



City of Garden Ridge

9400 Municipal Parkway
Garden Ridge, Texas 78266-2600
(210) 651-6632
Fax (210) 651-9638

**AGENDA
REGULAR SESSION
GARDEN RIDGE QUARRY COMMISSION MEETING
Monday, November 14, 2016 at 6:00 p.m.**

The Garden Ridge City Quarry Commission will meet in regular session on Monday, November 14, 2016 at 6:00 p.m. in the City Council Chambers, 9400 Municipal Parkway, Garden Ridge, Texas. This is an open meeting, open to the public, subject to the Open Meetings Law of the State of Texas, and as required by law, notice is hereby posted on or before November 10, 2016 before 5:00 p.m., providing time, place, date and agenda thereof. The meeting facility is wheelchair accessible and accessible parking spaces are provided. Requests for accommodations or interpretative services must be made 48 hours prior to this meeting.

1. Call to Order :
2. Roll Call:
3. Approval of Minutes:
 - a. September 12, 2016 Joint City Council and Quarry Commission Meeting
 - b. September 12, 2016 Regular Quarry Commission Meeting

4. Citizens Comments:

Rules for Citizen's Participation:

The Quarry Commission welcomes citizen participation and comments at all of their Commission Meetings. As a courtesy to your fellow citizens and out of respect to our elected officials, we request that if you speak, that you please follow these guidelines.

- a. Direct your comments to the entire Commission, not to an individual member, nor to the audience.
- b. Show the Commission the same respect and courtesy that you would like to be shown.
- c. Limit remarks to three (3) minutes per citizen during Item 4 and to three (3) minutes per citizen during Item 6.
- d. Citizens' comments will be limited to one (1) hour in Item 4 and thirty (30) minutes in Item 6.
- e. Citizen comments may be deferred to a specific Business Item set forth in Section 5, below, if such comments pertain to such Business Item

NOTE: The Texas Open Meetings Act permits a member of the public or a member of the governmental body to raise a subject that has not been included in the notice for the meeting.

*However, any discussion of the subject **must be limited** to a proposal to place the subject on the agenda for a future meeting and any response to a question posed to the Commission is limited to either a statement of specific factual information or a recitation of existing policy. TEX. GOV'T CODE § 551.042.*

5. Business Items:

The City Quarry Commission may discuss, consider, and /or take possible action for possible recommendation to the City Council for the following items:

- a. Review and discussion on the monthly Hanson Quarry blasting analysis data reported by Vibratex. Discussion with Hanson Servtex and Blasting contractors, on recent quarry operations, including any unusual blasts that occurred during reported month/s and/or current month.
- b. Review individual citizen blast report/s, follow up on citizen blast report/s and/or assign Quarry Commission member contact with citizen/s, as necessary.
- c. Discussion on number of, placement and location of monitors and other matters related to monitoring of blasts by Vibratex and notification to residents of monitor placements.
- d. Discussion on timely submission of Partial Exemption Permit applications.
- e. Vacant Quarry Commission position with term of office expiring September 30, 2018.
 - i. Interview possible candidates
 - ii. Consideration of recommendation to the City Council
- f. Nominations and vote on:
 - i. Quarry Commission Chair
 - ii. Quarry Commission Vice-Chair
- g. Discuss Grapevine article topics and future author/s of articles.
- h. Discuss future training sessions.

6. Citizen's Participation: - 3 minute limit per citizen.
See "Rules for Citizen's Participation" under Item 4.

7. Adjournment:

AGENDA NOTICES:

Decorum Required:

Any disruptive behavior, including shouting or derogatory statements or comments may be ruled out of order by the Presiding Officer. Continuation of this type of behavior could result in a request by the Presiding Officer that the individual leave the meeting, and if refused, an order of removal.

Action by Commission Authorized:

The City Quarry Commission may vote and/or act upon any item within this Agenda. The Commission reserves the right to retire into executive session concerning any of the items listed on this Agenda, pursuant to and in accordance with Texas Government Code Section 551.071, to seek the advice of its attorney about pending or contemplated litigation, settlement offer or on a matter in which the duty of the attorney to the governmental body under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas conflict with the Open Meetings Act and may invoke this right where the City Attorney, the Mayor or a majority of the Governing Body deems an executive session is necessary to allow privileged consultation between the City Attorney and the governing body, if considered necessary and legally justified under the Open Meetings Act. The City Attorney may appear in person, or appear in executive session by conference call in accordance with applicable state law.

Executive Sessions Authorized:

This agenda has been reviewed and approved by the City's legal counsel and the presence of any subject in any Executive Session portion of the agenda constitutes a written interpretation of Texas Government Code Chapter 551 by legal counsel for the governmental body and constitutes an opinion by the attorney that the items discussed therein may be legally discussed in the closed portion of the meeting considering available opinions of a court of record and opinions of the Texas Attorney General known to the attorney. This provision has been added to this agenda with the intent to meet all elements necessary to satisfy Texas Government Code Chapter 551.144(c) and the meeting is conducted by all participants in reliance on this opinion.

Attendance By Other Elected or Appointed Officials:

It is anticipated that members of other city board, commissions and/or committees may attend the meeting in numbers that may constitute a quorum of the other city boards, commissions and/or committees. Notice is hereby given that the meeting, to the extent required by law, is also noticed as a meeting of the other boards, commissions and/or committees of the City, whose members may be in attendance. The members of the boards, commissions and/or committees may participate in discussions on the same items listed on the agenda, which occur at the meeting, but no action will be taken by such in attendance unless such item and action is specifically provided for on an agenda for that board, commission or committee subject to the Texas Open Meetings Act.


Shelley Goodwin, TMRC
City Secretary

This is to certify that I, Shelley Goodwin, posted this Agenda at 10:00 am on November 10, 2016 on the bulletin board located at the entrance to the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas.


Shelley Goodwin, TMRC
City Secretary



City of Garden Ridge

9400 Municipal Parkway
Garden Ridge, Texas 78266-2600
(210) 651-6632
Fax (210) 651-9638

MINUTES OF CITY COUNCIL AND QUARRY COMMISSION JOINT MEETING, September 12, 2016

City Council Members Present:

Mayor Nadine Knaus
Mayor Pro-Tem John McCaw
Councilmember Todd Arvidson
Councilmember Bryan Lantzy
Councilmember Shelby Trial

Member Absent:

Councilmember Larry Thompson

Quarry Commission Members Present:

Chairman Mike Shands
Commissioner Jerry Barucky
Commissioner Albert Haddad
Commissioner Richard Holloway
Commissioner Johnell Holly
Ex-Officio Member Councilmember Bryan Lantzy

Member Absent:

Vice Chairman Wayne Mudge
Commissioner Jim Morgan

City Staff Present:

Nancy Cain, City Administrator
Cynthia Trevino, City Attorney
Shelley Goodwin, City Secretary

1. Call to Order

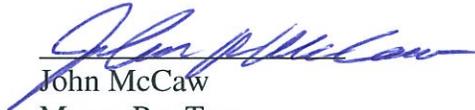
With a quorum of the City Council and Quarry Commission members present, Mayor Knaus called the joint meeting of the Garden Ridge City Council and Quarry Commission to order at 6:00 p.m. on Monday, September 12, 2016, in the City Council Chambers of the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas 78266.

limit from 75% to 70% and the Ordinance reference from 34-052012 to 34-082012. The City Council voted four (4) for and none (0) opposed. The motion carried unanimously.

7. **Citizen's Participation:** - 3 minute limit per citizen.
No one wished to speak.

8. **Adjournment:**

There being no further business, the Monday, September 12, 2016 Garden Ridge City Council and Quarry Commission joint meeting was adjourned at 7:18 p.m. by Mayor Knaus.


John McCaw
Mayor Pro Tem

Mike Shands
Quarry Commission Chair

ATTEST

Shelley Goodwin, TRMC
City Secretary



City of Garden Ridge

9400 Municipal Parkway
Garden Ridge, Texas 78266-2600
(210) 651-6632
Fax (210) 651-9638

MINUTES OF QUARRY COMMISSION REGULAR MEETING SEPTEMBER 12, 2016

Members Present:

Chairman Mike Shands
Commissioner Jerry Barucky
Commissioner Albert Haddad
Commissioner Richard Holloway
Commissioner Johnell Holly

Member Absent:

Vice Chairman Wayne Mudge
Commissioner vacant position

City Staff Present:

Nancy Cain, City Administrator
Cynthia Trevino, City Attorney
Shelley Goodwin, City Secretary

1. Call to Order

With a quorum of the Quarry Commission Members present, Chairman Mike Shands called the regular meeting of the Garden Ridge Quarry Commission to order at 6:00 p.m. on Monday, September 12, 2016 in the City Council Chambers of the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas 78266.

2. Approval of Minutes:

a) August 8, 2016 Regular Quarry Commission Meeting

Motion: Upon motion made by Commissioner Holly and seconded by Commissioner Holloway to approve August 8, 2016 Quarry Commission Meeting Minutes. The Quarry Commission voted five (8) for, none (0) opposed. The motion carried unanimously.

3. Citizens Comments

No one wished to speak.

4. **Business Items:**

The City Quarry Commission may discuss, consider, and /or take possible action for possible recommendation to the City Council for the following items:

- a. **Review and discussion on the monthly Hanson Quarry blasting analysis data reported by Vibratech. Discussion with Hanson Servtex and Blasting contractors, on recent quarry operations, including any unusual blasts that occurred during reported month/s and/or current month.**

Geoffrey Rigsby of Vibra-Tech presented and discussed the August blast analysis. He stated that 12 blasts occurred during the month of August and none of the blast exceeded the limits of Ordinance 34. The highest ppv readings occurred on August 1, 2016 in Lower 1B, with .235 ppv recorded at the Warden property line. The strongest air blast occurring on August 29, 2016 with an overpressure of 116 recorded at the Warden residence. He also discussed the timing and shots.

The Quarry Commission reviewed the shots and the blast analysis.

Geoffrey Rigsby of Vibra-Tech explained the USBM graphs used in the shot and blast analysis.

- b. **Review individual citizen blast report/s, follow up on citizen blast report/s and/or assign Quarry Commission member contact with citizen/s, as necessary.**

The Quarry Commission reviewed the citizen blast reports that were received by Robert Kessler (4 reports), Olivia Cruz, and David Gordon.

Geoffrey Rigsby, Vibra-Tech, reviewed the shot reports for each citizen blast report received during the months of August.

- c. **Discussion on number of, placement and location of monitors and other matters related to monitoring of blasts by Vibratech and notification to residents of monitor placements.**

The Quarry Commission discussed the placement of the roving monitor. They encouraged residents who are interested in the placement of a monitor at the home to contact the City of Garden Ridge.

- d. **Vacant Quarry Commission position with term of office expiring September 30, 2018.**
 - i. **Interview possible candidates**
 - ii. **Consideration of recommendation to the City Council**

Nancy Cain, City Administrator, stated currently the City of Garden Ridge does not have any resumes of candidates for this vacancy.

- e. **Discuss Grapevine article topics and future author/s of articles.**

The Quarry Commission discussed the upcoming Grapevine article topic, which will be written by Commissioner Barucky.

f. Discuss future training sessions.

The Quarry Commission discussed future training sessions and did not recommend one for the November 14, 2016 Quarry Meeting.

5. Citizen's Participation: - 3 minute limit per citizen.

No one wished to speak.

6. Training Session – 30 minute limit

a. Blast Regression Analysis

Geoffrey Rigsby of Vibra-Tech reviewed and explained how the Blast Regression Analysis is formed.

7. Adjournment:

There being no further business, the Monday, August 8, 2016 Garden Ridge Quarry Commission regular meeting was adjourned at 8:12 p.m. by Chairman Shands.

