

**County of Santa Clara
Department of Environmental Health**

**Second Quarter 2017 Noise Monitoring Report for
Lehigh Southwest Cement Company
24001 Stevens Creek Blvd.
Cupertino, CA 95014**

In the second quarter of 2017, the Department of Environmental Health (DEH) received five complaints related to noise in the vicinity of the Lehigh Cement Plant. We performed three different measurements in three different locations as presented in Table 1 below.

Table 1 - LEHIGH NOISE MONITORING - SECOND QUARTER 2017

DATE AND TIME	LOCATION	dB(A) NOISE MEASUREMENT*	dB(A) NOISE LIMIT**	BACKGROUND NOISE OBSERVATIONS / COMMENTS
4/28/17 10:08 pm- 11:08 pm	Firwood Drive	45.8	40.0	Observed no background noise (e.g. cricket or other animal noises) except for one plane flyover and several cars (6). Lehigh Cement was the dominant noise, a violation of the County Noise Ordinance.
6/15/17 10:07 pm- 11:07 pm	Firwood Drive ¹	59.0	40.0	Observed background cricket noise and numerous plane flyovers and car passby. Background noise was the dominant noise. Not a violation of the County Noise Ordinance. Plant was inaudible.
6/23/17 10:02 pm- 11:02 pm	Medina Court ²	41.8	40.0	Observed slight air conditioning compressor motor noise and observed numerous car passby's and numerous airplane flyby's. Background noise was the dominant noise. Not a violation of the County Noise Ordinance. Plant was barely audible.

¹Not a violation due to dominant background noise, Lehigh Cement plant was not audible. Noise measurement were taken on a different location on Firwood Drive.

²Not a violation due to dominant background noise, Lehigh Cement plant was barely audible.

*Noise meter Session Reports included in Attachment 1 and expressed as L_{eq}

**The noise limit for these monitoring sessions was 40 dB(A) because the noise contained a steady, audible hum for the entire monitoring session.

Conclusion

Based upon our review of the data shown above DEH concludes that when the noise monitoring occurred, the Plant was operating in violation of SCC Noise Ordinance on one occasion on 4/28/17.

County of Santa Clara
Department of Environmental Health
Noise Compliance Program

10:08:15 PM

Location; Firwood Drive; Cupertino, CA

Measurement Name: 831_Data.017 SLM Time History

Instrumentation: 831 0004340

Duration (seconds): 3600.0

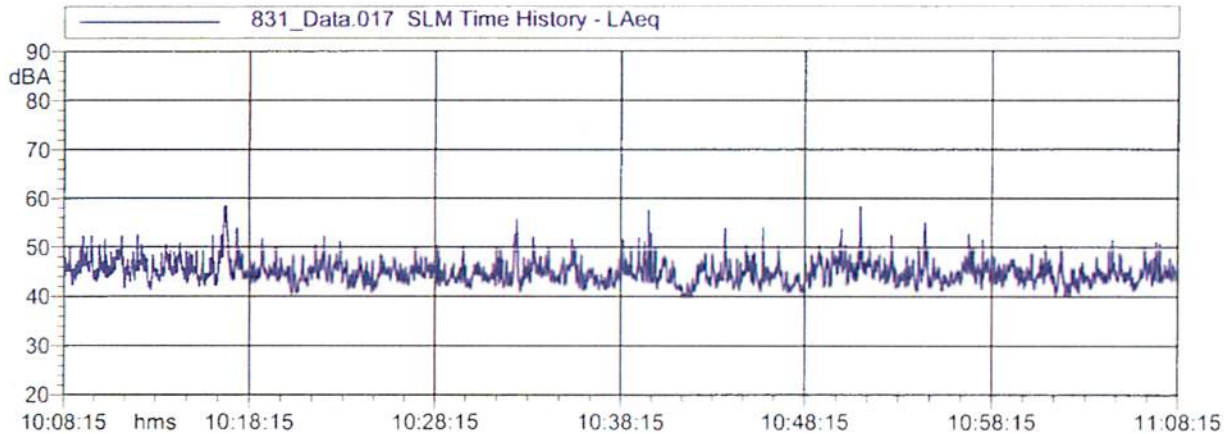
Operator Name: Peder W Eriksson Jr

Measurement Date: April 28, 2017

L90: 42.5 dBA

Annotation:

$L_{Aeq} = 45.8 \text{ dB}$



 **LARSON DAVIS**
A PCB PIEZOTRONICS DIV.

Larson Davis, a division of PCB Piezotronics, Inc.
3425 Walden Avenue, Depew, New York 14043 USA
Toll-Free Phone: 888-258-3222 www.larsondavis.com



County of Santa Clara
Department of Environmental Health
Noise Compliance Program

10:07:59 PM

Location: Firwood Drive; Cupertino, CA

Measurement Name: 831_Data.019 SLM Time History

Instrumentation: 831 0004340

Duration: 3600.0

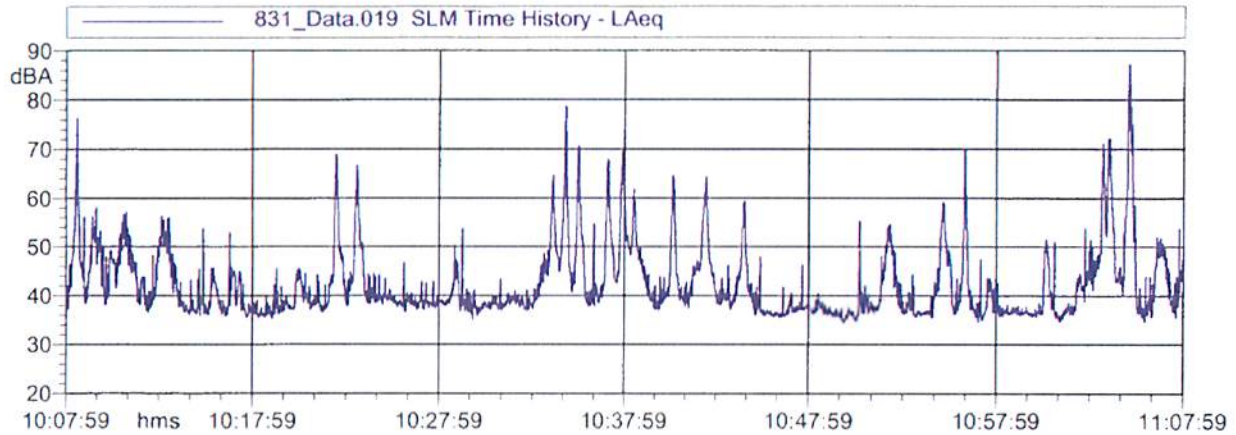
Operator Name: Peder W Eriksson Jr

Measurement Date: June 15, 2017

L90: 36.4 dBA

L_{Aeq} = 59.0 dB

Annotation:



Larson Davis, a division of PCB Piezotronics, Inc.
3425 Walden Avenue, Depew, New York 14043 USA
Toll-Free Phone: 888-258-3222 www.larsondavis.com



County of Santa Clara
Department of Environmental Health
Noise Compliance Program

