, अजमेर को पत्र लिखा जाकर क्षेत्र के मकानों में आई दरारों के कारणों की जांच कर रिपोर्ट दिनांक 30.01.2019 तक प्रस्तुत करने हेतु लिखा जाने के साथ ही पट्टाधारी कम्पनी मैसर्स जिन्दल शॉ लिमिटेड को भी पत्र दिनांक 15.01.2019 से पत्र लिखा जाकर सेन्ट्रल इन्स्टीट्यूट ऑफ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर के विशेषज्ञों को बुलवाकर जांच करा दिनांक 30.01.2019 तक रिपोर्ट प्रस्तुत करने हेतु लिखा गया।

6. जिसके क्रम में प्राप्त रिपोर्ट का विवरण निम्नानुसार है:-

• CIMFR :-

तीन सिस्मोग्राफ, ब्लास्टिंग स्थल से ग्राम पुर तक अलग-अलग दूरियों पर लगाकर 3 ब्लास्ट का रिकार्ड किया गया जिसमें ग्राम पुर में ब्लास्ट इण्ड्युस्ड (Blast induced) कम्पन्न नहीं पाये गये तथा मैसर्स जिन्दल शॉ लिमिटेड की खान के पास परमिशीबल लिमिट (Within permissible limit) 4 कम्पन्न पाये गये।

• MBM ENGINEERING COLLEGE JODHPUR - तीन सिस्मोग्राफ से दो ब्लास्टिंग ऑपरेशन का अध्ययन किया गया जिसमें दरारे आने का कारण ब्लास्टिंग नहीं पाया गया।

उक्त निरीक्षण के उपरान्त भी पुर ग्राम के मकानों में दरारें आने का स्पष्ट कारण ज्ञात नहीं होन पर जिला प्रशासन द्वारा भारत सरकार के भारतीय भू-गर्भिक सर्वेक्षण संस्था से जियोटेक्नीकल स्टेडी करवाई गई।

• GSI – भू अध्ययन 4-6 अप्रैल 2019

GSI द्वारा 4 अप्रैल 2019 से 6 अप्रैल 2019 तक दो दिन अध्ययन करने के बाद अध्ययन रिपोर्ट प्रस्तुत की गई जिसमें बताया गया कि पुर ग्राम में दरारे आने का भू-गर्भिक गतिविधि जिम्मेवार नहीं हैं। पुर में स्थानीय हलचल से ही दरारे आयी हैं। आगे दरारे रोकने के दो उपाय सुझाये गये।

1. प्रि-स्पिलिटिंग

2. उपकरण टिल-टेल्स –दरारों के बढने को मापने हेतु लगाने का सुझाव

7. प्रि-स्पिलिटिंग किस प्रकार से की जानी है, की व्यवहारिक जानकारी हेतु CIMFR के दो वरिष्ठ वैज्ञानिकों को जिला प्रशासन द्वारा बुलाया गया। CIMFR के दो वरिष्ठ वैज्ञानिकों द्वारा दिनांक 6 व 7 जून, 2019 को ग्राम पुर क्षेत्र का निरीक्षण कर सुझाव दिया कि प्रि-स्पिलिटिंग जिसमें 100 मीटर तक होल किये जाकर ब्लास्टिंग करके क्रेक करने (प्रि-स्पिलिटिंग) के लिए व्यवहारिक रूप से विस्तृत अध्ययन किया जाना आवश्यक है, जिससे बहुविशेषज्ञता की टीम जिसमें खनन अभियांत्रिकी, भू-जलवेता, भू-भौतिकवता, जियोटेक्निकल स्ट्रक्चरल आदि सम्मिलित हैं, की आवश्यकता है।

8. उपरोक्तानुसार भविष्य में होने वाले नुकसान की संभावना को देखते हुए जिला प्रशासन द्वारा निम्न निर्णय लिये गये :-

• नगर विकास न्यास को निर्देशित किया गया कि वह प्रभावित घरों में उपकरण Tell-Tales को लगाये ताकि भविष्य में आने वाली दरारों की मॉनिटरिंग की जा सके।

9. तत्पश्चात दिनांक 05.07.2019 को शासन सचिवालय, जयपुर में श्रीमान् मुख्य सचिव महोदय, की अध्यक्षता में बैठक सम्पन्न हुई, जिसमें जिला कलक्टर, भीलवाड़ा एवं विभिन्न विभागों के अधिकारी उपस्थित हुए। बैठक में ग्राम पुर की उक्त समस्या के निस्तारण बाबत विस्तृत चर्चा के उपरान्त निम्न निर्णय लिये गये :-

क्र० सं०	निर्णय का विवरण	की गई कार्यवाही का विवरण
01	पुर ग्राम की समस्या के मूल कारण का तकनीकी विशेषज्ञों से जाँच करवाई जावे। जाँच दल में निम्न विशेषज्ञ होंगे। 1- CSIR Building Research Institute, Roorke for Structure issues. 2- National Institute of Hydrology, Roorke for Hydrology Issues. 3-IIT Roorke for Geotechnical lissues.	<ul style="list-style-type: none"> <li>जिसके संबंध में इस कार्यालय के पत्र क्रमांक 26230 दिनांक 22.07.2019 (प्रति संलग्न) द्वारा संबंधित विभागों को पत्र लिखा गया।</li> <li>ग्राम पुर के मकानों में आ रही दरारों के कारणों का अध्ययन</li> </ul>

	4-CIMFR for Mining & Blasting issues 5- MBM Engineering Collage Jodhpur	करने के लिये वैज्ञानिकों की टीम का दिनांक 18.08.2019 से 20.08.2019 तक यात्रा का कार्यक्रम प्रस्तावित हैं एवं उक्त वैज्ञानिकों की टीम भीलवाडा आ चुकी है और अध्ययन जारी है।
02	उक्त विशेषज्ञों का जांच दल जिला प्रशासन(नोडल एजेन्सी) के पर्यवेक्षण में कार्य करेगा।	
03	ऐसे मकान जो पूर्णतया गिर चुके है उनके मुखिया /स्वामित्वधारी को नियमानुसार डीएमएफटी फंड से मुआवजा दिया जाएगा। मुआवजे का निर्धारण नवीन भूमि अर्जन पुर्नवास एवं पूर्णव्यवस्थापन में उचित प्रतिकर और पारदर्शिता का अधिकार अधिनियम 2013 के तहत निर्धारित किया जाएगा।	● उपनगर पुर में जो मकान पूर्णतया गिर चुके है/ जो अत्यन्त गम्भीर रूप से क्षतिग्रस्त है(40 मकान), उनके परिवारों के मुखिया/स्वामित्वधारी को नियमानुसार डीएमएफटी से मुआवजा दिये जाने के संबंध में डिस्ट्रीक्ट मिनरल फाउण्डेशन ट्रस्ट भीलवाडा को वित्तीय शक्तियों के तहत 2 करोड से अधिक की स्वीकृतियां राजस्थान डिस्ट्रीक्ट मिनरल फाउण्डेशन ट्रस्ट रुल्स 2016 के नियम 15(3)(11) CC के तहत राज्य स्तरीय एम्पावर्ड कमेटी के अनुमोदन के पश्चात ही प्रदत्त होने से अनुमोदन हेतु अति० मुख्य सचिव महोदय, खान एवं पेट्रोलियम विभाग, जयपुर को इस कार्यालय के पत्र कमांक 26242 दिनांक 23.07.19 (प्रति संलग्न) द्वारा पत्र लिखा जा चुका है।
04	ऐसे मकान जो गंभीर रूप से क्षतिग्रस्त है उनको तत्काल खाली करवाया जाएं एवं उनके परिवारों के मुखिया /स्वामित्वधारी को नियमानुसार मुआवजा दिया जाना उचित होगा।	
05	पुर ग्राम के पुनर्वास एवं पुर्नस्थापन हेतु जिला प्रशासन द्वारा जो भूमि चिन्हित की गई है उसे खारिज कर उनके स्थान पर डीएमएफटी फंड से मुआवजा राशि नियमानुसार एक मुश्त पैकेज के रूप में दी जाएगी।	
06	पुर ग्राम मे बनने वाले नए मकानों को सीबीआरआई की डिजाईन पर बनवाया जाएं ताकि सतत/स्थायी निर्माण संरचनाएं तैयार हो सके साथ ही पुर ग्राम की मिट्टी की जांच संबंधित संस्था से करवाने के निर्देश दिए गए।	● पुर ग्राम मे बनने वाले नए मकानों को सीबीआरआई की डिजाईन पर बनवाया जाने के संबंध में इस कार्यालय के पत्र कमांक/26232 दिनांक 22.07.2019 से निम्न अधिकारियों को कार्यवाही हेतु लिखा गया:- 1.मुख्य कार्यकारी अधिकारी, जिला परिषद, भीलवाडा 2.सचिव, यू०आई०टी० भीलवाडा 3.अ.अ. सा०नि०वि० भीलवाडा

		4.आयुक्त, नगर परिषद भीलवाडा ●पुर ग्राम की मिट्टी की जांच हेतु इस कार्यालय के पत्र क्रमांक/26233 दिनांक 22.07.2019 से उप निदेशक, कृषि विभाग, भीलवाडा को पत्र लिखा गया।
07	पुर ग्राम के पुर्नवास/पुर्नस्थापन के लिए जिंदल शॉ को सीएसआर के तहत विशेष योगदान प्रदान करने का अनुरोध किया गया।	तत्समय बैठक के दौरान ही जिंदल शॉ लि. के प्रतिनिधि को अवगत कराया गया।

10. उपखण्ड मजिस्ट्रेट, भीलवाडा के पत्र क्रमांक 2711-45 दिनांक 19.08.2019 एवं क्षेत्रीय अधिकारी, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, भीलवाडा के पत्र क्रमांक 2206 दिनांक 14.08.2019 से प्राप्त रिपोर्ट की प्रति संलग्न है।
11. ग्राम पुर के मकानों में आ रही दरारों के कारणों का वैज्ञानिकों द्वारा अध्ययन करने के उपरान्त प्राप्त रिपोर्ट अनुसार प्रकरण में अग्रिम कार्यवाही हेतु निर्णय लिया जावेगा।

  
 जिला मजिस्ट्रेट,  
 भीलवाडा

## मौका जाँच रिपोर्ट

आज दिनांक 17.12.2018 को श्रीमान जिला कलक्टर महोदय, भीलवाड़ा के आदेश क्रमांक न्याय/2018/25462 दिनांक 15.11.2018 एवं श्रीमान उपखण्ड मजिस्ट्रेट, भीलवाड़ा के आदेश क्रमांक न्याय/2018/9204-6 दिनांक 24.11.2018 की पालना में ग्राम पुर के मकानों में गहरी दरारों एवं नींव हिलने जान-माल के खतरे के कारण जिन्दल स्टील की अवैध ब्लास्टिंग व खनन को तत्काल रोकने के सम्बन्ध में प्रशिक्षु आई.ए.एस. श्री उत्सव कौशल के साथ अधोहस्ताक्षरकर्ता मय तकनीकी स्टाफ एवं क्षेत्रीय प्रबंधक महोदय, प्रदूषण नियन्त्रण मण्डल, भीलवाड़ा के साथ प्राप्त शिकायत की जाँच की गई।

सर्वप्रथम गठित कमेटी जिन्दल शॉ स्टील प्लांट पुर में तिरंगा हिल पर स्थिति पिट पर पहुँची जहाँ पर कमेटी द्वारा जिन्दल शॉ लिमिटेड की तकनीकी टीम के साथ क्षेत्र का निरीक्षण तथा ब्लास्टिंग करने की सम्पूर्ण प्रक्रिया को करने की कार्य योजना तैयार की गई। जिसमें सर्वप्रथम 89 होल्स किये गये जिसमें से 6 होल्स 11 मीटर गहरे, 58 होल्स 6 मीटर गहरे, 9 होल्स 5.5 मीटर गहरे, 1 होल 4 मीटर गहरा किया गया। जिसमें सभी होल्स में 4620 किलोग्राम साईड मिक्स इमल्शन (SME) भरा गया तथा 10.1 किलोग्राम कास्ट बूस्टर भरा गया। तत्पश्चात डिटोनेटिंग फ्यूज 15 मीटर लगा 02 डिटोनेटर से चार्ज किया गया। ब्लास्टिंग की तीव्रता नापने के लिये प्लांट के नजदीक थिकनर प्लांट के पास सीसमोग्राफ स्थापित किया गया। जो कि ब्लास्टिंग स्थल से लगभग 326 मीटर दूरी पर था। तत्पश्चात ब्लास्टिंग की कार्यवाही की गई।

No of Holes	:	89 (6-11m,58-6m,9-5.5m,15-5m,1-4m) Nos
Qty of SME	:	4620 Kg
Cast Booster	:	10.1 Kg
DTH (10 m)	:	6 Nos
DTH (7 m)	:	89 Nos
TLD (17 ms)	:	4 Nos
TLD (25 ms)	:	69 Nos
TLD (42 ms)	:	26 Nos
Detonating Fuse	:	15 m
Elect Detonator:	:	2 Nos
MCPD	:	100 Kg
PVS	:	1.562 mm/s
Inst Distance	:	326 m Approx

खान सुरक्षा महानिदेशालय, अजमेर क्षेत्र द्वारा ब्लास्टिंग करने के मानक तैयार किये हुये हैं जिनके विवरण अनुसार अगर किसी स्थान जिसमें ऐतिहासिक इमारतें तथा संवेदनशील इमारतों के पास ब्लास्टिंग करने की आवृत्ति 8 हर्टज से कम है तो वहाँ पर पीक पार्टिकल वेलोसिटी Peak Particle Velocity (ppv) 2 से कम होगी। जैसा कि नीचे दी हुई सूची में वर्णित है।

**Table: Permissible Peak Particle Velocity (ppv) at the foundation level of structures in Mining Areas in mm/s**

Type of structure	Dominant excitation Frequency, Hz		
	<8 Hz	8-25 Hz	>25 Hz
<b>(A) Buildings/structures not belong to the owner</b>			
(i) Domestic houses/structures (kuchha brick & cement)	5	10	15
(ii) Industrial Buildings (RCC & Framed structures)	10	20	25
(iii) Objects of historical importance & sensitive structures	2	5	10
<b>(B) Buildings belonging to owner with limited span of life</b>			
(i) Domestic houses/structures (kuchha, brick & cement)	10	15	25
(ii) Industrial buildings (RCC & framed structures)	15	25	50

उक्त ब्लास्टिंग करने के पश्चात उसकी तीव्रता को सीसमोग्राफ नामक यन्त्र से नापा गया। जिसका मापन करने पर Frequency 10-20 हर्टज के मध्य में पीक वेक्टर सम (पी.वी. सी.) 1.2,3 की कुल मात्रा 1.562 मिलीमीटर प्रति सैंकण्ड आंकी गई। जो कि खान सुरक्षा महानिदेशालय, अजमेर द्वारा निर्धारित मापदण्ड के अनुसार बहुत सुरक्षित थी। जब कि पुर कस्बा ब्लास्टिंग क्षेत्र से 2 किलोमीटर से ज्यादा दूरी पर है।

अतः यह कहा जाना सम्भव नहीं कि ग्राम पुर में मकानों में पाई गई दरारों का कारण जिन्दल शॉ स्टील द्वारा किये गये ब्लास्टिंग से हुआ है।

(श्री राजीव पारीक)

क्षेत्रीय प्रबंधक

राजस्थान स्टेट पोल्यूशन कन्ट्रोल बोर्ड  
भीलवाड़ा

(अविनाश कुलदीप)

अधीक्षण खनि अभियन्ता,  
भीलवाड़ा वृत्त भीलवाड़ा

(टीना झाबी)

उपखण्ड जिला मजिस्ट्रेट  
भीलवाड़ा

**कार्यालय जिला मजिस्ट्रेट, भीलवाडा**

क्रमांक : न्याय / 2018 / 25732

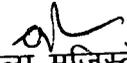
दिनांक : 19.12.2018

**आदेश**

पुर कस्बे के कतिपय लोगों द्वारा अपने मकानों में दरार आने की शिकायत की है। अतः उक्त संबंध में प्राप्त शिकायतों के बारे में तथ्यात्मक जांच रिपोर्ट प्रस्तुत करने हेतु निम्नानुसार कमेटी का गठन किया जाता है:-

1. अधीक्षण अभियंता, सार्वजनिक निर्माण विभाग, भीलवाडा
2. अधीक्षण अभियंता, जन स्वास्थ्य एवं अभियांत्रिकी विभाग, भीलवाडा
3. अधीक्षण अभियंता, जल संसाधन विभाग, भीलवाडा
4. अधीक्षण अभियंता, आर.यू.आई.डी.पी. भीलवाडा
5. अधीक्षण अभियंता, खनिज विभाग, भीलवाडा

उक्त कमेटी को निर्देशित किया जाता है कि उक्त अधिकारीगण कल दिनांक 20.12.2018 को मौके पर जाकर के जाँच करेंगे कि उक्त दरारों का क्या कारण है ? जाँच कर अपनी जांच रिपोर्ट अधोहस्ताक्षरकर्ता को प्रस्तुत करेंगे।

  
कृते जिला मजिस्ट्रेट,  
भीलवाडा

प्रतिलिपि :- निम्न को सूचनार्थ, पालनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है:-

1. अधीक्षण अभियंता, सार्वजनिक निर्माण विभाग, भीलवाडा
2. अधीक्षण अभियंता, जन स्वास्थ्य एवं अभियांत्रिकी विभाग, भीलवाडा
3. अधीक्षण अभियंता, जल संसाधन विभाग, भीलवाडा
4. अधीक्षण अभियंता, आर.यू.आई.डी.पी. भीलवाडा
5. अधीक्षण अभियंता, खनिज विभाग, भीलवाडा

  
कृते जिला मजिस्ट्रेट,  
भीलवाडा

पुर क्षेत्र के मकानों में पाई गई गहरी दरारों एवं नींव हिलने के सम्बन्ध में मौका जॉच रिपोर्ट

श्रीमान् जिला कलक्टर महोदया, भीलवाड़ा के आदेश क्रमांक 25732 दिनांक 19.12.2018 की पालना में दिनांक 20.12.2018 को 5 विभागों के अधीक्षण अभियंताओं द्वारा ग्राम पुर के बड़ा मंदिर, नीलगरों की मस्जिद, सब्जी मण्डी एवं जामा मस्जिद क्षेत्र का मौका निरीक्षण किया गया। निरीक्षण के दौरान पाया गया कि उक्त क्षेत्र के कई मकानों में दरारें पड़ी हुई थी तथा कई मकान काफी असुरक्षित स्थिति में पाये गये। नीलगरों की मस्जिद के सामने सड़क पर दो खड्डे भी पाये गये जिसकी मिट्टी बैठ गयी थी लेकिन इन खड्डों को वर्तमान में मिट्टी से भरा जा चुका है।

उक्त मौका निरीक्षण के दौरान टीम द्वारा सीनियर सेकण्डरी स्कूल पुर का अवलोकन किया गया। जहाँ पर जमीन से पानी का रिसाव सतत रूप से हो रहा है। जलदाय विभाग के अधीक्षण अभियंता ने बताया कि दिनांक 12.12.2018 को इस पानी का संप्ल लिया गया था जिसमें टीडीएस की मात्रा 3000 पीपीएम तथा नाईट्रेट की मात्रा भी निर्धारित मापदण्ड से ज्यादा पाई गयी थी। इससे यह स्पष्ट होता है कि यह पानी पीने वाला नहीं होकर वेस्ट वाटर है।

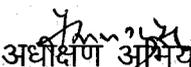
इसके बाद टीम द्वारा गणगौर घाट की तरफ से जिंदल शॉ लि० के गेट नं० 1 की तरफ स्थित मकानों का अवलोकन किया गया। जहाँ पर जिंदल शॉ लि० के गेट नं० 1 से पहले मंदिर व एक मंजिला मकान में कोई दरार नहीं पाई गयी तथा मंदिर भी सुरक्षित पाया गया।

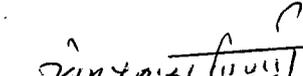
उक्त निरीक्षण के बाद सभी अधीक्षण अभियंताओं ने अपनी-अपनी तरफ से मकानों में दरार पड़ने के कारण बताये, जो कि इस प्रकार है:-

1. अधीक्षण अभियंता, जलदाय विभाग ने बताया कि इन दरारों का कारण इस क्षेत्र में कम्पन के कारण क्षेत्र की जमीन में सेटलमेण्ट होना प्रतीत होता है।
2. अधीक्षण अभियंता, सार्वजनिक निर्माण विभाग ने बताया कि मकानों में दरारों का कारण जमीन का बैठना या कम्पन से होना प्रतीत होता है।
3. अधीक्षण अभियंता, जल संसाधन ने अवगत कराया कि स्कूल मैदान में पानी निकलना भी किसी तालाब से सम्बन्धित नहीं है। क्योंकि स्कूल का लेवल भी तालाब के लेवल के आस-पास है।
4. अधीक्षण अभियंता, आरयूआईडीपी ने बताया कि मकानों में दरार का कारण 1. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना 2. वाईब्रेशन के कारण, मकानों की फाउण्डेशन में असमान सेटलमेण्ट होना है।
5. अधीक्षण अभियंता, खनि विभाग ने बताया कि 1. भूमि के अन्दर स्थित मिट्टी का सेटलमेण्ट होना एवं 2. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना है।

### निरीक्षण निष्कर्ष:

1. बहुमंजिला मकानों में दरारें ज्यादा पाई गयी, जो कि या तो कम्पन या जमीन के धंसने से हो सकती है।
2. बाद में जो मकान देखे गये वे हालांकि ब्लास्टिंग एरिये के पास थे, फिर भी उनमें दरारें नहीं थी। ऐसा प्रतीत होता था कि वहाँ के अन्दर की जमीन पथरीली थी।
3. क्योंकि कुछ मकान काफी नाजुक स्थिति में है, अतः वहाँ रहने वालों को जान-माल का खतरा हो सकता है।
4. जिस स्थान पर मकानों में दरारें इत्यादि आई है, उस क्षेत्र में बोर लॉगिंग इत्यादि करवाकर जमीन के अन्दर की संरचना की जानकारी प्राप्त की जाकर वास्तविक कारण का पता लगाया जा सकता है।
5. नगर परिषद को निर्देशित किया जाये कि नालियों की मरम्मत एवं सफाई करवाई जावे।

  
अधीक्षण अभियंता  
जन स्वास्थ्य अभियांत्रिकी विभाग

  
अधीक्षण अभियंता  
जल संसाधन विभाग

  
अधीक्षण खनि अभियंता  
खान विभाग

  
अधीक्षण अभियंता  
आरयूआईडीपी

  
अधीक्षण अभियंता  
सार्वजनिक निर्माण विभाग

कार्यालय अधिशाषी अभियन्ता सार्वजनिक निर्माण विभाग खण्ड भीलवाडा

क्रमांक : पीए/2018-19/ 5566

दिनांक:- 20-12-18

श्रीमान् जिला कलक्टर (महोदया),  
भीलवाडा ।

Section	न्याय
Div	
Date	21 DEC 2018
Off	
CS	
Location	महोदया,

विषय :- पुर में जिन्दल की बलास्टिंग से हुए पुर के मकानों के ध्वस्त बाबत व मुआवजा दिलाने बाबत।

प्रसंग :- आपका आदेश क्रमांक न्याय/2018/25732 दिनांक 19.12.2018

उपरोक्त विषयान्तर्गत एवं प्रासांगिक पत्र के क्रम में निवेदन है कि आज दिनांक 20.12.2018 को संयुक्त जांच दल के साथ अधोहस्ताक्षरकर्ता द्वारा ग्राम पुर में खेल मौहल्ला में एवं माईनिंग ऐरिया की तरफ के भवनों का भौतिक रुप से अवलोकन किया गया। जिसमें खेल मौहल्ला के पास कुछ मकानों के फर्श, छत, दीवारों व पानी के टैंकों में दरारें पाई गई है। जिसका कारण जमीन का बैठना या कम्पन द्वारा होना प्रतीत होता है जिसकी जांच सम्बन्धित विशेषज्ञ टीम द्वारा कराया जाना उचित होगा। जैसा कि स्थानीय निवासियों के द्वारा बताया गया कि मकानों की दरारों का गेप समय के साथ बढ रहा है जो कि सुरक्षा की दृष्टि से उचित नहीं है एवं इससे कभी भी जनहानि होने का अन्देशा होना प्रतीत होता है।

अतः पत्र सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

भवदीय,

( बी०एल० जयपाल )  
अधिशाषी अभियन्ता,  
सा.नि.वि.खण्ड भीलवाडा

दिनांक:-

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. श्रीमान् उपखण्ड अधिकारी, भीलवाडा ।
2. श्रीमान् अधीक्षण अभियन्ता, सा०नि०वि० वृत्त-भीलवाडा ।

अधिशाषी अभियन्ता,  
सा.नि.वि.खण्ड भीलवाडा

*My friend*  
*Am City*  
*01. see the rules & accordingly get the notices issued to person/houses to bring them safe place*  
*21/12/18*

कार्यालय अधिशाषी अभियन्ता जल संसाधन खण्ड द्वितीय भीलवाड़ा

क्रमांक / ५५५।

दिनांक/ २०-१२-१८

श्रीमाने जिला मजिस्ट्रेट  
भीलवाड़ा

विषय :- तथ्यात्मक जाँच रिपोर्ट बाबत।

प्रसंग :- आपके पत्रांक/ न्याय/२०१८/२५७३२ दिनांक १९.१२.२०१८ के क्रम में।

महोदय,

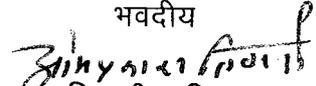
उपरोक्त विषयान्तर्गत निवेदन है कि आपके प्रासंगिक पत्र की पालना में एवं श्रीमान अधीक्षण अभियन्ता के निर्देशानुसार अधोहस्ताक्षरकर्ता द्वारा दिनांक २०.१२.२०१८ को जाँच दल के साथ पुर करबें में स्थित मकानों का निरीक्षण किया गया। ज्यादातर प्रभावित मकानों का लेवल गूगल मेप के अनुसार ४५८ मी. आ रहा है एवं आसपास में स्थित तीनों तालाबों का लेवल ४५० मी. के आसपास है। सभी तालाब बस्ती के साथ बसे हुये पुराने हैं एवं मकानों में दरार की समस्या नई है। अतः इस समस्या का कारण तालाबों में स्थित पानी का नहीं है।

स्कूल मैदान में पानी निकलना भी किसी तालाब से संबंधित नहीं है क्योंकि स्कूल का लेवल भी तालाबों के लेवल के आसपास है तथा यह समस्या नई है।

रिपोर्ट सूचनार्थ एवं अग्रिम कार्यवाही हेतु प्रेषित है।

संलग्न:- किये गये जाँच का गूगल मेप।

भवदीय

  
अधिशाषी अभियन्ता

जल संसाधन खण्ड द्वितीय भीलवाड़ा

क्रमांक /

दिनांक/

प्रतिलिपि श्रीमान अधीक्षण अभियन्ता जल संसाधन वृत्त भीलवाड़ा को दिनांक २०.१२.२०१८ को आपके दूरभाष पर दिये गये निर्देशों की अनुपालना में प्रेषित है।

अधिशाषी अभियन्ता

जल संसाधन खण्ड द्वितीय भीलवाड़ा

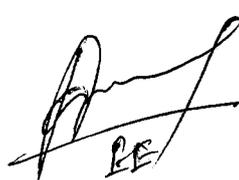
दिनांक:-20.12.2018

## जांच रिपोर्ट

विषय:- पुर कस्बे के कतिपय मकानों में दरार आने की शिकायत के संबंध में।

श्रीमान जिला कलक्टर, भीलवाड़ा के आदेश क्रमांक 25732 दिनांक 19.12.2018 के द्वारा गठित कमेटी के सदस्यों के साथ आज दिनांक 20.12.2018 को अधो-हस्ताक्षरकर्ता द्वारा पुर कस्बे में मौके पर जाकर निरीक्षण किया गया।

मुख्यतः पुर कस्बे के बड़ा मंदिर क्षेत्र, सब्जी मण्डी क्षेत्र, खेल मोहल्ला, कोठारी मोहल्ला, व्यास मोहल्ला आदि क्षेत्रों में कई मकानों में आई दरारों का निरीक्षण किया गया। अधोहस्ताक्षरकर्ता की राय में इन दरारों का कारण इस क्षेत्र में Vibration (कम्पन) के कारण क्षेत्र की जमीन में सेटलमेन्ट होना प्रतीत होता है। इस क्षेत्र में विभागीय पेयजल वितरण पाइप लाइनों में कोई लीकेज नहीं पाया गया।

  
V.K. Garg  
EE, Phas  
Dist City, Bhilwara

(पी0सी0गुप्ता)  
अधीक्षण अभियंता  
जन स्वा.अभि. विभाग  
वृत्त भीलवाड़ा

कार्यालय अधीक्षण अभियंता, आरयूआईडीपी,  
6/1026, "मीरा- भवन" शिव नगर,  
अहिंसां सर्किल के पास, कुवांडा-रोड़, भीलवाड़ा

E-mail -seruidpbhilwara@gmail.com

कमांक: अ.अ./आरयूआईडीपी/भी./2018-19/571

दिनांक: 20/12/2018

श्रीमान् जिला मजिस्ट्रेट,  
जिला-भीलवाडा (राज.)

विषय- पुर कस्बे में मकानों में दरार आने के संबंध में तथ्यात्मक जाँच रिपोर्ट।

संदर्भ- आपका पत्र कमांक: न्याय/2018/25732 दिनांक 19/12/2018

महोदय,

उपरोक्त विषय में निवेदन है कि आज दिनांक 20/12/2018 को पुर कस्बे में मकानों का आप द्वारा गठित कमेटी के साथ सामूहिक निरीक्षण किया गया। उक्त संबंध में निवेदन है कि मकानों में दरार आने के मुख्यतः दो कारण हो सकते हैं-

- 1- नालियों के क्षतिग्रस्त होने के कारण, waste water का भूमि में seepage होना।
- 2- Vibrations के कारण मकानों की foundation में uneven settlement होना।

रिपोर्ट सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रस्तुत है।

21/12/18  
अधीक्षण अभियंता  
आरयूआईडीपी, पीआईयू  
भीलवाड़ा

राजस्थान सरकार

कार्यालय अधीक्षण खनि अभियन्ता, भीलवाड़ा वृत्त भीलवाड़ा (राज.)

क्रमांक : अखअ/भीलवृत्त/खका/प-35/2018/1697

दिनांक : 20.12.2018

प्रेषितः

जिला मजिस्ट्रेट, महोदय

भीलवाड़ा-राजस्थान।

विषय:- पुर के मकानों में गहरी दरारों एवं नींव हिलने जान-माल के खतरे के कारण जिन्दल स्टील की अवैध ब्लास्टिंग व खनन को तत्काल रोकने बाबत।

प्रसंग:- आपका पत्रांक न्याय/2018/25732 दिनांक 19.12.2018 के कम में।

महोदय,

उपरोक्त विषयान्तर्गत प्रासांगिक पत्र के सन्दर्भ में निवेदन है कि आज दिनांक 20.12.2018, गुरुवार को पुर कस्बे में स्थिति मकानों का आप द्वारा गठित कमेटी के साथ सामूहिक रूप से निरीक्षण किया गया। मौके पर कुछ मकानों में लम्बी और लगभग आधा इन्च चौड़ी दरारें पायीं गईं। कुछ स्थानों पर जमीन के अन्दर दरारें देखी गईं।

निवेदन है कि दिनांक 17.12.2018 को भी जिन्दल शाँ स्टील प्लांट का निरीक्षण तथा ब्लास्टिंग करने की सम्पूर्ण प्रक्रिया को किया गया तथा उक्त ब्लास्टिंग करने के पश्चात उसकी तीव्रता को सीसमोग्राफ नामक यन्त्र से नापा गया। जिसका मापन करने पर पी.वी.सी. 1,2,3 की कुल मात्रा 1.56 मिलीमीटर प्रति सैंकण्ड आंकी गई। जो कि ब्लास्टिंग किये गये स्थान से लगभग 325 मीटर दूरी पर था। जो निर्धारित मापदण्ड के अनुसार बहुत सुरक्षित थी।

आज दिनांक 20.12.2018 को पुर गांव का पुनः निरीक्षण किया गया जिसके सम्बन्ध में निवेदन है कि मकानों में दरार आने के मुख्यतः निम्न कारण हो सकते हैं।

1. भूमि के अन्दर स्थिति मिट्टी का Settlement होना।

2. नालियों के क्षतिग्रस्त होने के कारण Waste water का भूमि में Seepage होने से।

भवदीय,

  
(अविनाश कुलदीप)  
अधीक्षण खनि अभियन्ता,  
भीलवाड़ा वृत्त भीलवाड़ा

Email./Post

*Jud*

GOVERNMENT OF INDIA



Geological Survey of India,  
Western Region,  
15-16, Jhalana Doongri,  
Jaipur-302004  
FAX: 0141-2711582/2703326  
E-Mail: gsiwrtdc@gmail.com

No. 2899 /111/PSS/Mission IV/WR/19

Jaipur the 25<sup>th</sup> April 2019

From:  
The Addl. Director General & HOD,  
Western Region,  
Geological Survey of India,  
15-16, Jhalana Doongri,  
Jaipur-302004.

To:  
The District Magistrate & Collector,  
Bhilwara District  
Rajasthan- 311001

**Sub:** Submission of geotechnical note on the cracks in buildings and water logging problem at Pur village, Bhilwara District, Rajasthan.

**Reference:** Your letter no. Jud/2019/25369, dated 14/03/19.

Sir,

In reference to your letter dated 14/03/19, a team of officers from Geological Survey of India, Western Region has visited the site/village during the period from 04/04/19 to 06/04/19 and carried out the necessary investigations.

In this regard, please find attached herewith a note for your kind perusal and necessary action.

Yours faithfully,

*Debasish Bhattacharya*

25.4.19  
(Debasish Bhattacharya)

Director, PSS, WR,  
for Additional Director General and HOD, WR

# A GEOTECHNICAL NOTE ON THE CRACKS IN BUILDINGS AND WATER LOGGING PROBLEM AT PUR VILLAGE, BHILWARA DISTRICT, RAJASTHAN

By

P. Charles D. Mony, Director, Pravin Kumar Sharma, Suptdg. Geologist &  
Vikram Singh Choudhary, Senior Geologist  
GSI, WR, Jaipur

## 1. Introduction

A request has been received from the District Magistrate & Collector, Bhilwara, vide letter no. Jud/2019/25369 dated 14/03/2019, to the investigate in development of cracks on buildings and water logging in Pur village, Bhilwara district. The authors were deputed by the ADG & HOD, WR, Geological Survey of India, Jaipur to evaluate the problems. The reported cracks were developed during July, August, December, 2018 and January, 2019 as per the data provided by the District administration.

The site was visited by the authors on the 5<sup>th</sup> April, 2019, along with of Shri Athar Aamir Khan, SDM, Bhilwara, Shri Pradeep Agarwal, Additional Director, Department Of Geology & Mining, Rajasthan and others. Subsequently, discussions were held with Shri Rajendra Bhatt, District Magistrate & Collector, Bhilwara in his Chamber.

Pur village (latitude 25°17'45.852" N and longitude 74°32'32.316" E, toposheet no. 45K/11) is located 10-12 south-west of the Bhilwara city and accessible by Bhilwara-Kankroli road.

## 2. Geomorphology and Geology

The area forms a part of Bhilwara district, Rajasthan. It is characterized rugged topography in the North- Eastern and South- Western part of the area and the remaining part is nearly peneplain. The maximum elevation is 529 m above msl towards the North- Western direction of the Pur village and the minimum elevation is 410 m above msl near the Government Senior Secondary school, Pur. Kothari River with several nallas forms the main drainage of the area. Drainage pattern in the area is dendritic. Small water bodies are present.

The Potla Formation of the Mangalwar Group forming the basement of the study area mainly consists of Granite Gneiss, amphibolites and Garnetiferous mica schist which is mainly exposed in the north-west part. Foliation of Garnetiferous mica schist varies from N20°E-N50°E/60°-70° towards N55°W. Apart from foliation, the rockmass is transected with the two prominent sets of joints. J1: N50°E/80° towards northeast and J2: N-S/10° towards east.