Mike Shands
Quarry Commission Chair

ATTEST

Shelley Goodwin
City Secretary

| | | | | | | | | | | | |
|-----------------|----------------------|---|---------------------------------|--------------|--------------|-------------|--------------|------------|---------------|--------------|-------------------------------------|
| 08/01/16 | 08-01-16 1B | N 29° 38' 34.6" W 098° 17' 33.8" | CLEAR 91° S 10 | 13:30 | 0.235 | 19.2 | 113.0 | 968 | 250.00 | 1,075 | Warden Property Line |
| 08/01/16 | 08-01-16 1B | N 29° 38' 34.6" W 098° 17' 33.8" | CLEAR 91° S 10 | 13:30 | 0.395 | 20.8 | 112.0 | 968 | 250.00 | 1,296 | Warden - 21375 Gunther Grove |
| 08/01/16 | 08-01-16 1B | N 29° 38' 34.6" W 098° 17' 33.8" | CLEAR 91° S 10 | 13:30 | 0.050 | 6.1 | 103.0 | 968 | 250.00 | 2,151 | City Property Line |
| 08/01/16 | 08-01-16 1B | N 29° 38' 34.6" W 098° 17' 33.8" | CLEAR 91° S 10 | 13:30 | 0.060 | 7.4 | 101.0 | 968 | 250.00 | 4,388 | Michels - 9118 Tuscan Hills |
| 08/01/16 | 08-01-16 1B | N 29° 38' 34.6" W 098° 17' 33.8" | CLEAR 91° S 10 | 13:30 | 0.033 | 6.8 | 84.0 | 968 | 250.00 | 6,806 | Midla - 8724 Verano Drive |
| 08/02/16 | 08-02-16 3D | N 29° 38' 50.2" W 098° 17' 37.5" | CLEAR 91° S 8 | 11:52 | 0.108 | 7.0 | 111.0 | 990 | 923.00 | 2,557 | Warden Property Line |
| 08/02/16 | 08-02-16 3D | N 29° 38' 50.2" W 098° 17' 37.5" | CLEAR 91° S 8 | 11:52 | 0.143 | 9.4 | 110.0 | 990 | 923.00 | 2,765 | Warden - 21375 Gunther Grove |
| 08/02/16 | 08-02-16 3D | N 29° 38' 50.2" W 098° 17' 37.5" | CLEAR 91° S 8 | 11:52 | 0.095 | 7.4 | 103.0 | 990 | 923.00 | 3,696 | Michels - 9118 Tuscan Hills |
| 08/02/16 | 08-02-16 3D | N 29° 38' 50.2" W 098° 17' 37.5" | CLEAR 91° S 8 | 11:52 | 0.048 | 6.1 | 101.0 | 990 | 923.00 | 3,148 | City Property Line |
| 08/02/16 | 08-02-16 3D | N 29° 38' 50.2" W 098° 17' 37.5" | CLEAR 91° S 8 | 11:52 | 0.063 | 10.0 | 84.0 | 990 | 923.00 | 6,696 | Midla - 8724 Verano Drive |
| 08/03/16 | 08-03-16 S Wall B | N 29° 38' 13.5" W 098° 16' 43.8" | PT CLOUDY 87° SW 8 | 11:21 | NT | NT | NT | 637 | 1053.00 | 6,249 | City Property Line |
| 08/03/16 | 08-03-16 S Wall B | N 29° 38' 13.5" W 098° 16' 43.8" | PT CLOUDY 87° SW 8 | 11:21 | NT | NT | NT | 637 | 1053.00 | 9,282 | Michels - 9118 Tuscan Hills |
| 08/03/16 | 08-03-16 S Wall B | N 29° 38' 13.5" W 098° 16' 43.8" | PT CLOUDY 87° SW 8 | 11:21 | NT | NT | NT | 637 | 1053.00 | 11,392 | Midla - 8724 Verano Drive |
| 08/03/16 | 08-03-16 S Wall B | N 29° 38' 13.5" W 098° 16' 43.8" | PT CLOUDY 87° SW 8 | 11:21 | 0.065 | 8.5 | 114.0 | 637 | 1053.00 | 5,043 | Warden - 21375 Gunther Grove |

| | | | | | | | | | | | |
|----------|----------------------|-------------------------------------|-----------------------|-------|-------|------|-------|------|---------|--------|------------------------------|
| 08/03/16 | 08-03-16 S Wall B | N 29° 38' 13.5" W 098° 16' 43.8" | PT CLOUDY 87° SW 8 | 11:21 | 0.063 | 7.6 | 101.0 | 637 | 1053.00 | 3,720 | Holly - 9916 Trophy Oaks |
| 08/08/16 | 08-08-16 S Wall A | N 29° 38' 14.3" W 098° 16' 40.3" | CLEAR 96° SW 5 | 12:56 | NT | NT | NT | 610 | 1001.00 | 9,529 | Michels - 9118 Tuscan Hills |
| 08/08/16 | 08-08-16 S Wall A | N 29° 38' 14.3" W 098° 16' 40.3" | CLEAR 96° SW 5 | 12:56 | NT | NT | NT | 610 | 1001.00 | 11,682 | Midla - 8724 Verano Drive |
| 08/08/16 | 08-08-16 S Wall A | N 29° 38' 14.3" W 098° 16' 40.3" | CLEAR 96° SW 5 | 12:56 | 0.105 | 13.5 | 112.0 | 610 | 1001.00 | 5,232 | Warden - 21375 Gunther Grove |
| 08/08/16 | 08-08-16 S Wall A | N 29° 38' 14.3" W 098° 16' 40.3" | CLEAR 96° SW 5 | 12:56 | 0.058 | 7.4 | 100.0 | 610 | 1001.00 | 4,026 | Holly - 9916 Trophy Oaks |
| 08/08/16 | 08-08-16 S Wall A | N 29° 38' 14.3" W 098° 16' 40.3" | CLEAR 96° SW 5 | 12:56 | 0.023 | 3.8 | 11.9 | 610 | 1001.00 | 6,543 | City Property Line |
| 08/11/16 | 08-11-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 09.9" | PT CLOUDY 95° S 6 | 13:19 | NT | NT | NT | 1000 | 480.00 | 4,842 | City Property Line |
| 08/11/16 | 08-11-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 09.9" | PT CLOUDY 95° S 6 | 13:19 | 0.093 | 17.9 | 113.0 | 1000 | 480.00 | 3,898 | Warden - 21375 Gunther Grove |
| 08/11/16 | 08-11-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 09.9" | PT CLOUDY 95° S 6 | 13:19 | 0.043 | 13.2 | 111.0 | 1000 | 480.00 | 3,690 | Warden Property Line |
| 08/11/16 | 08-11-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 09.9" | PT CLOUDY 95° S 6 | 13:19 | 0.043 | 6.7 | 110.0 | 1000 | 480.00 | 4,414 | Cohen - 10041 Trophy Oaks |
| 08/11/16 | 08-11-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 09.9" | PT CLOUDY 95° S 6 | 13:19 | 0.078 | 19.2 | 95.0 | 1000 | 480.00 | 6,123 | Michels - 9118 Tuscan Hills |
| 08/12/16 | 08-12-16 4A | N 29° 38' 58.8" W 098° 17' 38.1" | CLEAR 98° S 6 | 14:03 | NT | NT | NT | 923 | 715.00 | 3,923 | City Property Line |
| 08/12/16 | 08-12-16 4A | N 29° 38' 58.8" W 098° 17' 38.1" | CLEAR 98° S 6 | 14:03 | 0.035 | 13.5 | 112.0 | 923 | 715.00 | 3,426 | Warden Property Line |
| 08/12/16 | 08-12-16 4A | N 29° 38' 58.8" W 098° 17' 38.1" | CLEAR 98° S 6 | 14:03 | 0.093 | 14.3 | 110.0 | 923 | 715.00 | 3,632 | Warden - 21375 Gunther Grove |

| | | | | | | | | | | | |
|----------|-------------|-------------------------------------|-----------------------|-------|-------|------|-------|------|--------|-------|------------------------------|
| 08/12/16 | 08-12-16 4A | N 29° 38' 58.8" W 098° 17' 38.1" | CLEAR 98° S 6 | 14:03 | 0.035 | 4.5 | 108.0 | 923 | 715.00 | 4,498 | Cohen - 10041 Trophy Oaks |
| 08/12/16 | 08-12-16 4A | N 29° 38' 58.8" W 098° 17' 38.1" | CLEAR 98° S 6 | 14:03 | 0.058 | 10.9 | 102.0 | 923 | 715.00 | 3,704 | Michels - 9118 Tuscan Hills |
| 08/19/16 | 08-19-16 3D | N 29° 38' 49.7" W 098° 17' 37.7" | CLOUDY 88° S 9 | 12:27 | 0.115 | 8.6 | 112.0 | 1200 | 923.00 | 2,506 | Warden Property Line |
| 08/19/16 | 08-19-16 3D | N 29° 38' 49.7" W 098° 17' 37.7" | CLOUDY 88° S 9 | 12:27 | 0.133 | 9.3 | 111.0 | 1200 | 923.00 | 2,713 | Warden - 21375 Gunther Grove |
| 08/19/16 | 08-19-16 3D | N 29° 38' 49.7" W 098° 17' 37.7" | CLOUDY 88° S 9 | 12:27 | 0.060 | 9.8 | 106.0 | 1200 | 923.00 | 3,575 | Cohen - 10041 Trophy Oaks |
| 08/19/16 | 08-19-16 3D | N 29° 38' 49.7" W 098° 17' 37.7" | CLOUDY 88° S 9 | 12:27 | 0.075 | 7.4 | 101.0 | 1200 | 923.00 | 3,682 | Michels - 9118 Tuscan Hills |
| 08/19/16 | 08-19-16 3D | N 29° 38' 49.7" W 098° 17' 37.7" | CLOUDY 88° S 9 | 12:27 | 0.043 | 7.4 | 101.0 | 1200 | 923.00 | 3,095 | City Property Line |
| 08/23/16 | 08-23-16 3E | N 29° 38' 54.4" W 098° 17' 38.3" | PT CLOUDY 88° S 14 | 12:06 | 0.038 | 20.8 | 103.0 | 1000 | 871.00 | 2,980 | Warden Property Line |
| 08/23/16 | 08-23-16 3E | N 29° 38' 54.4" W 098° 17' 38.3" | PT CLOUDY 88° S 14 | 12:06 | 0.083 | 9.6 | 101.0 | 1000 | 871.00 | 3,185 | Warden - 21375 Gunther Grove |
| 08/23/16 | 08-23-16 3E | N 29° 38' 54.4" W 098° 17' 38.3" | PT CLOUDY 88° S 14 | 12:06 | 0.043 | 11.4 | 101.0 | 1000 | 871.00 | 3,630 | Michels - 9118 Tuscan Hills |
| 08/23/16 | 08-23-16 3E | N 29° 38' 54.4" W 098° 17' 38.3" | PT CLOUDY 88° S 14 | 12:06 | 0.070 | 31.3 | 98.0 | 1000 | 871.00 | 4,053 | Cohen - 10041 Trophy Oaks |
| 08/23/16 | 08-23-16 3E | N 29° 38' 54.4" W 098° 17' 38.3" | PT CLOUDY 88° S 14 | 12:06 | 0.023 | 7.4 | 95.0 | 1000 | 871.00 | 3,503 | City Property Line |
| 08/24/16 | 08-24-16 4B | N 29° 39' 02.5" W 098° 17' 36.4" | PT CLOUDY 84° S 11 | 11:38 | 0.105 | 16.1 | 112.0 | 470 | 860.00 | 4,015 | Warden - 21375 Gunther Grove |
| 08/24/16 | 08-24-16 4B | N 29° 39' 02.5" W 098° 17' 36.4" | PT CLOUDY 84° S 11 | 11:38 | 0.100 | 23.8 | 112.0 | 470 | 860.00 | 3,807 | Warden Property Line |