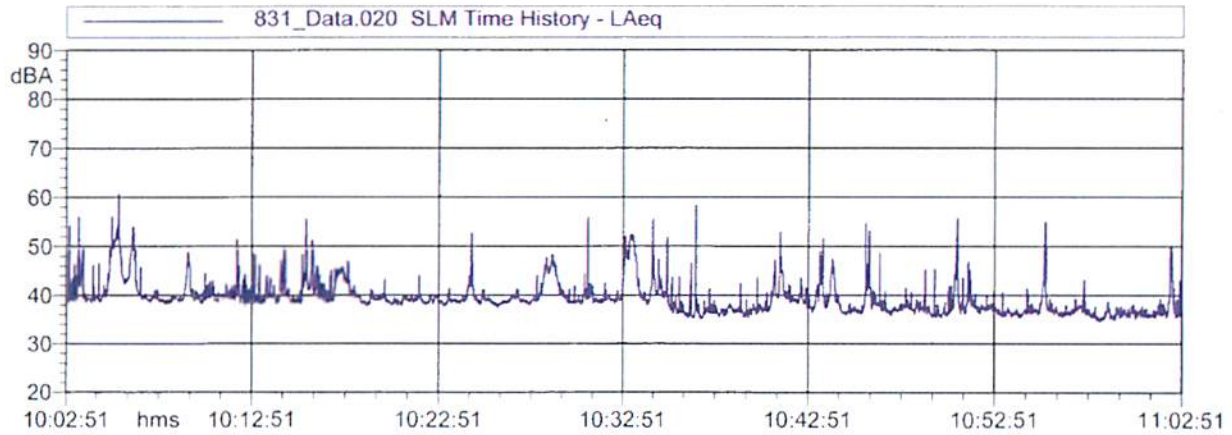
10:02:51 PM

Location: Medina Court; Cupertino, CA
Measurement Name: 831_Data.020 SLM Time History
Instrumentation: 831 0004340
Duration: 3600.0
Operator: Peder W Eriksson Jr
Measurement Date: June 23, 2017

L90: 36.2 dBA

$L_{Aeq} = 41.8 \text{ dB}$

Annotation.



Larson Davis, a division of PCB Piezotronics, Inc.
3425 Walden Avenue, Depew, New York 14043 USA
Toll-Free Phone: 888-258-3222 www.larsondavis.com



County of Santa Clara

Department of Environmental Health

1555 Berger Drive, Suite 300
San Jose, California 95112-2716
(408) 918-3400
www.EHInfo.org



May 16, 2017

**Lehigh Southwest Cement Company
Attn.: Sam Barket
24001 Stevens Creek Blvd.
Cupertino, CA 95014**

RE: Third Notice of Violation of Santa Clara County Noise Ordinance Section B11-152

Dear Mr Barket:

Since the Department of Environmental Health (DEH) issued the Second Notice of Violation on February 16, 2017, we have received two additional formal complaints alleging that Lehigh Southwest Cement Company (located at 24001 Stevens Creek Boulevard, Cupertino, hereafter Subject Property) is creating ongoing, steady noise at excessively-loud levels.

Santa Clara County Ordinance Code (Ordinance Code) section B11-152 generally limits excessive noise creating a public nuisance. On the Subject Property, which is in a residential land use area, you may not create noise exceeding 55 dB(A) (decibel A-weighting) between the hours of 7:00 a.m. and 10:00 p.m. From 10:00 p.m. to 7:00 a.m., you may not create noise exceeding 45 dB (A). Section B11-152(b) reduces the allowed noise limit to 40 dB(A), if it contains a steady, audible tone such as a whine, screech or hum.

On March 31, 2017, DEH staff took sound-level measurements for one hour, starting at 10:06 p.m., on a property located on Medina Court in Cupertino. The attached sound level data sheet and graph indicates that the L_{eq} value was 46.2 dB(A) for a period of one hour. During that one-hour period, there was no background noise (e.g. cricket or other animal noises) except for some planes and cars. After accounting for extraneous noise sources, the noise level contributed by Lehigh Southwest Cement Company was between 42-52 dB(A) due to the fluctuating noise levels originating from the plant and based upon our continuous observations during the monitoring period. The noise limit for this monitoring session was 40 dB(A) because the noise contained a steady, audible hum for the entire monitoring period.

On April 28, 2017, DEH staff took sound level measurements for a period of one hour, starting at 10:08 p.m., on a property located on Firwood Drive in Cupertino. The attached sound level data sheet and graph indicates that the L_{eq} value was 45.8 dB(A) for a period of one hour. During that one hour period, there was no background noise (e.g. cricket or other animal noises) except for that created by one plane

flyover and six cars. After accounting for extraneous noise sources, the noise level contributed by Lehigh Southwest Cement Company was between 42-47 dB(A) due to the fluctuating noise levels originating from the plant and based upon our continuous observations during the monitoring period. The noise limit for this monitoring period was 40 dB(A) because the noise contained a steady, audible hum for the entire monitoring period.

This is the Third Notice of Violation, documenting the fourth and fifth instances of excessive noise. DEH documented the first violation on April 14, 2016, the second violation on April 24, 2016, and the third violation on January 29, 2017.

DEH directs Lehigh Southwest Cement Company to immediately reduce the noise generated on the Subject Property. DEH will reevaluate the sound levels on Medina Court and/or Firwood Drive within 30 days to confirm that you have taken appropriate mitigation measures to reduce the sound created on the Subject Property. If DEH's subsequent testing reveals that you have failed to reduce the excessive noise, we will have no choice but to levy administrative fines and seek staff costs against you and consider other legal compliance options.

In addition, we request that you prepare a report detailing the measures that you have taken to reduce the noise by June 16, 2017.

Please contact me at (408) 918-3449 to discuss this matter.

Sincerely,



Rochelle Gaddi, Acting Director
Consumer Protection Division

Attachment-Session Report from March 31, 2017

Attachment-Session Report from April 28, 2017

Cc: Rob Eastwood, SCC Planning Department
Michael L. Rossi, Lead Deputy County Counsel

County of Santa Clara
Department of Environmental Health
Noise Compliance Program

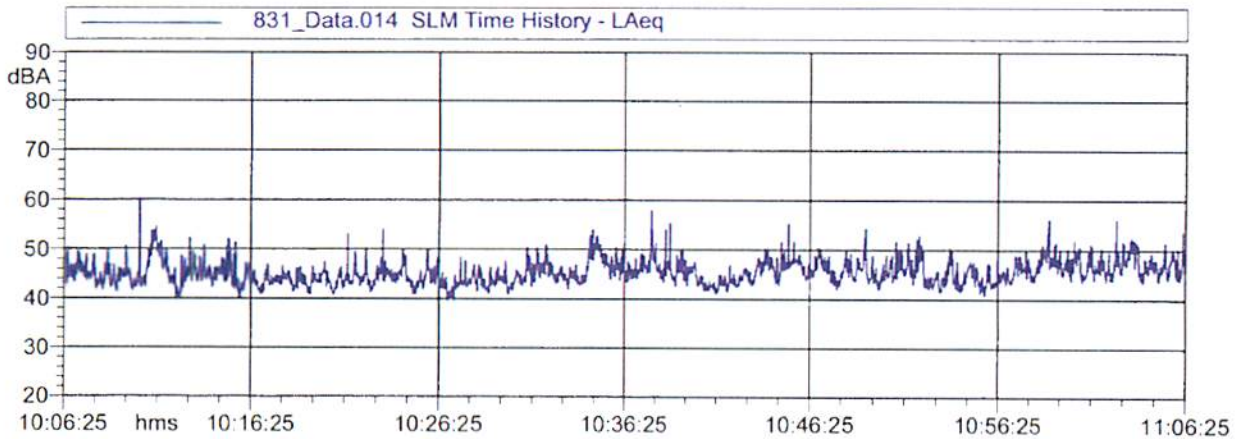
10:06:25 PM

Location: Medina Court; Cupertino, CA
Measurement Name: 831_Data.014 SLM Time History
Instrumentation: 831 0004340
Duration: 3600.0
Operator Name: Peder W Eriksson Jr REHS
Measurement Time: 3/31/2017