Vikram Singh  
23/4/19

PP  
Stamp  
23/04/19

41 msl  
23/04/19

### 3. Seismicity of the Area

As per the 2002 Bureau of Indian Standards (BIS) map, The Pur village area lies in Zone-II. A NE-SW trending Delwara lineament is passing 30-40 Km NW from the Pur village. A NE-SW trending Chambal-Jamnagar lineament is passing 45-55 Km SE of the Pur village. Some minor and major (Ajmer—Sandia lineaments, trend- NW-SE) lineaments have also been observed within 100 km radius of Pur village. There are four neo-tectonic fault present within the 60-100 km radius from Pur village (trend NE-SW). It is apparent from the seismo-tectonic framework that the Pur village is within the ambit of moderate to low seismic activity.

### 4. Description and nature of the cracks

During the investigations, a number of buildings were examined. There are about 375 buildings where cracks have been developed (as per data provided by the District administration). These cracks particularly developed in the houses and temples of Nilgarao ka mohalla (centre of village Pur) with extent of 250 X 150 m area. The elevation of the village varies from 410 m to 435 m above msl. This crack prone area is situated at higher elevation compare to other locality of the Pur village. In the outer periphery of these mohalla fine cracks have been observed.

These cracks were seen in the double storey as well as single storey buildings. Cracks were developed in the houses and temples, on the outer wall, inside in the plaster wall and floor. Mainly horizontal wide crack at floor (more than 2 mm in width) and vertical to sub-vertical cracks (more than 2 mm in width) were noticed on the walls of houses. It is also noticed that some of these cracks are of crazing types (occurrence of closely spaced fine cracks at the surface of the wall). The general trend of these cracks is N-S and E-W. The vertical cracks were not reflected in the wall on the other side, as such it is difficult to assign these cracks solely due to settlement. Horizontal cracks in a loading structure due to settlement are difficult to conceive.

During the visit, some residents of Pur village were enquired about the incidences, they replied that these cracks developed with noise and sudden shaking of the ground during period of July, 2018 to January, 2019. Villagers heard the sound and felt ground shaking many times.

Water logging problem has also been observed on the ground of the Government Senior Secondary school, Pur since last year. This water logging problem may be due to cracking/damaged sub-surface water/septic tanks which are situated north of school at higher elevation in the Nilgarao ka mohalla. This seepage/water logging could increase as and when water is supplied from Chambal drinking water project.

As per IMD data, no seismic activity has taken place during period of July, 2018 to January, 2019. It is surprising to note that > 375 buildings have suffered such kind of damage without any seismic event. In the absence of any natural event, it could be a local phenomenon.

In addition to this, mining activity is being carried out in the vicinity of Pur Village. Near Tiranga Hill which is located 2- 2.5 km away from the Pur village in northern part. Blasting is regularly carried out in open cast mining to extract/mine the iron ore.

Vikram Singh  
23/04/19

  
23/04/19

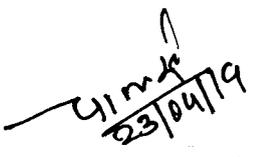
  
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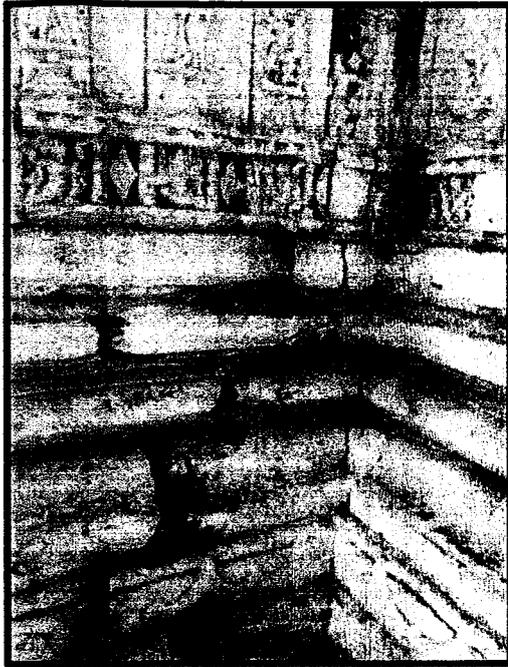
## 5. Conclusions and Recommendation

- i. Cracks in buildings are of common occurrence. A building component develops cracks whenever stress in the component exceeds its strength. Stress in a building component could be caused by externally applied forces, such as dead, live, wind or seismic loads, or foundation settlement or it could be induced internally due to thermal variations, moisture changes, chemical action, etc.
- ii. Cracks could be broadly classified as Structural and Non-Structural. Structural cracks which are due to incorrect design, faulty construction or overloading and Non-structural cracks are mostly due to internally induced stresses in building materials and these generally do not directly result in structural weakening. These are due to penetration of moisture or thermal variation. Cracks may appreciably vary in width from very thin hair cracks barely visible to naked eye (about 0.01 mm in width) to gaping cracks 5 mm or more in width.
- iii. IMD data indicate that there is no seismic activity during the period from July, 2018 to January, 2019 in and around Pur Village. It is surprising to note that more than 375 buildings have suffered such kind of damage without any seismic event. As, the development of cracks in building and ground cannot be attributed to natural phenomena like earthquake, it is apprehended that it could be induced by local shaking and vibrations.
- iv. It is recommended to install tell tales across already developed cracks to monitor the progress of cracks. Further it is also recommended to develop of progressive cracks by pre-splinting between the mining area and the village to keep the villagers safe from further development/ widening of cracks.

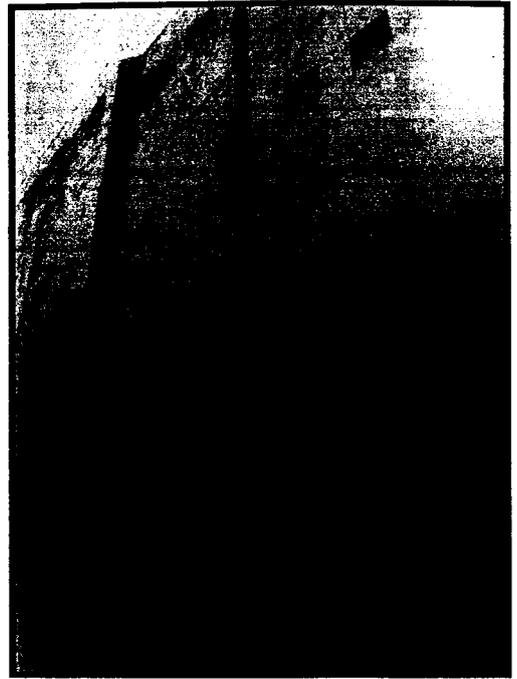
Vikram Singh  
(V. S. Choudhary) 23/4/19.  
Sr. Geologist

  
23/04/19  
(Pravin Kumar Sharma)  
Suptdg. Geologist

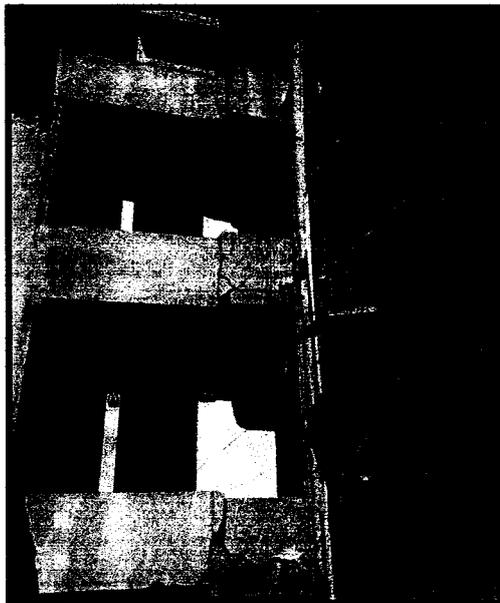
  
23/04/19  
(P. Charles D. Mony)  
Director



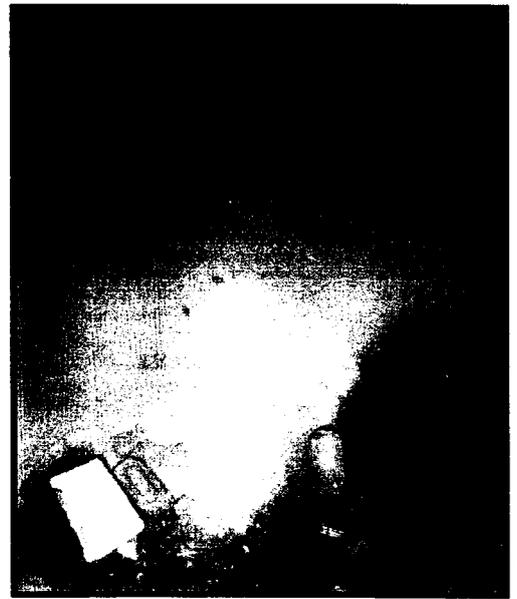
Cracks developed at Laxminarayan temple,  
Pur Village



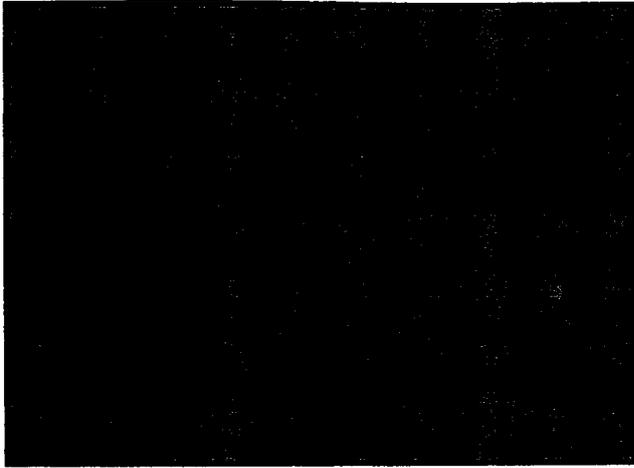
Cracks developed in brick wall near  
Laxminarayan temple, Pur Village



Cracks at corner of building, Pur Village



Cracks developed on floor of water tank,  
Mosque, Pur Village



Development of Crazing type cracks on wall,  
Pur village



Water logging at Government Senior Secondary  
school, Pur Village

JSL/BHL/2019/1864  
Date: 01-03-2019

सेवामे,

श्रीमान् जिला कलक्टर महोदय,  
भीलवाड़ा-राज0

Jud  
06/03  
134/  
11/3/19

विषय :-जिन्दल सॉ लि0 को स्वीकृती खनन पट्टा संख्या 631/05 निकट ग्राम डेडवास तहसील व जिला भीलवाड़ा के लिये ब्लास्टिंग से होने वाले प्रभावों के सम्बन्ध में कन्ट्रोलर एक्सप्लोसिव नागपुर से अध्ययन कराने हेतु।

प्रसंग:- आप श्रीमान् के पत्र क्रमांक 22091 दिनांक 15.01.2019 के कम में।

महोदय,

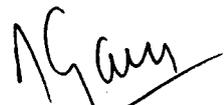
उपरोक्त प्रासांगिक पत्र के सम्बन्ध मे लेख है कि ग्राम पुर के ग्रामीणों द्वारा मैसर्स जिन्दल सॉ लि0 द्वारा किये जा रहे खनन कार्य के सम्बन्ध में शिकायत दर्ज करवाई गई थी। जिसके उपरान्त आप श्रीमान् द्वारा मैसर्स जिन्दल सॉ लि0 को पत्र द्वारा निर्देशित किया कि "सेन्ट्रल इन्स्टीट्यूट ऑफ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर" के विशेषज्ञों द्वारा उक्त प्रभावित क्षेत्र की जांच करवाई जावे और उनके द्वारा बनाई गई रिपोर्ट जिला कलक्टर कार्यालय में प्रस्तुत करें।

इसी कम में दिनांक 29.01.2019 व 30.01.2019 को "सेन्ट्रल इन्स्टीट्यूट ऑफ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर" के विशेषज्ञों द्वारा मैसर्स जिन्दल सॉ लि0 के खनन व प्लान्ट क्षेत्र का निरीक्षण किया तथा कम्पनी के खनन क्षेत्र में ब्लास्टिंग करवाई और पुर आबादी क्षेत्र में उसके प्रभावों को यंत्रो द्वारा मापा जाकर उसका अध्ययन किया।

"सेन्ट्रल इन्स्टीट्यूट ऑफ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर" के विशेषज्ञों द्वारा बनाई गई रिपोर्ट के आधार पर जिन्दल सॉ लि0 द्वारा किये जा रहे खनन कार्य से ग्राम पुर के आबादी क्षेत्रों में किसी भी प्रकार का कोई प्रभाव नहीं पड़ रहा है क्योंकि ब्लास्टिंग जोन आबादी क्षेत्र से लगभग 3 किमी. दूर स्थित है।

अतः "सेन्ट्रल इन्स्टीट्यूट ऑफ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर" के विशेषज्ञों द्वारा खनन सम्बन्ध में बनाई गई जांच रिपोर्ट आप श्रीमान् के समक्ष प्रस्तुत है।

सधन्यवाद।  
कृते-जिन्दल सॉ लिमिटेड

  
राजेन्द्र गौड़  
हैड लाईजन

संलग्नक:- उपरोक्तानुसार।

*Final report*  
*on*

**SCIENTIFIC BLASTING STUDY TO EVALUATE BLAST  
INDUCED GROUND VIBRATIONS IN BHEDWAS OPENCAST  
IRON ORE MINE**

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Prepared for

**M/s JINDAL SAW LIMITED - BHILWARA**

Investigators

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March 2019

*Final Report*  
on

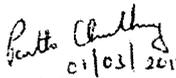
**Scientific blasting study to evaluate blast induced ground vibrations at Bhedwas Opencast Iron Ore Mine of M/s Jindal Saw Limited - Bhilwara**

PROJECT NO.SSP/N/356/2018-19

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CSIR-CIMFR reserves the right to publish the result of the research for the benefit of the industry in general.

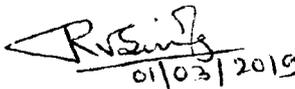
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*Final Report on*

**Scientific blasting study to evaluate blast induced ground vibrations at  
Dhedwas Iron Ore Mine of M/s Jindal Saw Limited – Bhilwara**

**Executive Summary**

M/s Jindal Saw Limited (Bhilwara) referred the study of investigation to recommend and evaluate the blast induced ground vibrations in the vicinity of habitats of PUR village (vide WO No. 4732003266 dated 23.01.2019), to CSIR-Central Institute of Mining & Fuel Research, Nagpur Research Centre (Mining Technology).

Scientific investigations were carried out by CSIR-CIMFR Scientists to study the existing blasting pattern and further evaluate ground vibrations. Regulatory permission by DGMS vide letter No.AJ/DMS/Perm-106(2)(b)/2016/6001, dated 06/12/2016 has been granted for deep hole blasting and by letter No.AJR/DMS/Perm-164(1b)(a)/2018/5413, dated 04/10/2018 for blasting within 300m upto 100m. This scientific blasting study was initiated by M/s Jindal Saw Limited – Bhilwara, in reference to letter No.22091, dated 15/01/2019 received from the Office of The District Collector Bhilwara.

The blasting events were monitored for ground vibrations and air over-pressure by seismographs of Instantel Make, Canada. Ground vibration and air over-pressure monitoring was done at different monitoring stations inside PUR village near Masjid (distance of nearly 2.5kms from blasting face), at the boundary of PUR village near Hotel Bahirunath (distance nearly 893m from blasting face) and inside the mine premises. Distance was measured with the help of Garmin eTrex 30x GPS.

The report encompasses the monitored blast design parameters, seismograph event records and recommendations which can be implemented alongwith existing blasting practices being followed in Dhedwas opencast iron ore mine.

Final Report  
on

**SCIENTIFIC BLASTING STUDY TO EVALUATE BLAST INDUCED GROUND VIBRATIONS AT DHEDWAS IRON ORE MINE OF M/S JINDAL SAW LIMITED – BHILWARA**

M/s Jindal Saw Limited - Bhilwara (JSL) referred the investigation of evaluating blast induced ground vibrations (vide their WO No. 4732003266, dated 23/01/2019) at Dhedwas Iron Ore Mine (Tiranga Openpit) to CSIR-Central Institute of Mining & Fuel Research (erstwhile CMRI), Nagpur Research Centre. Scientific investigations were conducted in the mine to study the blast design parameters and monitor ground vibrations in the vicinity of nearby habitats. This report summarizes the information on different blasting events, blast design being followed in the mine and the blast induced vibrations in blast results.

## **1. Introduction**

A team of CSIR-CIMFR Scientists visited Dhedwas opencast iron ore mine (Tiranga pit) of M/s Jindal Saw Limited, to study the blasting scenario in details and monitor the blasting results. The team monitored three blasting rounds (blasts) during the visit and collected data related to ground vibration.

### **1a Location**

The Dhedwas Iron Ore opencast mine is located in the district of Bhilwara, Rajasthan. The Taluka is Bhilwara & Mandal and is marked under Topo Sheet No.45K/11. The area of the mine is bounded by Latitude boundary pillar A at N25 22'35" and Longitude Boundary pillar A at E74 34'32".

### **1b Topography, drainage and regional geology**

Topographically, the lease area comprises of hilly tract in a rather flat terrain. This belt comprises of two parallel NE-SW trending hillocks from Village Pur in south to Jipiya in north covering a length of 14km and width of 3 to 4km. The general ground level is 450m in southern part (Tiranga-Samodi area) to 435m above mean sea level in the northern

part Dhedwas (450m)-Dhulkhera area (435m). The height of the hillocks above mean sea level varies from 539m in southern part of Tiranga Area, 483m in Samodi area, 514m in Dhedwas Area.

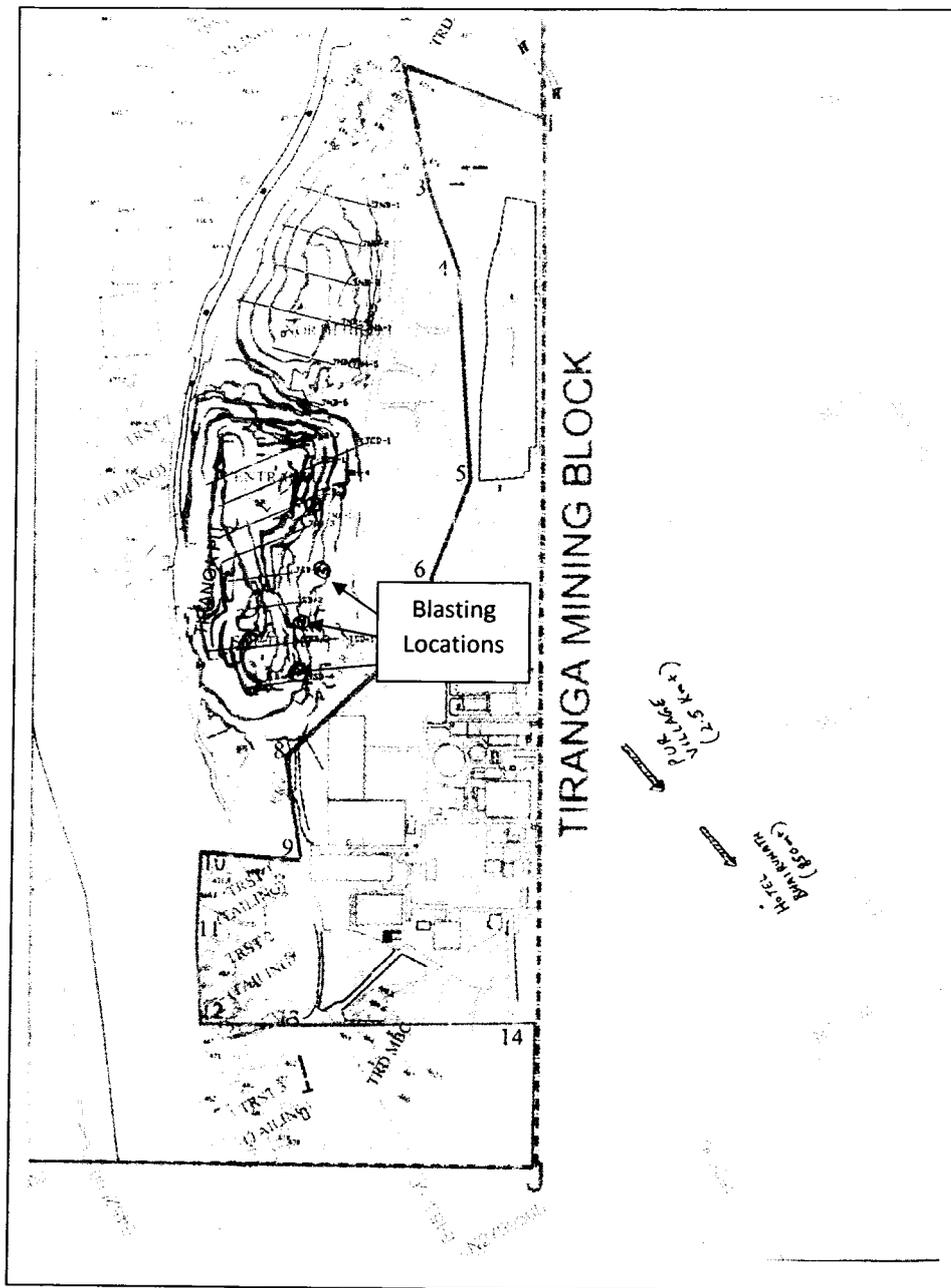
The area has low gradient in the central part having general slope towards North-West upto the river Kothari which flows from west to east. Some seasonal dendritic nallas / seasonal water courses are present which drain the rain water towards North West to North Direction. One such nallah originates from Tiranga Hill, drains towards North for 500, and goes out of lease area.

Geologically, the region is a part of Bhilwara Super Group of Archean to Lower Proterozoic in age. The rocks of Bhilwara Super group have been classified into Samdmata Complex, Mangalwar Complex and Hindoli group.

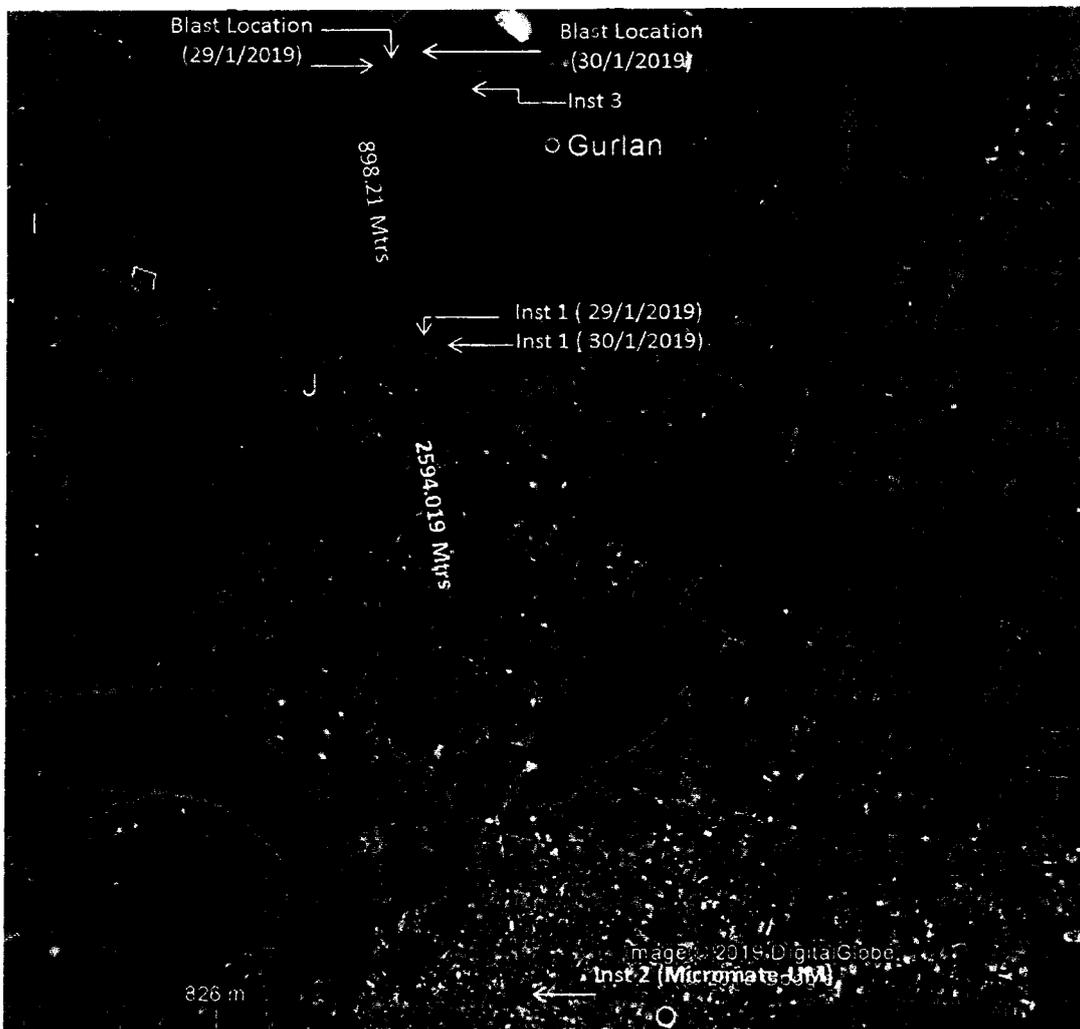
## **2. Charging and seismograph installation**

Blasting trials were conducted in different benches in different parts of the mine towards the direction of adjoining villages (shown in Figure 1). Pictorial representation of the seismograph locations with respect to blasting faces is shown in Figure 2. The nearest village observed was Pur village. The nearest and closest structure to the mine at the boundary of Pur village is Hotel Bhairunath which is at a distance of nearly 893m. Another point of concern/focus in view of blast induced vibrations was near a Masjid inside Pur village, which is at a distance of nearly 2500m from blasting location. This area near Masjid is a densely populated area with bylanes passing in front of the Masjid and surrounded by many residential and commercial entities.

Three blasting rounds were monitored by CSIR-CIMFR team. These blasting rounds were conducted with both 115mm and 165mm diameter drill holes. These holes were charged with bulk explosive / site mixed emulsion (SME). A view of the blasting face is shown in Figure 3 and Figure 4 below.



**Fig.1. Blasting Location in Dhedwas Mine alongwith direction of vibration monitoring in villages (Not to Scale – For illustration)**



**Fig.2. Pictorial / Illustrative representation of blasting locations and seismograph monitoring stations (Not to scale) {Courtesy: Google Maps}**



**Fig.3. View of drilled blasting face ready for bulk explosive charging**

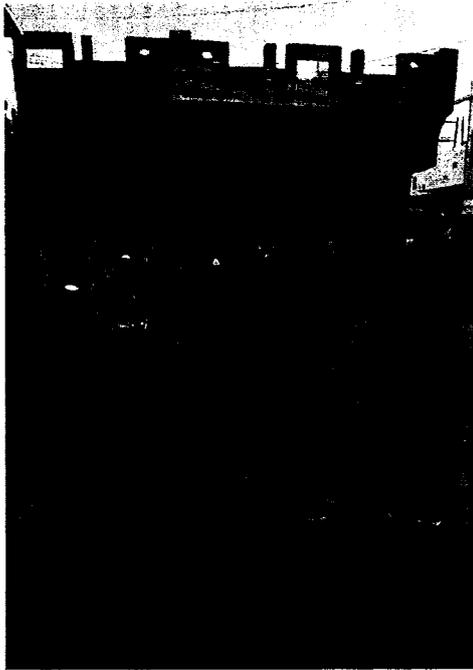


**Fig.4. View of drilled blasting face with free face**

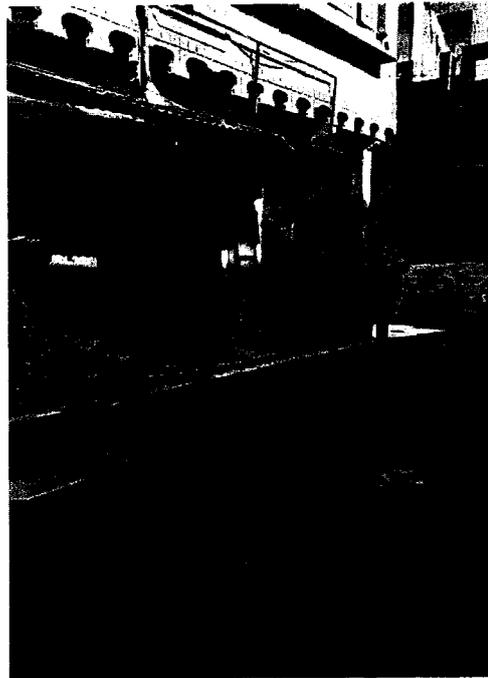
Blast induced ground vibrations were monitored using three seismographs. Two seismographs belonging to CSIR-CIMFR was used and one seismograph of M/s Jindal Saw Ltd, was used. State-of-the-art Micromate seismograph (InstanTel Make, Canada) was installed near Masjid in Pur village (see Figure 5a, 5b and 5c) and one Minimate Blaster seismograph (InstanTel Make, Canada) was fixed at the nearest point from the mine at the boundary of Pur village, near Hotel Bhairunath (see Figure 6a, 6b and 6c). Seismographs were fixed to the ground using plaster of paris at various monitoring stations to record blast induced ground vibration. Officials of Dhedwas mine record vibrations at fixed monitoring stations near to their structures using Minimate Blaster (InstanTel Make, Canada).

The distance from blasting location upto the point of vibration monitoring was obtained using hand-held global positioning system (GPS) e-Trex 30x (Garmin Make). Figure 7 illustrates the use of this GPS in field, indicating the GPS UTM co-ordinates. Using the GPS UTM co-ordinates of both blasting location and seismograph monitoring stations the shortest distance was determined.

Three blasting rounds were monitored in two days. Site mixed emulsion explosive was used for charging of blast holes alongwith cast booster as primer charge. Bottom hole initiation is followed using Down-the-holes shock tube / Nonel. Two shock tubes were used with a solid deck separating the two explosive decks in one blast hole. Shock tube with lower delay of 450ms was at the bottom deck and higher delay of 500ms was used in the top. Trunk line was connected using shock tube / Nonel with delays of 17ms, 25ms and 42ms of varying lengths depending on blast holes in mine.



**Fig.5a. View opposite Masjid**



**Fig.5b. Another view opposite Masjid**



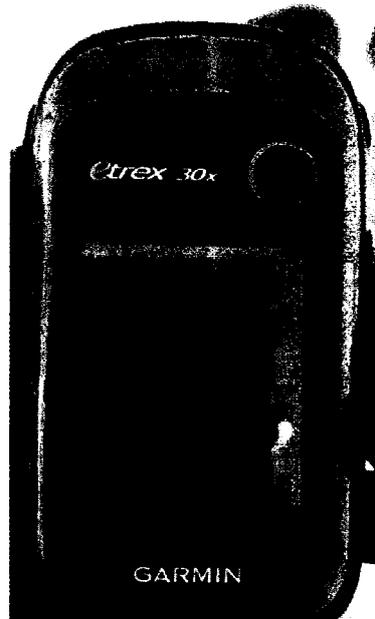
**Fig.5c. Seismograph installed near Masjid in Pur Village  
(Masjid Gate seen in backdrop)**



**Fig.6a. Seismograph at boundary of Pur village Fig 6b. Seismograph at nearest house**



**Fig 6c. Seismograph installed besides Hotel Bhairunath**



**Fig 7. GPS UTM co-ordinates using hand-held Garmin eTrex 30x**

### **3. Observations**

Blast induced ground vibrations from three blasting rounds were monitored at distance varying from 192m upto 2765m. The geophone trigger level were fixed at minimum levels of 0.45 mm/s in Micromate seismograph (near Masjid in Pur village) and 0.5mm/s in Blaster seismograph kept in mine premises and near Hotel Bhairunath. Geophone trigger level indicates that any vibration above 0.45mm/s or 0.5mm/s will be recorded in the seismograph.

Regulatory permission by DGMS vide letter No.AJ/DMS/Perm-106(2)(b)/2016/6001, dated 06/12/2016 (see Annexure A) has been granted for deep hole blasting and by letter No.AJR/DMS/Perm-164(1b)(a)/2018/5413, dated 04/10/2018 (see Annexure B) for blasting within 300m upto 100m. This scientific blasting study was initiated by M/s Jindal Saw Limited – Bhilwara, in reference to letter No.22091, dated 15/01/2019 received from the Office of The District Collector Bhilwara (see Annexure C).

The blast design parameters of all ten blasts are presented in Table 1. Observations of blast induced ground vibration is tabulated in Table 2.

**Table 1. Blast design parameters**

Hole Diameter : 165mm & 115mm  
 In-hole Initiation : Nonel / Shock tube (Bottom DTH Delay: 450ms, Top DTH Delay: 500ms)  
 Surface Initiation : Nonel / Shock tube Trunk Line Delay (TLD's)  
 Decking : 0.75m -1.5m Solid Deck (for holes deeper than 10m)  
 Explosive : Site mixed emulsion and cast booster (100gms)

Blast No.	Date	Bench Location (GPS UTM Coordinate)	Avg. Hole Depth (m)	No. of hole	Avg. B x S (m x m)	Avg. Stemming (m)	Avg. Charge / hole (kg)	Total Charge/round (kg)	Sp. Charge (kg/m <sup>3</sup> )
B1	29/1/19	43R 0453244, 2800574	12	22	4 x 4	4.5	100.30	2206.60	0.52
B2	29/1/19	43R 0453289, 2800580	8.31	58	4 x 4	3.5	73.14	4278.40	0.55
B3	30/1/19	43R 0453357, 2800635	9 to 12	74	4 x 4	4.5	86.75	6420.00	0.52
<b>Total Explosive Charge in all trials (kg)</b>								<b>12905</b>	<b>--</b>

All blast induced ground vibration event records are provided in Annexure D. Fast fourier transformation (FFT) was done to ground vibration data to obtain dominant frequency.

**Table 2. Blast induced ground vibration (PVS) and Air Overpressure (AOP)**

Blast No.	Max. Explosive Charge per delay (kg)	Seismograph distance from blast (m)	Peak Vector Sum (mm/s)	Dominant Frequency (Hz)	Air Overpressure (dBL)	Seismograph location
1	100	898 (Blaster)	<0.5	-	-	Near Hotel Bhairunath, Pur
		2594 (Micromate)	<0.45	-	-	In Pur Village, near Masjid
		271	3.82	18	108.4	Inside mine area
2	100	893 (Blaster)	0.648	14	102.8	Near Hotel Bhairunath, Pur
		2589 (Micromate)	<0.45	-	-	In Pur Village, near Masjid
		228	2.599	18	115.2	Inside mine area
3	150	941(Blaster)	0.524	19.75	97.5	Near Hotel Bhairunath, Pur
		2629 (Micromate)	<0.45	-	-	In Pur Village, near Masjid
		192	2.143	15.13	109.5	Inside mine area

The regulatory permissible PPV (Peak particle velocity) as per DGMS circular No.7 dt.29/08/97 (Table 3 below) for domestic houses/structures (Kuccha, brick and cement) is 10 mm/s, as majority of the ground vibration events have dominating frequency (in Table 2 above) is in the range of 8-25Hz.

**Table 3. Permissible Peak Particle Velocity (PPV) at the foundation level of structures in Mining Areas in mm/s (as per DGMS Circular No.7 dt.29/08/97)**

Type of Structure		Dominant Excitation Frequency, Hz		
		< 8 Hz	8 - 25 Hz	> 25 Hz
<b>(A) Buildings / structures not belong to owner</b>				
(i)	Domestic houses / structures (Kuchha, brick & cement)	5	10	15
(ii)	Industrial Buildings (RCC & Framed Structures)	10	20	25
(iii)	Objects of historical importance & sensitive structures	2	5	10
<b>(B) Buildings belonging to owner with limited span of life</b>				
(i)	Domestic houses / structures (Kuchha, brick & cement)	10	15	25
(ii)	Industrial buildings (RCC & framed structures)	15	25	50

#### 4. Conclusions & Recommendations

The following points could be concluded from the monitoring of pre-blast and post-blast events from the three blasting rounds.

- a) Seismograph installed inside PUR village (near Masjid), at a distance of nearly 2.5 km from the blasting face **could not trigger/measure any vibration**. Blast induced ground vibrations were less than 0.45mm/sec and very much within regulatory permissible limits as provided by DGMS Circular No.7, dated 29/08/1997 (Table 3 above).
- b) Seismograph installed at the boundary of the village near Hotel Bhairunath (distance from blasting face: ~890m), could measure blast induced ground **vibrations well within the permissible limits** and sometimes even failed to trigger in a few occasions (vibrations were less than 0.5 mm/s). Such low intensity vibrations measured, would fail to cause any damage to existing structures in this zone and beyond.
- c) Seismograph installed inside the mine area, also recorded ground vibrations below permissible allowable 5mm/s,

The following recommendations are enumerated, which can be followed by mine officials;

- a) It was observed that regular blast induced ground vibrations are being monitored by Dhedwas mine. This is a routine exercise being followed alongwith blasting operations. This should be continued.
- b) Bottom hole initiation is practiced with bottom explosive deck initiated with 450ms delay and top explosive deck initiated with 500ms delay. This definitely helps to restrict maximum explosive charge per delay and also to control blast induced ground vibration.
- d) Systematic & proper drilling of holes is to be maintained, to get desired spacing and burden.
- e) Stemming should be more than or at least equal to the average drilled burden.
- f) Top of the face should be cleaned for any debris. The face should be cleared of muck of the previous blast
- g) The free face direction should be as far as possible, away from the hutments/ structures (temporary or permanent).