| | | | | | | | | | | | |
|-----------------|------------------------------|---|-----------------------------|--------------|--------------|------------|--------------|------------|---------------|--------------|-------------------------------------|
| 08/24/16 | 08-24-16 4B | N 29° 39' 02.5" W 098° 17' 36.4" | PT CLOUDY 84° S 11 | 11:38 | 0.035 | 13.9 | 109.0 | 470 | 860.00 | 4,326 | City Property Line |
| 08/24/16 | 08-24-16 4B | N 29° 39' 02.5" W 098° 17' 36.4" | PT CLOUDY 84° S 11 | 11:38 | 0.083 | 17.2 | 106.0 | 470 | 860.00 | 4,871 | Cohen - 10041 Trophy Oaks |
| 08/24/16 | 08-24-16 4B | N 29° 39' 02.5" W 098° 17' 36.4" | PT CLOUDY 84° S 11 | 11:38 | 0.063 | 10.4 | 101.0 | 470 | 860.00 | 3,935 | Michels - 9118 Tuscan Hills |
| 08/26/16 | 08-26-16 4A | N 29° 38' 59.6" W 098° 17' 38.1" | PT CLOUDY 87° SE 1 | 11:58 | 0.070 | 13.2 | 113.0 | 923 | 630.00 | 3,507 | Warden Property Line |
| 08/26/16 | 08-26-16 4A | N 29° 38' 59.6" W 098° 17' 38.1" | PT CLOUDY 87° SE 1 | 11:58 | 0.100 | 11.4 | 112.0 | 923 | 630.00 | 3,713 | Warden - 21375 Gunther Grove |
| 08/26/16 | 08-26-16 4A | N 29° 38' 59.6" W 098° 17' 38.1" | PT CLOUDY 87° SE 1 | 11:58 | 0.060 | 12.8 | 110.0 | 923 | 630.00 | 4,579 | Cohen - 10041 Trophy Oaks |
| 08/26/16 | 08-26-16 4A | N 29° 38' 59.6" W 098° 17' 38.1" | PT CLOUDY 87° SE 1 | 11:58 | 0.040 | 11.9 | 106.0 | 923 | 630.00 | 3,999 | City Property Line |
| 08/26/16 | 08-26-16 4A | N 29° 38' 59.6" W 098° 17' 38.1" | PT CLOUDY 87° SE 1 | 11:58 | 0.070 | 12.5 | 103.0 | 923 | 630.00 | 3,720 | Michels - 9118 Tuscan Hills |
| 08/29/16 | 08-29-16 S Wall 0 | N 29° 38' 17.6" W 098° 16' 36.9" | CLOUDY 84° NE 13 | 14:39 | NT | NT | NT | 432 | 988.00 | 9,679 | Michels - 9118 Tuscan Hills |
| 08/29/16 | 08-29-16 S Wall 0 | N 29° 38' 17.6" W 098° 16' 36.9" | CLOUDY 84° NE 13 | 14:39 | 0.030 | 7.8 | 116.0 | 432 | 988.00 | 5,585 | Warden - 21375 Gunther Grove |
| 08/29/16 | 08-29-16 S Wall 0 | N 29° 38' 17.6" W 098° 16' 36.9" | CLOUDY 84° NE 13 | 14:39 | 0.045 | 5.1 | 112.0 | 432 | 988.00 | 5,283 | Cohen - 10041 Trophy Oaks |
| 08/29/16 | 08-29-16 S Wall 0 | N 29° 38' 17.6" W 098° 16' 36.9" | CLOUDY 84° NE 13 | 14:39 | 0.020 | 4.6 | 98.0 | 432 | 988.00 | 6,807 | City Property Line |
| 08/29/16 | 08-29-16 S Wall 0 | N 29° 38' 17.6" W 098° 16' 36.9" | CLOUDY 84° NE 13 | 14:39 | 0.028 | 6.2 | 84.0 | 432 | 988.00 | 4,333 | Holly - 9916 Trophy Oaks |
| 08/31/16 | 08-31-16 3D | N 29° 38' 49.2" W 098° 17' 37.8" | PT CLOUDY 89° E 6 | 13:40 | 0.130 | 14.7 | 109.0 | 990 | 923.00 | 2,455 | Warden Property Line |

| | | | | | | | | | | | |
|----------|-------------|-------------------------------------|----------------------|-------|-------|------|-------|-----|--------|-------|------------------------------|
| 08/31/16 | 08-31-16 3D | N 29° 38' 49.2" W 098° 17' 37.8" | PT CLOUDY 89° E 6 | 13:40 | 0.130 | 14.7 | 108.0 | 990 | 923.00 | 2,662 | Warden - 21375 Gunther Grove |
| 08/31/16 | 08-31-16 3D | N 29° 38' 49.2" W 098° 17' 37.8" | PT CLOUDY 89° E 6 | 13:40 | 0.055 | 9.1 | 103.0 | 990 | 923.00 | 3,525 | Cohen - 10041 Trophy Oaks |
| 08/31/16 | 08-31-16 3D | N 29° 38' 49.2" W 098° 17' 37.8" | PT CLOUDY 89° E 6 | 13:40 | 0.045 | 8.6 | 102.0 | 990 | 923.00 | 3,676 | Michels - 9118 Tuscan Hills |
| 08/31/16 | 08-31-16 3D | N 29° 38' 49.2" W 098° 17' 37.8" | PT CLOUDY 89° E 6 | 13:40 | 0.045 | 6.3 | 100.0 | 990 | 923.00 | 3,046 | City Property Line |



October 21, 2016

Mr. Mike Shands
Garden Ridge Quarry Commission
9400 Municipal Parkway
Garden Ridge, Texas 78266

4818 E. Ben White Blvd.
Suite 202
Austin, TX 78741

Phone 512.442.6464
Fax 512.442.6552

Dear Mr. Shands,

Enclosed is the analysis for the blasting conducted during the month of October 2016 at the Hanson Aggregates Quarry in Garden Ridge, Texas. Please place this information in your 2016 Blast Data Management Book.

At the request of the Garden Ridge Quarry Commission, Vibra-Tech, Inc. personnel used seismographs each day of blasting at various locations.

The attached report contains the original seismograph records obtained from the blasting along with a comparison of the recorded vibrations to the latest recommended U.S. Bureau of Mines (USBM) Variable Particle Velocity vs. Frequency Limits Report of Investigations (RI)-8507 (Nov. 1980).

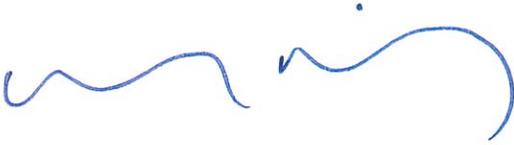
The recorded ground vibrations **satisfy** the Variable Particle Velocity vs. Frequency Limits recommended by the USBM RI-8507 (Nov. 1980), and the levels set forth in Garden Ridge City Ordinance 34.

The recorded air-borne effects **satisfy** the recommended levels set forth in the USBM RI-8485 (Nov. 1980), and the levels set forth in Garden Ridge City Ordinance 34.

If there are any additional questions, please contact the Quarry Commission, Mike Shands at 210-257-0868, or attend the Quarry Commission meeting held the 2nd Monday of each month at 7:00 p.m.

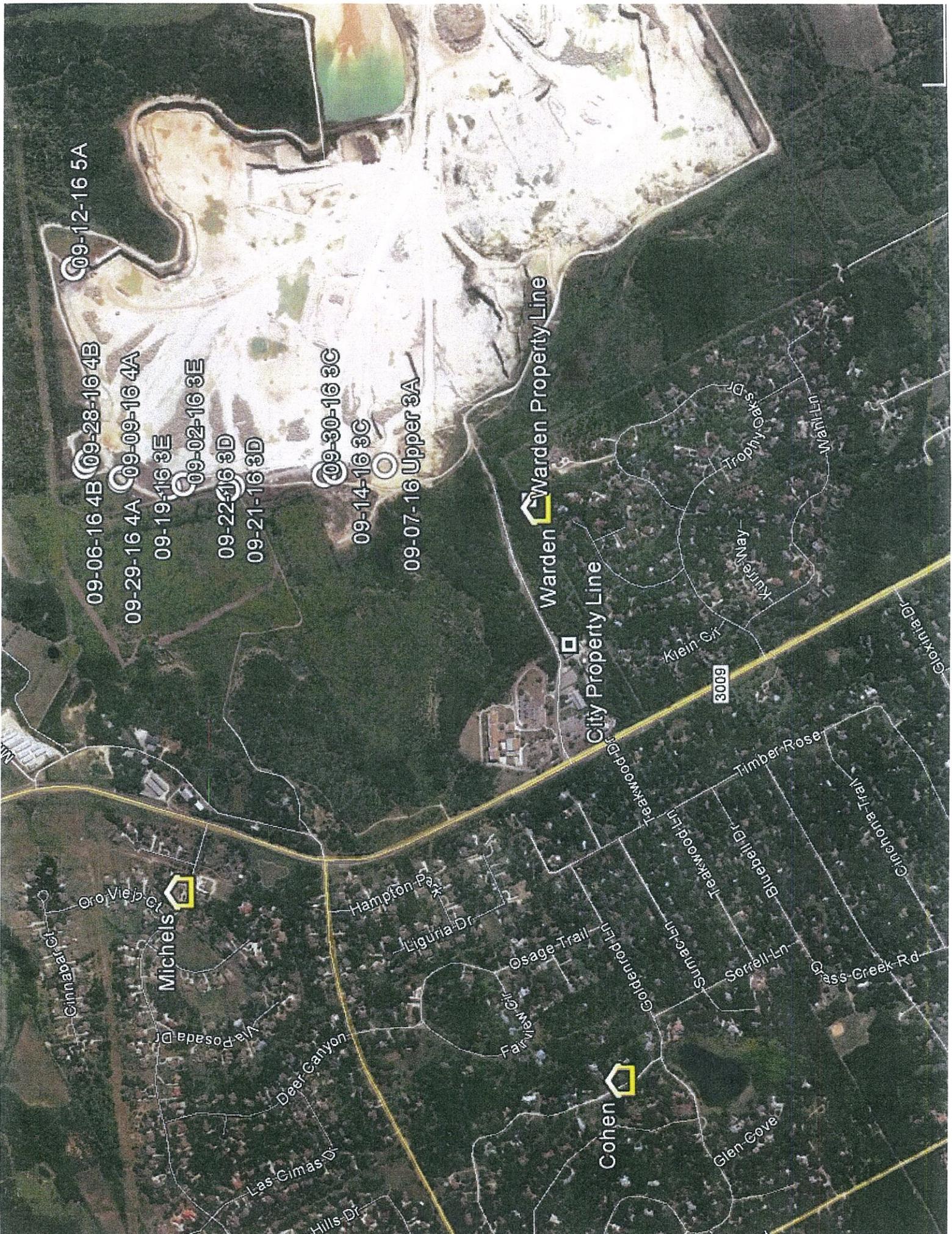
Respectfully submitted,

VIBRA-TECH, INC.

A handwritten signature in blue ink, consisting of two distinct, stylized cursive-like shapes. The first shape is a wavy line that starts with a small loop and ends with a tail. The second shape is a larger, more complex cursive flourish that starts with a small dot above it and ends with a large, sweeping curve.