L90.0: 42.4 dBA

L_{Aeq} = 46.2 dB

Annotation:



Larson Davis, a division of PCB Piezotronics, Inc.
3425 Walden Avenue, Depew, New York 14043 USA
Toll-Free Phone: 888-258-3222 www.larsondavis.com



County of Santa Clara
Department of Environmental Health
Noise Compliance Program

10:08:15 PM

Location; Firwood Drive; Cupertino, CA

Measurement Name: 831_Data.017 SLM Time History

Instrumentation: 831 0004340

Duration (seconds): 3600.0

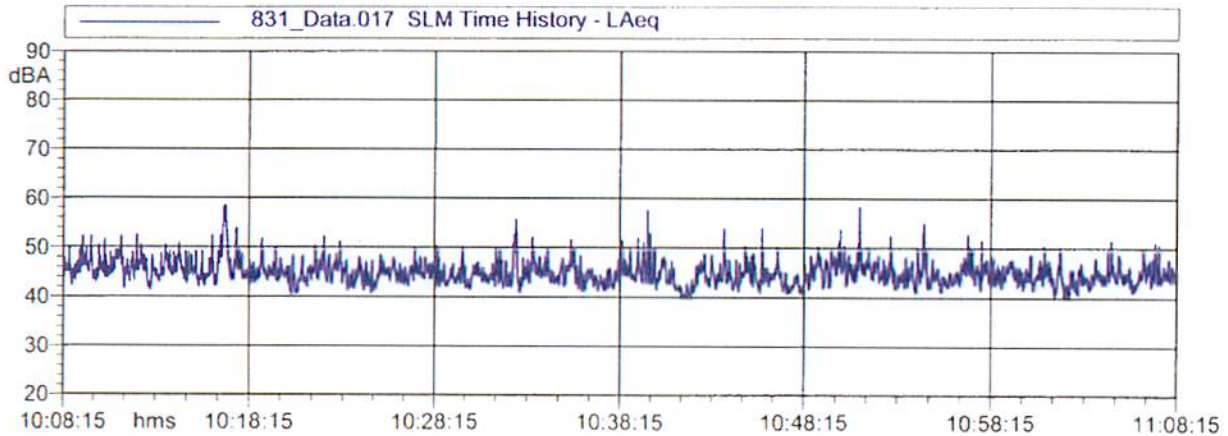
Operator Name: Peder W Eriksson Jr

Measurement Date: April 28, 2017

L90: 42.5 dBA

Annotation:

$L_{Aeq} = 45.8 \text{ dB}$



Larson Davis, a division of PCB Piezotronics, Inc.
3425 Walden Avenue, Depew, New York 14043 USA
Toll-Free Phone: 888-258-3222 www.larsondavis.com



Lehigh Hanson
HEIDELBERGCEMENT Group

Erika Guerra
Environmental Director
Lehigh Southwest Cement Co.
24001 Stevens Creek Blvd.
Cupertino, CA 95014
408-257-7476 office

June 14, 2017

Rochelle Gaddi, Acting Director
Department of Environmental Health
Consumer Protection Division
County of Santa Clara
1555 Berger Drive, Suite 300
San Jose, CA 95112-2716

Re: Permanente Quarry
Response to May 16, 2017 Correspondence

Dear Ms. Gaddi:

This letter responds to your May 16, 2017 correspondence, in which the Department of Environmental Health ("Department") contends that Lehigh Southwest Cement Company may have violated the County's noise ordinance at its Permanente facility located at 24001 Stevens Creek Blvd.

Your letter requests that Lehigh respond within 30 days, or by June 16, 2017, with a report detailing the measures taken by Lehigh to reduce noise. We respectfully request that you grant Lehigh a two-week extension (to June 30, 2017) to provide a formal response. Lehigh has conducted various ambient measurements before and after the above mentioned correspondence and is currently analyzing the data to provide a sound plan.

In the interim, we want to be clear that Lehigh believes that its Permanente facility remains in compliance with the County's noise ordinance, as shown by past and ongoing testing. We look forward to working with the Department to analyze the data and to ensure that the Department's concerns are addressed.

Please call with any questions.

Sincerely,



Erika Guerra
Environmental Director
Lehigh Southwest Cement Company

cc: Rob Eastwood, Department of Planning and Development
Michael L. Rossi, Lead Deputy County Counsel
Keith Krugh, Lehigh Hanson
Sam Barket, Lehigh Hanson



June 29, 2017

VIA EMAIL & CERTIFIED MAIL/RETURN RECEIPT
7015 1520 0001 8274 4089

Ms. Rochelle Gaddi, Acting Director
County of Santa Clara
Department of Environmental Health
Consumer Protection Division
1555 Berger Drive
Suite 300
San Jose, CA 95112-2716

**RE: Lehigh Southwest Cement Company Cupertino Plant
Response to May 16, 2017 Letter**

Dear Ms. Gaddi:

The following is in response to the Department of Environmental Health's ("DEH") May 16, 2017 correspondence, which identified suspected violations of Santa Clara County's Noise Ordinance, and asked that Lehigh Southwest Cement Company ("Lehigh") take action to reduce noise levels generated by the Permanente facility at 24001 Stevens Creek Boulevard. We are pleased to have this opportunity to respond to DEH by providing the latest data showing Lehigh's compliance, and by offering plans to further reduce sound levels at the facility.

Attachment A contains the results of a sound survey performed in April-May 2017 by Burns McDonnell, a nationally-respected firm. The study includes measurements at locations outside the facility including Voss Avenue and Longdown Road in Cupertino. The measurements were taken on April 10-11 while the cement plant was idle, and on May 22-23 while the cement plant was operating. The results showed that facility sound levels remained at all times below 40 dB(A), the most restrictive level available under the County noise ordinance.

These results, notably, are consistent with the outcomes of other third-party studies, including:

- On December 14, 2015, Burns McDonnell submitted, on Lehigh's behalf, a study to DEH. The study analyzed noise measured at several locations surrounding Lehigh's property. Burns McDonnell found that the facility was in compliance with the County's standards. On December 30, 2015, DEH concurred that Lehigh was in compliance. The County also provided a report from its own independent expert, dBF Associates, confirming that result.