### **Acknowledgement**

Scientists of CSIR-Central Institute of Mining and Fuel Research are thankful to the management and officials of M/s Jindal Saw Limited – Bhilwara for their kind help and co-operation extended during the course of the scientific investigations.

### **References:**

- 1) DGMS Circular No. DGMS (Tech) / (S&T) No.7 of 1997 dated 29/08/1997
- 2) Dowding C. H. (1985), Blast vibration monitoring, Prentice Hall Inc., USA
- 3) Lopex Jimeno C., Lopez Jimeno E., Carcedo F. J. A. and De Ramiro, Y. V.(1995), Drilling and blasting of rocks, Balkema A. A., Rotterdam

## **ANNEXURE – A**

### **REGULATORY DGMS PERMISSION 106 (2)(b)**



भारत सरकार/Govt. of India  
श्रम एवं रोजगार मंत्रालय/Ministry of Labour & Employment  
खान सुरक्षा महानिदेशालय/Directorate General of Mines Safety  
अजमेर क्षेत्र/Ajmer Region



ई:मेल-dgmsajr@gmail.com

फैक्स 0145-2425792, दूरभाष: 0145-2425537 ह्वका)

आना सागर लिंक रोड, अजमेर-305 001

पत्र संख्या :AJ/DMS/Perm-106(2)(b)/2016/

दिनांक / / 2016

प्रेषक:

खान सुरक्षा निदेशक,  
अजमेर क्षेत्र, अजमेर

पंजीकृत

सेवा में,

अभिकर्ता,

ढेडवास आयरन, कॉपर एवं एसोसियेटेड मिनेरल्स खान(एम.एल.सं.-631/05)

मालिक-मेसर्स जिंदल शॉ लिमिटेड,

सुशीला भवन, कृषि विज्ञान के पास,

महावीर नगर, भीलवाडा(राजस्थान)

**Subject: Permission under Regulation 106(2)(b) of the Metalliferous Mines Regulations, 1961 to work Dhedwas Iron, Copper and Associated Mineral Mine (M. L. No.631/05) of M/s Jindal Saw Limited by deployment of HEMM in conjunction with deep-hole blasting- renewal thereof**

महोदय,

Please refer to your letter no. JSL/BHL/MINES/2016-17/029, dated 13-06-2016 and no. JSL/BHL/MINES/2016-17/087, dated 03-10-2016 alongwith working plan of Suras Pit (Scale:- 1:1000):Dhed/Sur/WP/2016A, dated 31.03.2016, working plan of Tiranga Pit (Scale:- 1:1000):Dhed/Tir/WP/2016A, dated 31.03.2016, working plan of Dhulkhera North Pit (Scale:- 1:1000):Dhed/Dhul N/WP/2016A, dated 31.03.2016 and working plan of Dhulkhera South pit (Scale:-1:1000):Dhed/Dhul S/WP/2016A, dated 31.03.2016, Illumination survey reports for the month of July, August and September, 2016 signed by the Electrical Supervisor and Mines Manager and other related documents enclosed therewith on the above cited subject.

The matter has been considered in light of what has been stated in your application. In super-cession of this Directorate's letter No. AJ/DMS/Perm-106(2)(b)Metal/2011/4942 dated 15.06.2011, and by virtue of the powers conferred on the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under Regulation. 106(2)(b) of the Metalliferous Mines Regulations, 1961, and by virtue of the authorization granted to me by the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under Section 6(1) of Mines Act, 1952, I hereby grant you relaxations from the said provisions afresh, to work *Dhedwas Iron, Copper and Associated Mineral Mine (M. L. No.631/05) of M/s Jindal Saw Limited* by deployment of HEMM and in conjunction with deep-hole blasting, subject to the following conditions being strictly complied with:

## 1.0 GENERAL

1.1 Except where otherwise provided for in this relaxation/permission, all relevant provisions of the Metalliferous Mines Regulations, 1961, relating to opencast workings, use of explosives and use of machinery shall be strictly complied with.

1.2 *The opencast workings shall not be extended in areas unless the land in question has been acquired by M/s Jindal Saw Limited and is under physical possession of the management.*

## 2.0 SUPERVISION

2.1A person possessing 1st Class Mine Manager certificate of competency shall be appointed as the manager of the mine to look after mining operation.

2.2 Each of the two units one consisting of Suras pit, Dhulkhera(S) pit & Dhulkhera (N) pit and the other consisting of Tiranga block & Tiranga Samodi block shall be placed under overall charge of a 1st Class Manager and each production shift of each unit shall be placed under the charge of a 2nd Class Manager and during maintenance shift the working shall be placed under the charge of a foreman, who shall be responsible to see that all the regulations and the orders made there under are strictly complied with. He shall also supervise transport and loading being done by the contractor.

2.3 During every shift, every place in the mine shall be placed under the charge of such number of Assistant Managers, as to have overall control and inspection of all the operations connected with the mine, and their jurisdiction shall be clearly demarcated.

2.3(a) The Manager and Assistant Managers shall be assisted by such number of officials/engineers/ competent persons in each of the working shifts, as are sufficient to secure adequate inspection and maintenance in safe working order of all machinery deployed in the mine.

(b) Every place and operation in each of the working shifts, including operations carried out through contractors' workers or by contractual agencies, shall be placed under the charge of such number of mine foremen/mining mates/competent persons/supervisors, duly appointed and authorized by the manager, and their jurisdiction shall be clearly demarcated.

2.4 During each shift, the HEMM, machines, equipments & accessories deployed in the mine, including ones deployed through contractual agencies, shall be placed under the charge of such number of qualified and experienced engineers, competent persons, fitters, mechanics, etc., as may be required to effect their adequate inspection, examination, and maintenance in a safe working order.

2.5(a) The manager shall issue a copy of regulations, rules, bye-laws and orders made there-under, including contents of this permission which concern him and a code specifying duties and responsibilities, to all mine-officials, i.e., to Assistant Managers, Engineer(s), and subordinate Engineers, Mine Foremen, Mining Mates/Competent Persons, Supervisors, Technicians, Fitters, Mechanics, Machine Operators, helpers, etc., which affect him, in a language understood by them.

(b) It shall be the responsibility of the Manager, Assistant Managers, Under Managers, Engineer and subordinate Engineers, and other supervisors to ensure that all persons working in the mine, and those working on machines/equipments etc. work as per the code and all machines and equipments etc. are installed, operated and maintained in safe working condition.

2.6(a) Operations connected with Drilling, Charging, Stemming and Blasting of deep holes shall be placed under overall charge of an *Assistant Managers*, holding *I Class Manager's Certificate of Competency* granted under Metalliferous Mines Regulations, 1961, (hereinafter called as Blasting Officer) who shall supervise the said operations in accordance with the guidelines and directives issued by the Manager.

(b) Notwithstanding anything contained in the Metalliferous Mines Regulations, 1961, preparation of charges, charging and stemming of deep-holes shall be carried out under the personal supervision of a person holding Mine Foreman's Certificate of Competency granted under these

Regulations (hereinafter called as blaster), *who shall fire the shots himself*.

**2.7 During his shift the Assistant Manager shall -**

- (a) make frequent inspections of the areas placed under his charge, check any unsafe conditions/ practices in operations being conducted, including evidence of slide of material from high wall(s), and shall ensure that all operations are conducted in accordance with the provisions of the Act, rules, regulations, bye-laws and orders made there-under and in a safe and efficient manner,
- (b) not allow any person to work or HEMM to be deployed above or under any overhanging edges or places where there is indication of impending slide, until such danger has been removed,
- (c) ensure that every person engaged in dressing operations on high walls or required to work at height is provided with, and he uses safety belt of a type approved by the Chief Inspector of Mines,
- (d) ensure that all loose material is removed from high wall(s) before drillers are engaged on the lower bench,
- (e) ensure that parapet walls/berms/embankments along the haul roads and dump/stock-pile edges are properly maintained,
- (f) ensure strict compliance and adherence by all of "*Code of Traffic Rules & Procedures*" framed for movement of HEMM, and of "*Code of Practice*" framed for prevention of injuries to persons engaged at loading and unloading points, in tipping operations on stock piles/Crushers/Feeder Breakers or for dumping of overburden in dump yards, etc.
- (g) ensure compliance of stipulations of conditions governing grant of this permission and other provisions of the Regulations, Rules, bye-laws, orders, and circulars issued from time to time, as may be applicable.

**2.8 During his shift the engineer(s) shall -**

- (a) inspect & examine machines, equipments and accessories, and satisfy himself that they are in sound and safe working order.
- (b) not allow any machine, equipment to be used, if it is found defective.
- (c) ensure that every machine/equipment/accessory is used in a safe and efficient manner
- (d) ensure that each operation/activity concerning repair, maintenance and operation of machinery/equipment is carried on in a safe and efficient manner.

**3.0 CODES OF WORK PRACTICES**

3.1 A suitable '*Code of Traffic Rules & Procedures*' for regulating the movement of Heavy Earth Moving Machinery, trucks, tippers and other wheeled trackless machinery (commensurate with the capacity/size type of machines used in the mine) shall be framed and enforced. Such Code of Traffic Rules should be deliberated and approved by Tri-partite Committee comprising of drivers/operators of HEMM, supervisors and mine officials. A copy of traffic rules, in a language understood by them, shall be made over to all concerned, i.e., to drivers and operators of HEMM/dumpers/trucks/tippers (including those belonging to contractors), supervisors and mine officials, and to such other persons who monitor/control movement of HEMM.

3.2 A suitable '*Code of Practice*' for prevention of injuries to persons engaged in tipping on stock piles, tipping at Crushers/Feeder Breakers, dumping of overburden at dump yards, and to persons engaged at loading and unloading points (commensurate with the capacity/size type of machines used in the mine) shall be framed and enforced. Such Code of Practice should be deliberated and approved by Tri-partite Committee comprising of drivers/operators of HEMM, supervisors and mine officials. A copy of the code of practice, in a language understood by them, shall be made over to all concerned, i.e., to spotters, dump-men, drivers and operators of HEMM/dumpers/trucks/ tippers (including those belonging to contractors), supervisors and mine officials, and to such other persons who monitor/control dumping/tipping operations.

3.3 No edge-dumping or tipping over of overburden or mineral shall be done from the top-edge of the dump/stockpile.

3.4 A code of safe operating procedures, outlining duties and responsibilities of persons, competent persons, operators, supervisors and mine officials, shall be prepared and implemented for all operations and activities being carried on in the mine, viz., for operation of HEMM, drilling, charging, stemming and blasting of deep-holes, loading, transport and tipping/dumping of ore/mineral/overburden/other material, and likewise. A copy of such SOPs, in a language understood by them, shall be made over to all concerned for proper implementation and enforcement.

3.5 A scheme for proper maintenance, repair, overhaul and erection in respect of heavy earth moving machinery (commensurate with the capacity/size type of machines used in the mine), covering places such as repair sheds and workshops, shall be drawn and implemented.

3.6 A code of practice shall be drawn up for dealing with fires at different locations in the opencast mine, and for dealing of fires in heavy earth moving machinery.

#### **4.0 OPENCAST WORKINGS**

4.1(a) Garland drains of adequate size shall be provided on the periphery of the opencast workings to divert rain water away from the opencast workings and from flowing down the slopes. The drains shall preferably be made impervious by plastering of floor and sides to minimize seepage of water through the strata.

(b) Toe drains may also be made along benches as and where so required as to divert the water straight into the mine sump rather than flowing down the pit slope.

(c) No working shall be extended within 45 m of dwellings or structures not belonging to the Owner and the land acquired for National Highway No. 79 without obtaining permission in writing under Regulation 109 of the Metalliferous Mines Regulations, 1961 from the Directorate.

(d) No deep hole blasting shall be carried out within 300 of the dwellings and structure not belonging to the owner without obtaining a specific permission in writing under Regulation 164 of the Metalliferous Mines Regulations, 1961.

#### **4.2 Height & width of benches:**

4.2.1 (a) The height of benches in overburden, orebody or other rock formation shall not be more than the digging/cutting height of the machine used for digging, excavation or removal.

(b) The width of any working bench shall not be less than

- (i) the width of the widest machine plying on the bench plus 2.0 metres, or
- (ii) three times the width of the largest dumper/ truck/tipper plus 5.0 metres if dumpers/trucks/tippers ply on the bench, or
- (iii) operational area required for operation of HEMM deployed on the bench, or
- (iv) the height of the bench, whichever is more.

4.2.4 When persons are employed within 10m of the working face, adequate precautions shall be taken to ensure their safety by dressing the sides of the bench.

4.2.5 Plying of HEMM, dumpers or tipping trucks on the same bench where men are to work, travel, or rest shall be avoided.

#### **4.3 Strata Control & its Management**

4.3.1 Controlled blasting shall be done to minimise insitu rock damage and achieve the bench profiles stipulated as above. Pre-split blasts shall be taken on benches which are nearing ultimate pit position.

4.3.2 Any movement of strata warranting withdrawal of men and machinery from the face shall be intimated forthwith to this Directorate. The men and machinery shall not be deployed in the said part of the working, unless express permission in writing is accorded in writing.

4.3.3 The pit-slope shall also be regularly inspected along the benches, particularly in weak zones and areas around fault planes by competent person not below the rank of an Assistant Manager, and any deformation or formation of tensile cracks on the benches shall be brought to the notice of the Manager forthwith. Manager shall fix the frequency of such inspections. A report of every such inspection shall be recorded in a bound paged book kept for the purpose, which shall be signed by the person making the inspection and shall also be counter-signed by the Manager.

4.3.4(a) Review of pit-slope design, involving collection, collation & review of all the available geo-technical, geological & structural inputs, rock-mass characteristics, pit stratigraphy, climatic data, etc., shall be continued as an ongoing process. For the purpose a geotechnical cell shall be established at the mine level as well as company level to implement, maintain, monitor and control various geotechnical activities at regular intervals and ensure safe and economic exploitation of mineral from the mine. Scientific agencies having expertise in this regard shall continue to be engaged for the purpose.

(b) A process of regular auditing shall also be put in place to ensure immediate corrective action in case of any deviation from the design.

#### **5.0. FENCING AROUND OPENCAST WORKINGS**

5.1 The periphery around the limits of opencast workings shall be kept fenced with a masonry wall not less than 0.40m thick and not less than 1.2m in height, with a parapet top.

5.2 The edges of benches of the opencast workings shall be kept fenced with wire rope strands or barbed wire, supported on movable posts (wooden, iron or concrete). The gap between the adjacent rope strands or wires shall not be more than 0.30m, the bottom-most rope strand/wire shall not be more than 0.25m above the ground level and the top most rope strand or wire shall not be less than 1.00m from ground level.

#### **6.0. EXTERNAL OVERBURDEN DUMPS/ SPOIL BANKS**

6.1(a) Spoils, overburden or debris shall be deposited at places belonging to the mine and duly approved by the manager in writing.

(b) Spoils, overburden or debris shall not be deposited, beneath transmission, telephone or power lines or near any other public structure.

(c) The slope of a spoil bank face shall be determined by natural angle of repose of the material being deposited, but shall in no case exceed 37.5 degrees from the horizontal. The spoil bank face shall not be retained by artificial means at an angle in excess of its natural angle of repose.

(d) The slope of a spoil bank of overburden or debris shall be kept benched at every 30m lift/ height, and the width of such bench shall not be less than 30m, so however that the width of such bench after every 3 lifts shall not be less than 60m.

6.2 (a) The spoils, overburden or debris shall not be deposited within 45m of a railway line, public road, other public works, other structures, dwellings, houses, etc. not belonging to management.

(b) The toe of the dump shall not be allowed to approach any of the above-stated structures up to a distance not less than 2 times its vertical height.

(c) A suitable fence shall be erected between any railway line, other public works or road, or buildings or structures of permanent nature not belonging to the management, and the toe of every active spoil bank so as to prevent un-authorised persons from approaching the spoil bank.

6.3 No person shall, or shall be permitted to approach the toe of an active spoil bank where he may be endangered from material rolling down the face. Suitable warning signs at conspicuous places shall also be displayed.

6.4 No carbonaceous matter/debris/overburden shall be stacked within 100m around the active faces and periphery of the opencast workings.

#### **7.0. ROADS FOR TRUCKS AND DUMPERS AND FOR OTHER VEHICLES**

7.1(a) Separate haul roads shall be provided in the mine premises for use of HEMM/dumpers/trucks/ tippers and light vehicles. The layout of such roads shall be so designed and kept maintained that they do not cross/intersect each other at any point to the extent practically possible.

(b) Where such crossings of roads meant for light vehicles and dumpers cannot be avoided for reasons vetted by ISO of M/s Jindal Saw Ltd., and approved by the Director of Mines Safety, Ajmer Region, such crossings shall only be on level ground, and shall be visible to the operators of light vehicles as well as to the operators of dumpers for a distance of at least three times the braking distance of the largest dumper plying in the mine.

(c) The crossings shall be suitably manned in all working shifts, shall be provided with proper barricading arrangements, and shall be provided with audio-visual warning systems on either side of both the roads. The approach to such crossings shall also be provided with suitable speed barriers at a distance of not more than 30m from the crossing.

(c) The control intents applied at these crossings, to prevent collision of dumpers and light vehicles, shall be reviewed from time to time by ISO of M/s Jindal saw Ltd., which may also suggest and implement such other control intents as may be deemed fit in the local prevailing conditions.

7.2 The portion of surface haul road in mine premises, where there is heavy traffic of men and machines, shall be provided with a separate lane, properly fenced off from the haul road, for use of pedestrians, two wheelers and light vehicles.

7.3 (a) All haul roads shall be constructed commensurate to the carrying capacity of the HEMM/dumpers/trucks/tippers or other mobile machinery plying on it and shall be maintained in good condition. No vehicle other than the transport vehicles shall use the haul roads, except between designated points and when permitted in writing by the manager.

(b) If large capacity dumpers and smaller capacity tipping trucks or similar transport vehicles are deployed in the mine, separate roads for tipping trucks or similar transport vehicles shall be provided.

(c) Utility/light vehicles shall not be taken up to the working faces/places, but shall be parked at a distance/away from the operational area of HEMM. Suitable points shall be designated for parking utility vans and other light vehicles in the opencast workings, which in no case shall be less than 30m away from the operational area of HEMM. The light vehicles shall in no case be taken beyond the designated point unless operation of HEMM in the vicinity has been stopped.

7.4 Wherever practicable, all haul roads for HEMM/dumpers/trucks/tippers shall be arranged to provide one-way traffic. Where it is not practicable to provide for one-way traffic, no road shall be of a width less than *“three times the width of the largest vehicle plus 5.0m”* plying on that road. Definite turn-outs, crossing points, and waiting points shall be designated and demarcated by proper sign boards for the guidance of drivers of such HEMM/dumpers/trucks/tippers.

7.5(a) All corners and bends in haul roads for HEMM/dumpers/trucks/tippers shall be so designed, made and kept maintained that the operators and drivers of vehicles plying on the road have clear view along the road, for a distance of not less than three times the braking distance of largest HEMM when plying at the rated speed, as fixed by the manager.

(b) Where visibility for a distance as above cannot be ensured, separate lanes shall be provided for up and down traffic at all corners and bends in haul roads of widths not less than "*2 times the width of the largest vehicle plus 3.0m*" plying on that road. The lanes shall be *separated by a strong divider*, and the divider shall be adequately lighted & painted with fluorescent zebra-lines at its sides.

7.6 No haul road for HEMM/dumpers/tippers shall have gradient steeper than 1 in 16 at any place. Shorter ramps of gradient not exceeding 1 in 10 shall not exceed 100m in length at a stretch.

7.7 Where any part of the road exists above the level of the surrounding area, a strong parapet wall or embankment, *not less than 1.0m wide at the top with sides sloping on either side, and of height not less than the diameter of the tyre of the largest dumper/truck/tipper or light vehicle plying on it*, shall be provided and kept maintained to prevent any out of control vehicle getting off the road and rolling down. Dumping of mud or overburden shall not be treated as parapet wall.

7.8 Warning notices and road signs shall be posted along the haul roads at appropriate places like crossings, curves etc. for guidance of drivers of dumpers/trucks/tippers.

7.9 At every curve, parapet wall or vertical posts with zebra lines shall be provided to help the drivers to keep the trucks/tippers/dumpers on the track.

## **8.0 GENERAL LIGHTING**

8.1(a) Adequate general lighting arrangements conforming to stipulations not less than as specified under DGMS (Tech.) Circular no. 11 of 2016 dated 27.06.2016 shall be provided at the work places and in the opencast workings for working the mine beyond day-light hours. Flood lights shall be provided at quarry faces and work sites for their proper inspection at night.

(b) Where natural light is insufficient, arrangements for general lighting of the work place shall be made during working hours.

8.2(i) The Manager of every mine shall arrange to conduct Lighting survey once at least in every month to ensure adequacy of illumination.

(ii) A record of every such survey shall be maintained and signed by the competent person making the survey and countersigned and dated by the Manager.

(iii) The manager of every mine shall ensure that an Illumination Plan, indicating the location of places, type of illuminating devices, fixtures, lamps, supports, any other devices for illumination and showing required as well as measured value of light at various places to be illuminated, is maintained. Where any area of the mine is not in use or not needed to be lighted, the same shall be clearly marked and demarcated on the plan with reasons to be recorded. The plan shall be kept signed and dated by the surveyor and the official authorized for maintaining the lighting standard and countersigned and dated by the manager.

(iv) The Illumination Plan shall be brought up to date in every month based on the monthly illumination survey and considering the current status of workings.

8.3 All work persons employed in the opencast workings beyond daylight hours shall be provided with individual electric cap lamps.

## **9.0 PROTECTIVE EQUIPMENT**

9.1 Every person working in the mine shall be provided with, and shall use, a helmet and protective footwear of appropriate type.

9.2 Every person permitted to work on height or at any place having inclination of 45 degrees or more, from where he is likely to slip or overbalance, shall be provided with, and shall use, a full body harness of an approved type.

9.3 Every person permitted to work on a pontoon or in the vicinity of a sump/water-body, into which he may fall due to slip or overbalance, shall be provided with, and shall use, a life-jacket of a type possessing valid BIS licence.

9.4 Every mine official, supervisor and work-person employed beyond day-light hours in opencast workings, dump yard, stock-yard and the CHP, who by virtue of nature of his job, is employed in the vicinity of mobile HEMM/dumpers/tippers shall be provided with, and shall use, fluorescent jacket and helmet with fluorescent band, so that his movement/position can be conspicuously judged by operators of such machinery, and the risk of his run over by mobile HEMM/ dumpers/tippers is minimized.

#### **10.0 PRECAUTIONS AGAINST DUST**

10.1 Adequate arrangements to allay dry dust, by wetting, shall be made on haul roads and benches where mobile HEMM, trucks and dumpers operate.

10.2 All drills shall be provided with wet drilling arrangement or with a device, duly approved by the Chief Inspector of Mines, to prevent atmosphere getting charged with dust, which shall be kept in operation during drilling operations and it shall be maintained in efficient working order. No dry drilling operation shall be carried on.

#### **11.0 DESIGN, EXAMINATION, REPAIR & MAINTENANCE OF MACHINES**

11.1(a) The operator's cabins of all heavy earth moving machinery, viz., dozers, pay-loaders, drills, dumpers/trucks/ tippers, etc., shall be so designed and substantially built as to render adequate protection to the operator against heat, dust, noise, vibration, etc., and at the same time provide adequate safety to the operator in the event of roll-over/overturning of the HEMM.

(b) A seat belt of type prescribed by the equipment manufacturer shall be provided in the cabins of all wheeled trackless heavy earth moving machinery/dumpers/trucks/tippers, which shall be worn by the operators at all times.

11.2 A code of practice for inspection, examination and repair and maintenance of all HEMM shall be drawn up by the Engineer in consultation with the Equipment manufacturer and the Manager and shall be implemented. A copy of the same shall be submitted to this Directorate at an early date.

11.3(a) Every drilling and heavy earth moving machinery, dumper, truck, tipper, or electrical and mechanical equipment, apparatus or accessory, including those deployed through contractual agencies, (herein after called machine), shall be examined by an engineer or a competent person duly authorized in writing for the purpose, at least once in every 24 hours and all machinery shall be kept maintained in good and safe working condition. In case of wheeled trackless HEMM like dumpers, trucks, tippers and other such machinery, special attention shall be paid to safe working order of brakes, steering system, horn, audio-visual reversing alarm, rear view mirrors, head & tail lights, side indicator lamps, hazard lights, and other safety devices prescribed by the manufacturer/ circulars issued by DGMS.

(b) A record of examination and maintenance carried out in accordance with the above shall be maintained in a bound paged register, which shall be signed by the competent person or engineer in authorized for the purpose and countersigned by the Engineer (Mines).

11.4(a) Every machine, including those deployed through contractual agencies, shall be allocated at least one day in every week for its maintenance, when it shall be thoroughly examined & inspected by a competent person or an engineer, who shall satisfy himself that it is mechanically sound and is in safe and efficient working order, before it is allowed to be re-deployed.

(b) A report of every maintenance made under clause (a) shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by person making the inspection and countersigned by the Engineer(Mines).

11.5 Engineer (Mines) or any Superior Official duly authorized for the purpose shall also make surprise inspections at interval not exceeding 15 days to ensure that above examinations/scheduled checks on machines are in-fact being carried out.

11.6(a) If the engineer, foreman or other competent person making an inspection notices any defect in any machinery, the said machinery shall not be used until the defect has been remedied.

(b) Any defect in any machinery, reported by its operator, shall be promptly attended to.

11.7 Any machinery found to be in an unsafe operating condition shall be tagged at the operator's position; "*Out of Service, Do not Use*" and its use shall be prohibited until the unsafe condition has been corrected.

11.8 All repairs to a machine shall be done at a location which provides a safe place for the persons engaged on repairs.

11.9(a) Except for testing, trial or adjustment, which must necessarily be done while the machine is in motion, every machine shall be shut down, and positive means taken to prevent its inadvertent/accidental operation, before any repair, maintenance or lubrication is undertaken on it.

(b) Power shall be disconnected when repairs are to be carried on any electrically powered machine/apparatus.

(c) Any machinery, equipment or part thereof which is suspended or held apart by use of slings, hoists, or jacks shall be substantially blocked or cribbed, before men are permitted to work underneath or between the same.

11.10 The operator or driver shall not leave the machine while it is running unless it is placed under the charge of a competent person.

11.11 Only such fitters/mechanics possessing driver's/operator's license, shall be allowed to carry out test-run of HEMM.

## **12.0 DRILLING OF DEEP HOLES**

12.1 Following safety features shall be provided in drills –

- i. An approved type of dust prevention/suppression system,
- ii. Emergency push button in operator's cabin, main frame, propeller pendant, and at the machine's rear end to stop the power-supply to the machine,
- iii. Tripping device to trip the field switch,
- iv. Motor protection thermostat relay to trip the motor in case of increase in winding temperature,
- v. Explosive vent in the transformer
- vi. Propel interlock between drilling and propeller operation,
- vii. High discharge-air temperature switch,
- viii. Low lubricating oil pressure switch,
- ix. Electric solenoid valve in compressor lubrication line,
- x. No bump circuit,
- xi. Tower lock & lock check valve,
- xii. Spring loaded type propel joy-stick – which returns to neutral,
- xiii. Disk brake and brake valves,
- xiv. Anti-creep check valves to prevent creeping,
- xv. Seat belt at operator's seat,
- xvi. Fire-resistant hydraulic hoses and wiring near hot zones,
- xvii. Turbo-charger guard,
- xviii. Wet drilling arrangement or a device, duly approved by the Chief Inspector of Mines, to prevent atmosphere getting charged with dust,
- xix. Hermetically sealed operator's cabin of substantial construction to guard the operator from heat, dust and injury.

12.2 All moving parts of the drill shall be adequately guarded and it shall be ensured that such guards remain in place before the machine is put in operation.

12.3 The area where drilling is to be done shall be thoroughly cleaned of loose rocks and debris and position of every hole to be drilled shall be distinctly marked by the shot-firer/blasting officer, so as to be readily seen by the drillers.

12.4 No drilling shall be commenced in an area where shots have been fired, until the blasting officer/blaster has made a thorough examination of all places, including remaining butts of old deep holes, for unexploded charges that the drill rod may strike.

12.5 No drill or bore rod or pick shall be inserted in butts of old deep holes even if an examination under clause 11.4 has failed to reveal presence of explosives.

12.6 Drilling and charging of deep holes shall not be carried out in the same area at the same time.

12.7 Drilling operations shall not be carried on simultaneously on two benches, at places directly one above the other.

### **13.0 DUTIES OF DRILL OPERATORS**

13.1 At the beginning of his shift, the drill operator shall examine the drilling equipment and satisfy himself that -

- (a) crown blocks are mounted securely;
- (b) where compressed air drills are used, all hose connections are in order;
- (c) the drill is in safe working condition and all safety devices, as stipulated in clause 12.1 above, are in place and functional; and,
- (d) the drills is be provided with wet drilling arrangement or is fitted with a device, duly approved by the Chief Inspector of Mines, to prevent atmosphere getting charged with dust. He shall ensure that it is kept in operation during drilling operations.

13.2 The drill operator shall also ensure that -

- (a) work persons keep clear of the drill and drill stem while the drill is in motion;
- (b) work persons do not work under suspended tools when tools are removed from the holes,
- (c) all finished drill holes are properly plugged so as avoid possible injury to any one accidentally stepping onto the hole.

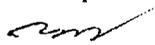
### **14.0 CHARGING OF DEEP HOLES**

14.1 Unless exemption has been obtained from this Directorate, provisions of Regulation 164(1A) and Regulation 164(1B) of the Metalliferous Mines Regulations, 1961 shall be complied with if any part of a public road or railway, or any permanent building or structure of permanent nature, not belonging to the M/s Jindal Saw Limited, lies within the danger zone.

14.2 General precautions and rules prescribed by the Regulations, Rules, bye-laws and orders made there-under and as prescribed by circulars issued by the Chief Inspector of Mines from time to time, regarding handling of explosives shall be observed by the blasting crew. Only such minimum number of person shall be allowed to remain at the charging site as are required during charging operations and firing of shot holes.

14.3(a) The entire area where charging of explosives is to be done shall be demarcated by suitable flags and effectively guarded to prevent unauthorised entry of persons or entry of other vehicles, and shall be kept free from dry vegetation and other combustible material.

(b) Smoking, naked light or open flames shall not be allowed within 300m of the area where charging of explosives is being carried on.

14.4 For transportation of explosives in bulk, stipulations of the Explosives Rules, 2008 shall be strictly complied with. 

14.5 The holes shall be charged (and fired) as soon as possible after the explosive is transported to the site of blasting. All normal precautions for charging (and firing) as stipulated by the Regulations, Rules, bye-laws and orders made there-under and as prescribed by circulars issued by the Chief Inspector of Mines from time to time, shall be strictly observed.

14.6 Explosive cartridges shall not be slit or deformed. Adequate amount of cap sensitive explosive shall be used with non-cap sensitive explosive to ensure complete detonation of the explosive charge.

14.7 Explosives shall be delivered/charged first into the hole farthest from the 'Priming Station'.

14.8 Not more than one hole shall be in the process of being charged at any point of time.

14.9 All operations connected with charging, stemming and making connections shall be done while standing on the solid ground.

14.10 The cartridges of explosives shall be lowered carefully into the deep-holes, so as to avoid sticking of cartridges in the holes, thereby causing air space(s) in the explosive column. After charging such hole with explosives, the length of the uncharged/remaining portion of the hole shall be measured to confirm that the cartridges are in close contact with each other and there is no air gap between the explosive column. In case, the length of uncharged portion of the hole is not as per calculation, thereby indicating the presence of air space, attempt may be made to push down the charge in case of slurry explosives only. The remaining hole shall then be stemmed with moist sand before blasting the shot holes.

14.11 Explosive charge shall not be allowed to sleep over in holes unless express permission in writing to the effect is obtained.

#### **15.0 PRECAUTIONS DURING FIRING**

15.1 Shots shall not be fired except during the hours of day light. Charged holes shall not be allowed to sleep overnight unless permission to the effect is obtained in writing from this Directorate.

15.2 Shots shall not be fired in crushed, broken or fractured ground.

15.3 As far as practicable, deep holes shall be fired either between the shifts, or during the rest interval, or at the end of work for the day.

15.4(a) The manager shall fix the time of blasting, and the same shall be circulated to all concerned, including to mine officials/supervisors, and to habitants of structures and dwellings nearby. The timings shall also be conspicuously posted on the notice board.

(b) Code of practice for deep-hole blasting shall be framed by the Manager, which shall strictly be adhered to.

(c) Blasting shall be done only during daylight hours. Charged holes shall not be allowed to sleep overnight unless permission to the effect is obtained in writing from this Directorate.

15.5 Two-way communication by wireless or walkie-talkie sets may be provided to the Blasting Officer, Blaster, and to his assistants. The sets, including mobile phones in possession of blasting personnel, if any, shall however remain switched off during handling and charging of explosives.

15.6(a) Before deep-holes/shots are charged, stemmed and fired, sufficient warning by siren or other suitable means shall be given to warn persons *within a radius of 500m*, including to the habitants of structures and dwellings not belonging to M/s JSL around the opencast workings, if any.

(b) The said *radius of 500m from the place of firing* shall be distinctly demarcated (by means of red flags or other suitable means) at least 30 minutes before firing of holes.

(c) Proper and distinct warning by a siren installed for the purpose shall be given *within the radius of 500m from the place of firing*, at least 30 minutes before the holes are fired.

(d) It shall be ensured by the blasting officer, blaster and his assistants, that no person remains *within a radius of 500m of place of firing* unless he has taken proper shelter from flying fragments resulting out of blasting.

(e) Guards shall be posted at either end/extreme points of the public roads falling *within a radius of 500m of place of firing*, who shall warn and stop passers-by and vehicles plying on it and shall, by efficient signals, intimate clearance of traffic to the blaster. In the event of any railway line lying within the danger zone, no shot shall be fired when there is traffic on the railway track.

15.7 During approach of a storm, following precautions shall be taken –

- (a) No explosives, particularly detonators shall be handled.
- (b) If charging operations have begun, work shall be discontinued till the storm has passed.
- (c) If deep-holes/shots are being fired electrically, all exposed wires shall be coiled up and kept covered by something other than a metal plate.
- (d) All wires shall be removed from contact with metallic plates/steel rails so as to prevent the charge from exploding prematurely by a local strike of the lightning.

15.8 After deep-holes/shots have been fired, no person shall enter or be allowed to enter the place, until 30 minutes after firing of the shots. Before allowing any person to enter the area, the Blasting Officer or the Blaster shall make sure that the area is free from dust, smoke or fumes.

15.9 In case of misfires, precautions as laid down in Regulation 167 of Metalliferous Mines Regulations, 1961 shall be taken.

15.10 A proper record of blast parameters like spacing & burden of holes, hole depth, number of holes fired in the round, charge/hole, charge/delay, and charge/round, length of explosive column(s) & stemming column length(s), initiation pattern (with proper sketches wherever called for), and distance upto which flying fragments resulting out of blasting projected, shall be kept maintained in a bound paged book with each round of deep-hole shots fired. The records shall be duly signed by the Blasting Officer and countersigned by the Manager of the mine.

15.11 In the event of hot strata being encountered, only slurry explosives shall be used for blasting and stipulations of D.G.M.S. Circular No. 3 of 1980, Circular No. 2 of 1985 and Circular No. 2 of 1990 shall be strictly complied with.

#### **16.0 DESIGN, OPERATION AND MAINTENANCE OF SHOVELS/PAYLOADERS/DOZERS**

16.1 Operator's cabin of every Shovel, Pay-loader, Dozer, shall be so designed as to afford roll-over protection and afford the operator clear and uninterrupted vision all around.