Geoffrey Rigsby
Southwest Regional Manager

cc: Jacob Scherer, Hanson – Servtex



09-12-16 5A

09-06-16 4B 09-28-16 4B

09-09-16 4A 09-19-16 3E

09-02-16 3E

09-22-16 3D

09-21-16 3D

09-30-16 3C

09-14-16 3C

09-07-16 Upper 3A

Michels

Cohen

Warden Property Line

City Property Line

3000

Cinnabar Ct

Oro Vieja Ct

Via Posada Dr

Deer Canyon

Las Cimas Dr

Hills Dr

Hampton Park

Liguria Dr

Osage Trail

Fairview Cir

Goldenrod Ln

Sumac Ln

Sorrell Ln

Grass-Creek Rd

Teakwood Ln

Bluebell Dr

Ginchona Trail

Timber-Rose

Klein Cir

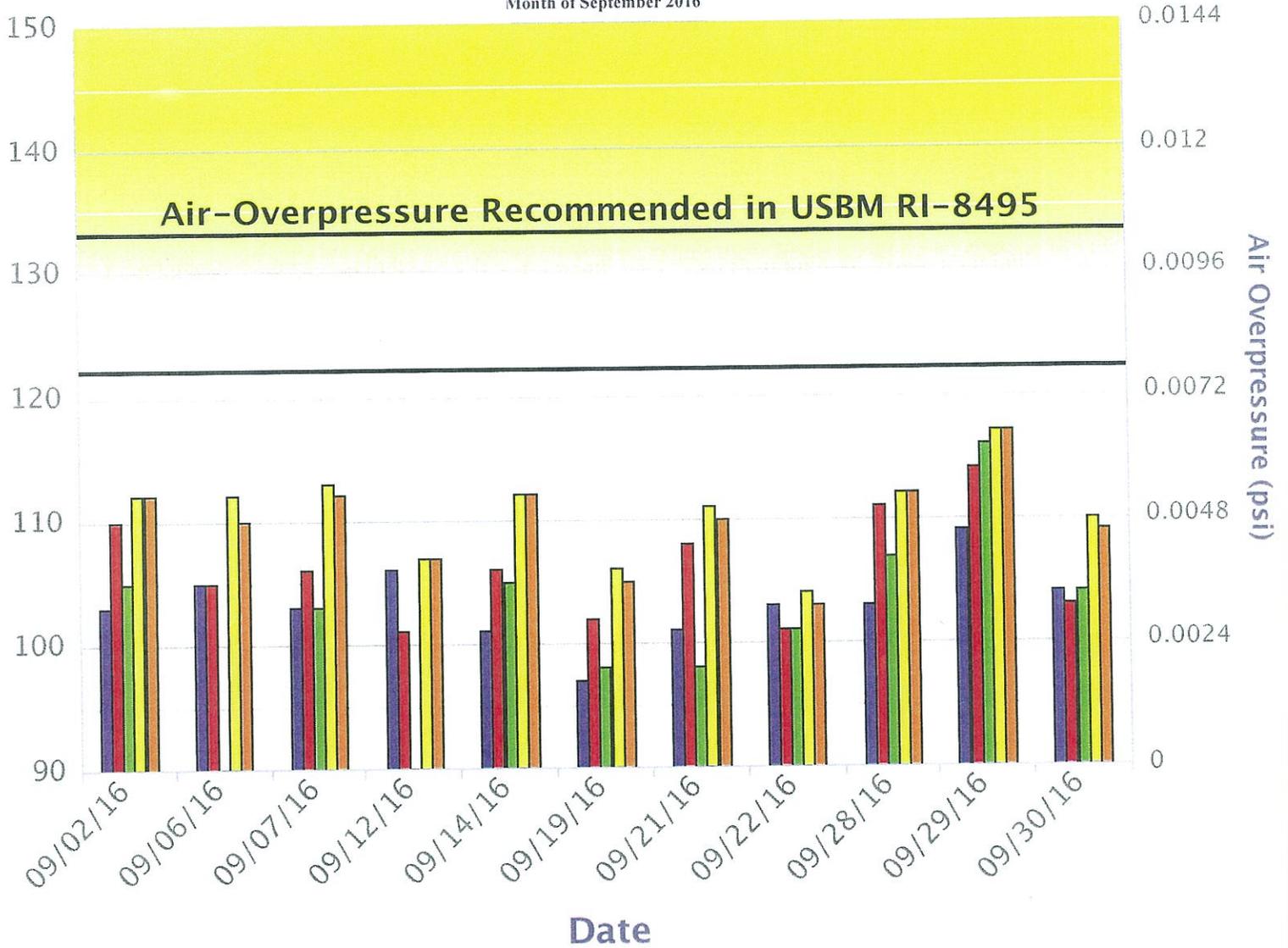
Kurre May

Trophy Oaks Dr

Warden

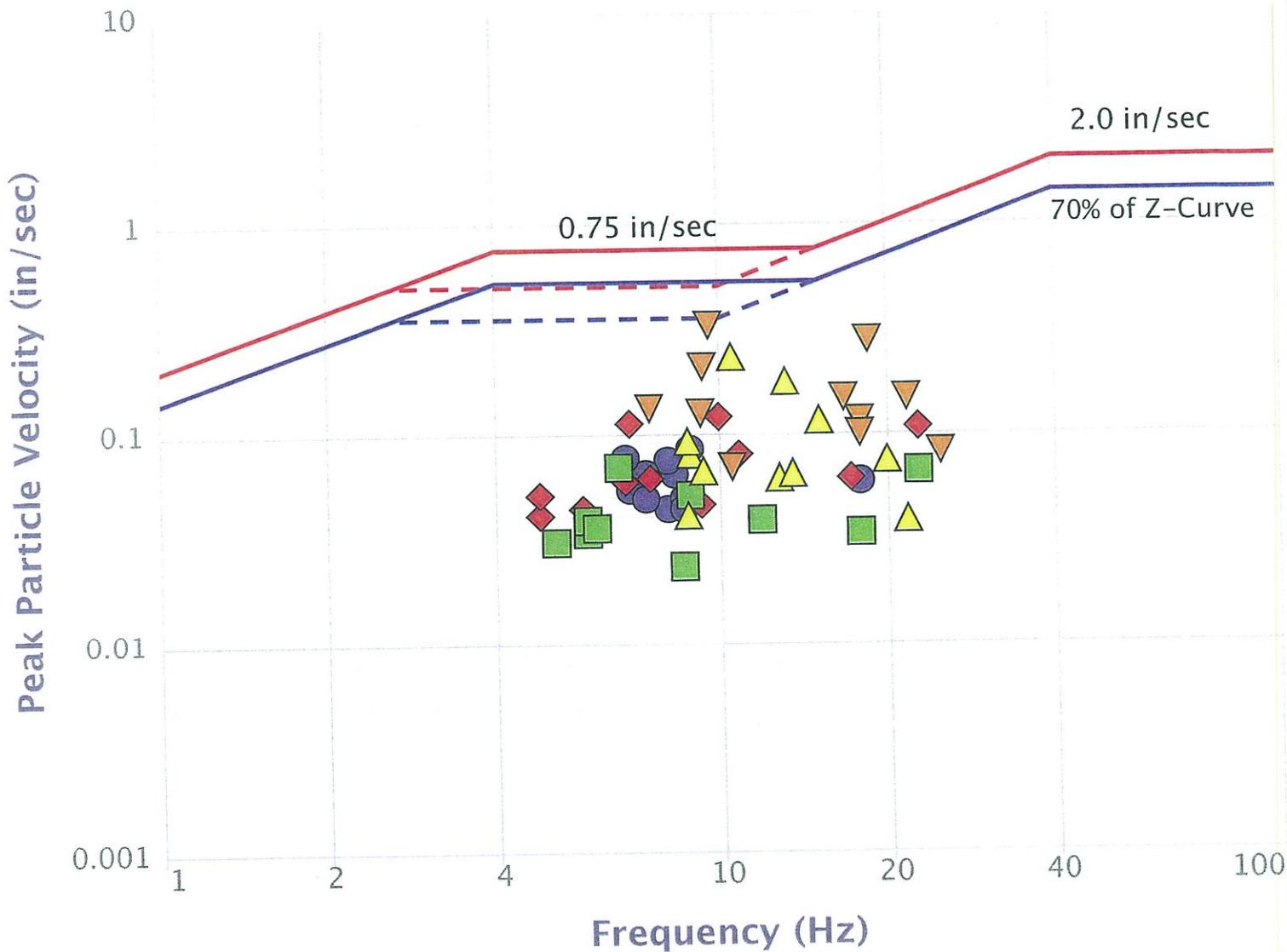
Gloria Dr

Garden Ridge Quarry Commission
 Garden Ridge, Texas
 AO Graph
 Month of September 2016



- Michels Residence
- Cohen Residence
- City Property Line
- Warden Property Line
- Warden Residence

Garden Ridge Quarry Commission Garden Ridge, Texas
USBM Graph
Month of September 2016



- Michels Residence
- ◆ Cohen Residence
- City Property Line
- ▲ Warden Property Line
- ▼ Warden Residence

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF SEPTEMBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-------------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 09/02/16 | 09-02-16 3E | N 29° 38' 54.8" W 098° 17' 38.5" | PT CLOUDY 82° NE 8 | 11:53 | 0.038 | 11.9 | 105.0 | 900 | 871.00 | 3,533 | City Property Line |
| 09/02/16 | 09-02-16 3E | N 29° 38' 54.8" W 098° 17' 38.5" | PT CLOUDY 82° NE 8 | 11:53 | 0.060 | 7.5 | 110.0 | 900 | 871.00 | 4,044 | Cohen - 10041 Trophy Oaks |
| 09/02/16 | 09-02-16 3E | N 29° 38' 54.8" W 098° 17' 38.5" | PT CLOUDY 82° NE 8 | 11:53 | 0.063 | 8.3 | 103.0 | 900 | 871.00 | 3,615 | Michels - 9118 Tuscan Hills |
| 09/02/16 | 09-02-16 3E | N 29° 38' 54.8" W 098° 17' 38.5" | PT CLOUDY 82° NE 8 | 11:53 | 0.113 | 17.9 | 112.0 | 900 | 871.00 | 3,225 | Warden - 21375 Gunther Grove |
| 09/02/16 | 09-02-16 3E | N 29° 38' 54.8" W 098° 17' 38.5" | PT CLOUDY 82° NE 8 | 11:53 | 0.060 | 12.8 | 112.0 | 900 | 871.00 | 3,020 | Warden Property Line |
| 09/06/16 | 09-06-16 4B | N 29° 39' 03.2" W 098° 17' 36.4" | PT CLOUDY 85° S 10 | 12:12 | 0.033 | 17.9 | 87.0 | 430 | 910.00 | 4,393 | City Property Line |
| 09/06/16 | 09-06-16 4B | N 29° 39' 03.2" W 098° 17' 36.4" | PT CLOUDY 85° S 10 | 12:12 | 0.060 | 17.2 | 105.0 | 430 | 910.00 | 4,942 | Cohen - 10041 Trophy Oaks |
| 09/06/16 | 09-06-16 4B | N 29° 39' 03.2" W 098° 17' 36.4" | PT CLOUDY 85° S 10 | 12:12 | 0.058 | 17.9 | 105.0 | 430 | 910.00 | 3,955 | Michels - 9118 Tuscan Hills |
| 09/06/16 | 09-06-16 4B | N 29° 39' 03.2" W 098° 17' 36.4" | PT CLOUDY 85° S 10 | 12:12 | 0.098 | 17.9 | 110.0 | 430 | 910.00 | 4,086 | Warden - 21375 Gunther Grove |
| 09/06/16 | 09-06-16 4B | N 29° 39' 03.2" W 098° 17' 36.4" | PT CLOUDY 85° S 10 | 12:12 | 0.073 | 20.0 | 112.0 | 430 | 910.00 | 3,878 | Warden Property Line |
| 09/07/16 | 09-07-16 Upper 3A | N 29° 38' 37.5" W 098° 17' 36.1" | PT CLOUDY 85° S 15 | 11:40 | 0.068 | 6.6 | 103.0 | 440 | 290.00 | 2,179 | City Property Line |
| 09/07/16 | 09-07-16 Upper 3A | N 29° 38' 37.5" W 098° 17' 36.1" | PT CLOUDY 85° S 15 | 11:40 | 0.110 | 6.9 | 106.0 | 440 | 290.00 | 2,339 | Cohen - 10041 Trophy Oaks |
| 09/07/16 | 09-07-16 Upper 3A | N 29° 38' 37.5" W 098° 17' 36.1" | PT CLOUDY 85° S 15 | 11:40 | 0.073 | 8.1 | 103.0 | 440 | 290.00 | 4,088 | Michels - 9118 Tuscan Hills |
| 09/07/16 | 09-07-16 Upper 3A | N 29° 38' 37.5" W 098° 17' 36.1" | PT CLOUDY 85° S 15 | 11:40 | 0.325 | 9.6 | 112.0 | 440 | 290.00 | 1,509 | Warden - 21375 Gunther Grove |
| 09/07/16 | 09-07-16 Upper 3A | N 29° 38' 37.5" W 098° 17' 36.1" | PT CLOUDY 85° S 15 | 11:40 | 0.228 | 10.6 | 113.0 | 440 | 290.00 | 1,292 | Warden Property Line |
| 09/09/16 | 09-09-16 4A | N 29° 39' 00.2" W 098° 17' 38.0" | CLEAR 89° S 14 | 12:41 | 0.050 | 1.9 | 110.0 | 900 | 670.00 | 4,059 | City Property Line |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB

**GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF SEPTEMBER
2016**

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-----------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 09/09/16 | 09-09-16 4A | N 29° 39' 00.2" W 098° 17' 38.0" | CLEAR 89° S 14 | 12:41 | 0.060 | 8.3 | 108.0 | 900 | 670.00 | 4,639 | Cohen - 10041 Trophy Oaks |
| 09/09/16 | 09-09-16 4A | N 29° 39' 00.2" W 098° 17' 38.0" | CLEAR 89° S 14 | 12:41 | 0.085 | 9.6 | 103.0 | 900 | 670.00 | 3,741 | Michels - 9118 Tuscan Hills |
| 09/09/16 | 09-09-16 4A | N 29° 39' 00.2" W 098° 17' 38.0" | CLEAR 89° S 14 | 12:41 | 0.113 | 9.4 | 110.0 | 900 | 670.00 | 3,774 | Warden - 21375 Gunther Grove |
| 09/09/16 | 09-09-16 4A | N 29° 39' 00.2" W 098° 17' 38.0" | CLEAR 89° S 14 | 12:41 | 0.068 | 14.3 | 111.0 | 900 | 670.00 | 3,568 | Warden Property Line |
| 09/12/16 | 09-12-16 5A | N 29° 39' 04.8" W 098° 17' 17.2" | PT CLOUDY 83° S 7 | 11:56 | NT | NT | NT | 848 | 690.00 | 5,362 | City Property Line |
| 09/12/16 | 09-12-16 5A | N 29° 39' 04.8" W 098° 17' 17.2" | PT CLOUDY 83° S 7 | 11:56 | 0.045 | 9.3 | 101.0 | 848 | 690.00 | 5,387 | Cohen - 10041 Trophy Oaks |
| 09/12/16 | 09-12-16 5A | N 29° 39' 04.8" W 098° 17' 17.2" | PT CLOUDY 83° S 7 | 11:56 | 0.043 | 8.1 | 106.0 | 848 | 690.00 | 5,631 | Michels - 9118 Tuscan Hills |
| 09/12/16 | 09-12-16 5A | N 29° 39' 04.8" W 098° 17' 17.2" | PT CLOUDY 83° S 7 | 11:56 | 0.080 | 25.0 | 107.0 | 848 | 690.00 | 4,688 | Warden - 21375 Gunther Grove |
| 09/12/16 | 09-12-16 5A | N 29° 39' 04.8" W 098° 17' 17.2" | PT CLOUDY 83° S 7 | 11:56 | 0.038 | 22.7 | 107.0 | 848 | 690.00 | 4,467 | Warden Property Line |
| 09/14/16 | 09-14-16 3C | N 29° 38' 41.8" W 098° 17' 36.9" | PT CLOUDY 88° NE 8 | 12:05 | 0.050 | 8.9 | 105.0 | 968 | 560.00 | 2,456 | City Property Line |
| 09/14/16 | 09-14-16 3C | N 29° 38' 41.8" W 098° 17' 36.9" | PT CLOUDY 88° NE 8 | 12:05 | 0.105 | 22.7 | 106.0 | 968 | 560.00 | 2,774 | Cohen - 10041 Trophy Oaks |
| 09/14/16 | 09-14-16 3C | N 29° 38' 41.8" W 098° 17' 36.9" | PT CLOUDY 88° NE 8 | 12:05 | 0.063 | 7.4 | 101.0 | 968 | 560.00 | 3,885 | Michels - 9118 Tuscan Hills |
| 09/14/16 | 09-14-16 3C | N 29° 38' 41.8" W 098° 17' 36.9" | PT CLOUDY 88° NE 8 | 12:05 | 0.275 | 18.5 | 112.0 | 968 | 560.00 | 1,925 | Warden - 21375 Gunther Grove |
| 09/14/16 | 09-14-16 3C | N 29° 38' 41.8" W 098° 17' 36.9" | PT CLOUDY 88° NE 8 | 12:05 | 0.113 | 15.2 | 112.0 | 968 | 560.00 | 1,712 | Warden Property Line |
| 09/19/16 | 09-19-16 3E | N 29° 38' 56.0" W 098° 17' 38.9" | CLEAR 94° SE 6 | 14:10 | 0.033 | 5.8 | 98.0 | 1200 | 910.00 | 3,633 | City Property Line |
| 09/19/16 | 09-19-16 3E | N 29° 38' 56.0" W 098° 17' 38.9" | CLEAR 94° SE 6 | 14:10 | 0.043 | 5.7 | 102.0 | 1200 | 910.00 | 4,217 | Cohen - 10041 Trophy Oaks |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF SEPTEMBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-----------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 09/19/16 | 09-19-16 3E | N 29° 38' 56.0" W 098° 17' 38.9" | CLEAR 94° SE 6 | 14:10 | 0.048 | 8.6 | 97.0 | 1200 | 910.00 | 3,592 | Michels - 9118 Tuscan Hills |
| 09/19/16 | 09-19-16 3E | N 29° 38' 56.0" W 098° 17' 38.9" | CLEAR 94° SE 6 | 14:10 | 0.123 | 9.3 | 105.0 | 1200 | 910.00 | 3,346 | Warden - 21375 Gunther Grove |
| 09/19/16 | 09-19-16 3E | N 29° 38' 56.0" W 098° 17' 38.9" | CLEAR 94° SE 6 | 14:10 | 0.063 | 13.5 | 106.0 | 1200 | 910.00 | 3,141 | Warden Property Line |
| 09/21/16 | 09-21-16 3D | N 29° 38' 50.9" W 098° 17' 39" | PT CLOUDY 82° SE 4 | 11:50 | 0.030 | 5.1 | 98.0 | 510 | 1014.00 | 3,154 | City Property Line |
| 09/21/16 | 09-21-16 3D | N 29° 38' 50.9" W 098° 17' 39" | PT CLOUDY 82° SE 4 | 11:50 | 0.040 | 4.8 | 108.0 | 510 | 1014.00 | 3,701 | Cohen - 10041 Trophy Oaks |
| 09/21/16 | 09-21-16 3D | N 29° 38' 50.9" W 098° 17' 39" | PT CLOUDY 82° SE 4 | 11:50 | 0.145 | 21.7 | 110.0 | 510 | 1014.00 | 2,829 | Warden - 21375 Gunther Grove |
| 09/21/16 | 09-21-16 3D | N 29° 38' 50.9" W 098° 17' 39" | PT CLOUDY 82° SE 4 | 11:50 | 0.078 | 8.9 | 111.0 | 510 | 1014.00 | 2,625 | Warden Property Line |
| 09/21/16 | 09-21-16 3D | N 29° 38' 50.9" W 098° 17' 39" | PT CLOUDY 82° SE 4 | 11:50 | 0.145 | 21.7 | 110.0 | 510 | 1014.00 | 2,829 | Warden Property Line |
| 09/22/16 | 09-22-16 3D | N 29° 38' 50.5" W 098° 17' 38.6" | PT CLOUDY 89° E 9 | 13:07 | 0.038 | 5.8 | 101.0 | 750 | 1000.00 | 3,132 | City Property Line |
| 09/22/16 | 09-22-16 3D | N 29° 38' 50.5" W 098° 17' 38.6" | PT CLOUDY 89° E 9 | 13:07 | 0.050 | 4.8 | 101.0 | 750 | 1000.00 | 3,659 | Cohen - 10041 Trophy Oaks |
| 09/22/16 | 09-22-16 3D | N 29° 38' 50.5" W 098° 17' 38.6" | PT CLOUDY 89° E 9 | 13:07 | 0.043 | 8.6 | 103.0 | 750 | 1000.00 | 3,598 | Michels - 9118 Tuscan Hills |
| 09/22/16 | 09-22-16 3D | N 29° 38' 50.5" W 098° 17' 38.6" | PT CLOUDY 89° E 9 | 13:07 | 0.130 | 7.5 | 103.0 | 750 | 1000.00 | 2,789 | Warden - 21375 Gunther Grove |
| 09/22/16 | 09-22-16 3D | N 29° 38' 50.5" W 098° 17' 38.6" | PT CLOUDY 89° E 9 | 13:07 | 0.090 | 8.8 | 104.0 | 750 | 1000.00 | 2,584 | Warden Property Line |
| 09/28/16 | 09-28-16 4B | N 29° 39' 03.4" W 098° 17' 37" | CLEAR 79° SW 1 | 11:34 | 0.023 | 8.6 | 107.0 | 494 | 800.00 | 4,394 | City Property Line |
| 09/28/16 | 09-28-16 4B | N 29° 39' 03.4" W 098° 17' 37" | CLEAR 79° SW 1 | 11:34 | 0.078 | 10.9 | 111.0 | 494 | 800.00 | 4,963 | Cohen - 10041 Trophy Oaks |
| 09/28/16 | 09-28-16 4B | N 29° 39' 03.4" W 098° 17' 37" | CLEAR 79° SW 1 | 11:34 | 0.048 | 7.4 | 103.0 | 494 | 800.00 | 3,910 | Michels - 9118 Tuscan Hills |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF SEPTEMBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-----------------|-------------------------------------|--------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 09/28/16 | 09-28-16 4B | N 29° 39' 03.4" W 098° 17' 37" | CLEAR 79° SW 1 | 11:34 | 0.068 | 10.6 | 112.0 | 494 | 800.00 | 4,103 | Warden - 21375 Gunther Grove |
| 09/28/16 | 09-28-16 4B | N 29° 39' 03.4" W 098° 17' 37" | CLEAR 79° SW 1 | 11:34 | 0.040 | 8.8 | 112.0 | 494 | 800.00 | 3,895 | Warden Property Line |
| 09/29/16 | 09-29-16 4A | N 29° 39' 00.3" W 098° 17' 38.3" | CLEAR 84° NE 10 | 13:06 | 0.035 | 6.0 | 116.0 | 900 | 715.00 | 4,059 | City Property Line |
| 09/29/16 | 09-29-16 4A | N 29° 39' 00.3" W 098° 17' 38.3" | CLEAR 84° NE 10 | 13:06 | 0.058 | 6.8 | 114.0 | 900 | 715.00 | 4,650 | Cohen - 10041 Trophy Oaks |
| 09/29/16 | 09-29-16 4A | N 29° 39' 00.3" W 098° 17' 38.3" | CLEAR 84° NE 10 | 13:06 | 0.083 | 8.9 | 109.0 | 900 | 715.00 | 3,718 | Michels - 9118 Tuscan Hills |
| 09/29/16 | 09-29-16 4A | N 29° 39' 00.3" W 098° 17' 38.3" | CLEAR 84° NE 10 | 13:06 | 0.145 | 16.7 | 117.0 | 900 | 715.00 | 3,783 | Warden - 21375 Gunther Grove |
| 09/29/16 | 09-29-16 4A | N 29° 39' 00.3" W 098° 17' 38.3" | CLEAR 84° NE 10 | 13:06 | 0.065 | 9.4 | 117.0 | 900 | 715.00 | 3,578 | Warden Property Line |
| 09/30/16 | 09-30-16 3C | N 29° 38' 42.7" W 098° 17' 37.2" | CLEAR 75° NE 3 | 12:15 | 0.065 | 22.7 | 104.0 | 900 | 520.00 | 2,514 | City Property Line |
| 09/30/16 | 09-30-16 3C | N 29° 38' 42.7" W 098° 17' 37.2" | CLEAR 75° NE 3 | 12:15 | 0.118 | 10.0 | 103.0 | 900 | 520.00 | 2,865 | Cohen - 10041 Trophy Oaks |
| 09/30/16 | 09-30-16 3C | N 29° 38' 42.7" W 098° 17' 37.2" | CLEAR 75° NE 3 | 12:15 | 0.075 | 6.8 | 104.0 | 900 | 520.00 | 3,836 | Michels - 9118 Tuscan Hills |
| 09/30/16 | 09-30-16 3C | N 29° 38' 42.7" W 098° 17' 37.2" | CLEAR 75° NE 3 | 12:15 | 0.205 | 9.4 | 109.0 | 900 | 520.00 | 2,012 | Warden - 21375 Gunther Grove |
| 09/30/16 | 09-30-16 3C | N 29° 38' 42.7" W 098° 17' 37.2" | CLEAR 75° NE 3 | 12:15 | 0.173 | 13.2 | 110.0 | 900 | 520.00 | 1,801 | Warden Property Line |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB



November 10, 2016

Mr. Mike Shands
Garden Ridge Quarry Commission
9400 Municipal Parkway
Garden Ridge, Texas 78266

4818 E. Ben White Blvd.
Suite 202
Austin, TX 78741

Phone 512.442.6464
Fax 512.442.6552

Dear Mr. Shands,

Enclosed is the analysis for the blasting conducted during the month of October 2016 at the Hanson Aggregates Quarry in Garden Ridge, Texas. Please place this information in your 2016 Blast Data Management Book.

At the request of the Garden Ridge Quarry Commission, Vibra-Tech, Inc. personnel used seismographs each day of blasting at various locations.