- In fall 2016, the City of Cupertino commissioned its own noise study, featuring continuous (“24-hour”) monitoring at two locations for a four-week period in October 2016. The City’s noise consultant, CDSA Design Group, compared the results to the County’s noise standards (and to the City’s standards), and again found no violations. The results were reported to the City Council on January 24, 2017.

Notwithstanding these studies, however, Lehigh recognizes that DEH and the local community continue to have concerns, and Lehigh is committed to fostering a good relationship with residents and to finding solutions that further reduce sound levels at the facility. In our March 24, 2017 letter we committed to update and establish a new baseline sound survey. We further established a noise monitoring program and offered the details of that program, this being done in addition to the analysis and mitigation actions implemented in previous months. **Attachment B** is a copy of that letter.

We also desire to accommodate DEH’s present request for additional mitigation. We consulted with our experts to determine whether additional sound-reducing measures are possible. We are pleased to report that we have identified a set of further actions that we can commit to, as listed below. We emphasize, however, that the efficacy of these measures cannot be known with precision in advance. While these actions should measurably reduce noise, the extent of such a reduction will not be known until after the modifications are made.

- Replace 32 fans in the kiln/mill dust collector
- Install directional plates to the existing silencers on exhaust fans, to direct sound away from nearby residential areas in the finish mill area
- Install acoustical wrap to fan 7FA8 in the silos of the shipping areas
- Install acoustical doors in the cement silos area

We also want to be clear regarding the timing of the implementation of these measures. Certain measures – and specifically, the replacement of the 32 fans – would occur incrementally over a period of months to ensure that, as modified fans are added, Lehigh continues to meet the operating requirements set by other agencies. We believe it is important to discuss and agree on a timeline for implementation to ensure that expectations are clear. We hope to meet with DEH to discuss the details of our proposal. In the meantime, we reserve our rights with respect to the exceedances claimed by DEH.

Finally, we want to reiterate our desire to maintain an open dialogue with the local community. In the past several months, we have visited on many occasions with our neighbors at their homes or at the plant site, to hear their concerns and to follow up on complaints. We have done this to gain a clearer understanding of residents’ concerns. We will continue to engage in this community outreach, and to do our best to fashion solutions that are responsive to our neighbors and those affected by this issue.

As indicated above, we believe that an appropriate next step is to meet with DEH to discuss the details of what we propose and a schedule for proceeding. We will reach out to DEH following this letter in this regard. In the interim, please feel free to contact me at any time if you have questions, thoughts or comments.

Sincerely,



Sam Barket
Environmental Manager
Lehigh Southwest Cement Company

Enclosures

Attachment A – April/May 2017 Survey Results

Attachment B – Lehigh March 24, 2017 letter and attachments

cc (via email):

Kari Saragusa, Lehigh

Denzil Cotera, Lehigh

Keith Krugh, Lehigh

Ana Damonte, Lehigh

Erika Guerra, Lehigh

Meas. Location	Ambient - Stack not in Operation							
	4/10/2017		4/10/2017		4/11/2017		4/11/2017	
	6 pm to 8 pm		12 am to 2 am		6 am to 8 am		12 pm to 2 pm	
	Leq	L90	Leq	L90	Leq	L90	Leq	L90
MP1	41.8 **	38.8 **	41.4 **	38.1 **	43.9 **	38.1 **	48.4 **	42.3 **
MP2	50.5 **	48.7 **	51.5 **	50.1 **	54.9 **	52.6 **	68.8 **	55.4 **
MP3	44.7 **	40.4 **	31.7 **	29 **	49.2 **	45.3 **	52.6 **	48.2 **
Longdown	37.3	31.3	38.4 *	28.9 *	43.9	40.1	61.5	42.7
Substation	47.2	41.4	39.9	36.9	49.3	42.7	47.7	42.7
Voss	49.3	28.7	32.3 *	25.3 *	50.6 *	37.1 *	48.9 *	44.2 *

Meas. Location	Baseline Fully Operational							
	5/22/2017		5/22/2017		5/23/2017		5/23/2017	
	6 pm to 8 pm		12 am to 2 am		6 am to 8 am		12 pm to 2 pm	
	Leq	L90	Leq	L90	Leq	L90	Leq	L90
MP1	51.7 **	49.8 **	52.0 **	51.2 **	52.2 **	50.8 **	53.7 **	51.5 **
MP2	61.5 **	60.4 **	62.7 **	61.9 **	62.4 **	61.6 **	62.1 **	60.9 **
MP3	45.6 **	41.2 **	46.0 **	44.5 **	46.3 **	45.0 **	44.0 **	40.8 **
Longdown	55.2	47.6	34.0	30.3	41.3	38.2	41.4	37.3
Substation	44.7	40.6	39.2	37.3	46.3	43.0	52.7	49.3
Voss	45.0 **	39.1 **	39.5 **	37.7 **	46.8 **	38.7 **	49.0 **	36.8 **

* Plant faintly audible

** Plant clearly audible

Ambient survey notes

4/10/2017 6 pm to 8pm

MP1	Birds, aircrafts, onsite backup alarms, finishing mill.
MP2	Stream, birds, aircrafts, onsite backup alarms, truck traffic, finishing mill.
MP3	Birds, aircrafts, truck traffic, finishing mill.
Longdown	Aircrafts, birds, talking, local traffic.
Substation	Insects, aircrafts, substation, local traffic, distant highway traffic, talking.
Voss	Aircrafts, birds, talking, local traffic, distant traffic.

4/11/2017 12 am to 2 am

MP1	Finishing mill, insects, onsite trucks, backup alarms, aircraft.
MP2	Finishing mill, insects, impact noises, onsite trucks, backup alarms, aircraft.
MP3	Finishing mill, transformers, insects, bird, onsite trucks, backup alarms, distant traffic.
Longdown	Traffic, distant aircraft, car alarm, birds, insects, facility noise, truck traffic.
Substation	Transformers, insects, birds, aircraft, traffic.
Voss	Distant highway noise, power lines, local traffic, insects, backup alarms, aircraft.

4/11/2017 6 am to 8 am

MP1	Birds, aircrafts, onsite backup alarms, onsite trucks, finishing mill.
MP2	Birds, aircrafts, onsite backup alarms, truck traffic, finishing mill.
MP3	Fan noise, birds, aircrafts, truck traffic, finishing mill.
Longdown	Aircrafts, birds, talking, local traffic.
Substation	Birds, aircrafts, substation, local traffic, distant highway traffic.
Voss	Aircrafts, birds, talking, local traffic, distant traffic, onsite backup alarm.

4/11/2017 12 pm to 2 pm

MP1	Aircrafts, gun range, onsite backup alarms, onsite trucks, offsite traffic, finishing mill.
MP2	Birds, aircrafts, onsite backup alarms, truck traffic, finishing mill, impact noise.
MP3	Fan noise, birds, aircrafts, finishing mill.
Longdown	Dogs, aircrafts, birds, talking, local traffic, gun range.
Substation	Birds, aircrafts, substation, local traffic, distant highway traffic.
Voss	Aircrafts, gun range, dog, birds, talking, local traffic, distant traffic, onsite backup alarm.