16.2 Every shovel, pay-loader, surface miner, dozer, shall be provided with following safety features -

- (a) All functions cut-off switch,
- (b) Swing Motor brake (in case of shovels),
- (c) Fire resistant hydraulic hoses,
- (d) Fire-resistant sleeves/conduits housing cables/wires;
- (e) Turbo-charger guard,
- (f) Roll-over Protection and seat belt of a type prescribed by the manufacturer at operator's seat,
- (g) Vent valve on top of hydraulic tanks,
- (h) A baffle plate between hot zone and cold zone,
- (i) Provisions for limiting hydraulic cylinders (stoppers),
- (j) Efficient warning devices prescribed by the manufacturer;
- (k) Front and rear lights of adequate intensity to render adequate illumination within working area of the machine,

- (l) Blinking type of hazard warning lights on all sides of the HEMM which, irrespective of engine's running can be switched on in case the machine breaks down or is stopped/stationed/ parked in operational area of other HEMM,
- (m) A portable lamp for use in emergency by the operator, unless the loading equipment is not intended to be used beyond day-light hours; and
- (n) An efficient portable fire extinguisher so placed as to be within easy reach of the operator.
- (o) A retractable ladder for mounting onto the machine.
- (p) Automatic fire protection/fire suppression system of approved type

16.3 Every shovel/pay-loader/surface miner/dozer shall be placed under the charge of a competent person for its operation, duly authorised in writing by the manager, herein called the 'Operator'.

16.4 No person other than the operator or his helper so authorised in writing by the manager, shall ride on a shovel, pay-loader, surface miner or dozer during its normal operation.

16.5 No person shall be permitted to ride in the bucket of a shovel, pay-loader or dragline.

16.6 Shovel dippers/bucket, pay-loader bucket, and dozer's blade shall be lowered to the ground when idle or during maintenance, unless so called for during repairs, when it shall be cribbed to prevent accidental fall.

16.7 No shovel or pay-loader shall be operated in a position, where any part of the machine or suspended loads there-from are brought closer than 3 metres to exposed high voltage transmission lines, unless the current has been cut off from such exposed transmission lines, and positive means have been taken to prevent the lines from being energised. A notice of this requirement shall be posted at the operator's position.

16.8 Electrical cables, if any, shall be laid in such a manner that they are not endangered either by falling rocks or by any other mobile equipment.

16.9 The shovel bucket shall be pulled out of the bank as soon as it is full.

16.10 When being operated in soft or unstable ground, every shovel shall be supported on mats, heavy planks or poles so as to distribute the load of the machinery over larger area and prevent its toppling.

16.11 When not in use, the shovel, pay-loader, surface miner, dozer shall be moved to and stood on stable ground.

16.12 If more than one stripping machine/excavator/shovel/ pay-loader is in use in any area, either on the same bench or on different benches, the machines shall be so spaced that there is not less than 30m distance from the swing range of the boom of other stripping machine/excavator/shovel/pay-loader, there is adequate space for safe operation of each of the equipment, and there is no danger from flying or falling pieces of stones from one machine to the other.

#### **17.0 DUTIES OF SHOVEL, PAYLOADER, DOZER OPERATORS**

17.1 At the commencement of his shift, the operator shall personally inspect and test the machine, paying special attention to the following details --

- (a) that every warning device and every safety device is in working order,
- (b) that it is mechanically sound and in efficient working order, and
- (c) that the lighting fixtures are in proper working order, if the machine is required to work beyond day-light hours.

17.2 He shall not take out the machine for work nor shall he work the machine, unless he is satisfied of its safe working order.

17.3 The operator shall maintain a record of every inspection made under clause 16.1 in a bound paged book kept for the purpose, and shall sign every entry made therein.

- 17.4 The operator shall keep the cab window clean so as to ensure clear vision at all times.
- 17.5 The walkways in or about the cab of any shovel, excavator, surface miner and pay-loader shall be kept free of loose tools, grease containers or other materials that might fall or give rise to tripping hazard.
- 17.6 The operator shall not operate the machine when persons are in such proximity as to be endangered.
- 17.7 The operator shall not swing the bucket over-passing the trucks/dumpers when they are being loaded. He shall swing the bucket over the body of the truck/dumpers whilst loading and not over the cab, unless the cab is protected by a substantially strong cover.
- 17.8 Before leaving the machine, the operator shall lower the bucket to the ground.
- 17.9 The operator shall not allow any unauthorised person to ride on the machine.

**18.0 DESIGN, OPERATION & MAINTENANCE OF TRUCKS/TIPPERS/DUMPERS, AND OTHER WHEELED TRACKLESS MACHINERY..**

- 18.1 Every truck/tipper/dumper and other wheeled trackless equipment shall be provided with following safety features:
- (a) efficient fail-safe service brake, and a parking brake,
  - (b) efficient secondary brake so that the truck/tipper/dumper/other wheeled trackless equipment can be stopped in an emergency, or in the event of failure of service brake,
  - (c) an efficient speed retarder or an exhaust brake (in tippers) to keep in check the speed of the vehicle during its down-gradient travel,
  - (d) an emergency steering in case the steering system is hydraulically operated;
  - (e) proper seat equipped with seat belts of a type prescribed by the manufacturer for driver, and separate seat(s), also duly equipped with seat belts, for person(s) other than operator/driver, if such person(s) authorised to ride in the dumper/truck/tipper,
  - (f) seat belt reminder to alert the operator for wearing the seat belt,
  - (g) a substantially strong cabin guard extension over the driver's/operator's cabin,
  - (h) alarm and indicator to warn the operator that the truck/tipper/dumper body is in lifted position
  - (i) rear view mirrors of adequate size on either side of the vehicle,
  - (j) rear vision system to assist the operator in reversal of the truck/tipper/dumper
  - (k) blind-spot mirrors to enable the operator to have clear visibility of blind area in and around the dumper/truck/tipper,
  - (l) automatically operated audio-visual alarm of an approved type which gets switched on no sooner the gear lever is shifted in "reverse" position;
  - (m) efficient horn & side indicator lights;
  - (n) efficient head-lights & tail lights, if the truck/tipper/dumper/equipment is required to work beyond day-light hours,
  - (o) auto dipping system to reduce glare on the eyes of the operator when approaching other trucks/tippers/dumpers during night operation
  - (p) blinking type of hazard warning lights on all sides of the truck/tipper/dumper/equipment which, irrespective of engine's running can be switched on in case the truck/tipper/dumper breaks down or is stopped/stationed/parked on haul road or in operational area of other truck/tipper/dumper/equipment,
  - (q) retro reflective reflectors on all sides,
  - (r) speed limiting device, mechanical or electronic, to restrict the speed of the dumper/tipper/truck to maximum as fixed by the manager,
  - (s) propeller shaft guard (in tippers),
  - (t) automatic fire protection/fire suppression system of approved type
  - (u) fire resistant hydraulic hoses in hot zones,
  - (v) fire-resistant sleeves/conduits housing electrical cables/wires,
  - (w) turbo-charge guard and exhaust pipe/tube coated with heat insulated paint
  - (x) mechanical steering locking to prevent untoward movement of steering wheel and tyre for safety of persons attending the dumper/tipper/truck whilst its engine is running,

- (y) mechanical type anti-collision device, such as tail-gate protection, bumper extension, etc., to protect operator from head on and head to tail collision,
- (z) proximity warning device of such range to indicate persons likely to be in close proximity of the truck/tipper/dumper, and,
- (zz) proximity warning device of adequate range to alert the operator when approaching other trucks/tippers/dumpers and allow him to stop the dumper whilst travelling at rated speed fixed by the manager without colliding with such trucks/tippers/dumpers.

18.2 The audio-visual alarm provided on trucks/tippers/dumpers/other mobile equipment shall be of such intensity which is not less than 5dB(A) above the surrounding noise level.

18.3 Every truck/tipper/dumper and other wheeled trackless equipment shall be operated by a competent person authorized in writing by the manager herein called the 'operator/driver'.

18.4 No person other than the driver or the manager or any person authorised in writing by the manager shall ride on a truck/tipper/dumper and other wheeled trackless equipment.

18.5 No person shall, or shall be permitted to, ride on the board/cabin platform of a running truck/tipper/dumper and other wheeled trackless equipment.

18.6 As far as possible, loaded trucks, tippers or dumpers shall not be reversed on gradients.

18.7 Sufficient stop blocks shall be provided at every tipping point and these shall be used on every occasion, material is dumped.

18.8 Code of Traffic Rules framed by the Manager shall be adopted and followed during movement of all truck/tipper/dumper and other wheeled trackless equipment. They shall be prominently displayed at relevant places in the opencast workings and on truck/dumpers roads.

18.9 When not in use, every truck, tipper or dumper or other wheeled trackless machinery shall be moved to and parked at proper parking place(s) which shall be on level ground and away from working area of other mobile equipment. The truck or dumper or other wheeled trackless machinery shall not be parked at a place where it cannot be observed.

18.10 No person shall, or shall be permitted to, work on the chassis of a truck or dumper, with the body in a raised position unless the truck or dumper body has been securely blocked in position. The hoist mechanism shall not be depended upon to hold the body of the truck or dumper in a raised position.

18.11 No person other than those authorised shall be permitted to enter or remain in any dumping yard, loading and unloading points and turning points.

18.12 In respect of every truck/dumper or class of truck/dumper, the maximum load to be hauled shall be determined and notified to operators/drivers by the Manager. Speed limits at which such loads can be hauled shall also be determined and fixed by the Manager, depending on the road gradient, direction of movement, road construction etc., and notices/sign boards specifying the same shall be posted along the haul road at appropriate places/sections.

#### **19.0 DUTIES OF TRUCK/DUMPER OPERATORS**

19.1 Before commencing work, the driver shall personally check the dumper/truck/tipper for oil(s), fuel & water levels, tyre inflation, and general cleanliness, and inspect and test the vehicle, paying special attention to the following details :

- (a) that all brakes, speed retarder, and steering system are in proper working order;
- (b) that proper seat and seat belt is provided on driver's/operator's seat
- (c) that all safety features and warning devices are in working order;
- (d) that automatically operated audio visual reversing alarm are in working order;
- (d) that rear vision system, blind spot mirrors and rear view mirrors are provided;
- (e) that all lights including hazard lights are in working order, if the vehicle is required to work after day-light hours.

19.2(a) The driver/operator shall not take out the vehicle for work nor shall he drive the vehicle, unless he is satisfied that it is mechanically sound and in efficient working order.

(b) He shall, before getting onto the operator's seat and starting the vehicle, ensure that none is in the close proximity of the dumper/truck/tipper as to be endangered by it. He shall give an audible warning signal before starting the truck, tipper or dumper.

(c) He shall wear the seat belt before starting the vehicle and shall also ensure that other person(s), if so authorised to ride the vehicle, are properly seated and also wear safety belts.

19.3 The driver shall maintain a record of every inspection made under clause 18.1 in a bound paged book kept for the purpose and shall sign every entry made therein.

19.4 The driver shall keep the cab window clean so as to ensure clear vision at all times.

19.5 The driver shall ensure that parking brake is on, before stopping the engine.

19.6(a) The driver shall handle the truck/dumper carefully and keep it under control at all times. He shall negotiate downhill gradients in low gear and apply retard brakes so that minimum of braking is required.

(b) He shall not drive too fast, shall avoid distractions and shall drive defensively. He shall not attempt to overtake another vehicle unless he can see clearly area enough ahead to be sure that he can pass it safely without exceeding speed limit, and that area ahead is free of any road intersection or junction. He shall also sound audible warning signal before overtaking and shall not attempt to pass the other vehicle until he has received a proper audible signal in reply.

(c) When approaching a stripping equipment, the driver of the truck or dumper shall sound the audible warning signal and shall not attempt to pass the stripping equipment until he has received a proper audible signal in reply.

(d) Before crossing a road or railway line, he shall reduce his speed, look in both directions along the road or railway line and shall proceed across the road or railway line only if it is safe to do so.

(e) The driver shall not operate the truck or dumper in reverse unless he has a clear view of the area behind the vehicle. He shall give an audible warning signal before reversing a truck or dumper.

(f) The driver shall be sure of clearance before driving through tunnels, archways, structure etc.

(g) The driver shall not drive 'nose to tail' particularly behind a vehicle with twin rear wheels from which a stone piece wedged between the tyres may fly back into the windscreen of his vehicle.

(h) He shall sound audible warning while approaching blind corners or any other points where person may walk in front unexpectedly.

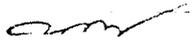
19.6 The driver shall see that the vehicle is not overloaded and that material is not loaded in a manner as to project horizontally beyond the sides of the vehicle's body. Any material projecting beyond the front or rear shall be indicated by the red flag during day and by a red light after day-light hours.

19.7 The driver shall not allow any unauthorised person to ride on the vehicle. He shall also not allow more than the authorised number of persons to ride on the vehicle.

## **20.0 TESTING OF BRAKES**

20.1 Brakes of every truck, dumper and any other wheeled trackless machine shall be tested atleast once in two weeks, in a manner as indicated below :

(a) **SERVICE BRAKE TEST** : The service brake shall be tested as specified by the manufacturer of the vehicle, or shall be tested on a specified gradient and speed when the vehicle is fully loaded. The vehicle should stop within a distance as specified by the OEM when the brake is applied, which shall be obtained from the manufacturer of the vehicle.



(b) **PARKING BRAKE TEST:** The parking brake shall be tested as specified by the manufacturer of the vehicle or shall be capable to hold the vehicle for a period of at least ten minutes when it is fully loaded and placed at the maximum gradient of road on which it is permitted to ply.

20.2 A record of every such test carried on every dumper/truck/tipper/other mobile HEMM shall be kept maintained in a bound paged book which shall be signed by the person carrying out the tests and shall be countersigned by the engineer and the manager. In case any defect in braking system is observed in any equipment/HEMM, such equipment/HEMM shall be taken off from operation and record thereof shall be kept maintained.

#### **21.0 ENTRY OF BUYERS' TRUCKS/TIPPERS/HEMM, IF ANY**

21.1(a) Separate stock yards shall be maintained for dumping and dispatch of mineral/ore from the mine and it shall be ensured that dispatch of ore by buyers' trucks/tippers, if any, is not carried out from the stock yard where dumping of ore from the mine is under progress.

(b) Buyers' trucks shall be parked away from the mine premises and only such number of trucks shall be allowed to enter the mine which can be accommodated in the dispatch yard and are due for loading during the shift, with due consideration of safety of persons engaged in loading operations.

21.2(a) Buyers' trucks, tippers and other heavy vehicles, not belonging to management, shall not be allowed in the mine premises without a valid pass issued by the manager or other competent person authorized for the purpose. Before the pass is issued, the engineer or competent person authorized for the purpose shall ensure the road-worthiness of such vehicles.

(b) In order to check entry of unauthorized trucks, tippers and other vehicles in mine premises, properly manned check gate(s) at the mine entrance(s) shall be set up, where record of entry and exit of each vehicle shall be maintained.

(c) At the check gate(s), driving license of the drivers shall be checked for eliminating the possibility of unlicensed persons driving the vehicles. Entry of unauthorized persons shall also be checked and controlled at such check gate(s) which shall be manned suitably for the purpose.

21.3 The manager shall fix the quantity of ore/spoil/OB/other material to be loaded in buyers' dumpers/tippers/trucks commensurate with the capacity/size/type of dumpers/tippers/trucks deployed. It shall also be ensured that only permitted quantity of ore/spoil/OB/other material is loaded in the dumpers/tippers/ trucks, so as to obviate the risk of accidents due to overloading in the mine premises.

#### **22.0 PERIODICAL INSPECTION OF HEMM AND OTHER EQUIPMENT**

22.1 The stability of every HEMM, CHP & its structures, over-head silos/bins/bunkers and their structures, shall be assessed by an agency having expertise in this regard once at least every year and also after every major overhaul. A record thereof shall be kept maintained in a bound paged book. The repairs/modification suggested by the assessing agency shall be carried out without any delays.

22.2 The design, construction, testing, marking and certification of all wire rope slings used for lifting loads shall conform to IS 2762:2009 (revised & amended) specifications.

22.3 All cranes, including overhead cranes shall be subjected to proof-load test by an agency having expertise in this regard once at least every year and record thereof shall be kept maintained.

22.4 Non-destructive testing of the equipment and of the lifting ropes, sheaves/pulleys, etc., shall be done by an agency having expertise in this regard once at least every year, and record thereof shall be kept maintained.

22.5 All apparatus used as or forming part of the equipment, like pressure vessels, air receivers, etc., shall be subjected to hydraulic test and NDT at intervals not exceeding three years. Such tests shall be done by an agency having expertise in this regard, and record thereof shall be kept maintained.

22.6 Installation, operation and maintenance of heavy machineries such as shovels, draglines, pay-loaders, surface miners, dumpers, tippers, trucks etc. shall be done strictly in accordance with the OEM's operation and maintenance instructions which shall be obtained from the manufacturers. A code of practice shall be prepared for the purpose.

22.7(a) Automatic fire protection/fire suppression system of approved type shall be provided and kept maintained in working order on every HEMM such as dumpers/tippers/trucks, dozers, front end loaders, draglines, drills, hydraulic and electric shovels. Recommended procedure for testing of such fire protection system, at a given interval as prescribed by the manufacturer shall also be adopted.

(b) An over-riding manual system along with fire alarm shall also be additionally provided for better effectiveness of the system.

22.8 Safety features recommended in the equipment/HEMM such as dumpers/tippers/trucks, dozers, front end loaders, draglines, drills, hydraulic and electric shovels, etc., shall form part of notices inviting tender for procurement of new equipment/HEMM. Design and drawings shall be obtained from OEM for fitting the same in equipment/HEMM already in use.

22.9 The layout of the workshop shall be in accordance with the stipulations of DGMS Circular No.8 of 2003.

22.10 While inflating tyres, suitable protective cages shall be used. Tyres shall in no case be inflated by sitting either in the front of it or on top of the same. The locking ring of every tyre shall be periodically examined and shall also be examined on every instance the tyre is inflated. A record of such examination shall be kept maintained in a bound paged book kept for the purpose, duly signed by the person making the inspection and countersigned by the engineer.

### **23.0 USE OF ELECTRICAL MACHINES/EQUIPMENT**

23.1 No electrically operated machine, equipment or accessory shall be energised, commissioned and used without prior approval of the competent authority under the relevant provisions of Central Electricity Authority (Measures relating to Safety and Supply) Regulations, 2010.

### **24.0 WORK CARRIED OUT BY CONTRACTUAL AGENCIES**

24.1 Following additional conditions shall be strictly complied with respect of work being carried on by outsourcing/contractual agency, if any -

24.1.1 The contracting firms engaged in the mine, (through its Owner, Agent, Managing Agent or any representative) shall ensure the compliance of provisions of this Act, Rules, Regulations or orders framed there-under and shall be subject to this Act in like manner as if he were the Owner/Agent, but not so as to exempt the owner, agent or manager of M/s Jindal Saw Limited.

24.1.2 M/s Jindal Saw Limited, through inspection and examination by its Manager, Assistant Managers, Engineer(s) and subordinate Engineers, shall ensure proper maintenance of machineries deployed by contracting firms, so that they are in safe working order, and shall also ensure regulation of employment of the workers of contracting firms engaged in the mine and maintenance of their statutory records in this regard, so however that the contracting firms (through its Owner, Agent, Managing Agent and any representative) shall be subject to the above in like manner as if he were the Owner/Agent under the Mines Act.

24.1.3 The contracting firms engaged in the mine, (through its Board of Directors/Partners) shall define the representative who shall be deemed to be the owner of the contracting firm, and the same shall be intimated to this Directorate in Form-I of First Schedule. M/s Jindal Saw Limited, through

its Nominated Owner, Agent, Manager, shall ensure submission of the Notice before the contracting firm is engaged in the mine.

24.2 The contracting firms engaged in the mine shall not sub-contract or give any petty-contract unless intimation thereof has been given to this Directorate in writing and such sub-contractor or petty-contractor shall also be subject to this Act in like manner as if he were the Owner/Agent/Manager under the Mines Act, but not so as to exempt the contracting firm engaged in the mine or M/s Jindal Saw Limited.

24.3 The contracting firms engaged in the mine, (through its Owner, Agent, Managing Agent and any representative) shall submit quarterly returns to this Directorate (by 10th of January, April, July, & October) in case the contracts extend over a period of 3 or more years, or monthly returns (by 10<sup>th</sup> of every month) if such contracts extend over a shorter period. The returns shall indicate Name of the firm, Registration number, Names and addresses of Directors/Partners and of the Person heading the firm, Nature of work, Type of deployment of machinery & work persons, Number of work persons employed, No. of persons holding VT Certificate, No. of persons who had undergone IME, and, Type of medical coverage given to the work persons, etc. The return shall be submitted through the Manager of the mine.

### 25.0 MISCELLANEOUS

25.1 Suitable steps shall be taken by all appropriate means to reduce the exposure of workers to any excessive noise and vibration. Guidelines given in DGMS {Tech.} Circular No.18 of 1975 may be followed.

25.2 Fire-fighting arrangements and piped water in sufficient quantity and adequate pressure, with connections at regular intervals shall be provided in and around the opencast workings for dealing with fire. Adequate length of hoses shall be kept stored at suitable places in the quarry.

25.3 Stipulations of circulars already issued and which may be issued by Director General of Mines Safety from time to time on design & layout of opencast workings, haul roads, spoil-dumps & stock-yards, repair, maintenance and use of HEMM in opencast mines and safety devices to be provided therein, shot-firing in opencast mines, use of electricity, and issues related to safety, welfare & health of workers, as may be applicable for surface & opencast workings, shall be complied with.

25.4 The Manager shall issue to every Driver/Operator, Supervisor and Mine Official connected with the use of Heavy Earth Moving Machinery, a copy of rules/regulations, orders made there-under and guidelines listed in this permission governing his duties, in a language understood by the person concerned. The Manager and the Engineer shall be responsible to ensure that all the precautions and guidelines listed in this permission are strictly followed by all concerned.

25.5 Except where otherwise provided for in this permission, all provisions of the Metalliferous Mines Regulations, 1961, relating to opencast workings, use of explosives and machineries, etc., shall be strictly complied with.

26.0 Please note that, this permission is subject to the following additional conditions -

26.1 In the event of any change in the circumstances connected with this permission/exemption which is likely to endanger the life of persons employed in the mine or the mine, the mining operations for which this permission has been granted shall be stopped forthwith and intimation thereof shall be sent to this Directorate. The said mining operation shall not be resumed without express and fresh permission in writing from this Directorate.

26.2 If at any time any one of the conditions, subject to which this permission/exemption has been granted, is violated or not complied with, this permission/exemption shall be deemed to have been revoked with immediate effect.

26.3 This permission/exemption may be amended or withdrawn at any time if considered necessary in the interest of safety and is being issued under Regulation 106(2)(b) of the

Metalliferous Mines Regulations, 1961, only, without prejudice to any other provisions of law which may be or may become applicable at any time.

26.4 This Directorate shall be informed as soon as the mining operations are commenced in accordance with the above permission/exemption. Intimation about completion of the mining operations should also be sent promptly and in any case not later than one month thereof.

27.0 *Unless renewed, this permission/relaxation shall be valid for a period of 5 (five) years from the date of issue of this letter.*

भवदीय,

ह/0

निदेशक खान सुरक्षा

अजमेर क्षेत्र

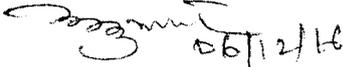
पत्र संख्या : AJ/DMS/Perm-106(2)(b)/2016/ 6001

दिनांक 66/12/2016

प्रतिलिपि सूचनार्थ प्रेषित:

✓ 1. श्री नवीन कुमार एरन, प्रबन्धक, डेडवास आयरन, कॉपर एवं एसोसियेटेड मिनेरल्स खान(एम.एल.सं.-631/05), मालिक-मेसर्स जिंदल शॉ लिमिटेड, सुशीला भवन, कृषि विज्ञान के पास, महावीर नगर, भीलवाडा(राजस्थान) ।

2 श्री एच. एस. चौधरी, मनोनीत, मेसर्स जिंदल शॉ लिमिटेड, ए-1, यू पी एस आई. डी. सी. इण्डस्ट्रियल एरिया, नन्दगाँव रोड, कोशी कलान, मथुरा- 281403 (यू.पी.)



निदेशक खान सुरक्षा

अजमेर क्षेत्र

## **ANNEXURE – B**

### **REGULATORY DGMS PERMISSION 164 (1b)(a)**



भारत सरकार / Govt. of India  
श्रम एवं रोजगार मंत्रालय / Ministry of Labour & Employment  
खान सुरक्षा महानिदेशालय / Directorate General of Mines Safety  
अजमेर क्षेत्र / Ajmer Region  
\*\*\*\*\*



ई मेल : [dgmsair@gmail.com](mailto:dgmsair@gmail.com)  
फैक्स 0145- 2425792, दूरभाष : 0145-2425537 (का)  
आनासागर लिंक रोड, अजमेर- 305 001

पत्र संख्या: AJR/DMS/Perm -164(1-B)(a)/2018/5413  
प्रेषक:  
खान सुरक्षा निदेशक  
अजमेर क्षेत्र

दिनांक 04/10/2018

रजिस्टर्ड  
(REGISTERED)

सेवा में  
अभिकर्ता  
ढेडवास आयरन ओर एवं एसोसिएटेड खान (एम.एल. सं. 631/05)  
मेसर्स जिन्दल सॉ लिमिटेड  
खसरा संख्या 9697/6711, निकट तिरंगा हिल्स  
गाँव पुर, तहसील एवं जिला भीलवाड़ा, राजस्थान

विषय: मेसर्स जिन्दल सॉ लिमिटेड की ढेडवास आयरन ओर व एसोसिएटेड मिनरल खदान के आसपास स्थित स्थायी ढांचों के 300 मीटर के भीतर परंतु 100 मीटर के बाहर एक समय में दो किलोग्राम से अधिक मात्रा में विस्फोट के साथ ब्लास्टिंग की धातु खान विनियम 1961 के विनियम 164 (1-B) (a) के अंतर्गत अनुमति का नवीनीकरण।

महोदय

कृपया उल्लिखित विषय पर आपके पत्र संख्या JSL/BHL/MINES/2018-19/0062, dated 20.08.2018 और इसके साथ संलग्न सरफेस प्लान सं Dhed/Sur/2018A/Permission dated 20.08.2018 को संदर्भित करें।

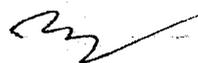
The matter has since been considered in the light of what has been stated in your application under reference and shown on the accompanying plans.

The matter has since been considered in the light of what has been stated in your application under reference and plans and sections enclosed therewith. By virtue of the powers conferred on the Chief Inspector of Mines (also designated as Director-General of Mines Safety) under Regulation 164(1-B) of the Metalliferous Mines Regulations, 1961 and by virtue of the authorization granted to me by the Chief Inspector of Mines (also designated as Director General of Mines Safety) under Section 6(1) of the Mines Act, 1952, I hereby renew the permission granted earlier by this directorate's L.N. AJR/DMS/164(1-B)(a)/2015, dated-04.03.2015 to conduct controlled deep hole blasting with more than two kilograms of explosive at one time to extract Iron ore within 300 m but beyond 100 m of surface structures not belonging to owner under Regulation 164(1-B) (a) of the Metalliferous Mines Regulations, 1961 at Dhedwas Iron Stone Mine of M/s Jindal Saw Ltd. situated near village Pur, Tehsil and district Bhilwara as indicated on Plan No. Dhed/Sur/2018A/Permission dated 20.08.2018 enclosed with your application under reference and subject to the following conditions being strictly complied with:

- 1.0 No blasting operations shall be conducted within 100 m of structures/dwellings not belonging to the owner and permanent nature without obtaining a separate permission under Regulation 164(1-B)(a) of the Metalliferous Mines Regulation, 1961.
- 1.1 The drilling, stemming and blasting operations shall be carried out under direct personal supervision of an Assistant Manager holder of I<sup>st</sup> Class Certificate of Competency with specially trained supervisors and workers.
- 1.2 The Manager shall fix the time of blasting and the same shall be circulated to all concerned, including to the habitants of structures and dwellings, not belonging to the management. The timings shall also be conspicuously posted on the mine's notice board. Blasting shall be done only daylight hours.
- 2.0 Following blast design parameters, as recommended by the scientific institute in their report titled "Scientific studies and Establishment of Controlled Blasting Parameters For Dhedwas Iron, Copper and Associated minerals Mine (M.L No 631/05)", shall be strictly adhered to whilst conducting deep hole blasting, which are reproduced below:

Bench height (m)	Drill hole Dia(mm)	Max. No. of holes in a round	Pattern of holes(m)		
			Depth (m)	Spacing (m)	Burden (m)
8-10	115	200	9-10	3.0-3.5	2.5-3.0

- 2.1 (i) No drilling shall be commenced in an area where shots have been fired, until the shot-firer has made a thorough examination at all places, including remaining butts of old deep holes, for unexploded charges that the drill may strike.
- (ii) The position of every deep hole to be drilled shall be distinctly marked so as to be readily seen by the drillers.
- (iii) No drill or bore rod or pick shall be inserted in the butts of old deep holes even if an examination under Clause (i) has failed to reveal presence of explosives.
- 2.2 (i) Drilling operators shall not be carried out simultaneously on two benches at places directly on above the other.
- (ii) Drilling and charging of deep holes shall not be carried out in the same area at the same time.
- 3.1 (a) The peak particle velocity of blast-induced ground vibrations, at dwellings/structures falling within 300m of the place of blasting and not belonging to the management, shall not exceed 10mm/sec
- (b) To limit the ppv to the thresh-hold limit of 5mm/sec in case of Tiranga Block, 10mm/sec in case of Dhulkhera Block (with frequency 8-25 Hz for both the blocks) and 15mm/sec (with frequency >25 Hz ) for Suras Block, charge/delay as recommended by scientific institute in their report (for 115mm dia deep-holes), shall be strictly adhered to. The safe charges vis-à-vis distance of structures from site of blasting are reproduced below:



### Tiranga Block

Distance (m)	100	150	200	250	300
Max. Charge per delay (kg.)	16.6	37.3	66.4	104	149

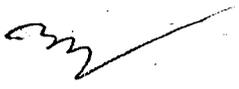
### Dhulkhera Block

Distance (m)	100	150	200	250	300
Max. Charge per delay (kg.)	44.8	101	179	280	403

### Suras Block

Distance (m)	100	150	200	250	300
Max. Charge per delay (kg.)	77.6	175	310	485	698

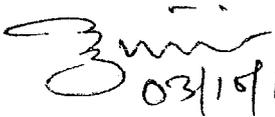
- 3.2 Only non-electric down-the-hole detonators of 450 ms in conjunction with detonating fuse shall be used for detonation/initiation of explosive column of deep-holes. Trunk line detonators of 17/25 ms delay intervals may be used to provide delay interval between holes in a row. Delay interval between the rows of deep-holes shall be 42 ms, as to comply with the charge restrictions stipulated as above.
- 3.3 In deep-hole blasting, cartridges of explosives shall be lowered down the hole carefully. The stemming length/length of hole left uncharged shall be measured to ascertain the length of explosive column and ensure that the cartridges of explosives lowered are in close contact and there is no air space. In case the measurements indicate presence of air space in the explosives column, the cartridges may be gently pushed down by a wooden rod only if slurry explosive is being used.
- 4.0 A safe code of blasting practice shall be framed by the manager and shall be circulated to all concerned for its strict compliance.
- 5.0 Shots shall not be fired beyond day light hours until adequate artificial light is provided. All holes charged on any one day shall be fired on the same day. Sleeping of holes shall not be permitted till the time specific permission in this regard is obtained.
- 5.1 During the approach and progress of an electric storm, the following precautions shall be taken:
- (i) No explosive, particularly detonators shall be handled.
  - (ii) If charging operations have begun, the work shall be discontinued until the storm has passed.
  - (iii) If the blast is to be fired electrically all exposed wires shall be coiled up and if possible placed in the mouth of the holes, or kept covered by something other than a metal plate.
  - (iv) All wires shall be removed from contact with the steel rails of a haulage track so as to prevent the charge being exploded prematurely by a local strike of the lightning.
- 6.0 The Manager of the mine shall ensure that recommendations made by the scientific agency in respect of the controlled blasting are strictly followed.
- 7.0 To control flying fragments resulting out of blasting from projecting beyond a distance of 10 meters from the place of firing, following precautions shall be taken.
- 

- a) No shot hole shall be fired in crushed, broken or fractured ground/strata.
  - b) Blasting shall be done against a free face only. Blasted material shall be cleared off before commencement of drilling operations for succeeding round.
  - c) Top stemming column shall not be less than the burden.
  - d) Only such stemming material that is free from pebbles and stone chips shall be used. Moist sand shall be used for stemming of deep-holes.
  - e) The area falling within a distance of 100 cm from the collar of each blast hole shall be cleaned of loose stones, drill cuttings, debris and other loose material.
  - f) Variation in inclination of holes shall be within 5 degrees to avoid variation in crest and toe burden.
  - g) Shot holes shall be adequately and effectively muffled to ensure that no flying fragments projects beyond a distance of 10.0 m from the place of blasting. Muffling of shot holes shall be done with conveyor belt/wire netting having not more than 25 mm mesh overlain by adequate number of sand bags each not less than 40 Kg by weight.
  - h) Sand shall be used as stemming material and shall be tapped hard into the blast hole to prevent blown out of explosive from the hole.
- 8.0 Monitoring of peak particle velocity and of the dominant frequency shall be done with each round of deep-hole shots fired.
- 8.1 A proper record of blast parameters like spacing & burden of holes, hole depth, number of holes fired in the round, charge/hole, charge/delay, and charge/round, length of explosive column(s) & stemming column length(s), initiation pattern (with proper sketches wherever called for), manner of muffling, results of ground vibration observed (ppv, frequency & air over pressure) and distance upto which flying fragments resulting out of blasting projected, shall also be kept maintained in a bound paged book with each round of deep-hole shots fired. The records shall be duly signed by the Manager of the mine.
- 8.2 In case, with any of the rounds fired, the peak particle velocity of ground vibrations resulting out of blasting is observed to be more than 5mm/sec in case of Tiranga Block, 10mm/sec in case of Dhulkhera Block (with frequency 8-25 Hz ) and 15mm/sec (with frequency >25 Hz ) for Suras Block at dwellings/structures not belonging to the management, or the flying fragments project to a distance beyond 10m from the place of firing, blasting operations shall be discontinued and this Directorate shall informed immediately. The blasting operations connected with this permission shall not be resumed unless express permission in writing is accorded by this Directorate afresh.
- 9.0 (i) Precautions with regards to taking shelter etc., as laid down in Regulation 164 of the Metalliferous Mines Regulations, 1961 shall be complied with.
- (ii) Notwithstanding what is contained under Regulation 164 of the Metalliferous Mines Regulations, 1961, no person other than shot firer and his assistants, if any, shall be permitted to remain within a radius of 20.0 m or within 60.0 on the same bench where charging of holes with explosives is being carried out.
- 9.1 (a) Before deep-holes are charged, stemmed and fired, sufficient warning by siren or other suitable means shall be given to warn persons within a radius of 500m, including to the habitants of structures and dwellings, not belonging to the owner.
- (b) It shall be ensured that no person remains in the dwellings/structures falling within a radial distance of 500m of the place of firing at the time of blasting, unless the dwelling/structure provides adequate/proper shelter from flying fragments resulting out of blasting. Guards shall be posted to ensure that no person inadvertently enters the danger zone, and to ensure that all persons within the danger zone have taken proper shelter.
- 

(c) Subsequent to blast, at least after 15.0 minutes, all clear signal shall be given. Hooters/siren or other efficient mechanism shall be installed for this purpose.

- 9.2 Guards shall be posted, one in either direction at the two extreme points of Metalled road which fall within the danger zone to warn passers-by and stop vehicular traffic, if any, and intimate the blaster about clearance of traffic by an efficient system of communication.
- 10.0 Owners of structures and dwellings and land, not belonging to the management and habitants/occupants of such dwellings/buildings shall be indemnified against damage to property/injury to persons, if any, arising out of mining operations.
- 11.0 In the event of any change in the circumstances connected with this permission which is likely to endanger the life of workmen employed in the mine or endanger the mine, the mining operations for which this permission has been granted shall be stopped forthwith and intimation thereof shall be sent to this Directorate. The said mining operation shall not be resumed without express and fresh permission in writing from this Directorate.
- 12.0 If at any time any of the conditions subject to which this permission has been granted is violated or not complied with, this permission shall be deemed to have been revoked with immediate effect.
- 13.0 This permission may be amended or withdrawn at any time if considered necessary in the interest of safety and is being issued under Regulation 164(1B) of the Metalliferous Mines Regulations, 1961, only without prejudice to any other provisions of law which may be or may become applicable at any time.
- 14.0 Unless renewed, this relaxation shall be valid for a period of 3(three) years from the date of issue of this letter.