The attached report contains the original seismograph records obtained from the blasting along with a comparison of the recorded vibrations to the latest recommended U.S. Bureau of Mines (USBM) Variable Particle Velocity vs. Frequency Limits Report of Investigations (RI)-8507 (Nov. 1980).

The recorded ground vibrations **satisfy** the Variable Particle Velocity vs. Frequency Limits recommended by the USBM RI-8507 (Nov. 1980), and the levels set forth in Garden Ridge City Ordinance 34.

The recorded air-borne effects **satisfy** the recommended levels set forth in the USBM RI-8485 (Nov. 1980), and the levels set forth in Garden Ridge City Ordinance 34.

If there are any additional questions, please contact the Quarry Commission, Mike Shands at 210-257-0868, or attend the Quarry Commission meeting held the 2nd Monday of each month at 7:00 p.m.

Respectfully submitted,

VIBRA-TECH, INC.

A handwritten signature in black ink, appearing to read "Geoffrey Rigsby". The signature is fluid and cursive, with the first name starting with a large 'G' and the last name starting with a large 'R'.

Geoffrey Rigsby

Southwest Regional Manager

cc: Jacob Scherer, Hanson – Servtex

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF OCTOBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-------------------|-------------------------------------|----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 10/03/16 | 10-03-16 Upper 3A | N 29° 38' 37.7" W 098° 17' 36.1" | CLEAR 79° SE 5 | 11:37 | 0.050 | 6.8 | 104.0 | 440 | 270.00 | 2,193 | City Property Line |
| 10/03/16 | 10-03-16 Upper 3A | N 29° 38' 37.7" W 098° 17' 36.1" | CLEAR 79° SE 5 | 11:37 | 0.070 | 8.1 | 111.0 | 440 | 270.00 | 2,359 | Cohen - 10041 Trophy Oaks |
| 10/03/16 | 10-03-16 Upper 3A | N 29° 38' 37.7" W 098° 17' 36.1" | CLEAR 79° SE 5 | 11:37 | 0.050 | 7.4 | 105.0 | 440 | 270.00 | 4,081 | Michels - 9118 Tuscan Hills |
| 10/03/16 | 10-03-16 Upper 3A | N 29° 38' 37.7" W 098° 17' 36.1" | CLEAR 79° SE 5 | 11:37 | 0.288 | 11.6 | 115.0 | 440 | 270.00 | 1,526 | Warden - 21375 Gunther Grove |
| 10/03/16 | 10-03-16 Upper 3A | N 29° 38' 37.7" W 098° 17' 36.1" | CLEAR 79° SE 5 | 11:37 | 0.215 | 12.5 | 116.0 | 440 | 270.00 | 1,312 | Warden Property Line |
| 10/04/16 | 10-04-16 3E | N 29° 38' 56.6" W 098° 17' 39.2" | CLOUDY 85° SE 9 | 12:55 | 0.028 | 10.9 | 97.0 | 900 | 950.00 | 3,680 | City Property Line |
| 10/04/16 | 10-04-16 3E | N 29° 38' 56.6" W 098° 17' 39.2" | CLOUDY 85° SE 9 | 12:55 | 0.043 | 9.6 | 100.0 | 900 | 950.00 | 4,279 | Cohen - 10041 Trophy Oaks |
| 10/04/16 | 10-04-16 3E | N 29° 38' 56.6" W 098° 17' 39.2" | CLOUDY 85° SE 9 | 12:55 | 0.055 | 17.9 | 100.0 | 900 | 950.00 | 3,573 | Michels - 9118 Tuscan Hills |
| 10/04/16 | 10-04-16 3E | N 29° 38' 56.6" W 098° 17' 39.2" | CLOUDY 85° SE 9 | 12:55 | 0.100 | 10.0 | 103.0 | 900 | 950.00 | 3,406 | Warden - 21375 Gunther Grove |
| 10/04/16 | 10-04-16 3E | N 29° 38' 56.6" W 098° 17' 39.2" | CLOUDY 85° SE 9 | 12:55 | 0.070 | 11.9 | 105.0 | 900 | 950.00 | 3,202 | Warden Property Line |
| 10/05/16 | 10-05-16 3F | N 29° 38' 56.6" W 098° 17' 39.2" | CLEAR 87° SW 7 | 13:01 | 0.028 | 13.9 | 101.0 | 690 | 900.00 | 3,680 | City Property Line |
| 10/05/16 | 10-05-16 3F | N 29° 38' 56.6" W 098° 17' 39.2" | CLEAR 87° SW 7 | 13:01 | 0.050 | 27.8 | 101.0 | 690 | 900.00 | 4,279 | Cohen - 10041 Trophy Oaks |
| 10/05/16 | 10-05-16 3F | N 29° 38' 56.6" W 098° 17' 39.2" | CLEAR 87° SW 7 | 13:01 | 0.045 | 13.9 | 95.0 | 690 | 900.00 | 3,573 | Michels - 9118 Tuscan Hills |
| 10/05/16 | 10-05-16 3F | N 29° 38' 56.6" W 098° 17' 39.2" | CLEAR 87° SW 7 | 13:01 | 0.098 | 13.2 | 105.0 | 690 | 900.00 | 3,406 | Warden - 21375 Gunther Grove |
| 10/05/16 | 10-05-16 3F | N 29° 38' 56.6" W 098° 17' 39.2" | CLEAR 87° SW 7 | 13:01 | 0.055 | 20.0 | 103.0 | 690 | 900.00 | 3,202 | Warden Property Line |
| 10/06/16 | 10-06-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 07.6" | PT CLOUDY 85° S 8 | 12:02 | 0.030 | 5.4 | 103.0 | 810 | 500.00 | 5,006 | City Property Line |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB
* Instrument Unavailable

**GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF OCTOBER
2016**

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-------------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 10/06/16 | 10-06-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 07.6" | PT CLOUDY 85° S 8 | 12:02 | 0.078 | 5.8 | 110.0 | 810 | 500.00 | 4,526 | Cohen - 10041 Trophy Oaks |
| 10/06/16 | 10-06-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 07.6" | PT CLOUDY 85° S 8 | 12:02 | 0.068 | 17.9 | 104.0 | 810 | 500.00 | 6,326 | Michels - 9118 Tuscan Hills |
| 10/06/16 | 10-06-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 07.6" | PT CLOUDY 85° S 8 | 12:02 | 0.123 | 10.6 | 112.0 | 810 | 500.00 | 4,038 | Warden - 21375 Gunther Grove |
| 10/06/16 | 10-06-16 Lower 6 | N 29° 38' 51.2" W 098° 17' 07.6" | PT CLOUDY 85° S 8 | 12:02 | 0.063 | 17.9 | 112.0 | 810 | 500.00 | 3,834 | Warden Property Line |
| 10/11/16 | 10-11-16 S Wall B | N 29° 38' 14.1" W 098° 16' 41.3" | CLEAR 70° NW 5 | 10:29 | 0.020 | 7.6 | 103.0 | 820 | 988.00 | 6,459 | City Property Line |
| 10/11/16 | 10-11-16 S Wall B | N 29° 38' 14.1" W 098° 16' 41.3" | CLEAR 70° NW 5 | 10:29 | 0.100 | 5.4 | 108.0 | 820 | 988.00 | 4,886 | Cohen - 10041 Trophy Oaks |
| 10/11/16 | 10-11-16 S Wall B | N 29° 38' 14.1" W 098° 16' 41.3" | CLEAR 70° NW 5 | 10:29 | 0.085 | 8.9 | 92.0 | 820 | 988.00 | 3,938 | Holly - 9916 Trophy Oaks |
| 10/11/16 | 10-11-16 S Wall B | N 29° 38' 14.1" W 098° 16' 41.3" | CLEAR 70° NW 5 | 10:29 | NT | NT | NT | 820 | 988.00 | 9,457 | Michels - 9118 Tuscan Hills |
| 10/11/16 | 10-11-16 S Wall B | N 29° 38' 14.1" W 098° 16' 41.3" | CLEAR 70° NW 5 | 10:29 | 0.080 | 17.2 | 110.0 | 820 | 988.00 | 5,248 | Warden - 21375 Gunther Grove |
| 10/12/16 | 10-12-16 S Wall C | N 29° 38' 12.8" W 098° 16' 46" | CLOUDY 74° NW 7 | 11:43 | NT | NT | NT | 700 | 1250.00 | 6,069 | City Property Line |
| 10/12/16 | 10-12-16 S Wall C | N 29° 38' 12.8" W 098° 16' 46" | CLOUDY 74° NW 7 | 11:43 | 0.075 | 6.8 | 110.0 | 700 | 1250.00 | 4,475 | Cohen - 10041 Trophy Oaks |
| 10/12/16 | 10-12-16 S Wall C | N 29° 38' 12.8" W 098° 16' 46" | CLOUDY 74° NW 7 | 11:43 | 0.048 | 7.5 | 106.0 | 700 | 1250.00 | 3,530 | Holly - 9916 Trophy Oaks |
| 10/12/16 | 10-12-16 S Wall C | N 29° 38' 12.8" W 098° 16' 46" | CLOUDY 74° NW 7 | 11:43 | NT | NT | NT | 700 | 1250.00 | 9,137 | Michels - 9118 Tuscan Hills |
| 10/12/16 | 10-12-16 S Wall C | N 29° 38' 12.8" W 098° 16' 46" | CLOUDY 74° NW 7 | 11:43 | 0.048 | 9.3 | 111.0 | 700 | 1250.00 | 4,867 | Warden - 21375 Gunther Grove |
| 10/13/16 | 10-13-16 S Wall O | N 29° 38' 17.6" W 098° 16' 36.9" | PT CLOUDY 83° SE 6 | 13:12 | NT | NT | NT | 518 | 975.00 | 6,807 | City Property Line |
| 10/13/16 | 10-13-16 S Wall O | N 29° 38' 17.6" W 098° 16' 36.9" | PT CLOUDY 83° SE 6 | 13:12 | 0.045 | 6.6 | 112.0 | 518 | 975.00 | 5,283 | Cohen - 10041 Trophy Oaks |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB
* Instrument Unavailable