Baseline operation survey notes

5/22/2017 6 pm to 8pm

MP1	Plant fan noise, birds, insects, aircrafts.
MP2	Plant fan noise, birds, insects, onsite backup alarms, trucks, horns.
MP3	Plant fan noise, quarry siren, birds, insects, distant traffic.
Longdown	Aircrafts, birds, talking, local traffic, residential air conditioner.
Substation	Birds, substation, local traffic, distant highway traffic, talking.
Voss	Plant fan noise, aircrafts, birds, talking, local traffic, distant traffic.

5/23/2017 12 am to 2 am

MP1	Plant fan noise, insects, aircrafts.
MP2	Plant fan noise, insects, trucks.
MP3	Plant fan noise, aircraft, distant dog bark.
Longdown	Insects, aircrafts, birds, local traffic.
Substation	Substation, local traffic, distant highway traffic, talking.
Voss	Plant fan noise, insects, distant traffic.

5/23/2017 6 am to 8 am

MP1	Plant fan noise, birds, insects, aircrafts, onsite sirens and conveyer.
MP2	Plant fan noise, trucks, horns.
MP3	Plant fan noise, birds, onsite trucks, distant traffic.
Longdown	Aircrafts, birds, local traffic.
Substation	Birds, substation, local traffic, distant highway traffic, talking.
Voss	Plant fan noise, aircrafts, birds, talking, local traffic, distant traffic.

5/23/2017 12 pm to 2 pm

MP1	Plant fan noise, birds, insects, aircrafts, onsite sirens and conveyer.
MP2	Plant fan noise, birds, aircrafts, onsite backup alarms, trucks, horns.
MP3	Plant fan noise, birds, onsite trucks, distant traffic.
Longdown	Aircrafts, local construction, birds, talking, local traffic.
Substation	Local construction noise, birds, substation, local traffic, distant highway traffic, talking.
Voss	Plant fan noise, aircrafts, birds, talking, local traffic, distant traffic.



24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

March 24, 2017

VIA EMAIL & CERTIFIED MAIL/RETURN RECEIPT

Ms. Rochelle Gaddi, Acting Director
County of Santa Clara
Department of Environmental Health
Consumer Protection Division
1555 Berger Drive
Suite 300
San Jose, CA 95112-2716

**RE: Lehigh Southwest Cement Company—Permanente Plant
Update on Sound Reduction Projects**

Dear Ms. Gaddi:

This letter is in response to your February 16, 2017 letter, regarding allegations that Lehigh Southwest Company (Lehigh) Permanente Facility had violated section B11-152 of the Santa Clara County noise ordinance. Lehigh has been performing sound surveys that demonstrate that Lehigh has remained in compliance with the above mentioned ordinance.

I want to reiterate Lehigh's commitment to be a good neighbor in the community, and reassure you and others that we continue to work diligently in finding solutions to further reduce the emissions of sound from the facility into the surrounding community.

In response to your request to explain all past, present and future measures that Lehigh has taken to reduce sound levels in its operation, below is a summary of those actions, including a robust plan of present and near term activities. In addition to various studies and capital investments made, these actions include ongoing communication with the members of the community.

In May 2015, at the request of the Santa Clara County Department of Environmental Health (SCCDEH), Lehigh studied sound levels in and around the plant.

In September 2015, we expanded our sound monitoring study in coordination with SCCDEH. A third party prepared a Sound Compliance Study (SCS) to investigate the noise complaints.

Measurements were collected with SCCDEH's staff in attendance. The study was completed in December 2015 with the following results:

- The study concluded that sound levels from plant operations were in compliance with B11-152 of the Santa Clara County noise ordinance. Sound levels were reduced between May 2015 and September 2015 studies due to the various improvements made at the plant.
- A sound model (CadnaA) was developed to distinguish plant sound levels from other sources.

SCCDEH retained an independent sound expert to peer review the study conducted by the third party. The independent expert verified that the results provided in the SCS were accurate and that Lehigh was in compliance with B11-152 of the Santa Clara County noise ordinance. On December 30, 2015, SCCDEH confirmed that Lehigh was in compliance.

The SCS provided Lehigh with a wealth of data to: assess compliance, identify the main sources creating the highest sound levels around our operations, and establish a baseline for the sound levels produced by the equipment. Since then, Lehigh has continued to work and invest capital to reduce further sound levels at the facility. This is reflected in all the improvements made during the second half of 2015, 2016 and more that are planned for this year. These actions are major capital projects that require engineering, funding and time for planning, procurement and execution.

On June 15, 2016 Lehigh committed to providing updates to SCCDEH about ongoing projects intended to reduce sound levels. As stated in the SCCDEH record (Attachment A), some of these projects are: the modification of Fan 7FA2, Fan 7FA11, Fan 7FA10b, Fan 6FA19 and G-Cooler fans by installing silencers; adding insulating blankets to the G-Cooler and compressor room, and other operational procedures.

These are some of the various projects executed with successful measureable results. In addition to these Lehigh has experimented with fan configurations, and other operational measurements that unfortunately, have not proven viable or effective.

Lehigh continues to look for further sound reduction opportunities. Due to the complexity of this topic, in addition to these investments, and as requested by SCCDEH, we have asked a third party sound specialist to help us:

1. Update and establish a new **Baseline Sound Survey** to obtain operational sound measurements of the current operations. The sound specialists will be taking near-field and far-field measurements. Attachment B contains the proposed onsite and offsite measurements. This will allow us to verify further reductions as we continue to invest in reducing sound levels at the facility.
2. Conduct a **Second Sound Survey** to verify that actions taken to reduce sound levels were effective. This action will generate a report to compare baseline measurements and those

taken after implementation of actions to further reduce sound levels. All sound level measurements will be performed in accordance with ANSI S1.4, S1.13, and S12.18.

3. **Develop a Sound Monitoring Program Manual** to support the development of Lehigh's sound monitoring program. The monitoring program is hereby provided to the Santa Clara County Department of Environmental Health as an enclosure to this submittal (Attachment C). This will ensure continuity in the implementation of the program with various plant personnel. The manual will include information and instructions on the following:
 - a. Definitions of acoustical terminology
 - b. Guidelines for taking sound level measurements per ANSI standards
 - c. Configuration settings for Larson Davis LxT sound level meter
 - d. Sound level measurement procedures
 - e. Map of sound measurement locations
 - f. Baseline sound levels from previous sound study at each location
 - g. Downloading and processing data
 - h. Sound measurements field data sheets
4. **Conduct Training for Sound Monitoring Program.** The objective of this training is to educate Lehigh personnel on the operation of the Larson Davis LxT sound level meter and proper measurement and reporting procedures.

Lehigh expects that these actions will generate additional data for the company, the authorities and neighbors to objectively identify sound levels related to our facility and record the progress of our improvement actions.

In addition to this, Lehigh would like to reiterate our commitment to fostering an open dialogue with the surrounding community. To this effect, Lehigh hosted two neighbors to observe the plant operations. During their visit, in May 2016 Lehigh's personnel jointly took sound level measurements around the plant. To further enhance this commitment, Lehigh is evaluating the implementation of a "community mailbox" where members of the community can log complaints, request information and make suggestions that help to further reduce sound levels.