भवदीय

  
03/11/18

(अरविन्द कुमार)

खान सुरक्षा निदेशक

अजमेर क्षेत्र, अजमेर

## **ANNEXURE – C**

### **OFFICIAL CORRESPONDENCE WITH OFFICE OF THE DISTRICT COLLECTOR, BHILWARA**

## **ANNEXURE – D**

# **BLAST INDUCED GROUND VIBRATION EVENT RECORDS**

**Date/Time** Vert at 13:42:09 January 29, 2019  
**Trigger Source** Geo: 0.500 mm/s  
**Range** Geo: 31.75 mm/s  
**Record Time** 2.0 sec at 1024 sps  
**Job Number:** 1

**Serial Number** BE21273 V 10.72-1.1 Minimate Blaster  
**Battery Level** 6.2 Volts  
**Unit Calibration** February 3, 2018 by UES, New Delhi  
**File Name** W273HS97.E90

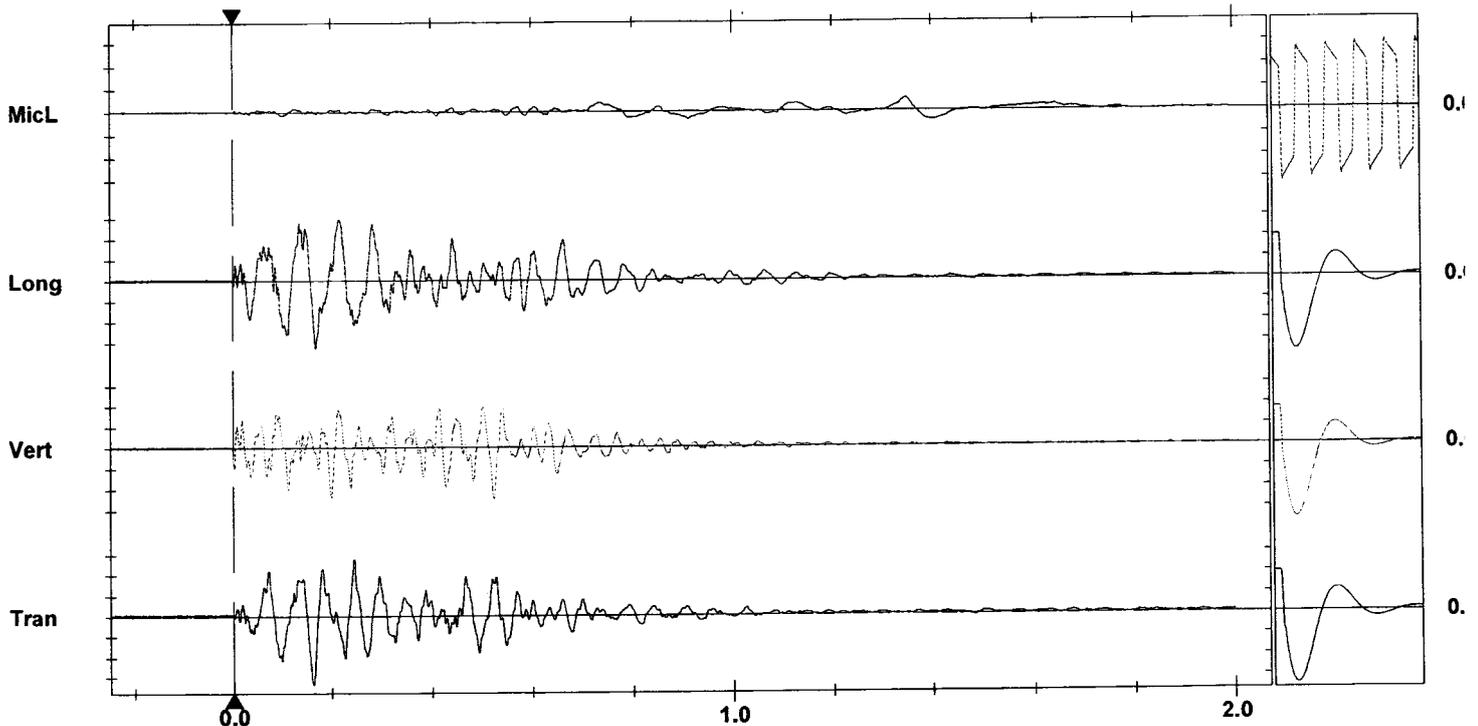
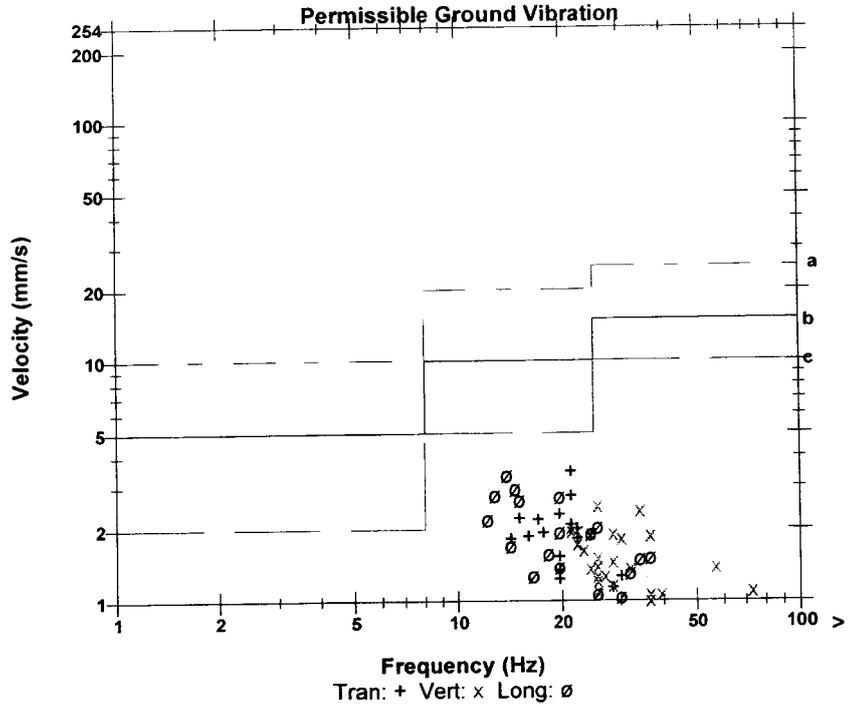
**Notes**

**Microphone** Linear Weighting  
**PSPL** 108.4 dB(L) 5.250 pa.(L) at 1.350 sec  
**ZC Freq** 8.5 Hz  
**Channel Test** Passed (Freq = 20.5 Hz Amp = 471 mv )

	Tran	Vert	Long	
PPV	3.445	2.492	3.334	mm/s
PPV	61.74	58.93	61.46	dB
ZC Freq	21	26	14	Hz
Time (Rel. to Trig)	0.163	0.522	0.169	sec
Peak Acceleration	0.053	0.056	0.070	g
Peak Displacement	0.023	0.012	0.032	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.6	7.6	7.5	Hz
Overswing Ratio	3.3	3.7	3.3	

**Peak Vector Sum** 3.820 mm/s at 0.164 sec

**DGMS India (A)**



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 1.000 mm/s/div Mic: 10.000 pa.(L)/div  
**Trigger =** ▶ ◀

Sensor Check

**Date/Time** Vert at 14:02:53 January 29, 2019  
**Trigger Source** Geo: 0.510 mm/s  
**Range** Geo: 254.0 mm/s  
**Record Time** 4.0 sec at 1024 sps  
**Job Number:** 1

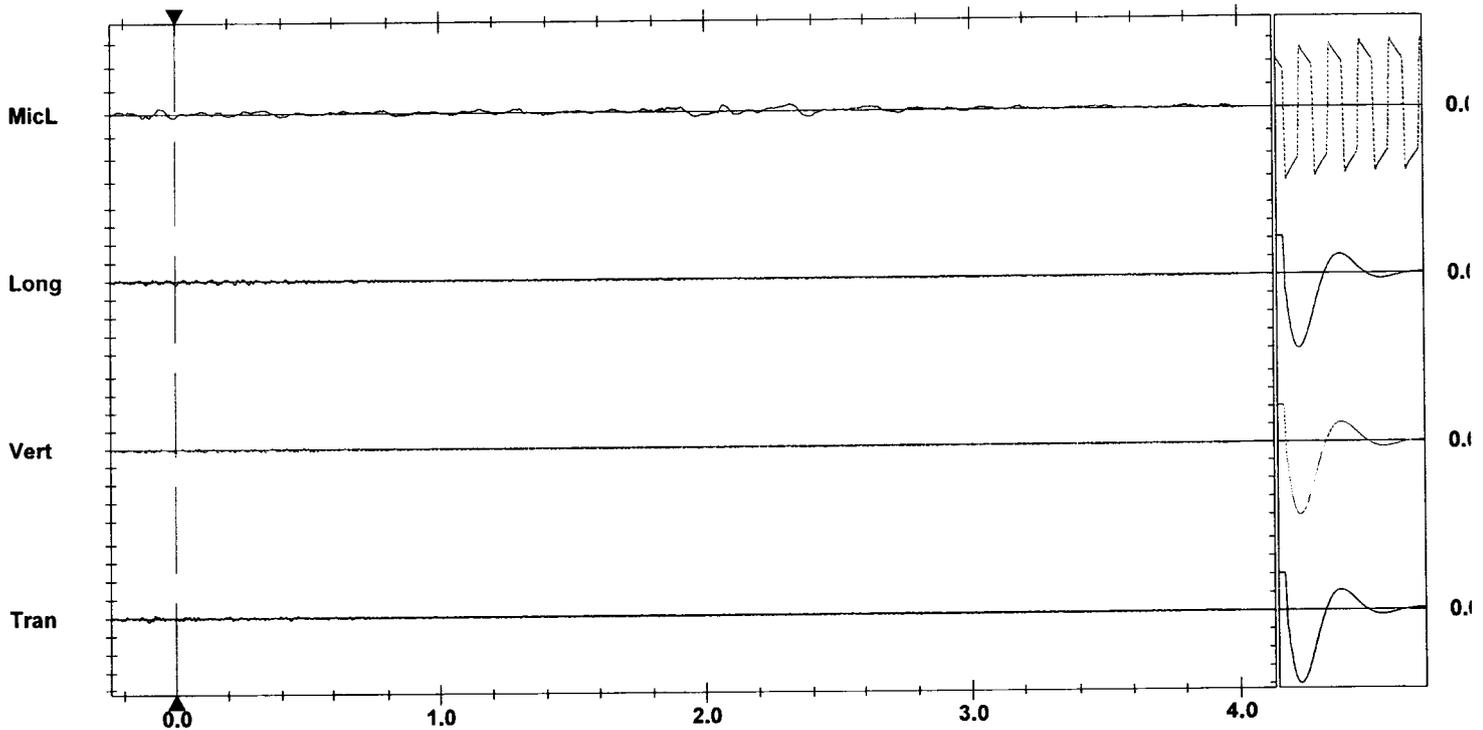
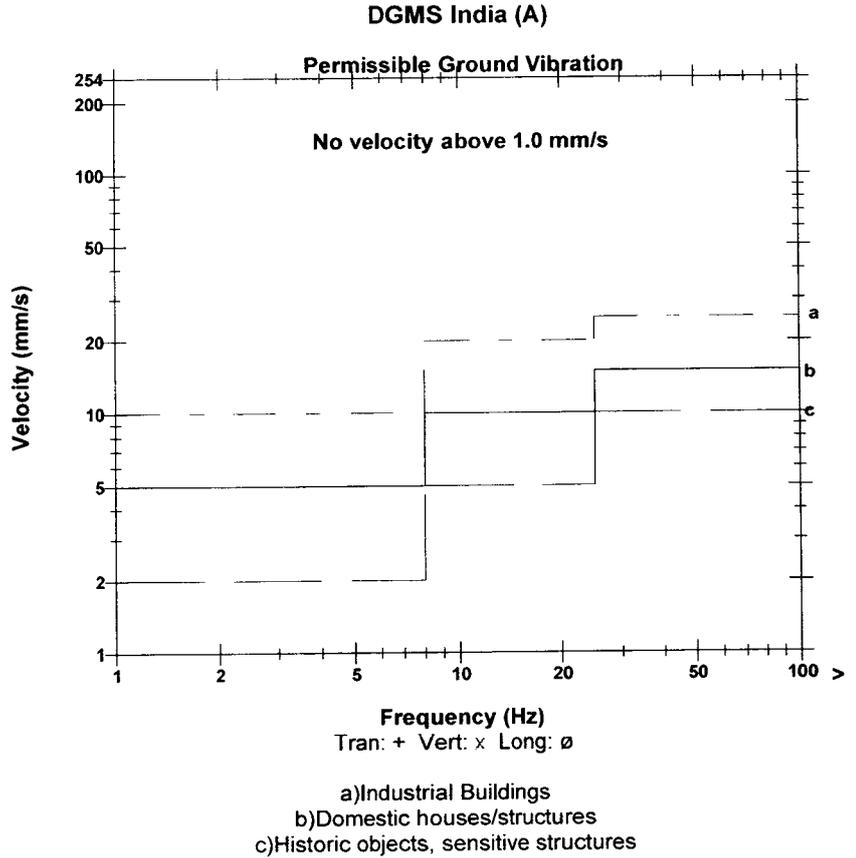
**Serial Number** BE17708 V 10.20-1.1 Minimate Blaster  
**Battery Level** 6.4 Volts  
**Unit Calibration** January 17, 2019 by CIMFR Dhanbad  
**File Name** S708HS98.CTO

**Notes**

**Microphone** Linear Weighting  
**PSPL** 102.8 dB(L) 2.750 pa.(L) at 2.384 sec  
**ZC Freq** 6.0 Hz  
**Channel Test** Passed (Freq = 20.1 Hz Amp = 504 mv )

	Tran	Vert	Long	
PPV	0.381	0.508	0.508	mm/s
PPV	42.62	45.12	45.12	dB
ZC Freq	30	47	30	Hz
Time (Rel. to Trig)	-0.112	0.000	0.002	sec
Peak Acceleration	0.013	0.013	0.027	g
Peak Displacement	0.003	0.002	0.003	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.3	7.4	Hz
Overswing Ratio	3.9	3.9	3.9	

**Peak Vector Sum** 0.648 mm/s at 0.000 sec



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div  
**Trigger** =

Sensor Check

**Date/Time** Long at 13:49:48 January 29, 2019  
**Trigger Source** Geo: 0.500 mm/s  
**Range** Geo: 31.75 mm/s  
**Record Time** 2.0 sec at 1024 sps  
**Job Number:** 1

**Serial Number** BE21273 V 10.72-1.1 Minimate Blaster  
**Battery Level** 6.3 Volts  
**Unit Calibration** February 3, 2018 by UES, New Delhi  
**File Name** W273HS97.R00

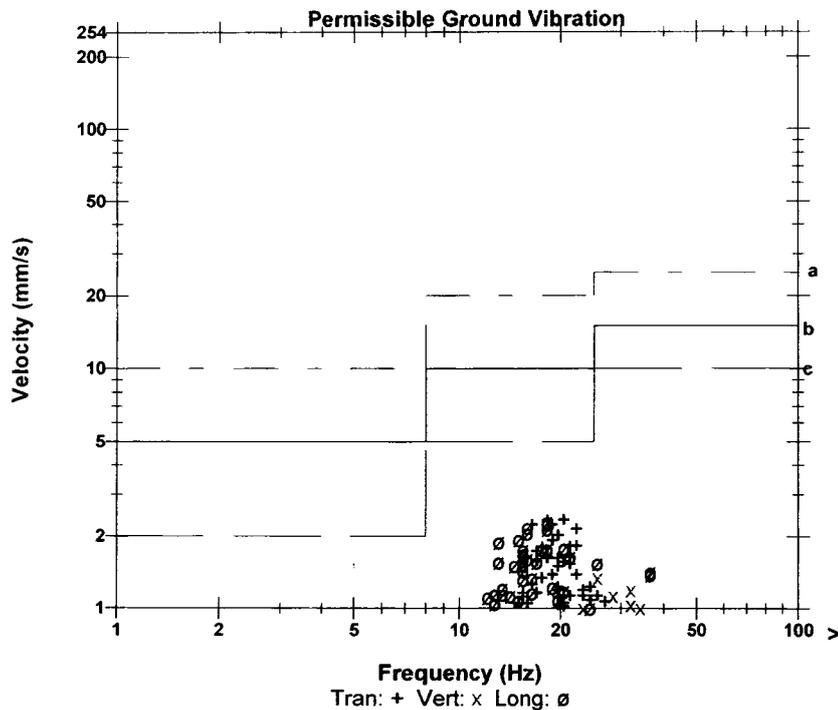
**Notes**

**Microphone** Linear Weighting  
**PSPL** 115.2 dB(L) 11.50 pa.(L) at 0.726 sec  
**ZC Freq** 4.7 Hz  
**Channel Test** Passed (Freq = 20.5 Hz Amp = 471 mv )

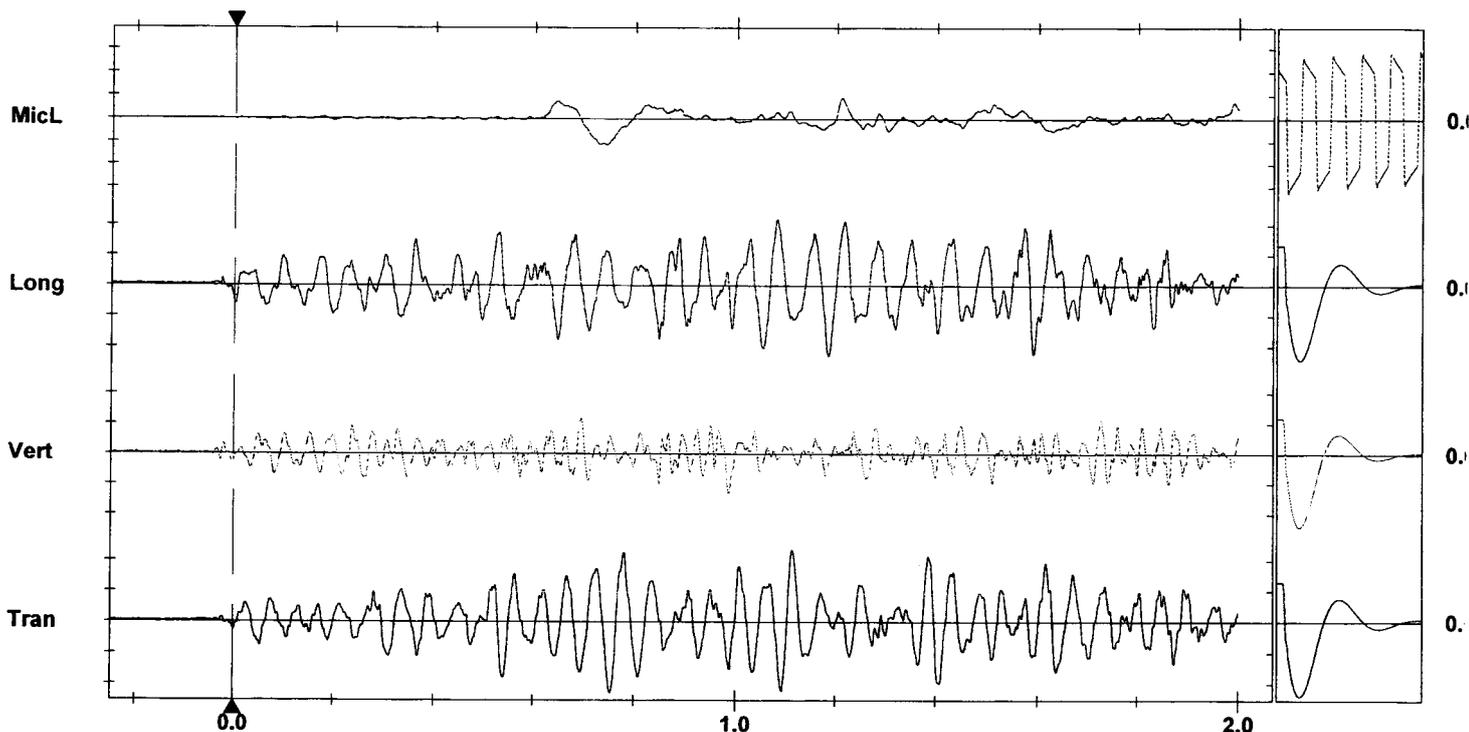
	Tran	Vert	Long	
PPV	2.349	1.333	2.302	mm/s
PPV	58.42	53.50	58.24	dB
ZC Freq	20	26	18	Hz
Time (Rel. to Trig)	1.114	0.986	1.186	sec
Peak Acceleration	0.043	0.036	0.055	g
Peak Displacement	0.020	0.007	0.021	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.6	7.6	7.5	Hz
Overswing Ratio	3.3	3.7	3.3	

Peak Vector Sum 2.599 mm/s at 1.115 sec

**DGMS India (A)**



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



Sensor Check

**Date/Time** Tran at 13:54:00 January 30, 2019  
**Trigger Source** Geo: 0.510 mm/s  
**Range** Geo: 254.0 mm/s  
**Record Time** 4.0 sec at 1024 sps  
**Job Number:** 1

**Serial Number** BE17708 V 10.20-1.1 Minimate Blaster  
**Battery Level** 6.3 Volts  
**Unit Calibration** January 17, 2019 by CIMFR Dhanbad  
**File Name** S708HSB2.M00

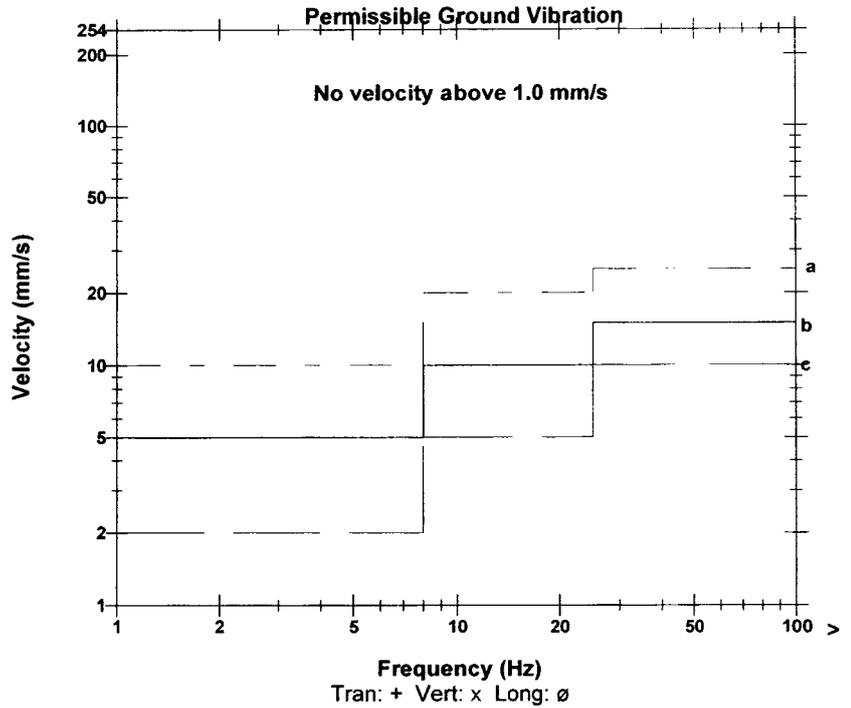
**Notes**

**Microphone** Linear Weighting  
**PSPL** 97.5 dB(L) 1.500 pa.(L) at 2.953 sec  
**ZC Freq** 8.3 Hz  
**Channel Test** Passed (Freq = 20.1 Hz Amp = 498 mv )

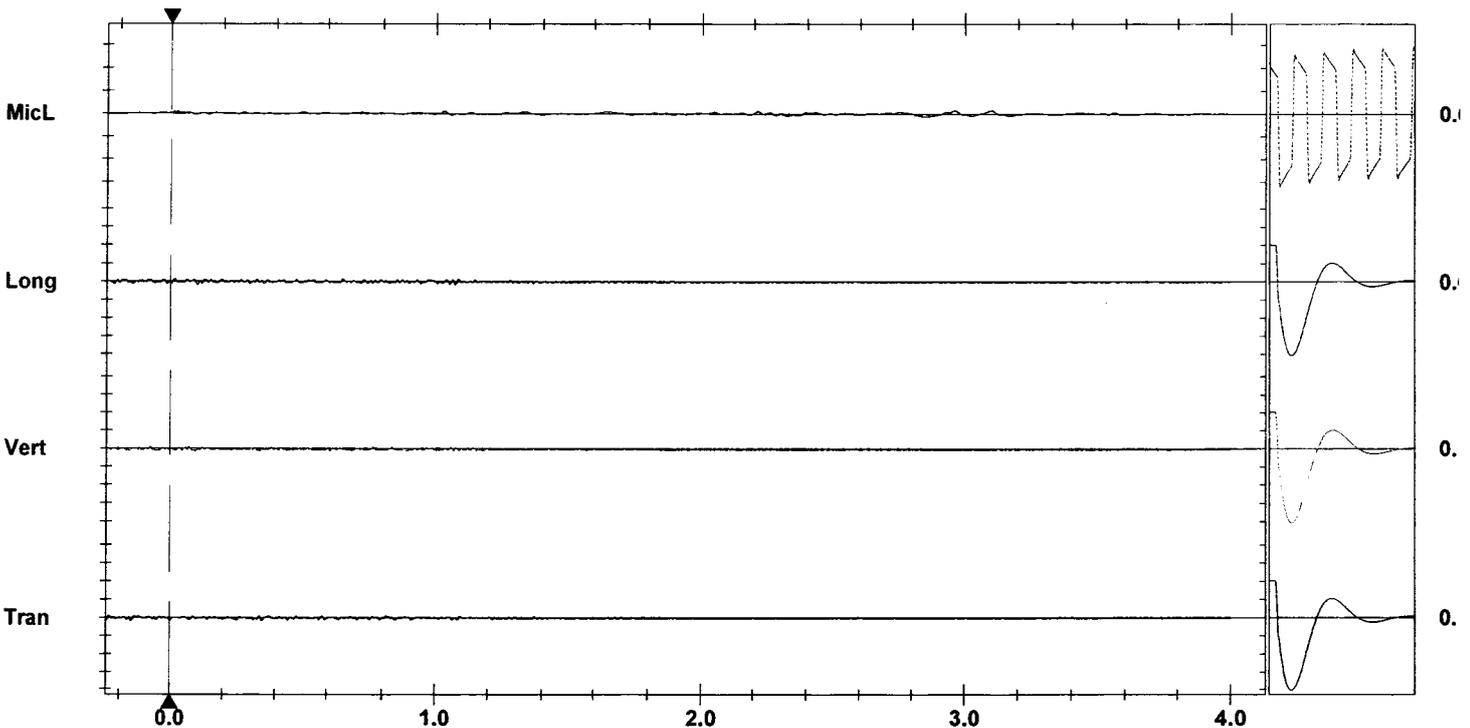
	Tran	Vert	Long	
PPV	0.508	0.381	0.381	mm/s
PPV	45.12	42.62	42.62	dB
ZC Freq	51	51	64	Hz
Time (Rel. to Trig)	0.000	0.096	-0.222	sec
Peak Acceleration	0.027	0.013	0.013	g
Peak Displacement	0.002	0.002	0.002	mm
<b>Sensor Check</b>	Passed	Passed	Passed	
Frequency	7.4	7.3	7.4	Hz
Overswing Ratio	4.0	3.9	4.0	

**Peak Vector Sum** 0.524 mm/s at 0.000 sec

**DGMS India (A)**



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



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div  
**Trigger =**

**Sensor Check**

**Date/Time** Long at 13:44:48 January 30, 2019  
**Trigger Source** Geo: 0.500 mm/s  
**Range** Geo: 31.75 mm/s  
**Record Time** 4.0 sec at 1024 sps  
**Job Number:** 1

**Serial Number** BE21273 V 10.72-1.1 Minimate Blaster  
**Battery Level** 6.2 Volts  
**Unit Calibration** February 3, 2018 by UES, New Delhi  
**File Name** W273HSB2.600

**Notes**

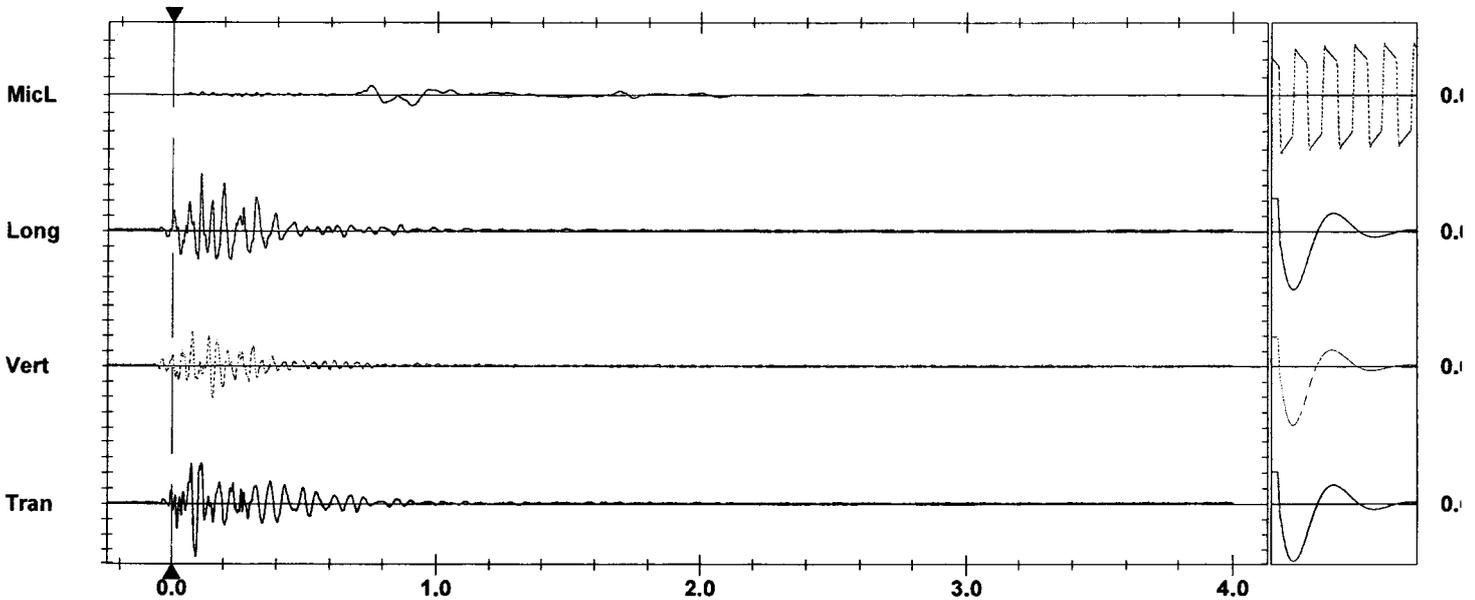
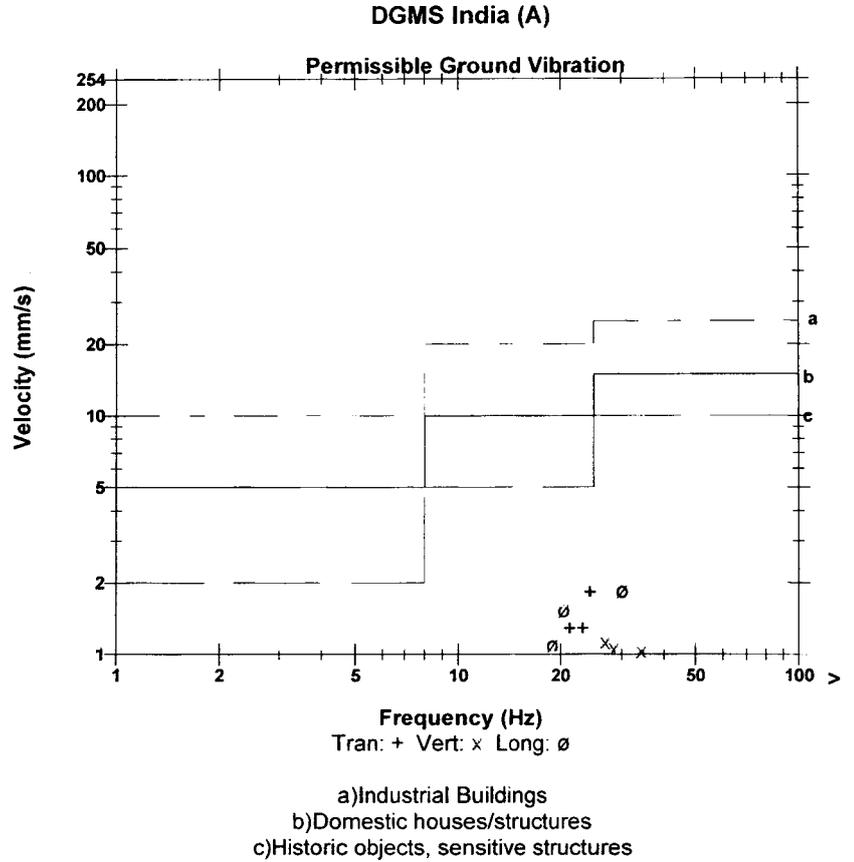
**Post Event Notes**

Tiranga Mines : reading taken at Station N0. 2 (243 mtr.)

**Microphone** Linear Weighting  
**PSPL** 109.5 dB(L) 6.000 pa.(L) at 0.903 sec  
**ZC Freq** 3.0 Hz  
**Channel Test** Passed (Freq = 20.1 Hz Amp = 484 mv )

	Tran	Vert	Long	
PPV	1.826	1.127	1.857	mm/s
PPV	56.23	52.04	56.38	dB
ZC Freq	24	27	30	Hz
Time (Rel. to Trig)	0.093	0.076	0.109	sec
Peak Acceleration	0.045	0.025	0.035	g
Peak Displacement	0.012	0.006	0.011	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.6	7.7	7.5	Hz
Overswing Ratio	3.2	3.6	3.3	

Peak Vector Sum 2.143 mm/s at 0.110 sec



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 0.500 mm/s/div Mic: 10.000 pa.(L)/div  
 Trigger = ▶ ◀

Sensor Check

राजस्थान सरकार  
कार्यालय जिला कलक्टर भीलवाड़ा (राज.)

क्रमांक:- 22091

दिनांक:- 15/01/2019

वास्तु,

जिन्दल शॉ लिमिटेड  
तिरंगा पहाड़ी, पुर  
जिला भीलवाड़ा (राज.)

विषय:- आपके पक्ष में स्वीकृत खनन पट्टा संख्या 631/05 निकट ग्राम डेडवास तहसील भीलवाड़ा के लिये ब्लास्टिंग से होने वाले प्रभावों के सम्बन्ध में कन्ट्रोलर एक्सप्लोसिव नागपुर से अध्ययन कराने हेतु ।

महोदय,

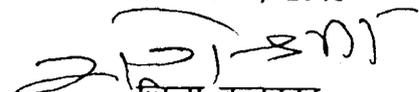
उपरोक्त विषयान्तर्गत लेख हैं कि आपके पक्ष में खनन पट्टा संख्या 631/2005 निकट ग्राम डेडवास तहसील व जिला भीलवाड़ा में खनिज लेड, जिंक, आयरन ओर, गोल्ड, सिल्वर एवं अन्य एसोसिएटेड खनिजों के लिये स्वीकृत होकर प्रभावशील हैं । उक्त खनन पट्टा क्षेत्र में आप द्वारा एम.एम.आर. 1961 की धारा 106 (2)(बी) के अन्तर्गत खान सुरक्षा महानिदेशालय अजमेर के पत्र क्रमांक AJ/DMS/Perm-106(2)(b)2016/6001 दिनांक 06.12.2016 से प्राप्त ब्लास्टिंग की अनुमति प्राप्त की हुई है, जिसकी शर्तों के अनुरूप आपको ब्लास्टिंग की जानी है ।

आप द्वारा खनन पट्टा क्षेत्र में की जा रही ब्लास्टिंग के सम्बन्ध में ग्राम पुर के ग्रामीणों द्वारा प्रस्तुत शिकायतों के अनुसार ब्लास्टिंग से उनके मकानों में गहरी दरारें आने तथा मकानों की नींव हिलने से जान-माल का खतरा बना हुआ है, तथा इस सम्बन्ध में ग्रामीणों द्वारा विभिन्न न्यायालयों में भी वाद दायर किये गये हैं ।

ग्रामीणों द्वारा प्रस्तुत शिकायतों के क्रम इस कार्यालय के आदेश दिनांक 19.12.2018 से पृथक-पृथक विभागों के पांच अधिकारियों की कमेटी का गठन कर मकानों में दरार आने की सम्बन्धी शिकायतों की जांच करवाई गई । उक्त कमेटी की मौका जांच रिपोर्ट दिनांक 20.12.2018 के अनुसार मकानों में दरारे आने का कारण कम्पन अथवा जमीन के धंसने से होना अवगत कराया गया है । आप द्वारा सभी निर्धारित मापदण्ड को ध्यान में रखते हुए ब्लास्टिंग की जा रही है, तो किन कारणों से खनन पट्टा क्षेत्र के निकट स्थित ग्राम पुर की आबादी क्षेत्र में मकानों में दरारे आ गई है ? यह अध्ययन किया जाना आवश्यक है ।

अतः इस सम्बन्ध में आपको निर्देश दिये जाते हैं कि आप शीघ्र सेन्ट्रल इन्स्टीट्यूट ऑफ़ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर के विशेषज्ञों को बुलवाकर आबादी क्षेत्र में ब्लास्टिंग से हो रहे प्रभावों के सम्बन्ध में अध्ययन कराया जाकर मकानों में आई दरारे एवं जमीन धंसने के कारणों की जानकारी कराई जावे, ताकि आमजन की जान-माल की सुरक्षा के सम्बन्ध में आवश्यक उपाय किये जा सकें ।

इस सम्बन्ध में विशेषज्ञों की अध्ययन रिपोर्ट अधोहस्ताक्षरकर्ता को 30 जनवरी, 2019 तक प्रस्तुत करावे ।

  
जिला कलक्टर  
भीलवाड़ा



DEPARTMENT OF MINING ENGINEERING  
FACULTY OF ENGINEERING & ARCHITECTURE  
JAI NARAIN VYAS UNIVERSITY, JODHPUR- 342011  
RAJASTHAN



Dr. S.K. Parihar  
Professor & Head

Phone (O): 0291-2515154  
Phone (R): 0291 - 2552258  
Cell No.: 9414127232  
E-mail id: s\_k\_parihar@yahoo.com

To,

The Collector  
Bhilwara, Rajasthan

Section	DM
DM	
Date	06 FEB 2019
CS	
Inward No.	