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF OCTOBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-------------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 10/13/16 | 10-13-16 S Wall O | N 29° 38' 17.6" W 098° 16' 36.9" | PT CLOUDY 83° SE 6 | 13:12 | 0.045 | 7.7 | 101.0 | 518 | 975.00 | 4,333 | Holly - 9916 Trophy Oaks |
| 10/13/16 | 10-13-16 S Wall O | N 29° 38' 17.6" W 098° 16' 36.9" | PT CLOUDY 83° SE 6 | 13:12 | NT | NT | NT | 518 | 975.00 | 9,679 | Michels - 9118 Tuscan Hills |
| 10/13/16 | 10-13-16 S Wall O | N 29° 38' 17.6" W 098° 16' 36.9" | PT CLOUDY 83° SE 6 | 13:12 | 0.040 | 8.9 | 114.0 | 518 | 975.00 | 5,585 | Warden - 21375 Gunther Grove |
| 10/14/16 | 10-14-16 4B | N 29° 39' 03.5" W 098° 17' 37.3" | PT CLOUDY 85° SE 5 | 10:53 | 0.028 | 8.9 | 110.0 | 544 | 630.00 | 4,394 | City Property Line |
| 10/14/16 | 10-14-16 4B | N 29° 39' 03.5" W 098° 17' 37.3" | PT CLOUDY 85° SE 5 | 10:53 | 0.048 | 22.7 | 112.0 | 544 | 630.00 | 112 | Cohen - 10041 Trophy Oaks |
| 10/14/16 | 10-14-16 4B | N 29° 39' 03.5" W 098° 17' 37.3" | PT CLOUDY 85° SE 5 | 10:53 | 0.058 | 6.9 | 105.0 | 544 | 630.00 | 3,888 | Michels - 9118 Tuscan Hills |
| 10/14/16 | 10-14-16 4B | N 29° 39' 03.5" W 098° 17' 37.3" | PT CLOUDY 85° SE 5 | 10:53 | 0.083 | 16.1 | 114.0 | 544 | 630.00 | 4,111 | Warden - 21375 Gunther Grove |
| 10/14/16 | 10-14-16 4B | N 29° 39' 03.5" W 098° 17' 37.3" | PT CLOUDY 85° SE 5 | 10:53 | 0.055 | 16.1 | 114.0 | 544 | 630.00 | 3,904 | Warden Property Line |
| 10/18/16 | 10-18-16 4A | N 29° 39' 00.7" W 098° 17' 38.6" | PT CLOUDY 92° S 10 | 14:08 | NT | NT | NT | 876 | 670.00 | 4,088 | City Property Line |
| 10/18/16 | 10-18-16 4A | N 29° 39' 00.7" W 098° 17' 38.6" | PT CLOUDY 92° S 10 | 14:08 | 0.043 | 9.3 | 107.0 | 876 | 670.00 | 4,692 | Cohen - 10041 Trophy Oaks |
| 10/18/16 | 10-18-16 4A | N 29° 39' 00.7" W 098° 17' 38.6" | PT CLOUDY 92° S 10 | 14:08 | 0.058 | 6.9 | 101.0 | 876 | 670.00 | 3,702 | Michels - 9118 Tuscan Hills |
| 10/18/16 | 10-18-16 4A | N 29° 39' 00.7" W 098° 17' 38.6" | PT CLOUDY 92° S 10 | 14:08 | 0.135 | 10.9 | 110.0 | 876 | 670.00 | 3,822 | Warden - 21375 Gunther Grove |
| 10/18/16 | 10-18-16 4A | N 29° 39' 00.7" W 098° 17' 38.6" | PT CLOUDY 92° S 10 | 14:08 | 0.065 | 9.1 | 111.0 | 876 | 670.00 | 3,618 | Warden Property Line |
| 10/19/16 | 10-19-16 3D | N 29° 38' 46.8" W 098° 17' 38.0" | PT CLOUDY 92° S 10 | 11:29 | 0.038 | 6.4 | 95.0 | 750 | 988.00 | 2,824 | City Property Line |
| 10/19/16 | 10-19-16 3D | N 29° 38' 46.8" W 098° 17' 38.0" | PT CLOUDY 92° S 10 | 11:29 | 0.058 | 8.9 | 103.0 | 750 | 988.00 | 3,282 | Cohen - 10041 Trophy Oaks |
| 10/19/16 | 10-19-16 3D | N 29° 38' 46.8" W 098° 17' 38.0" | PT CLOUDY 92° S 10 | 11:29 | 0.038 | 6.4 | 102.0 | 750 | 988.00 | 3,686 | Michels - 9118 Tuscan Hills |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB
* Instrument Unavailable

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF OCTOBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-----------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 10/19/16 | 10-19-16 3D | N 29° 38' 46.8" W 098° 17' 38.0" | PT CLOUDY 92° S 10 | 11:29 | 0.158 | 19.2 | 106.0 | 750 | 988.00 | 2,418 | Warden - 21375 Gunther Grove |
| 10/19/16 | 10-19-16 3D | N 29° 38' 46.8" W 098° 17' 38.0" | PT CLOUDY 92° S 10 | 11:29 | 0.075 | 20.0 | 108.0 | 750 | 988.00 | 2,211 | Warden Property Line |
| 10/21/16 | 10-21-16 3E | N 29° 38' 50.3" W 098° 17' 38.8" | CLEAR 65° NE 10 | 11:18 | 0.035 | 6.1 | 105.0 | 900 | 950.00 | 3,106 | City Property Line |
| 10/21/16 | 10-21-16 3E | N 29° 38' 50.3" W 098° 17' 38.8" | CLEAR 65° NE 10 | 11:18 | 0.100 | 15.2 | 106.0 | 900 | 950.00 | 2,769 | Cohen - 10041 Trophy Oaks |
| 10/21/16 | 10-21-16 3E | N 29° 38' 50.3" W 098° 17' 38.8" | CLEAR 65° NE 10 | 11:18 | 0.045 | 9.3 | 104.0 | 900 | 950.00 | 3,639 | Michels - 9118 Tuscan Hills |
| 10/21/16 | 10-21-16 3E | N 29° 38' 50.3" W 098° 17' 38.8" | CLEAR 65° NE 10 | 11:18 | 0.050 | 7.6 | 104.0 | 900 | 950.00 | 3,582 | Warden - 21375 Gunther Grove |
| 10/21/16 | 10-21-16 3E | N 29° 38' 50.3" W 098° 17' 38.8" | CLEAR 65° NE 10 | 11:18 | 0.058 | 6.2 | 108.0 | 900 | 950.00 | 2,564 | Warden Property Line |
| 10/25/16 | 10-25-16 3F | N 29° 38' 53.6" W 098° 17' 39.5" | CLOUDY 75° NE 9 | 11:08 | 0.028 | 7.8 | 103.0 | 600 | 850.00 | 3,387 | City Property Line |
| 10/25/16 | 10-25-16 3F | N 29° 38' 53.6" W 098° 17' 39.5" | CLOUDY 75° NE 9 | 11:08 | 0.035 | 6.9 | 104.0 | 600 | 850.00 | 3,977 | Cohen - 10041 Trophy Oaks |
| 10/25/16 | 10-25-16 3F | N 29° 38' 53.6" W 098° 17' 39.5" | CLOUDY 75° NE 9 | 11:08 | 0.050 | 11.4 | 103.0 | 600 | 850.00 | 3,519 | Michels - 9118 Tuscan Hills |
| 10/25/16 | 10-25-16 3F | N 29° 38' 53.6" W 098° 17' 39.5" | CLOUDY 75° NE 9 | 11:08 | 0.068 | 12.8 | 108.0 | 600 | 850.00 | 3,101 | Warden - 21375 Gunther Grove |
| 10/25/16 | 10-25-16 3F | N 29° 38' 53.6" W 098° 17' 39.5" | CLOUDY 75° NE 9 | 11:08 | 0.053 | 8.8 | 109.0 | 600 | 850.00 | 2,899 | Warden Property Line |
| 10/26/16 | 10-26-16 5B | N 29° 39' 03.1" W 098° 17' 16.0" | PT CLOUDY 75° SE 8 | 12:03 | NT | NT | NT | 816 | 663.00 | 5,292 | City Property Line |
| 10/26/16 | 10-26-16 5B | N 29° 39' 03.1" W 098° 17' 16.0" | PT CLOUDY 75° SE 8 | 12:03 | 0.048 | 7.1 | 100.0 | 816 | 663.00 | 5,260 | Cohen - 10041 Trophy Oaks |
| 10/26/16 | 10-26-16 5B | N 29° 39' 03.1" W 098° 17' 16.0" | PT CLOUDY 75° SE 8 | 12:03 | 0.023 | 7.8 | 102.0 | 816 | 663.00 | 5,697 | Michels - 9118 Tuscan Hills |
| 10/26/16 | 10-26-16 5B | N 29° 39' 03.1" W 098° 17' 16.0" | PT CLOUDY 75° SE 8 | 12:03 | 0.030 | 15.2 | 110.0 | 816 | 663.00 | 4,360 | Warden - 21375 Gunther Grove |

NT = No Trigger, <0.020 ips.
NT = No Trigger, <122dB
* Instrument Unavailable

GARDEN RIDGE QUARRY COMMISSION
GARDEN RIDGE, TEXAS
MONTH OF OCTOBER
2016

| DATE | SHOT # LOCATION | SHOT LOCATION GPS READING | WEATHER | TIME | PPV (in/sec) | FREQ (Hz) | AIR (dB) | SHOT DURATION (MS) | MAX LBS/ DELAY | DISTANCE FROM BLAST | SEISMOGRAPH LOCATION |
|----------|-------------------|-------------------------------------|-----------------------|-------|--------------|-----------|----------|--------------------|----------------|---------------------|------------------------------|
| 10/26/16 | 10-26-16 5B | N 29° 39' 03.1" W 098° 17' 16.0" | PT CLOUDY 75° SE 8 | 12:03 | 0.053 | 23.8 | 110.0 | 816 | 663.00 | 4,580 | Warden Property Line |
| 10/27/16 | 10-27-16 3G | N 29° 38' 56.5" W 098° 17' 39.5" | PT CLOUDY 79° SW 3 | 11:43 | * | * | * | 575 | 850.00 | 3,661 | City Property Line |
| 10/27/16 | 10-27-16 3G | N 29° 38' 56.5" W 098° 17' 39.5" | PT CLOUDY 79° SW 3 | 11:43 | 0.025 | 5.2 | 107.0 | 575 | 850.00 | 4,270 | Cohen - 10041 Trophy Oaks |
| 10/27/16 | 10-27-16 3G | N 29° 38' 56.5" W 098° 17' 39.5" | PT CLOUDY 79° SW 3 | 11:43 | 0.050 | 6.1 | 103.0 | 575 | 850.00 | 3,545 | Michels - 9118 Tuscan Hills |
| 10/27/16 | 10-27-16 3G | N 29° 38' 56.5" W 098° 17' 39.5" | PT CLOUDY 79° SW 3 | 11:43 | 0.050 | 12.5 | 112.0 | 575 | 850.00 | 3,395 | Warden - 21375 Gunther Grove |
| 10/27/16 | 10-27-16 3G | N 29° 38' 56.5" W 098° 17' 39.5" | PT CLOUDY 79° SW 3 | 11:43 | 0.035 | 11.1 | 112.0 | 575 | 850.00 | 3,192 | Warden Property Line |
| 10/28/16 | 10-28-16 1B | N 29° 38' 34.3" W 098° 17' 34.0" | PT CLOUDY 72° SE 4 | 11:34 | 0.023 | 7.6 | 97.0 | 688 | 85.00 | 2,119 | City Property Line |
| 10/28/16 | 10-28-16 1B | N 29° 38' 34.3" W 098° 17' 34.0" | PT CLOUDY 72° SE 4 | 11:34 | 0.048 | 16.7 | 101.0 | 688 | 85.00 | 2,028 | Cohen - 10041 Trophy Oaks |
| 10/28/16 | 10-28-16 1B | N 29° 38' 34.3" W 098° 17' 34.0" | PT CLOUDY 72° SE 4 | 11:34 | 0.028 | 7.8 | 95.0 | 688 | 85.00 | 4,384 | Michels - 9118 Tuscan Hills |
| 10/28/16 | 10-28-16 1B | N 29° 38' 34.3" W 098° 17' 34.0" | PT CLOUDY 72° SE 4 | 11:34 | 0.213 | 23.8 | 104.0 | 688 | 85.00 | 1,040 | Warden - 21375 Gunther Grove |
| 10/28/16 | 10-28-16 1B | N 29° 38' 34.3" W 098° 17' 34.0" | PT CLOUDY 72° SE 4 | 11:34 | 0.150 | 20.8 | 106.0 | 688 | 85.00 | 1,261 | Warden Property Line |
| 10/31/16 | 10-31-16 Upper 3A | N 29° 38' 38.2" W 098° 17' 36.6" | PT CLOUDY 79° SW 3 | 11:25 | 0.043 | 6.9 | 102.0 | 568 | 275.00 | 2,198 | City Property Line |
| 10/31/16 | 10-31-16 Upper 3A | N 29° 38' 38.2" W 098° 17' 36.6" | PT CLOUDY 79° SW 3 | 11:25 | 0.083 | 7.8 | 110.0 | 568 | 275.00 | 2,409 | Cohen - 10041 Trophy Oaks |
| 10/31/16 | 10-31-16 Upper 3A | N 29° 38' 38.2" W 098° 17' 36.6" | PT CLOUDY 79° SW 3 | 11:25 | 0.073 | 7.4 | 101.0 | 568 | 275.00 | 4,022 | Michels - 9118 Tuscan Hills |
| 10/31/16 | 10-31-16 Upper 3A | N 29° 38' 38.2" W 098° 17' 36.6" | PT CLOUDY 79° SW 3 | 11:25 | 0.288 | 11.4 | 113.0 | 568 | 275.00 | 1,569 | Warden - 21375 Gunther Grove |
| 10/31/16 | 10-31-16 Upper 3A | N 29° 38' 38.2" W 098° 17' 36.6" | PT CLOUDY 79° SW 3 | 11:25 | 0.153 | 10.0 | 114.0 | 568 | 275.00 | 1,354 | Warden Property Line |