This course of action demonstrates Lehigh's ongoing commitment to enhancing community relations and improving the local environment. Lehigh welcomes any additional input that the SCCDEH provides to enhance the planned activities. Please feel free to contact me anytime at 408-996-4269 if you have comments, or if you would like more information.

Sincerely,

Sam Barket
Environmental Manager

Enclosure

Attachment A - Updates to SCCDEH about ongoing projects intended to reduce sound levels.

Attachment B – Map of on-field and off-field measurements

Attachment C – Lehigh’s sound monitoring plan

cc (via email):

Kari Saragusa, Lehigh

Denzil Cotera, Lehigh

Keith Krugh, Lehigh

Ana Damonte, Lehigh

Erika Guerra, Lehigh

ATTACHMENT A

UPDATES TO SCCDEH ABOUT ONGOING PROJECTS INTENDED TO REDUCE SOUND LEVELS

Lehigh Hanson

HEIDELBERGCEMENT Group

24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

June 15, 2016

VIA CERTIFIED MAIL/RETURN RECEIPT
7015 0640 0007 4329 0570

Mr. Michael Balliet, Director
Santa Clara County
Department of Environmental Health
Consumer Protection Division
1555 Berger Drive, Suite 300
San Jose, CA 95112-2716

**RE: Lehigh Southwest Cement Company—Permanente Plant
Update on Noise Projects**

Dear Mr. Balliet:

On June 2nd Lehigh Southwest Cement Company responded to allegations that the Permanente facility had violated section B11-152 of the Santa Clara County noise ordinance. In that response, Lehigh committed to performing noise attenuation projects to reduce the emissions of noise into the surrounding community. This letter provides a summary of those activities to date.

The table, below, presents a list of noise attenuation projects. Each line includes sound level measurements taken both prior to and subsequent to project completion. Sound level readings were taken using an Extech Instruments Sound Level Meter #407732.

Projects Summary

Equipment Description	Project Description	Reading Before (dBA)	Reading After (dBA)
G-Cooler Insulation	Installed 1100 square feet of sound insulating blankets to G-cooler structure (11 @ 4' X 25')	83.5	77.9
Compressor Room	Operational change: closed north door to restrict sound escape	85.3	76.8
Compressor Room	Installed 360 square feet of double-thickness sound insulating blankets (9 @ 4' X 10')	88	78.9

This information has also been communicated to a local resident of Firwood Avenue, Mr. Karim Sharif, who has voiced complaints about noise from the facility in the past.

Lehigh proposes to provide the Santa Clara County Department of Environmental Health with periodic updates regarding further noise attenuation projects at the facility. These projects demonstrate Lehigh's ongoing commitment to enhancing community relations and improving the local environment.

Please feel free to contact anytime at 408-996-4269 if you have comments, or would like more information.

Sincerely,



Sam Barket
Environmental Manager

cc (via email):

Kari Saragusa, Lehigh
Denzil Cotera, Lehigh
Alan Sabawi, Lehigh
Ana Damonte, Lehigh

Lehigh Hanson
HEIDELBERGCEMENT Group

24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

July 18, 2016

VIA CERTIFIED MAIL/RETURN RECEIPT
7015 0640 0007 4329 0761

Mr. Michael Balliet, Director
County of Santa Clara
Department of Environmental Health
Consumer Protection Division
1555 Berger Drive
Suite 300
San Jose, CA 95112-2716

**RE: Lehigh Southwest Cement Company—Permanente Plant
Update on Noise Projects**

Dear Mr. Balliet:

On June 15, 2016, Lehigh Southwest Cement Company (Lehigh) committed to providing updates to the Santa Clara County Department of Environmental Health about ongoing projects intended to reduce the emissions of noise from the facility into the surrounding community. This letter details the past month's progress in that regard.

An on-site sound measurement survey had previously identified four (4) sources as creating the highest sound levels at the facility. These sources are identified below. Please note that the "FA" designation indicates that the source is a fan.

- 6FA19 (finish mill draft fan)
- 7FA10b (a dust collector fan)
- 7FA11 (a dust collector fan)
- 7FA21 (provides ventilation for tunnel number 3)

Lehigh has been in contact with dB Noise Reduction Inc. of Ontario, Canada, about the design and purchase of sound suppressors for these devices. Lehigh has provided them with detailed performance information on each source, and has received design proposals from dB Noise Reduction for a suppressor for each source. These proposals are under review. Upon acceptance by Lehigh, the manufacturer requires 6-8 weeks for construction of the devices.

These projects demonstrate Lehigh's ongoing commitment to enhancing community relations and improving the local environment.

Please feel free to contact me anytime at 408-996-4269 if you have comments, or if you would like more information.

Sincerely,



Sam Barket
Environmental Manager

cc (via email):

Kari Saragusa, Lehigh
Denzil Cotera, Lehigh
Alan Sabawi, Lehigh
Ana Damonte, Lehigh

Lehigh Hanson
HEIDELBERGCEMENT Group

24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

November 30, 2016

VIA CERTIFIED MAIL/RETURN RECEIPT
7015 1520 0001 8270 3543

Mr. Michael Balliet, Director
County of Santa Clara
Department of Environmental Health
Consumer Protection Division
1555 Berger Drive
Suite 300
San Jose, CA 95112-2716

**RE: Lehigh Southwest Cement Company—Permanente Plant
Update on Sound Reduction Projects**

Dear Mr. Balliet:

On June 15, 2016, Lehigh Southwest Cement Company (Lehigh) committed to providing updates to the Santa Clara County Department of Environmental Health about ongoing projects intended to reduce the emissions of sound from the facility into the surrounding community. This letter details the recent progress in that regard.

As mentioned in past submittals, Lehigh is working to install sound suppressors on the first four (4) devices listed in the table, below. These sound suppressors have been delivered; installation is complete on the first 3, and the final suppressor is being installed today.

The table also lists projects completed on two (2) other sound sources, the G-Cooler and the compressor room. These projects include installation of sound insulating blankets and process changes (i.e., keeping the door closed at all times, unless it must be opened for maintenance access). Also included in the table are sound measurements taken prior to and subsequent to project completion for each source. Please note that a follow-up measurement of sound from fan 6FA19 will be taken upon project completion.

In addition, Lehigh experimented with changing the booster fan blade pitch angles. In September the fan blade angles were reduced from 25° to 16° in the hope that this would reduce turbulence and, therefore, sound frequency and amplitude. Unfortunately, the booster fan was unable to produce enough draft in the duct using this configuration to be functional, so the blade pitch was

**Santa Clara County, Department of Environmental Health
Update on Sound Reduction Projects**

returned to its previous configuration. Lehigh continues to investigate additional options to reduce sound from the kiln stack booster fan.

Source	Modification	Sound Before (dBA)	Sound After (dBA)
7FA21	Suppressor	92.2	78.4
7FA11	Suppressor	100	83.3
7FA10b	Suppressor	104.3	103.1
6FA19	Suppressor	99.5	In progress
G-Cooler	Insulating blankets	82.5	77.9
Compressor room, north door	Closed door during normal operation	85.3	76.8
Compressor room	Insulating blankets	88	78.9

As recommended by the County in its August 17th letter, Lehigh is working with sound engineers from Burns and McDonnell to develop a formal sound monitoring program. The monitoring program will be provided to the Santa Clara County Department of Environmental Health when it is finalized.