DISPATCH

JNVU/FE .....1324

Date .....1.....

Dated: February 4, 2019

Ref: Your letter No. 22090 dated 15.01.19.

Sub: Ground vibration studies caused due to blasting at Jindal Saw Limited,  
Bhilwara.

Sir,

With above reference and subject this is to bring to your notice that the studies were carried out on 29 and 30 January on the mines quoted by you. The houses in the PUR village were also visited. The report on the same is being submitted to you with this letter. It is requested to acknowledge the receipt of the same.

Thanking you

Your Sincerely

(Dr. S. K. Parihar)

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**OBSERVATIONS OF BLAST INDUCED GROUND  
VIBRATION AT DHEDWAS IRON ORE MINE OF  
JINDAL SAW LIMITED, BHILWARA**

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Submitted to  
Collector, Bhilwara

Submitted by  
Dr. S. K. Parihar  
Professor



Department of Mining engineering  
MBM Engineering College  
JNV University Jodhpur

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January 2019

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## ACKNOWLEDGEMENT

For Scientific Blasting Study for Monitoring of Blast Induced Ground Vibration author visited the mine on January 28 to January 31, 2019. The trial blasts were taken in the presence of officials of DGMS, officials of local administration, Technical Officers of concerned departments of state government and officials of Jindal Saw Limited.

Author conveys a vote of thanks to the Collector, Bhilwara and Management of Jindal Saw Limited to provide an opportunity to conduct a study. Thanks are also conveyed to Mr. Patil and Mr. Airen for providing all the facilities for the trial blast and logistic support. Author is thankful to the Mine Management Staff Members and drilling-blasting working crew for extending all the support required during the blasting and witnessing the trial blast. Author believes that without this co-operation. It would have not been possible to make the trial blast and their recording a success.



Dr. S. K. Parihar

HEAD  
Department of Mining Engineering  
Faculty of Engineering  
Jai Narain Vyas University  
JODHPUR

**INTRODUCTION:** Ground vibration studies was conducted at lease area of Dhedwas Iron ore Mine of Jindal Saw Limited, Bhilwara on January 28-31, 2019. The events observed were witnessed by Director and Deputy Director, DGMS, Ajmer, Scientists from CSIR - Central Institute of Mining and Fuel Research, Nagpur with other authorities of various state government departments.

The lease area (ML- 631/05) for an area of 1570.36 Ha (Fig. 1) was granted for a period of 30 years by State Govt.

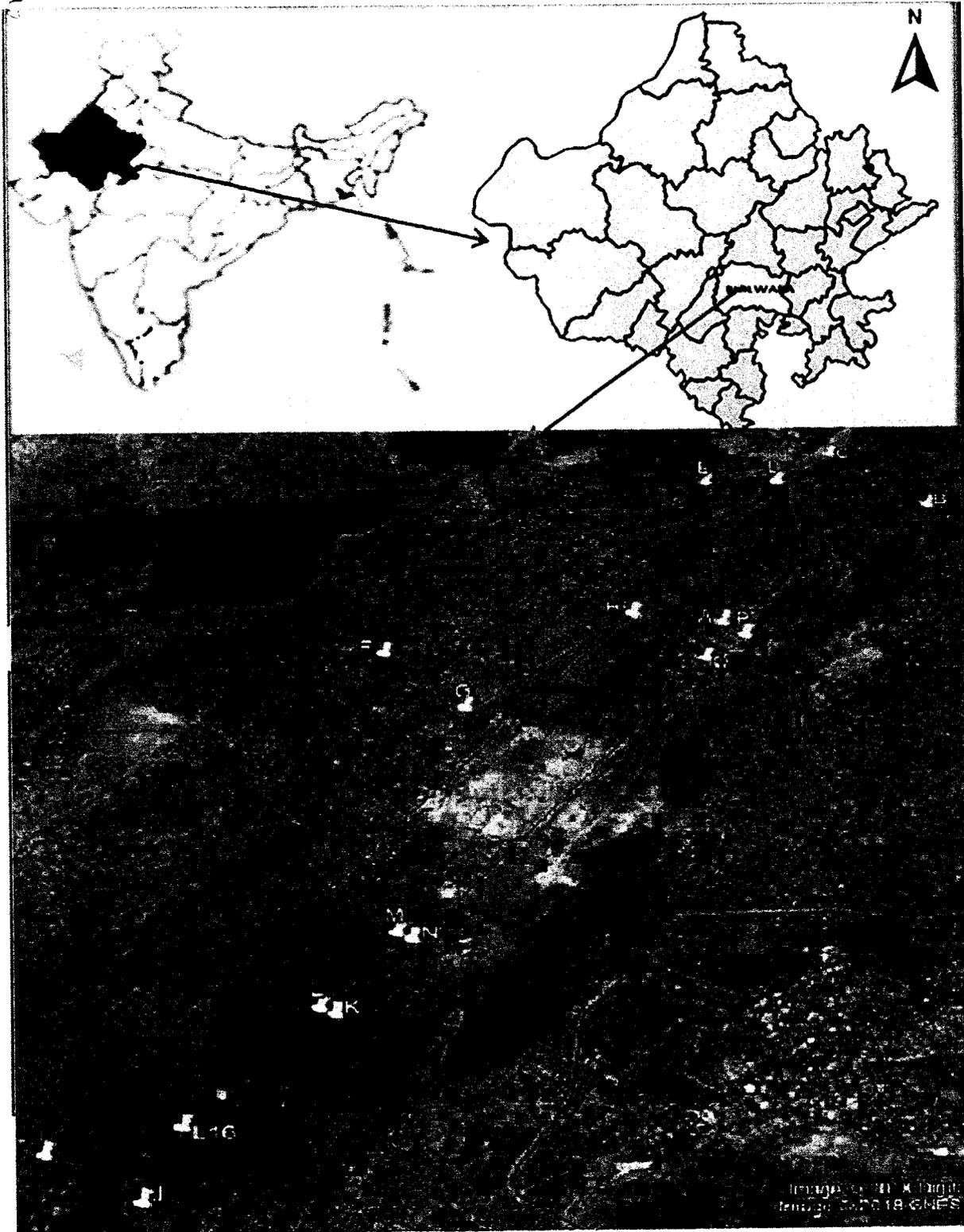
Name of the Lessee	:	M/s. Jindal Saw Ltd.
Nominated Owner	:	Mr. Hawa Singh Chaudhary (Full Time Director)
Corporate Office	:	12, Jindal Center, Bhikaiji Cama Palace, New Delhi-110066
Registered Office	:	A-1, U.P.S.I.D.C., Industrial Area, Nand Gaon Road, Kosi Kalan, District- Mathura, U.P. -281403 Phone No. 05662-232426 Mobile NO. 9837061176
Email id	:	<a href="mailto:hs.chaudhary@jindalsaw.com">hs.chaudhary@jindalsaw.com</a>
Site & Correspondence address	:	Araji no. 9697/6711, Near Tiranga Hills, Village- Pur, Distt. Bhilwara Telephone no. – 01482-248417 Mobile No. 8003690517 Email id – <a href="mailto:dinesh.patil@jindalsaw.com">dinesh.patil@jindalsaw.com</a>
Mine code	:	30 RAJ 06001
Status of the Applicant	:	Public Limited Company
Mineral(s) which are included in the Lease Deed	:	Iron Ore, Copper, Lead, Zinc, Gold , Silver, Cobalt, Nickel & Associated Minerals

The Mine is being worked by mechanized open cast mining method in lease area in four pits, which are, as below.

1. Tiranga Pit
2. Suras Pit
3. Dhulkhera (N) Pit
4. Dhulkhera (S) Pit

Since the problem was in the PUR village hence the blasts were restricted to the nearest block to the PUR village, i.e. Tiranga pit.

Jindal Saw Limited  
Bhilwara, Rajasthan



**Fig. 1 Location of the Lease Area**

## **DRILLING AND BLASTING:**

**Pre-requisite:** Permission for deep hole blasting was accorded by DGMS vide letter no. AJR/DMS/Perm-106(2)(b)/2016/6001 dated 06.12.2016, Further permission for blasting within 300 M to 100 M was granted by letter no. AJR/DMS/Perm-164(1b)(a)/2018/5413 dated 04/10/2018.

**Method:** 115 and 165 mm dia holes were drilled and used for blasting. The depth of the holes was different at various locations depending upon the topography of the surface on the first bench and as per the bench height at lower benches. However, depth taken was 6.0 M, 9.0 M and 12.0 M. Number of rows used were 2 or 3. Number of holes in three blasts were 22, 58 and 74. The spacing and burden used in all the rounds were 3.75 – 4.0 M and 3.75 to 4.0 M. The individual details of the blasé design parameters are given in Table 1.

These holes were charged with site mixed emulsion. In deep holes wherever required one deck was also provided with cast booster explosive. A general charging pattern is depicted in Fig 2. A primer booster was used at the bottom with 450 ms detonator in all the blasting rounds. Site mixed emulsion explosive was used as column charge. Bottom hole initiation was used in all the blasts. TLD (17, 25 and 42 ms) were used for surface connection and inter hole delay. Stemming was done with drill cuttings.

Average charge per hole has been calculated on the basis of the no. of holes, total charge used in the round. Maximum charge per delay has also been calculated on the basis of the no. of TLD's used and the total charge used in the blast. Both these parameters along with other blasting parameters followed with each round of blast have been included in Table 1. Blast lay out of each round has been submitted at Annexure 4 to Annexure 6.

**Table 1: Blast Design Parameters**

Hole Diameter: 115 mm / 165 mm  
Initiation Type: Electric initiation  
Explosive Used: Site mixed Emulsion with cast boosters  
Stemming Material: Drill Cuttings  
Delay: Relay (17/42 ms), Trunk Line Delay

Blast No	Date	Bench Location	Hole Depth (m)	No. of holes	No. of Row	Avg. B x S (m x m)	Avg. Stemming (m)	Deck Type No.	Avg. Charge/ hole (Kgs)	Total Charge/ round (Kgs)	No. of Delays	Max. Charge/ Delay (kgs)
B1	29/01/19	Bench 2	12.0 (165 mm)	22	2	4.0 X 4.0	4.5	One (Drill Cuttings)	100.0	2207	31	50
B2	29/01/19	Bench 1	6.0 M (165 mm)	30	3	4.0 X 4.0	3.5 M	Nil	75.0	4354	71	50
			9.0 M (165 mm)	4.5 M								
			9.0 M (165 mm)	4.5 M								
B3	30/01/19	Top Bench	6.0 M (115 mm)	06	3	4.0 X 4.0	3.5 M	Nil	86.9	6437.4	91	50
			9.0 M (165 mm)	4.5 M								
			12.0 M (165 mm)	5.5 M								

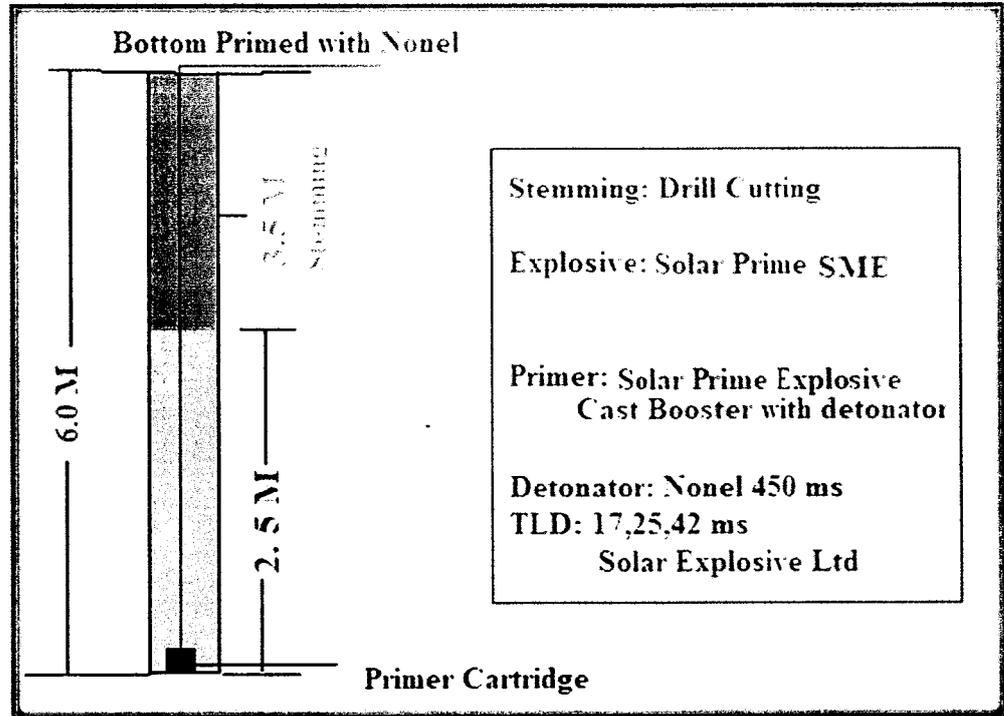


Fig 2: Section of a charged hole

## OBSERVATIONS:

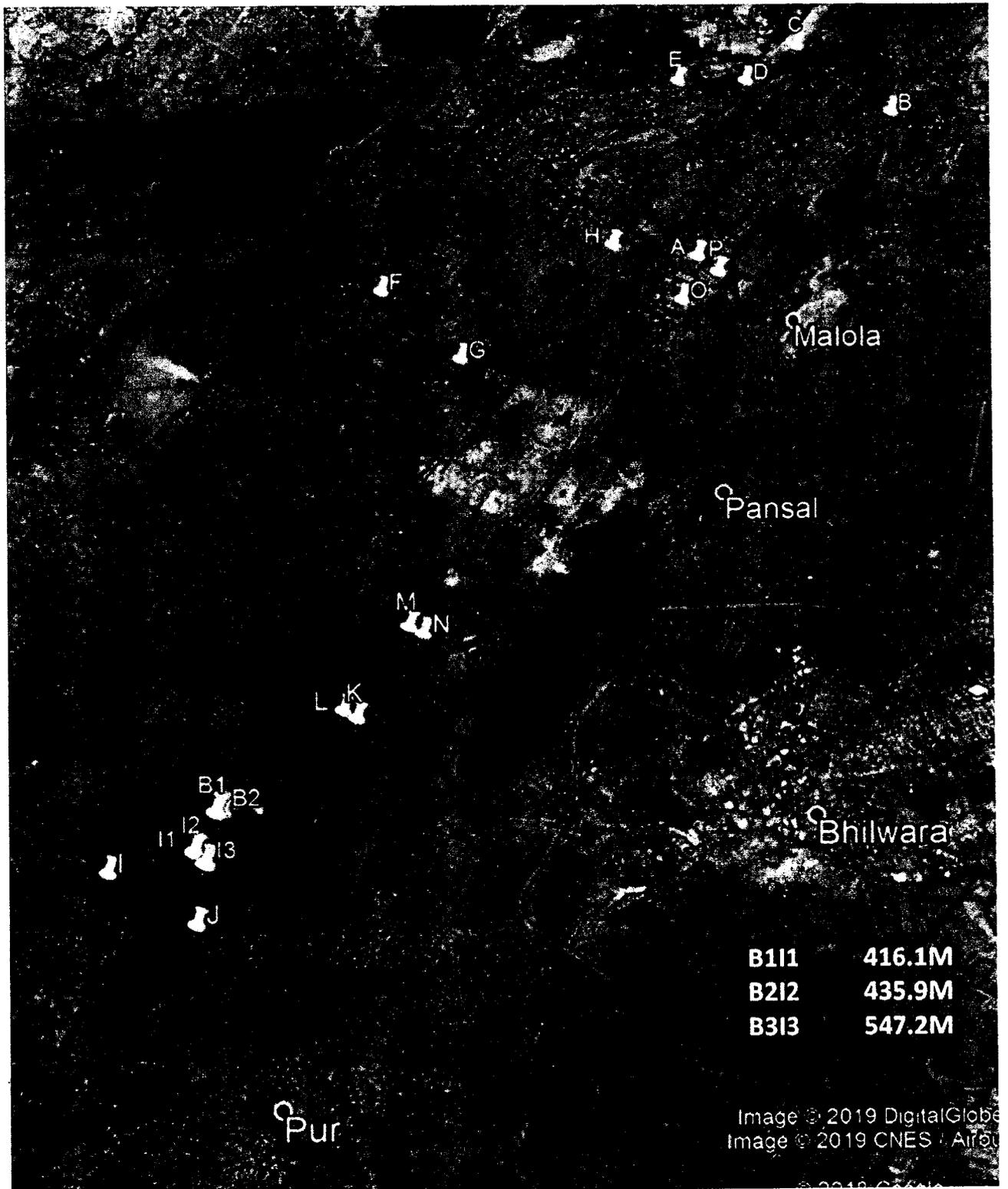
**Study Period:** To carry out the desired study and observe the blasting operations, three blasts were conducted on January 29, 2019 and January 30, 2019.

Locations of all the blast sites were also recorded by a GPS during the pre-blast reconnaissance of the blast site. Similarly, location of all the three blasting sites and instrument stations were also recorded by GPS and inter distance was calculated. The same has been given in Table 2 and is depicted in Fig. 3(a) and 3(b)

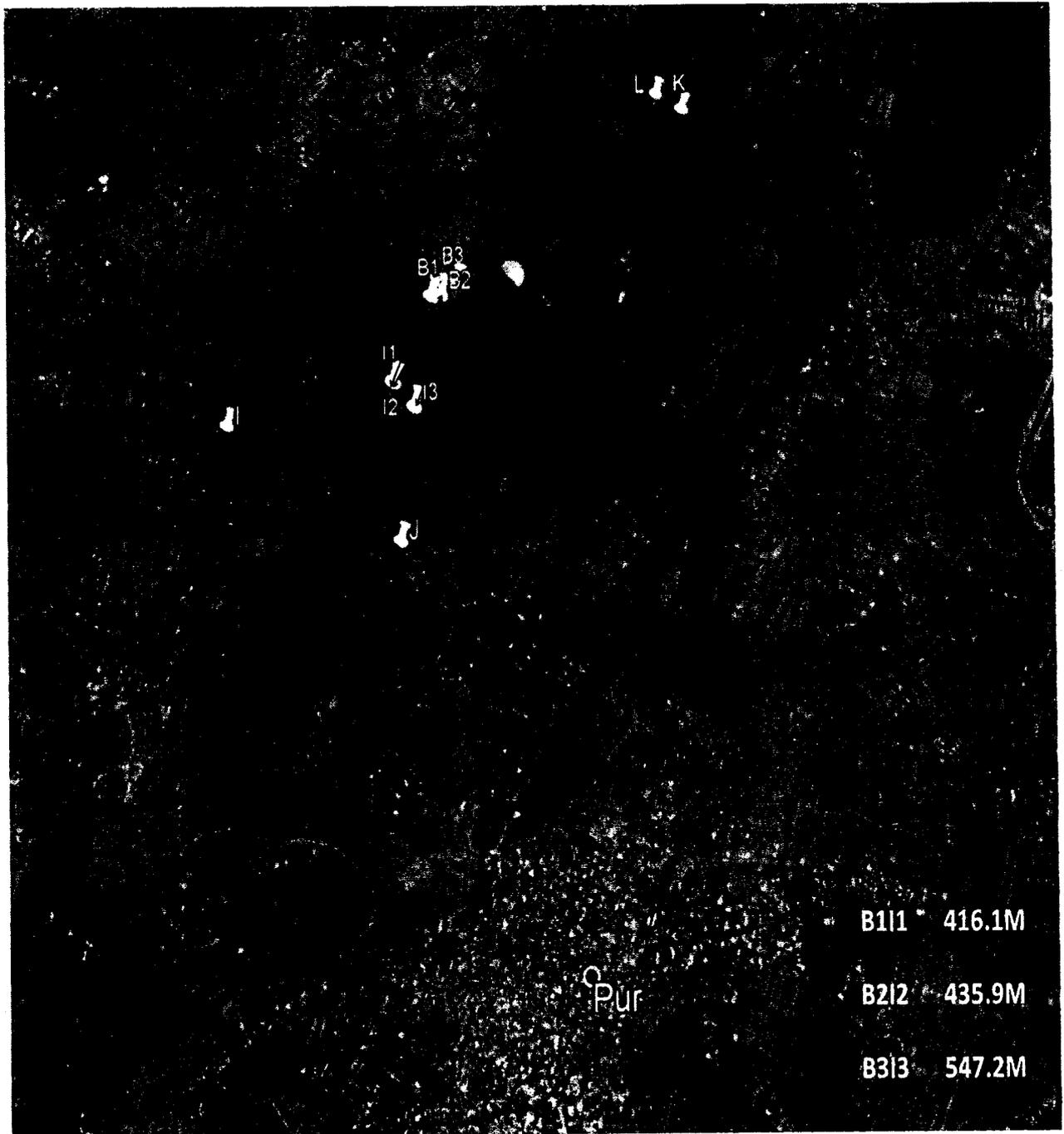
**Table 2: Location of Blast/Instrument Site**

Blast/Instrument Site	Date	GPS		Distance (Met)
		Latitude	Departure	
BS1	29.01.19	N 25° 19' 15.6"	E 74° 32' 07.8"	416.1
IS1		N 25° 19' 3.6"	E 74° 32' 03.0"	
BS2	29.01.19	N 25° 19' 15.9"	E 74° 32' 09.3"	435.9
IS2		N 25° 19' 3.6"	E 74° 32' 03.0"	
BS3	30.01.19	N 25° 19' 17.6"	E 74° 32' 11.6"	547.2
IS3		N 25° 19' 0.2"	E 74° 32' 06.9"	

Blast induced ground vibration and air over-pressure were monitored with a seismograph Blastmate III (Make: Instanetel, Canada). For all the three blasts, ground vibrations were monitored at different monitoring stations (IS1, IS2, IS3), which were fixed in consultation with management. The instrument trigger level for ground vibration was set on the minimum i.e. 0.50 mm/s. The Geo phone was fixed to the monitoring stations as described earlier with all precautions.



**Fig. 3(a):** Depicting the Blast and Instrument site with reference to Pur Village



**Fig. 3(b): Depicting the Blast and Instrument site with reference to Pur Village**

Vibration and Air over pressure were recorded for each blast. Ground vibrations in three directions (Transverse, Vertical and Longitudinal) were recorded along with the acceleration and displacement, Air over pressure and Zero frequency. Peak vector sum has also been calculated and provided in Table 3 with all other details for each blast.

**Table 3: Observations Taken During the Blast Monitoring**

Blast No.	Time of Blast Hrs.	Direction	Peak Particle Velocity (mm/s)	ZC Freq. (Hz)	Peak Acceleration (g)	Peak Displacement (mm)	Peak Vector Sum (mm/s)	Air Over Pressure (dB)
1	29.01.19 At 13:58:41	Transverse	0.810	>100	0.0663	0.00218	1.91	0.500
		Vertical	1.90	73	0.143	0.00358		
		Longitudinal	0.190	>100	0.0166	0.00341		
2	29.01.19 At 13:59:33	Transverse	1.10	>100	0.118	0.00553	4.38	0.500
		Vertical	4.38	64	0.293	0.00911		
		Longitudinal	0.286	>100	0.0249	0.00737		
3	30.01.19 At 13:50:58	Transverse	0.169	>100	0.0166	0.00019	0.709	2.500
		Vertical	0.540	37	0.0199	0.00333		
		Longitudinal	0.619	16	0.0166	0.00529		

The waveform report of each blast is given in Annexure 1 to Annexure 3.

## ANALYSIS:

### Existing DGMS ground vibration norms & standards

The safe ground vibration levels are those which are unlike to produce interior cracking or other damage in residence. Depending upon the socio-economic values of life, various countries have set their standards for safe levels of blast vibrations for structures. In India DGMS norms are followed. As per DGMS Circular No. 7 of 1997, permissible Peak Particle Velocity in mm/sec at the foundation level of structure in mining is in Table 4 as given below:

**Table 4: Permissible Peak Particle Velocity (PPV) at the foundation level of structures in mining areas in mm/s**

Type of Structure	Dominate excitation Frequency Hz		
	< 8 Hz	8-25 Hz	> 25 Hz
<b>(A) building &amp; Structures not Belonging to the Owner</b>			
(i) Domestic Houses / Structures(Kuchcha, Brick and Cement)	5	10	15
(ii) Industrial Building (RCC and Framed Structures)	10	20	25
(iii)Objects of Historical Importance and Sensitive Structures	2	5	10
<b>(B) Buildings &amp; Structures Belonging to Owner with Limited Span of Life</b>			
(i) Domestic Houses/Structures (Kuchcha, Brick and Cement)	10	15	25
(ii) Industrial Building (RCC and Framed Structures)	15	25	50

Air Over Pressure in dB(L)	Effects
115	Threshold limit of public complaints (Dishes & windows rattles)
120	Threshold of pain in hearing
140	No damage for structure
150	Some window breaks
170	Most window breaks
180	Structural damage

**Blast No. 1:** This blast caused a peak vector sum of ground vibration as 1.91 mm/sec. However, considering three components individually the maximum ground vibration was observed in Vertical direction as 1.90 mm/sec with a  $\omega_c$  frequency of 73 Hz.

Comparing this with the DGMS Circular No. 7 of 1997, it is evident that the blasting operations are safe. The distance between the blast and observation site was recorded as 416.1 M

**Blast No. 2:** This blast caused a peak vector sum of ground vibration as 4.38 mm/sec. However, considering three components individually the maximum ground vibration was observed in Vertical direction as 4.38 mm/sec with a  $z_c$  frequency of 64 Hz. Comparing this with the DGMS Circular No. 7 of 1997, it is evident that the blasting operations are safe. The distance between the blast and observation site was recorded as 435.9 M

**Blast No. 3:** This blast caused a peak vector sum of ground vibration as 0.709 mm/sec. However, considering three components individually the maximum ground vibration was observed in Longitudinal direction as 0.619 mm/sec with a  $z_c$  frequency of 16. Comparing this with the DGMS Circular No. 7 of 1997, it is evident that the blasting operations are safe. The distance between the blast and observation site was recorded as 547.2 M

Further, with regard to the cracks developed in the walls of the houses of PUR village following conclusions are made:

- **Since vibration recorded at a site much nearer to the blast site has been observed safe and therefore either there will be no vibration or negligible vibrations at PUR village. Hence it is concluded that the cracks developed are not due to blasting in Tiranga block of Dhedwas iron ore mine.**

*Disclaimer:*

*Observations for the ground vibration were taken for blasting the holes drilled and charged in the supervision of the Mines Manger and charging was done by the staff members of the company. The author has submitted the observations taken by the instrument for the blast mentioned in the report. Predictions for the safety are absolutely dependent on the blasting practice used. Author shall not be responsible for any deviation from the practice and observations.*

  
**HEAD**  
Department of Mining Engineering  
Faculty of Engineering  
Jai Narain Vyas University  
JODHPUR



Event Report



Date/Time Vert at 13:58:41 January 29, 2019  
 Trigger Source Geo: 0.500 mm/s  
 Range Geo: 31.7 mm/s  
 Record Time 2.0 sec at 1024 sps  
 Job Number: 1

Serial Number BA5228 V 10 72-4 32 Blast,late III  
 Battery Level 6.3 Volts  
 Unit Calibration June 8, 2018 by UES, New Delhi  
 File Name G663HS98.ET0

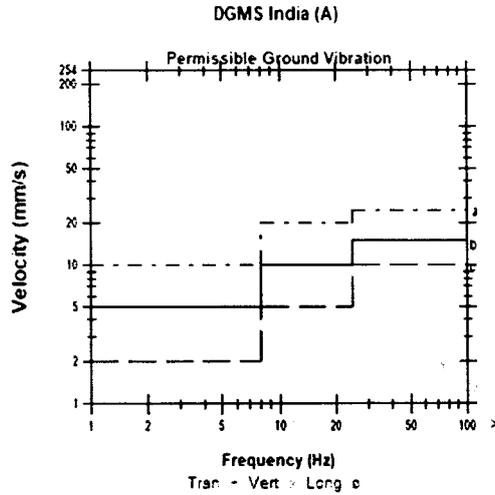
NOTES  
 JINDAL, SAW Pul. Bhawar Registrar  
 Observations taken by Aditya  
 Dr. S. K. Panhar Professor  
 Dept of mining Engg. MBM Engineering College, Jodhpur

Extended Notes

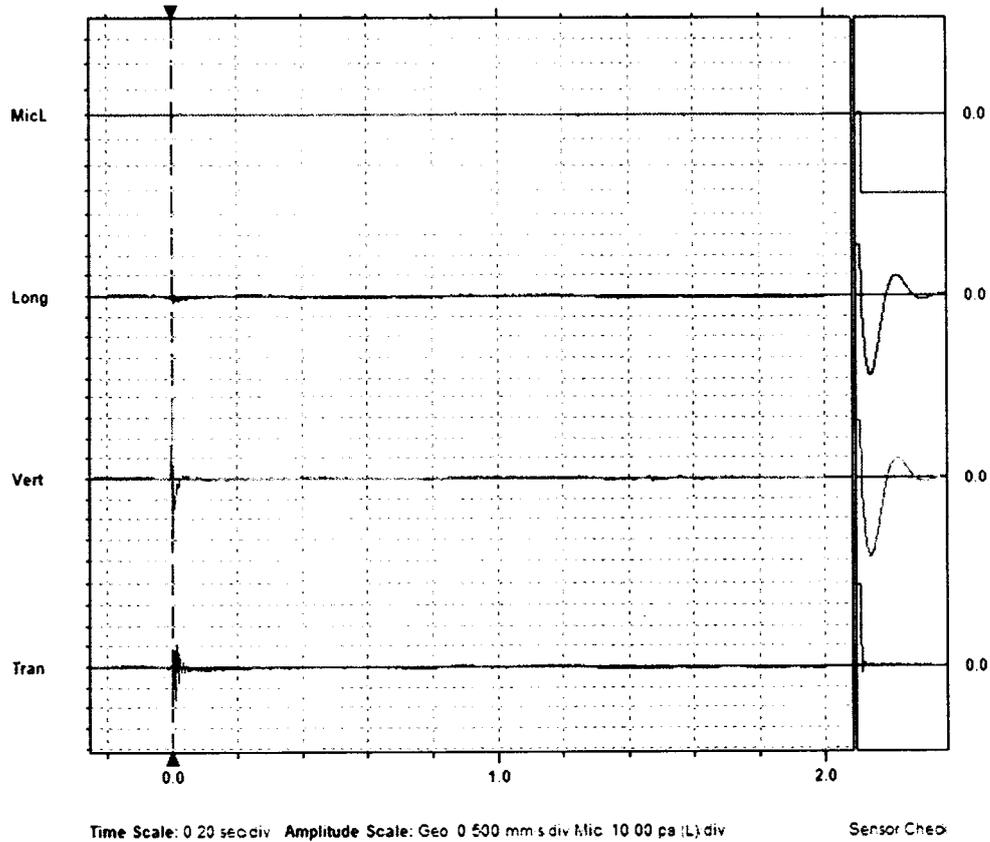
Microphone Linear Weighting  
 PSPL 0.500 pa (L) at 0.005 sec  
 ZC Freq >100 Hz  
 Channel Test Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	0.810	1.90	0.190	mm/s
PPV (Ponderated)	0.143	0.522	0.109	mm/s
ZC Freq	>100	73	>100	Hz
Time (Rel. to Trig)	0.012	0.001	0.000	sec
Peak Acceleration	0.0023	0.143	0.0160	g
Peak Displacement	0.00218	0.00358	0.00341	mm
Sensor Check	Check	Passed	Passed	
Frequency	78.8	7.3	7.4	Hz
Overswing Ratio	1.0	4.2	4.2	

Peak Vector Sum 1.91 mm/s at 0.001 sec



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





Event Report



Date/Time Vert at 12:59:33 January 29, 2019  
 Trigger Source Geo: 0.500 mm/s  
 Range Geo: 31.7 mm/s  
 Record Time 2.0 sec at 1024 s/s  
 Job Number 1

Serial Number BA5628 V 10 72-4 32 Blast/Mate III  
 Battery Level 8.3 Volts  
 Unit Calibration June 8, 2018 by UES, New Delhi  
 File Name G666HS99 790

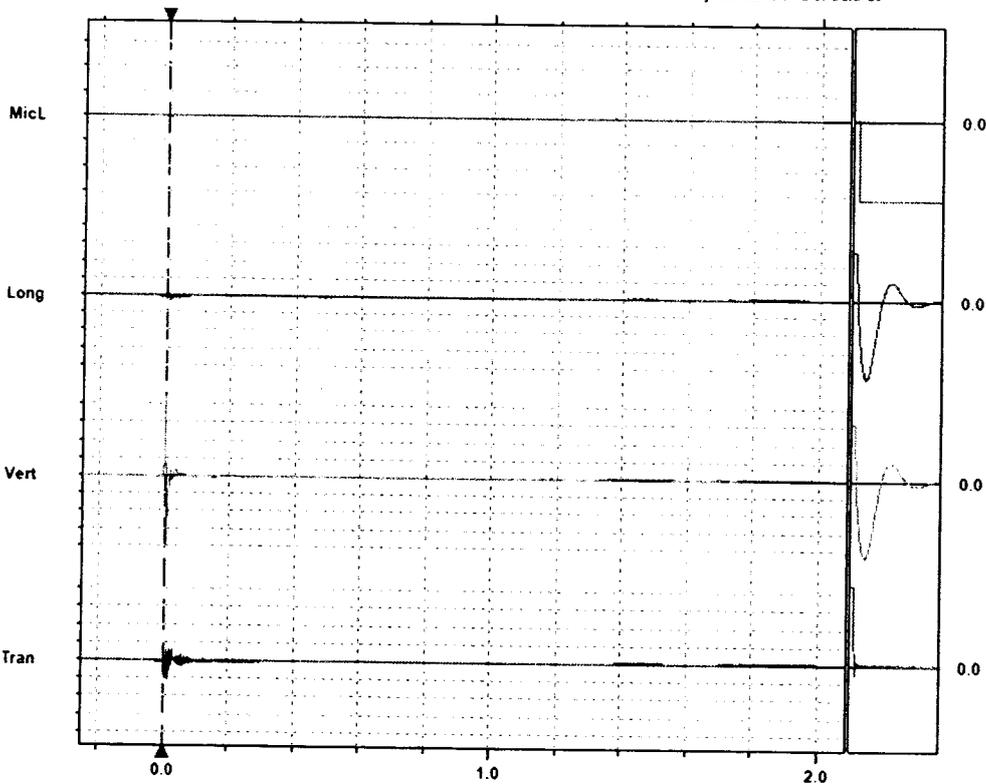
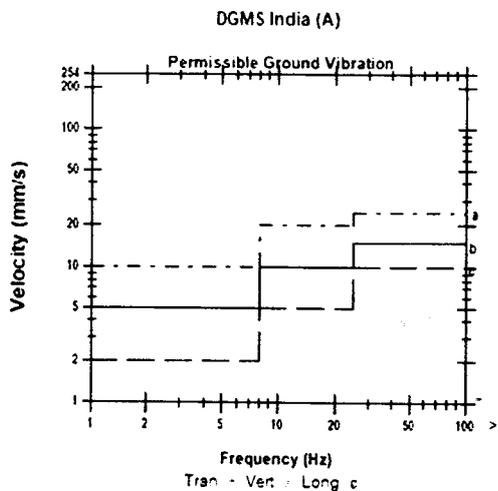
Notes  
 JINDAL SAH Ful Bhawara Rajasthan  
 Observations taken by Aolaya  
 Dr. S. K. Panigrahi Professor  
 Dept of mining Engg. MSM Engineering College, Jodhpur