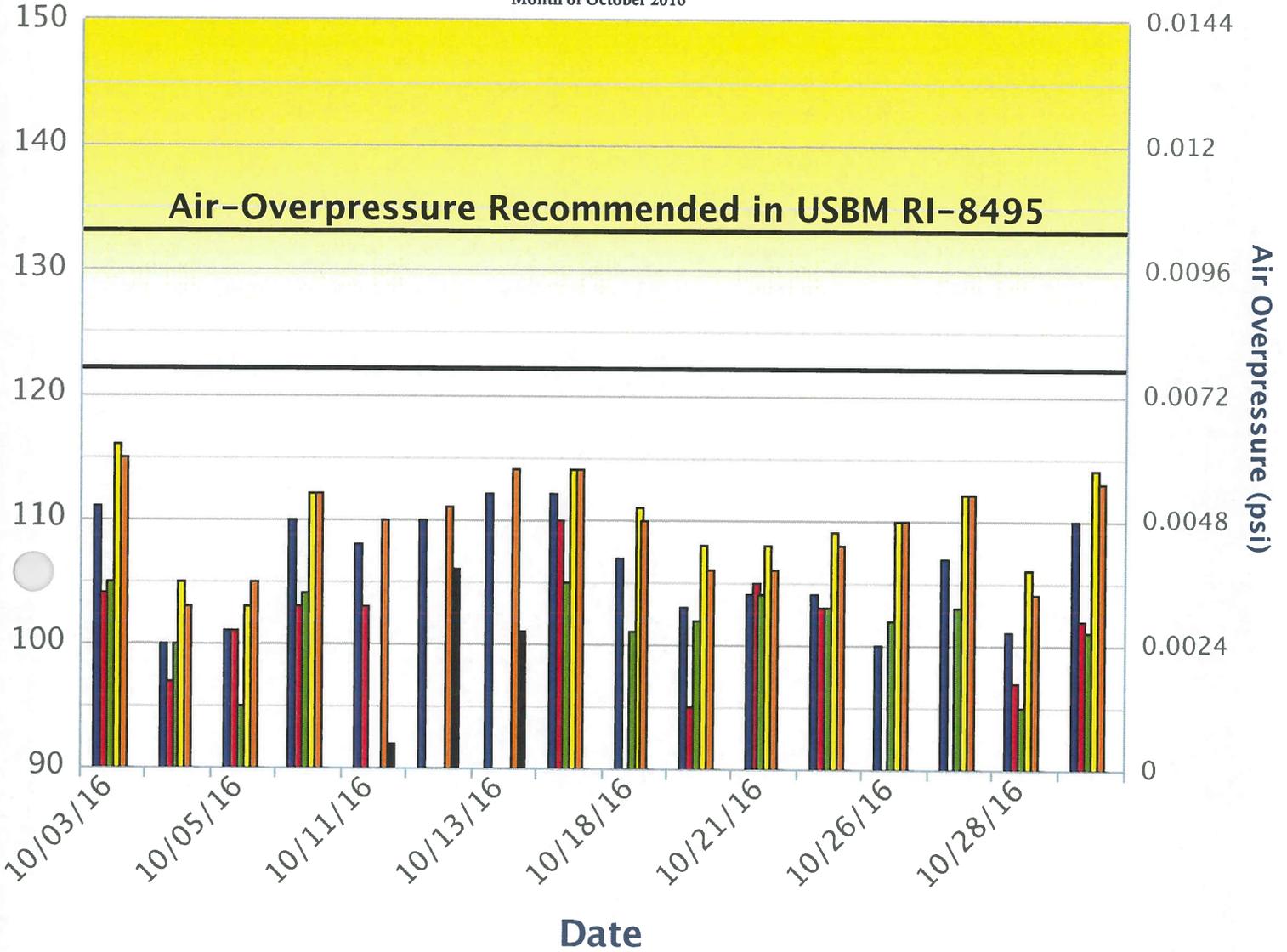
NT = No Trigger, <0.020 ips.

NT = No Trigger, <122dB

* Instrument Unavailable

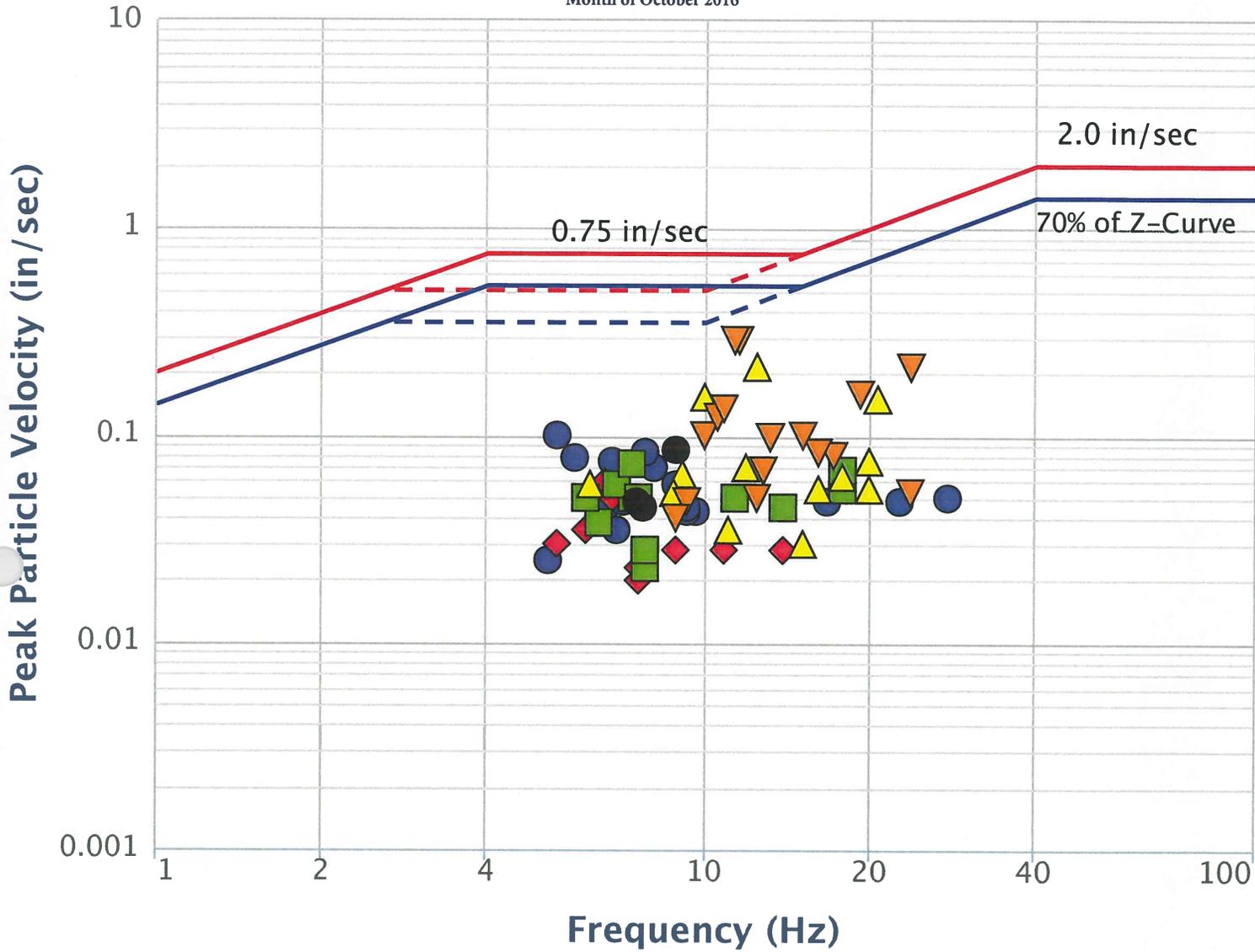
Garden Ridge Quarry Commission
 Garden Ridge, Texas
 AO Graph
 Month of October 2016

Air-Overpressure Recommended in USBM RI-8495



- Cohen Residence
- City Property Line
- Michels Residence
- Warden Property Line
- Warden Residence
- Holly Residence

Garden Ridge Quarry Commission
Garden Ridge, Texas
USBM Graph
Month of October 2016



- Cohen Residence
- ◆ City Property Line
- Michels Residence
- ▲ Warden Property Line
- ▼ Warden Residence
- Holly Residence

CITY OF GARDEN RIDGE

COPY

CITIZEN QUARRY BLAST IMPACT REPORT

Name: ROBERT KESSLER Report Date: 9/30/2016

Address: 19960 Fm 2252 E-Mail Address: _____

Phone: 210-421-3587 Blast Date/Time: 9/30/2016 / 12:10

Please describe the event.

BLAST SHOOK HOUSE

RECEIVED

OCT 11 2016

PER JH

How did this blast compare to other blasts? SAME

On a 1 to 5 scale, please rate the blast intensity. (1= minor, 5= major) 3

What was your activity at the time of the blast? VARO WORK

In what general direction does your house face? (N, E, S or W) N

Is your home a 1 story, 1 1/2 story, or 2 story or larger? 1

What is the approximate square footage of your home? 2800

Would you like a Quarry Commission member to contact you regarding your report?
(Yes or No) _____

We encourage you to attend the next meeting of the Quarry Commission. Representatives of the monitoring company and the blasting contractor as well as the Quarry Manager normally attend every meeting and are available to answer questions. The Commission meets the second Monday of each month at 7:00 PM in the Municipal Courtroom.

Please complete the form and print it, then submit the completed report(s) to the City Hall or to quarrycom@ci.garden-ridge.tx.us. Thank you for submitting the form.

2016/1-9

Sent to C
10-12-16

CITIZEN BLASTING - REPORT FORM

Name: Connie Cain

Date Reported: 10/12/16

Address: 9967 Trophy Oaks Dr

E-mail address: Conniecain@SATX,rr.com

Phone: 651-6757

Date / Time of the blast: 10/11/2016 1

Describe weather - cloudy or clear? Temperature? 80

Please describe your concern and explain what was felt, seen or heard.

at 10:25 AM the floor under my feet moved with extreme force.

Please rate what you felt using the following rating scale as a guide only.

- 1. Noticeable, but barely.
- 2. A nuisance; definitely perceptible; most would describe it as minor shaking.
- 3. Noticeable; likely wake a sleeping person; windows rattle; disturbing.
- 4. Dishes rattle, pictures fall; perceived house or foundation movement.
- 5. Really gets your attention; consider moving to cover and hiding; damage likely to be seen; windows cracked;

Your rating (1 minor - 5 major): 5

How did this blast compare to others you have heard or felt? - WORST EVER

Would you like someone to contact you to explain what we found out? Do you have any other concerns? NO

RECEIVED

OCT 12 2016

PER JH

Please complete this form and print it on your own computer, then submit the completed reports to the City Hall or to quarrycom@ci.garden-ridge.tx.us. Thank you for filling out our form.

We encourage you to attend the next meeting of the Quarry Commission. The Commission meets on the second Monday of the month at 7:00 p.m. in the Municipal Courtroom.

2016/1-10

AMT
QC
10-12-16

City Secretary

From: noreply@civicplus.com
Sent: Tuesday, October 11, 2016 10:35 AM
To: City Administrator; City Secretary
Subject: Online Form Submittal: Citizen Quarry Blast Impact Report

Citizen Quarry Blast Impact Report

| | |
|--|--|
| First Name | Missy |
| Last Name | Lantzy |
| Report Date | 10/11/2016 |
| Phone Number: | 651-3531 |
| E-Mail Address | Mmlantzy@hotmail.com |
| Address1 | 20515 Wahl lane |
| Blast Date/Time: | 10:29 am |
| Please describe the event. | Shook all the windows in the house. |
| How did this blast compare to other blasts? | <i>Field not completed.</i> |
| On a 1 to 5 scale, please rate the blast intensity. (1=minor, 5 = major) | 4 |
| What was your activity at the time of blast? | In guest room |
| In what general direction does you house face? (N,E,S or W) | E |
| What is the approximate square footage of your home? | 3000 |
| Is your home a 1 story, 1 1/2 , or 2 story or large? | 1 1/2 |
| Would you like a Quarry Commission member to contact you regarding | No |

2016/2-10

AC
10-12-16

your report?

We encourage you to attend the next meeting of the Quarry Commission. *Representatives of the monitoring company and the blasting contractor as well as the Quarry Manager normally attend every meeting and are available to answer questions. The Commission meets the second Monday of every other month at 7:00 PM in the City Council Chambers in City Hall.*

By filing this report, you consent to the public release of this information.

Email not displaying correctly? [View it in your browser.](#)