This course of action demonstrates Lehigh's ongoing commitment to enhancing community relations and improving the local environment. Please feel free to contact me anytime at 408-996-4269 if you have comments, or if you would like more information.

Sincerely,

Sam Barket
Environmental Manager

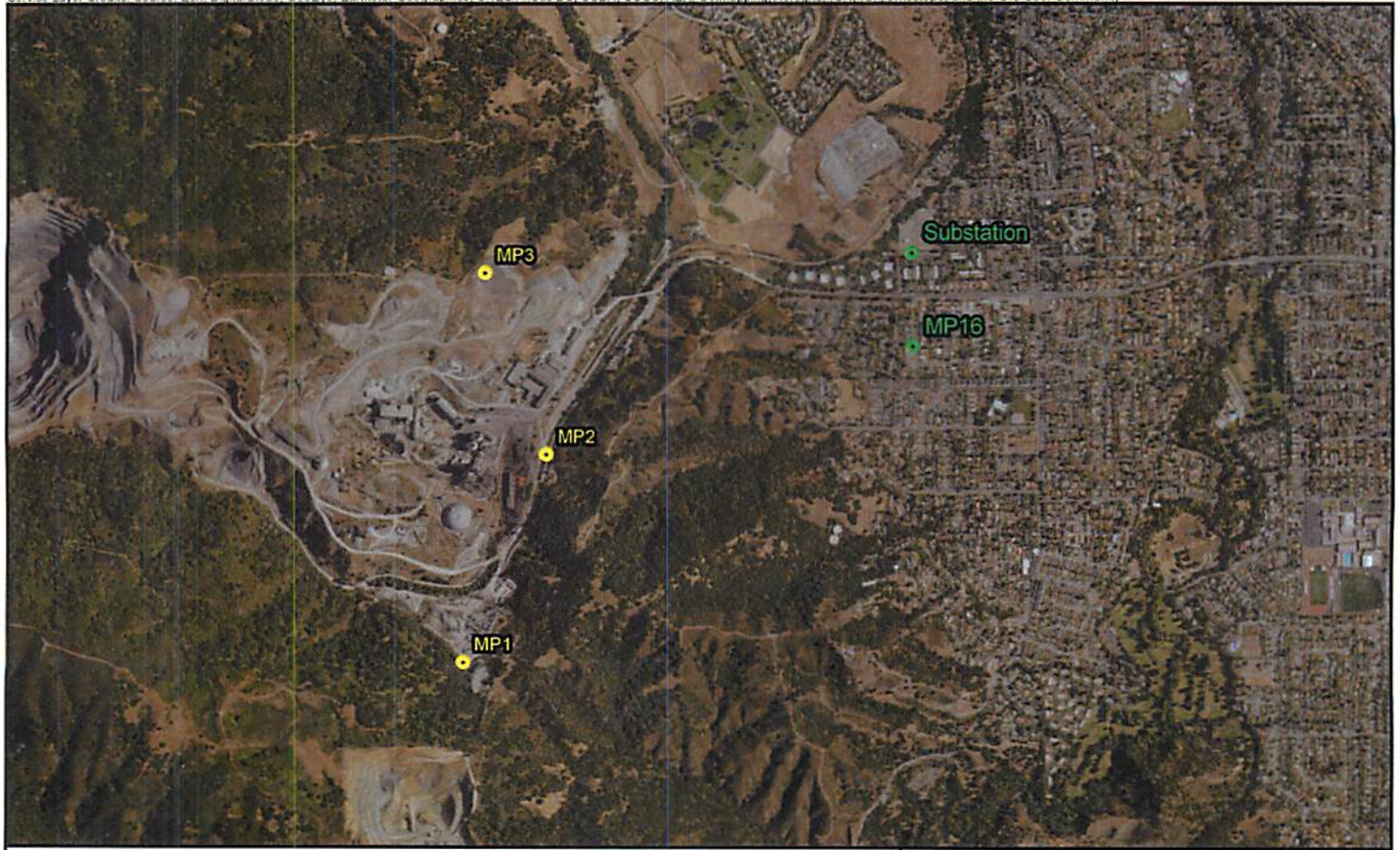
cc (via email):

Kari Saragusa, Lehigh
Denzil Cotera, Lehigh
Keith Krugh, Lehigh
Ana Damonte, Lehigh