Extended Notes

Microphone Linear Weighting  
 PSPL 0.500 pa (L) at 0.010 sec  
 ZC Freq >100 Hz  
 Channel Test Check: (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	1.10	4.38	0.286	mm/s
PPV (Ponderated)	0.295	1.84	0.142	mm/s
ZC Freq	>100	64	>100	Hz
Time (Rel. to Trig)	0.015	0.002	0.010	sec
Peak Acceleration	0.118	0.293	0.0249	g
Peak Displacement	0.00553	0.00911	0.00737	mm
Sensor Check	Check	Passed	Passed	
Frequency	78.8	7.2	7.4	Hz
Overswing Ratio	0.8	4.2	4.2	

Peak Vector Sum 4.38 mm/s at 0.002 sec



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 1.000 mm/s div Mic: 10.00 pa (L) div Sensor Check



Event Report



Date/Time Long at 13:50:58 January 30, 2019  
 Trigger Source Geo: 0.500 mm/s  
 Range Geo: 31.7 mm/s  
 Record Time 2.0 sec at 1024 sps  
 Job Number: 1

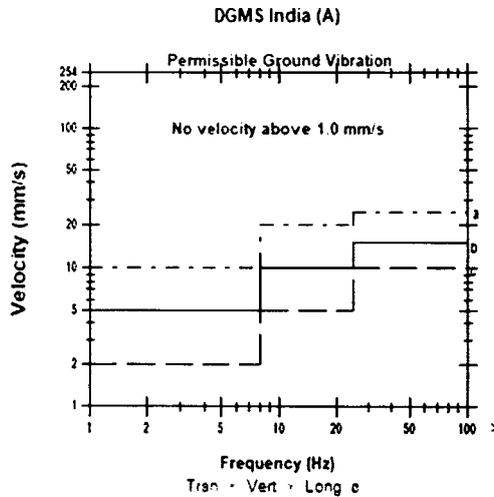
Serial Number BA5688 V 10 72-4 32 BlastMate III  
 Battery Level 9.4 Volts  
 Unit Calibration June 6, 2018 by UES, New Delhi  
 File Name G668HS62.GY0

Notes  
 JINDAL, SAW Bhatnagar, Rajashan  
 Observations taken by Aditya  
 Dr. S. K. Panhar Professor  
 Dept of Mining Engrg. MSM Engineering College, Jodhpur

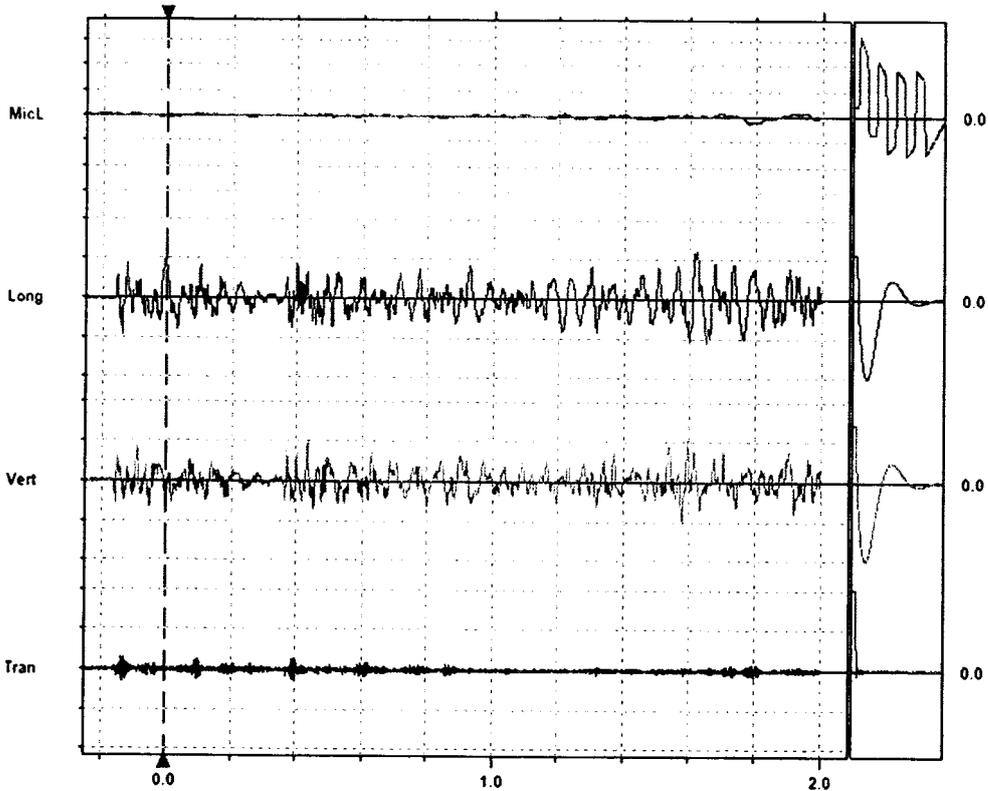
Extended Notes  
 Microphone Linear Weighting  
 PSPL 2.50 pa (L) at 1.778 sec  
 ZC Freq 7.0 Hz  
 Channel Test Passed (Freq = 19.7 Hz, Amp = 820 mv)

	Tran	Vert	Long	
PPV	0.159	0.540	0.819	mm/s
PPV (Ponderated)	0.0232	0.393	0.810	mm/s
ZC Freq	>100	37	16	Hz
Time (Rel. to Trig)	-0.134	1.596	1.823	sec
Peak Acceleration	0.0166	0.0199	0.0166	g
Peak Displacement	0.00019	0.00333	0.00529	mm
Sensor Check	Check	Passed	Passed	
Frequency	37.9	7.3	7.4	Hz
Overswing Ratio	1.0	4.2	4.2	

Peak Vector Sum 0.709 mm/s at 1.816 sec

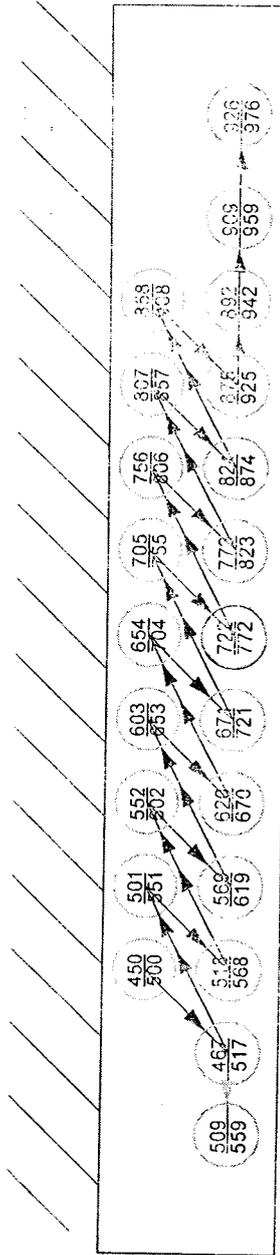


- a) Industrial Buildings
- b) Domestic houses structures
- c) Historic objects, sensitive structures



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 0.500 mm/s div Mic: 10.00 pa (L) div Sensor Check

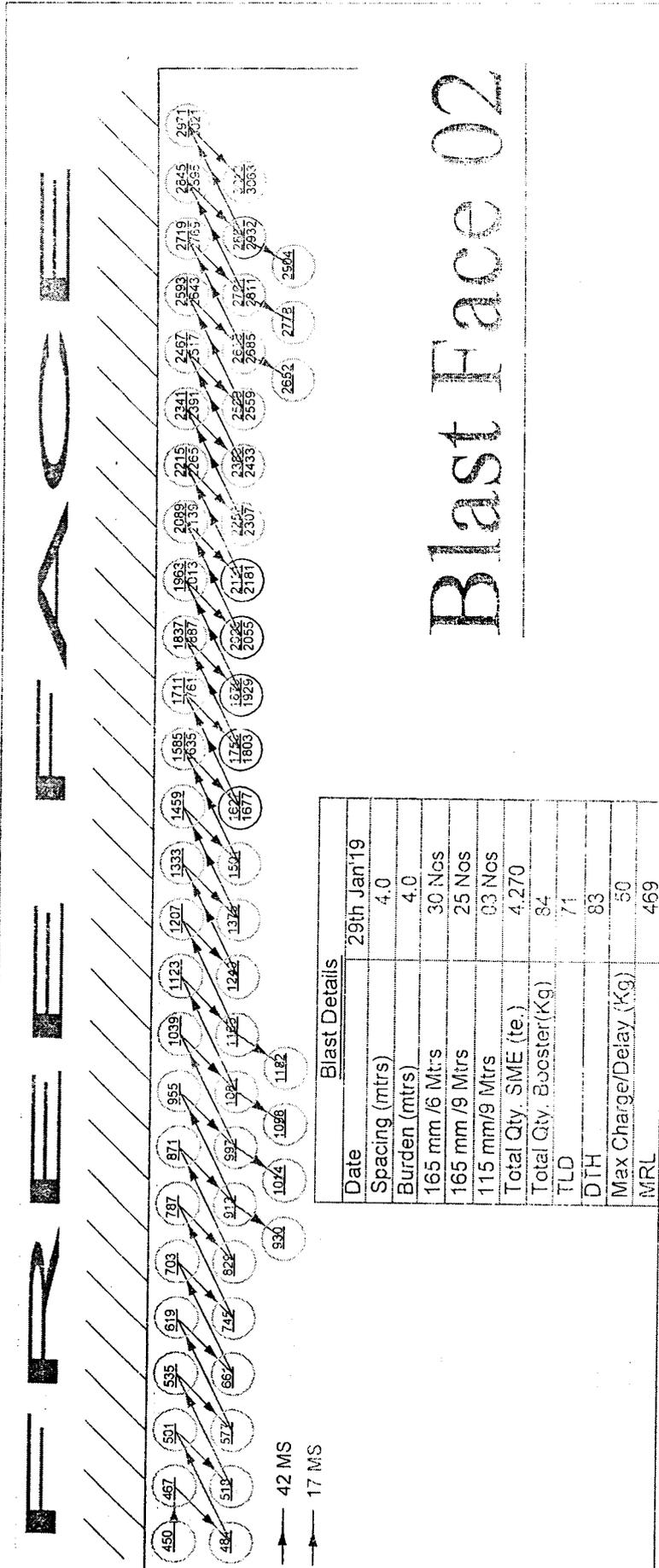
# FREE FACE



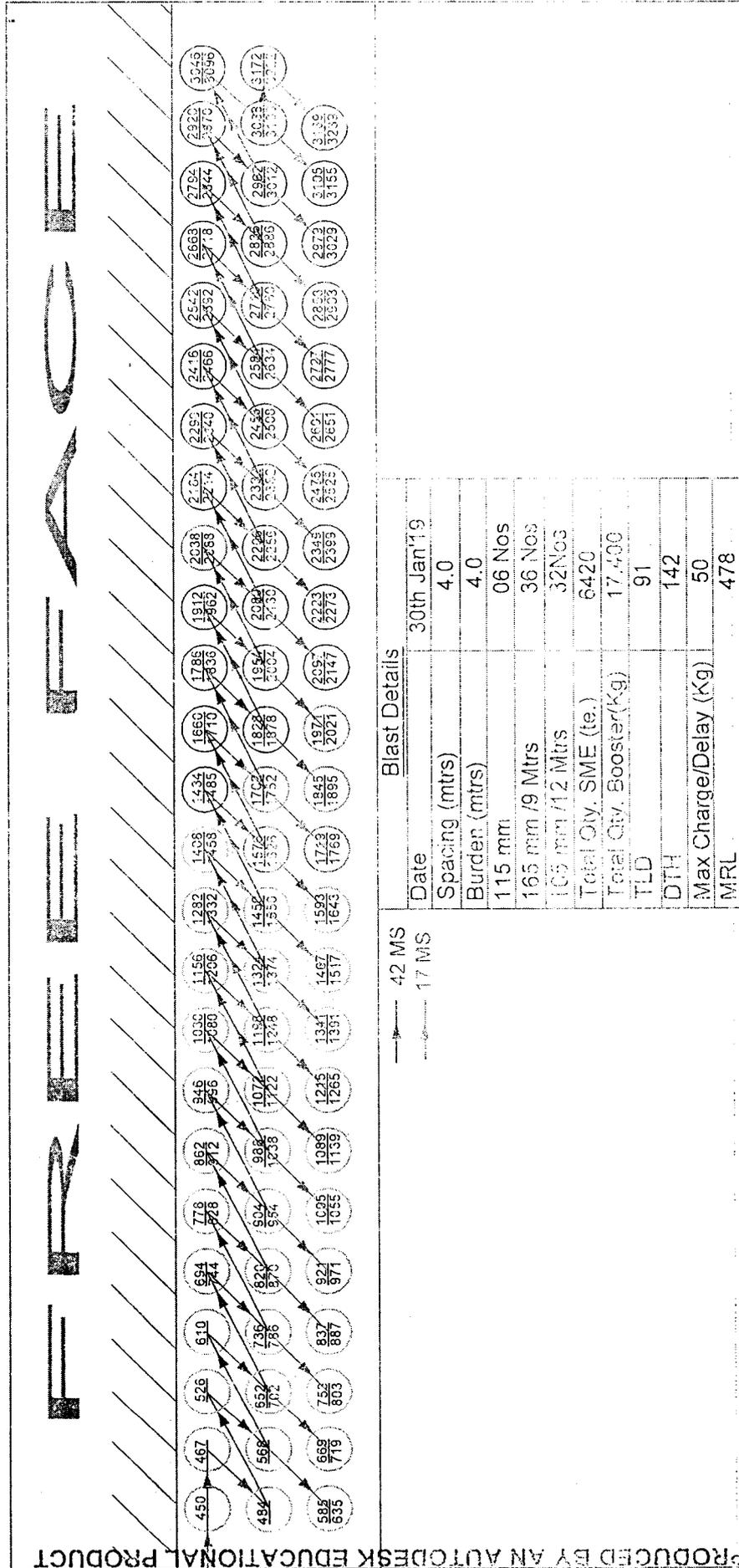
# Blast Face 01

Blast Details	
Date	28th Jan'19
Spacing (mtrs)	4.0
Burden (mtrs)	4.0
10's mm /6 Mtrs	00 Nos
10's mm /12 Mtrs	22 Nos
Total Qty. SME (te.)	1.2
Total Qty. Booster(Kg)	6.6
TLO	31
DTH	44
MCPD	50
MRL	467

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## कार्यालय जिला मजिस्ट्रेट, भीलवाड़ा

क्रमांक : न्याय / 2019 / 26242

दिनांक : 23-07-2019

प्रेषिति,

श्रीमान अति० मुख्य सचिव महोदय,  
खान एवं पेट्रोलियम विभाग,  
जयपुर

विषय :- पुर के आवासीय मकानों / निर्माण संरचनाओं में दरार आने के कारण उनके परिवारों के मुखिया / स्वामित्वधारी को नियमानुसार डीएमएफटी से मुआवजा देने बाबत।

महोदय,

उपर्युक्त विषयान्तर्गत निवेदन है कि उपनगर पुर के क्षतिग्रस्त संरचनाओं में दरार आने के कारण उपनगर पुर क्षेत्र के निवासियों की जान माल की सुरक्षा, सुख-सुविधा के आकलन एवं अन्य तथ्यों के कम में माननीय मुख्य सचिव महोदय, राजस्थान, जयपुर की अध्यक्षता में दिनांक 05.07.2019 को आयोजित बैठक के कार्यवाही विवरण की प्रतिलिपि संलग्न है। उक्त बैठक में लिये गये निर्णयानुसार ऐसे मकान जो पूर्णतया गिर चुके हैं/ उनके परिवारों के मुखिया / स्वामित्वधारी को नियमानुसार डीएमएफटी फण्ड से मुआवजा दिया जाएगा। उक्तानुसार सर्वे करवाया जा चुका है। उपनगर पुर में जो मकान पूर्णतया गिर चुके हैं/ जो गम्भीर रूप से क्षतिग्रस्त हैं, उनके परिवारों के मुखिया / स्वामित्वधारी का लगभग राशि 16,72,62,000 (सौलह करोड बहत्तर लाख बांसठ हजार) का मुआवजा देना जाना है।

अतः उक्त मुआवजे का भुगतान डीएमएफ से किया जाना है। इस मुआवजे की स्वीकृति बाबत आयोजित होने वाली डिस्ट्रीक्ट मिनेरल फाउण्डेशन ट्रस्ट की शाखा परिषद की बैठक में जनप्रतिनिधि भी सदस्य (ट्रस्टी) होते हैं। वर्तमान में विधान सभा सत्र चल रहा है जिसके तहत जनप्रतिनिधियों की बैठक नहीं रखी जा सकती है तथा डिस्ट्रीक्ट मिनेरल फाउण्डेशन ट्रस्ट भीलवाड़ा को वित्तीय शक्तियों के तहत 2 करोड से अधिक की स्वीकृति या राजस्थान डिस्ट्रीक्ट मिनेरल फाउण्डेशन ट्रस्ट रूल्स 2016 के नियम 4(3) (a) (CC) के तहत राज्य स्तरीय एम्पावर्ड कमेटी के अनुमोदन के पश्चात ही प्रदत्त है।

अभी मानसूनकाल को मध्यनजर रखते हुए ऐसे मकान जो पूर्णतया गिर चुके हैं/ जो गम्भीर रूप से क्षतिग्रस्त हैं, उनके परिवारों के मुखिया / स्वामित्वधारी को नियमानुसार डीएमएफटी फण्ड से मुआवजा दिये जाने की कार्यवाही जोर से करनी आवश्यक है।

ऐसी स्थिति में उपनगर पुर में जो मकान पूर्णतया गिर चुके हैं / जो गम्भीर रूप से क्षतिग्रस्त हैं, उनके परिवारों के मुखिया/स्वागित्वधारी को नियमानुसार डीएमएफटी से मुआवजा दिये जाने हेतु उक्तानुसार लगभग राशि 16,72,62,000 (सौलह करोड़ बहत्तर लाख बांसठ हजार) का बजट डीएमएफटी से राजस्थान डिस्ट्रीक्ट मिनेरल फाउण्डेशन ट्रस्ट रूल्स 2016 के नियम 15(3)(11) के तहत अनुमोदन कराने का श्रम करावें।  
सलग्न: उपरोक्तानुसार

भवदीय

21/11/2011

जिला मजिस्ट्रेट,  
भीलवाड़ा

प्रतिलिपि: अति. निदेशक(प्रशासन), निदेशालय, खान एवं भू. विज्ञान विभाग, उदयपुर (सदस्य सचिव स्टेट लेवल एम्पावर्ड कमेटी) को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

21/11/2011

जिला मजिस्ट्रेट,  
भीलवाड़ा

**Office of District Collector & District Magistrate, Bhilwara**

No\Jud\2019\ 26230  
To,

Dated 22 July, 2019

1. Director, CSIR-CBRI through Prof. S.K. Singh  
Sr. Pr. Scientist Structural Engg. Group,  
Group Leader, PPC & CCC Group  
Professor, AcSIR  
CSIR- Central Building Research Institute  
Roorkee 247 667, India  
[sk Singh@cbri.res.in](mailto:sk Singh@cbri.res.in), [sk Singh\\_cbri@yahoo.co.in](mailto:sk Singh_cbri@yahoo.co.in)
2. Dr, Brijesh Kr, Yadav,  
Indian Institute of Technology Roorkee,  
Department of Hydrology  
Roorkee – 247 667, Uttarakhand, India  
[brijkfhy@iitr.ernet.in](mailto:brijkfhy@iitr.ernet.in)
3. Department of Geotechnical/Civil Engineering  
Indian Institute of Technology  
Roorkee – 247 667, Uttarakhand, India  
[civil@iitr.ernet.in](mailto:civil@iitr.ernet.in)
4. Dr S.K Jain.  
Director, National Institute of Hydrology  
Roorkee
5. The Director,  
CSIR-Central Institute of Mining and Fuel Research  
Barwa Road, Dhanbad- 826015  
Jharkhand
6. Professor (Dr.) S.K. Parihar,  
Department of Mining Engineering,  
Jai Narayan Vyas University, Jodhpur  
[s\\_k\\_parihar@yahoo.com](mailto:s_k_parihar@yahoo.com)

**Subject:** To carried out scientific study and find out causes & effect of development of cracks in building/structure/roads/drains in and around Pur village, tehsil and District Bhilwara, Rajasthan

**Ref.** Minutes of the Meeting issued vide letter no. F.4 (777) PRD/PC/Pur Village Bhilwara/2019/1692 dated 20.07.2019, by Rural Development & Panchayati Department held on 05.07.2019 under the chairmanship of the Chief Secretary, Government of Rajasthan at Jaipur

**Respected sir,**

With reference to above mentioned subject and referred high level meeting held under the chairmanship of Chief Secretary, Government of Rajasthan on 05 July 2019 to discuss the causes & effect of development of cracks in building/structure/roads/drains in and around Pur village, tehsil and District Bhilwara, Rajasthan. Copy of the Minutes of the meeting dated 05.07.2019 is enclosed herewith.

The Meeting was attended by experts from CIMFR, DGMS, and GSI (Geological survey of India) Prof. Sunil Parihar (Mining), MBM Engineering Collage Jodhpur besides Add. Chief Secretaries/Pr. Secretaries of various related department of the State Government and district administration officials.

It was decided in the meeting that your esteemed institution shall carry out an interdisciplinary scientific study in a coordinated manner to identify root causes & effects of development of cracks in building/civil structure/roads/drains in and around Pur village, tehsil and District Bhilwara, Rajasthan and thereafter, also suggest the Mitigation measures and Action plan to the District-administration/State Government.

It is pertinent to mention here that the affected area is located above 2 km. from the operating Iron ore mine of M/s Jindal Saw Ltd and affected population is of the view that blasting of the mine is responsible for development of cracks in the area.

Therefore, it is requested to kindly provided expertise of your esteem institutions to find out holistically the cause of development of cracks in building/structure/roads/drains in and around Pur village, tehsil and District Bhilwara.

Background note in the form of small PPT/handout including the chronology of the events is enclosed here with for reference and need full.

Enclosed:

- 1) Copy of the Minutes of the meeting dated 05.07.2019
- 2) Background note in the form of small PPT/handout

  
(Rajendra Bhatt)  
District Magistrate & Collector  
Bhilwara

Copy to the following for the information and Further necessary action please-

1. Sr, D.S. to Chief Secretary, Government of Rajasthan at Jaipur
2. P.s. to ACS. Mines & Petroleum
3. P.s. to ACS. Department of RD& PR
4. P.s. to ACS, Finance
5. P.s. to Pr. Sec., Revenue

  
District Magistrate & Collector  
Bhilwara

राजस्थान सरकार  
कार्यालय उपखण्ड मजिस्ट्रेट, भीलवाडा

क्रमांक / न्याय / 2019 /

2711-45

दिनांक :- 19.08.2019

प्रेषित:-

क्षेत्रीय प्रबंधक,  
प्रदूषण नियंत्रण मण्डल,  
भीलवाडा

विषय:- प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना में तथ्यात्मक प्रतिवेदन प्रस्तुत करने के संबंध में।

उपरोक्त विषयान्तर्गत लेख है कि माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना में प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में तथ्यात्मक प्रतिवेदन प्रस्तुत करना है। प्रकरण में पेशी दिनांक 21.08.2019 नियत है। तथ्यात्मक प्रतिवेदन की प्रति संलग्न कर भिजवाई जा रही है।

अतः माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली में पेशी दिनांक से पूर्व तथ्यात्मक प्रतिवेदन प्रस्तुत कर अधोहस्ताक्षरकर्ता को अवगत करावें।

संलग्न:- उपरोक्तानुसार

  
उपखण्ड मजिस्ट्रेट  
भीलवाडा

प्रतिलिपि:-निम्न को उक्त प्रतिवेदन की प्रति संलग्न कर प्रेषित है।

01. सहायक सचिव महोदय, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जयपुर
- ✓ 02. जिला मजिस्ट्रेट महोदय, भीलवाडा
03. अधीक्षण खनि अभियंता, भीलवाडा
04. तहसीलदार, भीलवाडा

  
उपखण्ड मजिस्ट्रेट  
भीलवाडा

राजस्थान सरकार  
कार्यालय उपखण्ड मजिस्ट्रेट, भीलवाड़ा

प्रार्थना पत्र 288/19 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 के सम्बन्ध में तथ्यात्मक प्रतिवेदन :-

1. मेसर्स जिन्दल शॉ लिमिटेड के पक्ष में खनन पट्टा संख्या 631/2005 निकट ग्राम डेडवास तहसील व जिला भीलवाड़ा में क्षेत्रफल 1556.7817 हैक्टर खनिज लेड, जिंक, कॉपर, आयरन, गोल्ड, सिल्वर, कोबाल्ट एवं एसोसिएटेड खनिजों के लिये स्वीकृत होकर प्रभावशील हैं । पट्टाधारी कम्पनी द्वारा उक्त खनन पट्टा क्षेत्र में खनन कार्य हेतु की जा रही ब्लास्टिंग के लिये खान सुरक्षा निदेशालय अजमेर के पत्र दिनांक 06.12.2016 से ब्लास्टिंग की अनुमति प्राप्त की हुई है ।
2. उक्त खनन पट्टा क्षेत्र के समीप स्थित ग्राम पुर के ग्रामीणों द्वारा शिकायत की गई कि पट्टाधारी कम्पनी द्वारा क्षेत्र में खनन कार्य हेतु की जा रही ब्लास्टिंग से उनके रहवासी मकानों में दरारे आ रही हैं, जिससे जान-माल का खतरा बना रहता है ।
3. क्षेत्र के ग्रामीणों द्वारा की गई शिकायतों के सम्बन्ध में अधीक्षण खनि अभियन्ता, भीलवाड़ा वृत्त, भीलवाड़ा, प्रशिक्षु आई.ए.एस. श्री उत्सव कौशल एवं क्षेत्रिय अधिकारी राजस्थान राज्य प्रदुषण नियंत्रण मण्डल भीलवाड़ा द्वारा दिनांक 17.12.2018 को क्षेत्र का निरीक्षण किया गया। उक्त निरीक्षण रिपोर्ट के अनुसार क्षेत्र में ब्लास्टिंग करने के पश्चात उसकी तीव्रता को सिस्मोग्राफ नामक यंत्र से नापा गया, जिसका मापन करने पर Frequency 10-20 हर्टज के मध्य में पीक वेक्टर सम (पी.वी.सी.) 1, 2, 3 की कुल मात्रा 1.562 मिलीमीटर प्रति सैकण्ड आंकी गई, जो कि खनन सुरक्षा महानिदेशालय, अजमेर द्वारा जारी अनुमति में निर्धारित मापदण्ड के अनुसार बहुत सुरक्षित थी, जबकि पुर कस्बा ब्लास्टिंग क्षेत्र से करीब 2 किलोमीटर से अधिक दूरी पर है । अतः यह कहा जाना सम्भव नहीं है कि पुर में मकानों में पाई गई दरारों का कारण जिन्दल शॉ लिमिटेड के द्वारा की गई ब्लास्टिंग से हुआ हो।
4. तत्पश्चात दिनांक 19.12.2018 से पांच अभियन्ताओं की कमेटी का गठन कर क्षेत्र के मकानों में आई दरारों का क्या कारण है ? की रिपोर्ट प्रस्तुत करने हेतु लिखा गया। उक्त आदेश की पालना में अभियन्ताओं द्वारा क्षेत्र का निरीक्षण दिनांक 20.12.2018 को किया गया। जिसकी रिपोर्ट निम्नानुसार है :-

क्र०सं०	विभाग का नाम	प्रस्तुत रिपोर्ट का विवरण
01	अधीक्षण अभियन्ता, जलदाय विभाग, भीलवाड़ा	इन दरारों का कारण इस क्षेत्र में कम्पन के कारण क्षेत्र की जमीन में सेटलमेन्ट होना प्रतीत होता है।

02	अधीक्षण अभियंता, सा0नि0वि0 भीलवाडा	मकानों में दरारों का कारण जमीन का बैठना या कम्पन से होना प्रतीत होता है।
03	अधीक्षण अभियंता, जल संसाधन विभाग, भीलवाडा	स्कूल के मैदान में पानी निकलना भी किसी तलाब से संबंधित नहीं है, क्योंकि स्कूल का लेवल भी तालाब के लेवल के आस-पास है।
04	अधीक्षण अभियंता, आर.यू.आई.डी.पी. भीलवाडा	मकानों में दरारों का कारण:- 1. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना। 2. वाईब्रेशन के कारण मकानों की फाउण्डेशन में असमान सेटलमेन्ट होना।
05	अधीक्षण अभियंता, खनिज विभाग, भीलवाडा	1. भूमि के अन्दर स्थित मिट्टी का सेटलमेन्ट होना। 2. नालियों के क्षतिग्रस्त होने के कारण वेस्ट वाटर का भूमि में सीपेज होना है।

उक्त निरीक्षण रिपोर्ट अनुसार भी यह स्पष्ट नहीं हो सका कि पुर क्षेत्र में दरारे आने का वास्तविक कारण क्या हैं।

5. अतः क्षेत्र में आने वाली दरारों के कारणों की स्पष्ट जानकारी नहीं हो पाने से दिनांक 15.01.19 से निदेशक महोदय, अतिरिक्त निदेशक (भू-विज्ञान), उदयपुर एवं अधीक्षण भू-वैज्ञानिक, भीलवाडा, श्री एस. के. परिहार विभागाध्यक्ष, एम.बी.एम. इन्जीनियरिंग कॉलेज, जोधपुर एवं निदेशक खान सुरक्षा महानिदेशालय, अजमेर को पत्र लिखा जाकर क्षेत्र के मकानों में आई दरारों के कारणों की जांच कर रिपोर्ट दिनांक 30.01.2019 तक प्रस्तुत करने हेतु लिखा जाने के साथ ही पट्टाधारी कम्पनी मैसर्स जिन्दल शॉ लिमिटेड को भी पत्र दिनांक 15.01.2019 से पत्र लिखा जाकर सेन्ट्रल इन्स्टीट्यूट ऑफ़ माईनिंग एण्ड फ्यूल रिसर्च, नागपुर के विशेषज्ञों को बुलवाकर जांच करा दिनांक 30.01.2019 तक रिपोर्ट प्रस्तुत करने हेतु लिखा गया।

6. जिसके क्रम में प्राप्त रिपोर्ट का विवरण निम्नानुसार है:-

• CIMFR :-

तीन सिस्मोग्राफ, ब्लास्टिंग स्थल से ग्राम पुर तक अलग-अलग दूरियों पर लगाकर 3 ब्लास्ट का रिकार्ड किया गया जिसमें ग्राम पुर में ब्लास्ट इण्ड्युस्ड (Blast induced) कम्पन्न नहीं पाये गये तथा मैसर्स जिन्दल शॉ लिमिटेड की खान के पास परमिशीबल लिमिट (Within permissible limit) 4 कम्पन्न पाये गये।

• MBM ENGINEERING COLLEGE JODHPUR - तीन सिस्मोग्राफ से दो ब्लास्टिंग ऑपरेशन का अध्ययन किया गया जिसमें दरारे आने का कारण ब्लास्टिंग नहीं पाया गया।

उक्त निरीक्षण के उपरान्त भी पुर ग्राम के मकानों में दरारें आने का स्पष्ट कारण ज्ञात नहीं होन पर जिला प्रशासन द्वारा भारत सरकार के भारतीय भू-गर्भिक सर्वेक्षण संस्था से जियोटेक्नीकल स्टेडी करवाई गई।

• GSI – भू अध्ययन 4-6 अप्रैल 2019

GSI द्वारा 4 अप्रैल 2019 से 6 अप्रैल 2019 तक दो दिन अध्ययन करने के बाद अध्ययन रिपोर्ट प्रस्तुत की गई जिसमें बताया गया कि पुर ग्राम में दरारे आने का भू-गर्भिक गतिविधि जिम्मेवार नहीं हैं। पुर में स्थानीय हलचल से ही दरारे आयी हैं। आगे दरारे रोकने के दो उपाय सुझाये गये।

1. प्रि-स्पिलिटिंग

2. उपकरण टिल-टेलस –दरारों के बढने को मापने हेतु लगाने का सुझाव

7. प्रि-स्पिलिटिंग किस प्रकार से की जानी हैं, की व्यवहारिक जानकारी हेतु CIMFR के दो वरिष्ठ वैज्ञानिकों को जिला प्रशासन द्वारा बुलाया गया। CIMFR के दो वरिष्ठ वैज्ञानिकों द्वारा दिनांक 6 व 7 जून, 2019 को ग्राम पुर क्षेत्र का निरीक्षण कर सुझाव दिया कि प्रि-स्पिलिटिंग जिसमें 100 मीटर तक होल किये जाकर ब्लास्टिंग करके क्रोक करने (प्रि-स्पिलिटिंग) के लिए व्यवहारिक रूप से विस्तृत अध्ययन किया जाना आवश्यक हैं, जिससे बहुविशेषज्ञता की टीम जिसमें खनन अभियांत्रिकी, भू-जलवेता, भू-भौतिकवता, जियोटेक्निकल स्ट्रक्चरल आदि सम्मिलित हैं, की आवश्यकता हैं।

8. उपरोक्तानुसार भविष्य में होने वाले नुकसान की संभावना को देखते हुए जिला प्रशासन द्वारा निम्न निर्णय लिये गये :-

• नगर विकास न्यास को निर्देशित किया गया कि वह प्रभावित घरों में उपकरण Tell-Tales को लगाये ताकि भविष्य में आने वाली दरारों की मॉनिटरिंग की जा सके।

9. तत्पश्चात दिनांक 05.07.2019 को शासन सचिवालय, जयपुर में श्रीमान् मुख्य सचिव महोदय, की अध्यक्षता में बैठक सम्पन्न हुई, जिसमें जिला कलक्टर, भीलवाड़ा एवं विभिन्न विभागों के अधिकारी उपस्थित हुए। बैठक में ग्राम पुर की उक्त समस्या के निस्तारण बाबत विस्तृत चर्चा के उपरान्त उपनगर पुर में जो मकान पूर्णतया गिर चुके है/ जो अत्यन्त गम्भीर रूप से क्षतिग्रस्त है, उनके परिवारों के मुखिया/स्वामित्वधारी को नियमानुसार डीएमएफटी से मुआवजा दिये जाने के संबंध में डिस्ट्रीक्ट मिनरल फाउण्डेशन ट्रस्ट भीलवाडा को वित्तीय शक्तियों के तहत 2 करोड से अधिक की स्वीकृतियां राजस्थान डिस्ट्रीक्ट मिनरल फाउण्डेशन ट्रस्ट रूल्स 2016 के नियम 15(3)(11) CC के तहत राज्य स्तरीय एम्पावर्ड कमेटी के अनुमोदन के पश्चात ही प्रदत्त होने से अनुमोदन हेतु अति० मुख्य सचिव महोदय, खान एवं पेट्रोलियम विभाग, जयपुर को जिला मजिस्ट्रेट, भीलवाडा के पत्र क्रमांक 26242 दिनांक 23.07.19 (प्रति संलग्न) द्वारा पत्र लिखा जा चुका है।

• श्रीमान् मुख्य सचिव महोदय की बैठक दिनांक 05.07.2019 में पुर ग्राम की समस्या के मूल कारण का निम्न तकनीकी विशेषज्ञों से जाँच कराये जाने का निर्णय लिया गया .

जिसके संबंध में जिला मजिस्ट्रेट, भीलवाडा के पत्र क्रमांक 26230 दिनांक 22.07.2019 (प्रति संलग्न) द्वारा संबंधित विभागों को पत्र लिखा जा चुका है :-

- 1- CSIR Building Research Institute, Roorke for Structure issues.
- 2- National Institute of Hydrology, Roorke for Hydrology Issues.
- 3-IIT Roorke for Geotechnical issues.
- 4-CIMFR for Mining & Blasting issues
- 5- MBM Engineering Collage Jodhpur

ग्राम पुर के मकानों में आ रही दरारों के कारणों का अध्ययन करने के लिये वैज्ञानिकों की टीम का दिनांक 18.08.2019 से 20.08.2019 तक यात्रा का कार्यक्रम प्रस्तावित है ।

- श्रीमान मुख्य सचिव महोदय की अध्यक्षता में आयोजित बैठक दिनांक 05.07.2019 में लिए गए निर्णयों की पालना में निम्नानुसार कार्यवाही प्रक्रियाधीन है :-

क्र० सं०	विवरण	संबंधित अधिकारीगण जिनको कार्यवाही की जानी है।
1	पुर ग्राम की पुनर्वास/पुनर्स्थापन के लिए सीएसआर के तहत विशेष योगदान प्रदान करने हेतु।	प्रबंधक, जिन्दल शॉ लि० पुर
2	पुर ग्राम में बनने वाले नए मकानों को सीबीआरआई की डिजाइन पर बनवाने की कार्यवाही के संबंध में।	1.मुख्य कार्यकारी अधिकारी, जिला परिषद, भीलवाडा 2.सचिव, यू०आई०टी० भीलवाडा 3.अ.अ. सा०नि०वि० भीलवाडा 4.आयुक्त, नगर परिषद भीलवाडा
3	प्रश्नगत प्रकरण के परिप्रेक्ष्य में पुर ग्राम की मिट्टी की जाँच करने हेतु।	उप निदेशक, कृषि विभाग, भीलवाडा
4	बैठक कार्यवाही विवरण में अंकित निर्देशों की पालना करने हेतु।	1.जिला पुलिस अधीक्षक, भीलवाडा 2.उपखण्ड मजिस्ट्रेट भीलवाडा 3.सचिव, नगर विकास न्यास, भीलवाडा 4.अधीक्षण अभियंता, खनिज विभाग, भीलवाडा 5.अधीक्षण अभियंता, सा०नि० वि० भीलवाडा 6. तहसीलदार, भीलवाडा 7.आयुक्त, नगर परिषद, भीलवाडा
5	1. उपनगर पुर के लघुकाल में ऐसे मकान जो पूर्णतया गिर चुके हैं तथा ऐसे आवासीय मकान/निर्माण संरचनाएँ जो गम्भीर रूप से क्षतिग्रस्त हैं, की जाँच कर असुरक्षित श्रेणी का प्रमाण पत्र जारी किए जाने हेतु कमेटी का गठन। उक्त कमेटी इन संरचनाओं को अन्यत्र विस्थापित होने हेतु व्यवहारिक दृष्टिकोण के साथ समुचित	इस कमेटी में निम्न सदस्य हैं:- 1.तहसीलदार, भीलवाडा 2.अधिशायी अभियंता, सा०नि०वि०,भीलवाडा 3. अधिशायी अभियंता, नगर परिषद,भीलवाडा

समझाईश कर तत्काल खाली करने हेतु एडवाईजरी जारी करना।	
2. असुरक्षित श्रेणी का प्रमाण पत्र जारी होने पर नियमानुसार अधिकृत मूल्यांकन करना।	आयुक्त, नगर परिषद, भीलवाडा
3. असुरक्षित श्रेणी का प्रमाण पत्र जारी किए जाने के पश्चात् सुरक्षा के उच्च मापदण्डों को ध्यान में रखते हुए आवासीय मकान/निर्माण संरचनाओं को विधि सम्मत प्रक्रिया से हटाए जाने की कार्यवाही।	उपखण्ड मजिस्ट्रेट भीलवाडा निर्देशन में आयुक्त, नगर परिषद भीलवाडा द्वारा की जावेगी।
4. वर्तमान में मानसून की सक्रियता के दृष्टिगत उपनगर पुर क्षेत्र में किसी भी अप्रिय एवं अपरिहार्य परिस्थिति से निपटने के लिए त्वरित एवं यथोचित समाधान हेतु पूर्व में ही समस्त आवश्यक कार्यवाही एवं व्यवस्थाएँ की जाने की कार्यवाही।	1 उपखण्ड मजिस्ट्रेट भीलवाडा 2 तहसीलदार, भीलवाडा 3 आयुक्त, नगर परिषद, भीलवाडा 4. अधीक्षण अभियंता, सा0नि0वि0, भीलवाडा

10. ग्राम पुर के मकानों में आ रही दरारों के कारणों का अध्ययन करने के लिये वैज्ञानिकों की टीम का दिनांक 18.08.2019 से 20.08.2019 तक यात्रा का कार्यक्रम प्रस्तावित है। वैज्ञानिकों द्वारा अध्ययन कर रिपोर्ट अनुसार प्रकरण में अग्रिम कार्यवाही हेतु निर्णय लिया जावेगा।

  
 उपखण्ड मजिस्ट्रेट,  
 भीलवाडा



राजस्थान राज्य प्रदूषण नियंत्रण मण्डल  
18, पन्नाधाय सर्किल के पास, आजाद नगर, भीलवाड़ा

राप्रनिम/क्षैका भील/जनरल/एल-4/2206  
जिला मजिस्ट्रेट,  
भीलवाड़ा (राज.)

दिनांक:- 14/08/2019

विषय:- प्रार्थना पत्र 288/2019 श्री बालकृष्ण व्यास बनाम राजस्थान राज्य व अन्य में माननीय राष्ट्रीय हरित अधिकरण, प्रधान पीठ, नई दिल्ली के आदेश दिनांक 03.05.2019 की पालना के सम्बन्ध में।

संदर्भ:- आपके कार्यालय का पत्र क्रमांक न्याय/2019/26327 दिनांक 08.08.2019 इस कार्यालय में ई-मेल से प्राप्त दिनांक 13.08.2019।

महोदय,

उपरोक्त विषयान्तर्गत संदर्भित पत्र के क्रम में निवेदन है कि माननीय राष्ट्रीय हरित अधिकरण द्वारा प्रधान पीठ, नई दिल्ली जिस शिकायत के आधार पर परिवाद स्वीकार किया गया है वह इस कार्यालय को दिनांक 09.08.2019 को प्राप्त हुई। शिकायत पर विभाग की टिप्पणी परिशिष्ट 'अ' पर सुलभ संदर्भ हेतु संलग्न है।

इसी क्रम में लेख है कि राजस्थान राज्य प्रदूषण नियंत्रण मण्डल द्वारा वर्ष 2019 में उक्त खनन इकाई की परिवेशीय वायु गुणवत्ता प्रबोधन (AAQM-Ambient Air Quality Monitoring) का कार्य दिनांक 08.01.2019 को 5 स्थानों पर किया गया जिसमें 2 स्थानों पर यथा स्वीच यार्ड स्टेशन (PM<sub>10</sub>-142 µg/m<sup>3</sup>) एवं तिरंगा माइन पिट (PM<sub>10</sub>-162 µg/m<sup>3</sup>) पर नमूनों के विश्लेषण परिणाम विविक्त पदार्थ (10 माइक्रॉन से कम आकार) या PM<sub>10</sub> µg/m<sup>3</sup> हेतु निर्धारित मानक- 100 µg/m<sup>3</sup> से अधिक पाये गये (विश्लेषण प्रतिवेदनों की छायाप्रति परिशिष्ट 'ब' पर संलग्न है)। उद्योग द्वारा पेड मोनिटरिंग हेतु प्राप्त आवेदन पर राज्य मण्डल द्वारा दिनांक 12.03.2019 को उक्त दोनों स्थानों पर पुनः परिवेशीय वायु गुणवत्ता हेतु नमूने एकत्रित किये गये (विश्लेषण प्रतिवेदनों की छायाप्रति परिशिष्ट 'स' पर संलग्न है)। जिसमें इकाई के लिए गये नमूनों के विश्लेषण परिणाम मानकों के अनुरूप पाये गये हैं।

वर्तमान में वर्षा ऋतु के कारण यदि खनन इकाई के परिवेशीय वायु गुणवत्ता नमूने एकत्रिकरण का कार्य किया जाता है तो लिये गये नमूनों का एवं उनके विश्लेषण परिणामों का रिप्रजेंटेशन उचित नहीं होगा। अतः राज्य मण्डल द्वारा वर्षा ऋतु के उपरान्त खनन कार्य से हो रहे प्रदूषण की जांच पुनः कर ली जावेगी।

अग्रिम एवं आवश्यक कार्यवाही हेतु सादर प्रेषित है।

भवदीय,

  
(महावीर मेहता)  
क्षेत्रीय अधिकारी

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. सदस्य सचिव, राजस्थान राज्य प्रदूषण नियंत्रण मण्डल, जयपुर।
2. उपखण्ड मजिस्ट्रेट, भीलवाड़ा।
3. अधीक्षण अभियन्ता, खनन एवं भू-विज्ञान विभाग, भीलवाड़ा।

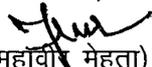
  
क्षेत्रीय अधिकारी

श्री बालकृष्ण व्यास की मूल शिकायत पर इस कार्यालय की बिन्दुवार टिप्पणी निम्नानुसार है :-

क्रसं.	शिकायत	टिप्पणी
1	यह कि प्रार्थी पुर, जिला-भीलवाडा का निवासी है जो अपने परिवार के साथ अपने पैतृक मकान पुर में निवास कर रहा था।	-
2	यह कि विगत कुछ वर्षों से जिंदल शॉ लिमिटेड, पुर, भीलवाडा द्वारा खनन के दौरान रात्रि व कभी कभी दोपहर में ब्लास्टिंग किये जाने से मेरे व आसपास के क्षेत्र में बने मकानों व सरकारी सम्पत्ति को नुकसान पहुंच रहा है जिस कारण मकानों की दीवारों में दरारें आ चुकी है, छत गिरने लगी है व मार्ग में बड़े खड्डे हो जाने से सडकें भी क्षतिग्रस्त हो चुकी है।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है। उक्त प्रकरण में ब्लास्टिंग एवं उससे होने वाले प्रभावों पर कार्यवाही करने हेतु खान एवं भू-विज्ञान विभाग सक्षम/अधिकृत है।
3	यह कि इस सम्बन्ध में मुझ प्रार्थी व मेरे गांव के अन्य व्यक्तियों व प्रबुद्धजनों द्वारा हम ग्राम वासियों को हुई व हो रही परेशानी का एक लिखित प्रार्थनापत्र/शिकायत आप श्रीमान के समक्ष प्रस्तुत की गयी थी।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।
4	यह कि आप श्रीमान द्वारा हमें आश्वस्त करते हुए सम्पूर्ण घटनाक्रम की जानकारी लेने व विस्तृत जांच रिपोर्ट प्रस्तुत करने हेतु श्रीमान उपखण्ड अधिकारी, भीलवाडा को अपने पत्रांक एफ 12-12(4) भीलवाडा/आरए/2018/965 दिनांक 26.07.2018 द्वारा आदेशित किया गया व हमें विश्वास दिलाया गया की जो भी दोषी होगा उसके खिलाफ कार्यवाही करते हुए आपको उचित मुआवजा दिलाये जाने का प्रयास किया जावेगा।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।
5	यह कि आपके पत्रांक 965 दिनांक 26.07.2018 की अनुपालना में श्रीमान उपखण्ड अधिकारी, भीलवाडा द्वारा अपनी विस्तृत जांच रिपोर्ट उनके कार्यालय के पत्रांक राजस्व/2018/7920-26 दिनांक 10.09.2018 द्वारा श्रीमान को प्रेषित करते हुए जिंदल शॉ लिमिटेड, पुर, भीलवाडा में किये जा रहे अवैध खनन व अवैध ब्लास्टिंग की रिपोर्ट प्रेषित की गई तथा श्रीमान उपखण्ड अधिकारी महोदय द्वारा उनके पत्रांक राजस्व/2018/7897-99 से लगायत 7904-05 दिनांक 10.09.2018 से खनिज अभियन्ता, खनिज विभाग, भीलवाडा, जिला वन अधिकारी वन विभाग, भीलवाडा, थानाधिकारी थाना-पुर/प्रतापनगर व तहसीलदार भीलवाडा को ग्राम पुर सरहदी क्षेत्र में जिंदल शॉ लिमिटेड द्वारा किये जा रहे अवैध खनन ब्लास्टिंग तथा अवैध खनन सामग्री को तुरन्त प्रभाव से रोकने हेतु निर्देशित किया गया था।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।
6	यह कि श्रीमान उपखण्ड अधिकारी महोदय की रिपोर्ट उपरान्त भी आज दिनांक तक जिंदल शॉ लिमिटेड, पुर, भीलवाडा द्वारा अवैध ब्लास्टिंग, अवैध खनन व अवैध खनन सामग्री का परिवहन लगातार बेबाक रूप से किया जा रहा है। जिसे तुरन्त रोका जाना आवश्यक है नहीं तो कोई बड़ी दुर्घटना कारित हो सकती है। जिसके लिए प्रशासन जिम्मेदार रहेगा।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।

7	यह कि प्रार्थी का घर तो इतना क्षतिग्रस्त हो गया है कि प्रार्थी को अपना घर खाली कर अपने परिवार के साथ भीलवाडा में किराये के मकान में रहने को मजबूर होना पड रहा है जिससे प्रार्थी का दैनिक दिनचर्या प्रभावित होने के साथ-साथ 10 हजार रूपये मासिक किराये व रोज-रोज अपने घर नौकरी हेतु पुर आने जाने का परिवहन व्यय लगभग 15000/-पन्द्रह हजार रूपये का आर्थिक भार उठाना पड रहा है।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।
8	यह कि जिंदल शॉ लिमिटेड, पुर भीलवाडा का मालिक एक प्रभावशाली, धनी व रुबेदार व्यक्ति होने से उसका प्रभाव प्रशासन व राजनेताओं पर भी है जिस कारण ही उसके गलत होने पर भी प्रशासन व सरकार उसका कुछ नहीं कर पा रही है। वह बेबाक रूप से अपने गलत कार्यों व उद्देश्यों को करता जा रहा है व गरीब जनता को भारी आर्थिक, मानसिक, भावनात्मक, जीवनसंकटापन्न हानि पहुंचाने को आतुर है।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।
9	यह कि श्रीमान जिंदल शॉ लिमिटेड द्वारा किये जा रहे अवैध खनन, अवैध ब्लास्टिंग व अवैध खनन सामग्री परिवहन पर तुरन्त रोक लगाई जावे। उसे उसके किये गये कृत्यों व सरकारी आदेशों को नहीं मानने के लिए उसके खिलाफ मुकदमा दर्ज करवाया जावे तथा मुझे हुई तथा लगातार हो रही आर्थिक हानि का मुआवजा दिलाया जावे। अन्यथा प्रार्थी को जिंदल शॉ लिमिटेड के साथ-साथ प्रशासन के विरुद्ध भी सक्षम न्यायालय में परिवाद प्रस्तुत किया जावेगा जिसके लिए प्रशासन स्वयं जिम्मेदार होगा। यदि कोई जनहानि होती है तो इसके लिए सिर्फ और सिर्फ प्रशासन जिम्मेदार होगा जो मुकदर्शक बने हो रहे अवैध कार्यों को देख रहा है व दोषियों को गलत कार्य करने हेतु प्रोत्साहित कर रहा है।	राजस्थान राज्य प्रदूषण नियंत्रण मण्डल से सम्बन्धित नहीं है।

टिप्पणी:-वर्तमान में वर्षा ऋतु के कारण यदि खनन इकाई के परिवेशीय वायु गुणवत्ता नमूने एकत्रिकरण का कार्य किया जाता है तो लिये गये नमूनों का एवं उनके विश्लेषण परिणामों का रिप्रजेन्टेशन उचित नहीं होगा। अतः राज्य मण्डल द्वारा वर्षा ऋतु के उपरान्त खनन कार्य से हो रहे प्रदूषण की जांच पुनः कर ली जावेगी।

भवदीय,  
  
 (महावीर मेहता)  
 क्षेत्रीय अधिकारी

FORM - X  
 RAJASTHAN STATE POLLUTION CONTROL BOARD  
 REPORT OF THE STATE BOARD ANALYST  
 (See Rule - 10)  
 Final Report

Report No. : 6342  
 Report On : 31/01/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 16/01/2019 from Shri Om Prakash Shandil, JSC, Central Laboratory, RSPCB Central Laboratory a sample of Ambient Air Quality of ~~Yashwantrao Chavan~~ ~~Plant - Pansil, Bhilwara District- Bhilwara~~ Collected from Ambient air Quality Monitoring and CCR Building Collected on 08/01/2019. The Sample was in a condition fit for analysis as reported below.

I further certify that I have analyzed the aforementioned sample on 31/01/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	95
2	Sulphur Dioxide as $\text{SO}_2$ $\mu\text{g}/\text{m}^3$	88
3	$\text{NO}_2$ $\mu\text{g}/\text{m}^3$	4.2

The condition of the seals, fastening and container on receipt was as follows : Satisfactory

Reported This On 31/01/2019

ANALYST  
 RAJASTHAN STATE POLLUTION CONTROL BOARD  
 Head Office (Central Laboratory)  
 Institutional Area, Palana District  
 Jaipur-302 004  
 Phone: 0141-5159618, 5159617  
 Fax: 0141-5159615

FORM - X  
RAJASTHAN STATE POLLUTION CONTROL BOARD  
REPORT OF THE STATE BOARD ANALYST  
(See Rule - 10)  
Final Report

Report No. : 5343

Report On : 31/01/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub-Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 16/01/2019 from Shri Om Prakash Sharda, JSO, Central Laboratory, RSPCB Central Laboratory a sample of Ambient Air Quality of M/S. Jindal Saw Limited, Plant - , Tehsil- Bhilwara, District- Bhilwara Collected from Ambient Air Quality Monitoring at SWP/1/17/3 Station(220 KVA Station) Collected on 16/01/2019. The Sample was in a condition fit for analysis as follows below :-

I further certify that I have analyzed the aforementioned sample on 31/01/2019 and declare the result of the analysis as follows :-

S. No.	Parameters	Result
1	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	142
2	Sulphur Dioxide as SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	71
3	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	452

Condition of the seals, fastening and container on receipt was as follows : Intact  
Signed This On 31/01/2019

BOARD ANALYST

Rajasthan State Pollution Control Board  
Head Office (Central Laboratory)  
4, Institutional Area, Jhalana Dohamuri  
Jaipur-302 604  
Phone: 0141-5159618, 5159607  
Fax: 0141-5159605

**FORM - X**  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
**REPORT OF THE STATE BOARD ANALYST**  
(See Rule - 10)  
Final Report

Report No. : 6344

Report On : 31/01/2019

I hereby certify that I S. N. Tikliwal, State Board Analyst duly appointed under sub Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 16/01/2019 from Shri Om Prakash Sharda, J.S.C. Central Laboratory, RSPCB Central Laboratory a sample of Ambient Air Quality of ~~MS Jindal~~ ~~Industrial Plant - 7, Tonsi - Bhilwara, District - Bhilwara~~ Collected from Ambient Air Quality Monitoring Station, Guest House Collected on 08/01/2019. The Sample was in a condition fit for analysis as reported below.

I further certify that I have analyzed the aforementioned sample on 31/01/2019 and declare the result of the analysis as follows:

Sl. No.	Parameters	Result
1	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	77
2	Sulphur Dioxide as $\text{SO}_2$ $\mu\text{g}/\text{m}^3$	8.5
3	$\text{NO}_2$ $\mu\text{g}/\text{m}^3$	41.5

The condition of the seals, fastening and container on receipt was as follows: Satisfactory

Analysed This On 31/01/2019

S. N. Tikliwal  
BOARD ANALYST

Rajasthan State Pollution Control Board

Head Office (Central Laboratory)

4, Institutional Area, Jhalana Deemed to be

University, Jaipur-302 004

Phone: 0141-233618, 233617

Fax: 0141-5159005

FORM - X  
RAJASTHAN STATE POLLUTION CONTROL BOARD  
REPORT OF THE STATE BOARD ANALYST  
(See Rule - 10)  
Final Report

Report No. : 3345

Report On : 31/01/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub Section 2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 16.01.2019 from Dr. Narain Dhoot, RSPCB Central Laboratory, a sample of Ambient Air Quality of ~~3475~~ ~~Central Steel Limited, Plant - 3, City - Dhedwas, Tehsil - Bhilwara, District - Bhilwara, M.L. No. - 631/05~~ collected from Ambient Air Quality Monitoring near ~~Tiranga Mine Pit~~ Collected on ~~16.01.2019~~. The Sample was in condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 31/01/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	162
2	Sulphur Dioxide as SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	86
3	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	357
4	Suspended Particulate Matter $\mu\text{g}/\text{m}^3$	665

The condition of the seals, fastening and container on receipt was as follows :- intact

Signed This On 31/01/2019

S. N. TIKKI WAL  
BOARD ANALYST

Rajasthan State Pollution Control Board  
Head Office (Central Laboratory)  
4, Institutional Area, Jhalana Deemah  
Jaipur-302 004  
Phone: 0141-5159648, 5159607  
Fax: 0141-5159665

FORM - K  
RAJASTHAN STATE POLLUTION CONTROL BOARD  
REPORT OF THE STATE BOARD ANALYST  
(See Rule - 10)  
Final Report

Report No. : 5346

Report On : 31/01/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 16/01/2019 from Dr. Narain Bhoat, JSC, Central Laboratory, RSPCB Central Laboratory a sample of Ambient Air Quality of ~~MS-Jindal Saw~~ ~~Unit~~, Phase - , City- Dhedwas Tensil- Bhiwara, District- Bhiwara M.L. No- 631/05 Collected from ~~Ambient Air Quality Monitoring near Bhiwara Mine Pit (South)~~ Collected on ~~08/01/2019~~. The sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 31/01/2019 and declare the result of the analysis as follows :-

Sl. No.	Parameters	Result
1	Particulate Matter (PM10) $\mu\text{g}/\text{m}^3$	94
2	Sulphur Dioxide as SO <sub>2</sub> $\mu\text{g}/\text{m}^3$	63
3	NO <sub>2</sub> $\mu\text{g}/\text{m}^3$	352
4	Suspended Particulate Matter $\mu\text{g}/\text{m}^3$	464

The condition of the seals, fastening and container on receipt was as follows : Satisfactory  
Signed This On 31/01/2019

  
BOARD ANALYST

Rajasthan State Pollution Control Board  
Head Office (Central Laboratory)  
E. Institutional Area, Jhalana Dohran,  
Jaipur-302 015  
Phone: 0141-515964, 515965  
Fax: 0141-515965

**FORM - X**  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
**REPORT OF THE STATE BOARD ANALYST**

(See Rule - 10)  
**Final Report**

Report No. : 6471

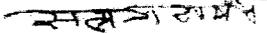
Report On : 26/03/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 18/03/2019 from Shri Mahesh Kumar Singh, SO, Bhilwara, RSPCB Bhilwara a sample of Ambient Air Quality of M/S Jindal Saw Limited, Plant - , Tehsil- Bhilwara, District- Bhilwara Collected from Ambient Air Quality Monitoring near Tiranga Mine pit Collected on 12/03/2019. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 26/03/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Nitrogen Dioxide as NO <sub>2</sub> µg/M <sup>3</sup>	32.4
2	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	79
3	Sulphur Dioxide as SO <sub>2</sub> ug/m <sup>3</sup>	7.1
4	Suspended Particulate Matter µg/m <sup>3</sup>	332

The condition of the seals, fastening and container on receipt was as follows : **Intact**  
Signed This On 26/03/2019

  
**BOARD ANALYST**

Rajasthan State Pollution Control Board  
Head Office (Central Laboratory)  
4, Institutional Area, Jhalana Doongari,  
Jaipur-302 004  
Phone: 0141-5159648, 5159607  
Fax: 0141-5159665

**FORM - X**  
**RAJASTHAN STATE POLLUTION CONTROL BOARD**  
**REPORT OF THE STATE BOARD ANALYST**

(Sec Rule - 10)  
**Final Report**

Report No. : 6470

Report On : 26/03/2019

I hereby certify that I S. N. Tikkiwal, State Board Analyst duly appointed under sub Section(2) of Section 29 of the Air (Prevention & Control of Pollution) Act, 1981 received on the 18/03/2019 from Shri Mahesh Kumar Singh, SO, Bhilwara, RSPCB Bhilwara a sample of Ambient Air Quality of M/S Jindal Saw Limited, Plant: , Tehsil: Bhilwara, District: Bhilwara Collected from Ambient Air Quality Monitoring near Switch Yard Station (220KVA Station) Collected on 12/03/2019. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 26/03/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Nitrogen Dioxide as NO <sub>2</sub> µg/M <sup>3</sup>	38.5
2	Particulate Matter (PM <sub>10</sub> ) µg/m <sup>3</sup>	90
3	Sulphur Dioxide as SO <sub>2</sub> µg/m <sup>3</sup>	8.2

The condition of the seals, fastening and container on receipt was as follows : Intact  
Signed This On 26/03/2019

**BOARD ANALYST**

Rajasthan State Pollution Control Board  
Head Office (Central Laboratory )  
4, Institutional Area, Jhalana Doongari,  
Jaipur-302 004  
Phone: 0141-5159648,5159607  
Fax: 0141-5159665



राजस्थान सरकार  
ग्रामीण विकास एवं पंचायती राज विभाग  
(पंचायती राज)

विकास खण्ड शासन सचिववालय जयपुर दुरभाष 0141-2227275, ईमेल - seprd1235@gmail.com  
एफ.4(777)परावि/पीसी/पुर विलेज भीलवाडा/2019/ 1692 जयपुर, दिनांक - 20/07/19

बैठक कार्यवाही विवरण

जिंदल शा.लि. कम्पनी द्वारा खनन क्षेत्र में की जा रही ब्लास्टिंग के कारण पुर गांव जिला भीलवाडा के आवासीय मकानों/निर्माण संरचनाओं में दरारे आने के कारण ग्रामवासियों की जान-माल की सुरक्षा, नुकसान आकलन एवं अन्य तथ्यों पर चर्चा हेतु दिनांक 05.07.2019 को श्रीमान मुख्य सचिव महोदय राजस्थान की अध्यक्षता में बैठक आयोजित हुई जिसमें उपस्थित अधिकारियों की सूची परि. 1 पर सलग्न है।

बैठक में जिला कलेक्टर भीलवाडा एवं जिंदल सा.लि. के अधिकारियों द्वारा विस्तार से प्रस्तुतीकरण दिया गया एवं चर्चा उपरांत निम्न निर्णय लिये गये:-

1. पुर ग्राम की समस्या के मूल कारण का तकनीकी विशेषज्ञों से जांच करवाई जावे। जांच दल में निम्न विशेषज्ञ होंगे:-
  - CSIR Building Research Institute, Roorkee for Structure issues.
  - National Institute of Hydrology, Roorkee for Hydrology issues.
  - IIT Roorke for Geotechnical issues.
  - CMFIR for Mining & Blasting issues.
  - MBM Engineering College Jodhpur
2. उक्त विशेषज्ञों का जांच दल जिला प्रशासन (नोडल एजेन्सी) के पर्यवेक्षण में कार्य करेगा।
3. ऐसे मकान जो पूर्णतया गिर चुके हैं उनके परिवारों के मुखिया/स्वामित्वधारी को नियमानुसार डीएमएफटी फंड से मुआवजा दिया जाएगा। मुआवजे का निर्धारण नवीन भूमि अर्जन पुनर्वास एवं पुनर्व्यवस्थापन में उचित प्रतिकर और पारदर्शिता का अधिकार अधिनियम 2013 के तहत निर्धारित किया जाएगा।

4. ऐसे मकान जो गंभीर रूप से क्षतिग्रस्त है उनको तत्काल खाली करवाया जाए एवं उनके परिवारों के मुखिया/स्वामित्वधारी को नियमानुसार मुआवजा दिया जाना उचित होगा।
5. पुर ग्राम के पुर्नवास एवं पुर्नस्थापन हेतु जिला प्रशासन द्वारा जो भूमि चिन्हित की गई उसे खारिज कर उसके स्थान पर डीएमएफटी फंड से, मुआवजा राशि नियमानुसार एक मुश्त पैकेज के रूप में दी जाएगी।
6. पुर ग्राम में बनने वाले नए मकानों को सीबीआरआई की डिजाईन पर बनवाया जाए ताकि सतत/स्थायी निर्माण सरंचनाएं तैयार हो सकें। साथ ही पुर ग्राम की मिट्टी की जाच संबंधित संस्था से करवाने के निर्देश दिये गये।
7. पुर ग्राम की पुर्नवास/पुर्नस्थापन के लिए जिंदल शॉ लि. को सीएसआर के तहत विशेष योगदान प्रदान करने का अनुरोध किया गया।
8. बैठक में आये तकनीकी विशेषज्ञों को यात्रा व्यय का नियमानुसार भुगतान जिला कलेक्टर द्वारा डी.एम.एफ.टी. से किया जावे।

अंत में बैठक सधन्यवाद समाप्त हुई

  
 (मुकेश माहेश्वरी)  
 अधीक्षण अभियंता

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है:-

1. वरि० उप सचिव, मुख्य सचिव, राजस्थान सरकार
2. निजी सचिव, अतिरिक्त मुख्य सचिव, खान विभाग
3. निजी सचिव, अतिरिक्त मुख्य सचिव, ग्राविपंराज
4. निजी सचिव, अतिरिक्त मुख्य सचिव, वित्त विभाग
5. निजी सचिव, प्रमुख शासन सचिव, राजस्व विभाग
6. निजी सचिव, शासन सचिव एवं आयुक्त, पंराज
7. उपखण्ड अधिकारी, भीलवाडा
8. निदेशक, खान सुरक्षा विभाग, अजमेर
9. जिन्दल शा. क० व उनके प्रतिनिधि
10. निदेशक, GSI वैस्टर्न रीजन, जयपुर व उनके प्रतिनिधि
11. निदेशक CSIR-CIMFR धनबाद व उनके प्रतिनिधि
12. डॉ. एस.के.परिहार, प्रो० खनन इंजीनियरिंग विभाग जोधपुर
13. अतिरिक्त निदेशक, जियोलॉजी, माईनिंग एवं जियोलॉजी, उदयपुर।

  
 अधीक्षण अभियंता

राजस्थान सरकार

कार्यालय जिला कलक्टर एवं जिला मजिस्ट्रेट, भीलवाडा

दिनांक 22/07/2019

क्रमांक न्याय / 2019 / 26052

प्रेषिते,

1. मुख्य कार्यकारी अधिकारी, पुर, परिषद, भीलवाडा
2. सचिव, नगर विकास न्यास, भीलवाडा
3. अधीक्षण अभियंता, सार्वजनिक निर्माण विभाग, भीलवाडा
4. आयुक्त, नगर परिषद, भीलवाडा

विषय :- पुर के मकानों में दरारों के संबंध में।

उपर्युक्त विषयान्तर्गत उपनगर पुर के क्षतिग्रस्त संरचनाओं, दरारें आने के कारण उपनगर क्षेत्र के निवासियान की जान माल की सुरक्षा, नुकसान के आकलन एवं अन्य तथ्यों के क्रम में माननीय मुख्य सचिव महोदय, राजस्थान जरापुर की अध्यक्षता में दिनांक 05.07.2019 को आयोजित बैठक का कार्यवाही विवरण पत्र क्रमांक 1692 दिनांक 20.07.2019 द्वारा प्राप्त हुआ है। उक्त कार्यवाही विवरण के बिन्दू संख्या 06 में पुर ग्राम में बनने वाले नए मकानों का सीबीआरआई की डिजाईन पर बनवाया जाने हेतु निर्देश प्राप्त हुए हैं, जिसकी प्रति संलग्न है।

अतः पुर ग्राम में बनने वाले नए मकानों को सीबीआरआई की डिजाईन पर बनवाया जाए, ताकि सतत/स्थायी निर्माण संरचनाएँ तैयार हों इसकी पूर्ण रखा से पालना सुनिश्चित की जाकर कार्ययोजना से अधोहस्ताक्षरकर्ता को अवगत करावे।

संलग्न:- उक्तानुसार

21/3/501  
जिला मजिस्ट्रेट  
भीलवाडा

प्रतिलिपि :- सूचनार्थ/नियमानुसार आवश्यक कार्यवाही हेतु

1. जिला पुलिस अधीक्षक, भीलवाडा
2. समस्त उपखण्ड मजिस्ट्रेट भीलवाडा
3. अधीक्षण अभियंता, खनिज विभाग, भीलवाडा
4. समस्त सहसीलादार, भीलवाडा
5. समस्त जिला स्तरीय अधिकारीगण जिला भीलवाडा

21/3/501  
जिला मजिस्ट्रेट  
भीलवाडा

राजस्थान सरकार  
कार्यालय जिला कलक्टर एवं जिला मजिस्ट्रेट, भीलवाडा

दिनांक 22.07.2019

क्रमांक : न्याय / 2019 / 26233

प्राप्ति.

उप निदेशक,  
कृषि विभाग, भीलवाडा

विषय :- पुर के मकानों में दरारों के संबंध में।

उपर्युक्त विषयान्तर्गत उपनगर पुर के क्षतिग्रस्त संरचनाओं, दरार आने के कारण उपनगर क्षेत्र के निवासियान की जान माल की सुरक्षा, पुनर्सान के आकलन एवं अन्य तथ्यों के क्रम में माननीय मुख्य सचिव महोदय, राजस्थान जयपुर की अध्यक्षता में दिनांक 05.07.2019 को आयोजित बैठक का कार्यवाही विवरण पत्र क्रमांक 1692 दिनांक 20.07.2019 द्वारा प्राप्त हुआ है। उक्त कार्यवाही विवरण के बिन्दू संख्या 06 में पुर ग्राम की मिट्टी की जाँच करवाने के निदेश प्राप्त हुए हैं जिसकी प्रति संलग्न हैं।

अतः पुर ग्राम की मिट्टी की जाँच प्रश्नगत प्रकरण के परिप्रेक्ष्य में उक्त रिपोर्ट अविलम्ब अधोहस्ताक्षरकर्ता को प्रस्तुत करें।

संलग्न:- उक्तानुसार

प्रतिलिपि:- सुचनाथ

1. जिला पुलिस अधीक्षक, भीलवाडा
2. उपखण्ड मजिस्ट्रेट भीलवाडा
3. तहसीलदार, भीलवाडा
4. आयुक्त, नगर परिषद, भीलवाडा

21/07/19  
जिला मजिस्ट्रेट  
भीलवाडा

21/07/19  
जिला मजिस्ट्रेट  
भीलवाडा

राजस्थान सरकार  
कार्यालय जिला कलेक्टर एवं जिला मजिस्ट्रेट, भीलवाडा

दिनांक 22/07/2019

क्रमांक : न्याय / 2019 / 2033

प्रति,

उप निदेशक,

पुलिस विभाग, भीलवाडा

विषय :- पुर के मकानों में दरारों के संबंध में।

पुलिस विभागान्तर्गत उपनगर पुर के क्षतिग्रस्त संरचनाओं, दरार आदि के कारण उपनगर क्षेत्र के निवासियों की जान माल की सुरक्षा, सुव्यवस्था के आकलन एवं अन्य तथ्यों के क्रम में माननीय मुख्य सचिव महोदय, राजस्थान जयपुर की अध्यक्षता में दिनांक 05.07.2019 को आयोजित बैठक का कार्यवाही विवरण पत्र क्रमांक 1692 दिनांक 20.07.2019 द्वारा प्राप्त हुआ है। उक्त कार्यवाही विवरण पत्र बिन्दू संख्या 06 में पुर ग्राम की मिट्टी की जाँच करवाने का निदेश प्राप्त हुए है जिसकी प्रति संलग्न है।

अतः पुर ग्राम की मिट्टी की जाँच प्रश्नगत प्रकरण के परिप्रेक्ष्य में कर

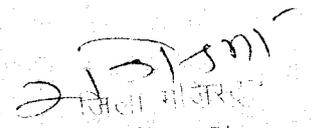
रिपोर्ट अविलम्ब अर्थात् इस्ताक्षरकर्ता को प्रस्तुत करें।

संलग्न:- उक्तानुसार

प्रतिलिपि:- सुचिन्तित

1. जिला पुलिस अधीक्षक, भीलवाडा
2. उपखण्ड मजिस्ट्रेट भीलवाडा
3. तहसीलदार, भीलवाडा
4. आयुक्त, नगर परिषद, भीलवाडा

  
जिला मजिस्ट्रेट  
भीलवाडा

  
जिला मजिस्ट्रेट  
भीलवाडा