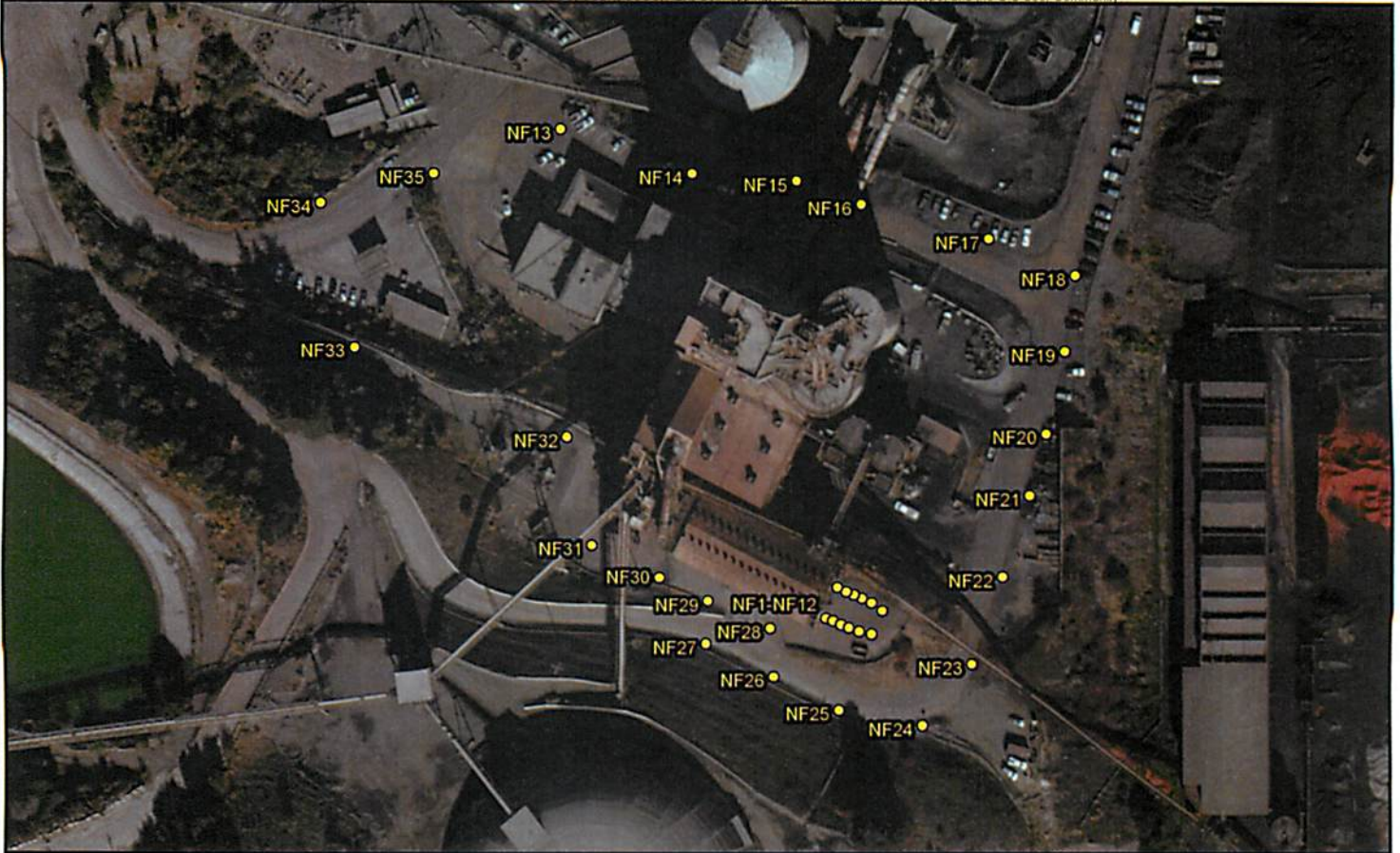
ATTACHMENT B

MAP OF ON-FIELD AND OFF-FIELD MEASUREMENT LOCATIONS

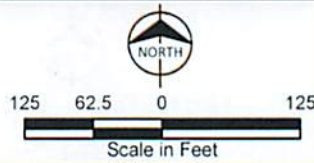
Path: R:\Projects\Marketing\Proposals\Lehigh Cement\March 2017 Activity\Attachment 1 - Monitoring Locations.mxd irbrewe 3/15/2017
COPYRIGHT © 2017 BURNS & McDONNELL ENGINEERING COMPANY, INC.
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomatics, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community



<ul style="list-style-type: none">● Onsite Measurement Points● Offsite Measurement Points	<p>Scale in Feet</p>		<p>Far-Field Measurement Points</p> <p>CONFIDENTIAL Attorney Client Privileged</p>
--	----------------------	--	---



● Near-Field Measurement Points



Onsite Near-Field
Measurement Points

CONFIDENTIAL
Attorney Client Privileged

ATTACHMENT C
LEHIGH'S SOUND MONITORING PLAN

Conduct Quarterly Sound Survey

This procedure describes how to conduct the quarterly sound survey. Ten-minute sound measurements are logged at three (3) different locations around the plant site. NOTE: before coming to the plant, call the control room (408-996-4269) and verify that the kiln is running.

- **Responsibility**—Environmental engineer, or designee.
- **Applicability**—Sound survey.
- **Affected Area**—Environmental department.
- **Frequency**—Quarterly.
- **Procedure**
 - 1) Trained and qualified Lehigh personnel shall collect noise measurements.
 - 2) Noise measurements shall be taken during the nighttime period of 10:00 PM to 7:00 AM to quantify sound levels when non-facility noise is minimal. One measurement will be taken at each selected location.
 - 3) Confirm with the control room operator that the facility is fully operational prior to taking measurements: measurements shall be taken when the cement kiln is operating, and the exhaust stack fan is operating within the range of 700 to 900 revolutions per minute (rpm), which is representative of typical operations.
 - 4) You will need the following equipment:
 - i. 4WD vehicle;
 - ii. Larson Davis LxT1 sound level meter kit;
 - iii. *Sound Monitoring Program field data sheet* (attached);
 - iv. Clipboard;
 - v. Anemometer (inside the meter kit);
 - vi. Tripod;
 - vii. Flashlight;
 - viii. Pen.
 - 5) Prepare the sound level meter:
 - i. Turn the meter on by pressing the “On/Off” button;
 - ii. If the meter doesn’t stay on, replace the batteries¹;
 - iii. The time response of the meters shall be set to “slow” (the A-weighting filter network shall be used for all overall sound level measurements; the sound level measurements shall include, at a minimum, the minimum, average, and maximum A-weighted sound levels recorded throughout the measurement period).
 - iv. Calibrate the meter:
 1. Turn on the calibrator;

¹ Four (4) spare AA batteries are kept in the meter kit.

Conduct Quarterly Sound Survey

2. Set it to 94 dB;
 3. Place the calibrator over the end of the microphone;
 4. After it reaches a steady number, read the value in dB;
 5. Record the value at the top of the field data sheet under "Cal Before." NOTE: the calibrator turns off automatically.
- 6) Record the following information on the field data sheet:
- i. Date;
 - ii. Name (printed);
 - iii. Signature;
 - iv. Kiln operating rate (tons per hour)²;
 - v. Kiln booster fan speed (rpm).
- 7) Conduct sound measurements:
- i. Proceed to a measurement point³ (the [Sound Monitoring Program locations map](#) is attached):
 1. Sound level measurements shall be recorded during a period of minimal background influence, i.e. between vehicle passes, aircraft flyovers, train passes, and other discrete non-facility sources. The measurement may be paused during such discrete noise sources if necessary to limit non-facility interference. Non-facility noise sources that are audible during measurements but unavoidable shall be noted on the documentation form. Care shall be exercised to assure that the measurement position is free from excess reflections due to walls, columns, or other equipment, and from significant shadowing effects. Care shall also be taken to minimize the effect of airflow from fans, vent discharges, strong electric or magnetic fields, etc.
 2. Noise measurements shall be made with the sound level meter mounted on a tripod, and the microphone positioned approximately 5 feet above the ground; the microphone shall be pointed at the proper angle relative to a line-of-sight to the source.
 3. Remove tripod from pouch and fully extend the legs;
 4. Place it on the ground so that nothing is between it and the stack, and nothing (such as a vehicle) is directly behind it;

² Obtain kiln operating rate and booster fan speed from the control room operator.

³ Noise monitoring shall be performed at the measurement locations designated MP1 through MP3, shown in Attachment 1. These locations are recommended because they were used in the December 2015 study and baseline monitoring data exists. In addition, each location is in sufficient proximity to the facility's noise-generating equipment that facility noise will tend to dominate extraneous noise sources, and thus allow for consistency in results, ease of measurement, and avoid the need for additional methodologies to distinguish facility noise from other sources.

Conduct Quarterly Sound Survey

5. Attach the oval mounting bracket (see photo, below) to the top of the tripod by screwing it onto the mounting stud at the top of the tripod;
 6. Raise the tripod extension to its fullest height using the hand crank;
 7. Attach the mounting flange (see photo, below) to the back of the sound meter by screwing it in beneath the battery cover;
 8. Place the flange collar down over the aluminum mounting bracket stud, then tighten the knob.
- ii. Position the meter:
1. The angle of the microphone shall be as specified by the manufacturer as that angle for which the microphone has the most uniform frequency response;
 2. The observer shall not stand between the microphone and the source, and shall stand behind and to one side of the microphone at all times during the actual noise testing periods;
 3. Adjust the position of the meter so that the microphone is pointed directly at the stack, *then rotate it to either side about 30 degrees*;
 4. Add the wind screen (the spherical foam attachment).
- iii. Begin recording:
1. The duration of measurement shall be a minimum of 10 minutes, which is commonly considered a sufficient amount of time to represent noise over an hour time period;
 2. The noise meter shall collect and save sound level measurements every second for the entire 10 minute measurement period;
 3. Press the black arrow on the left of the "Run/Pause" button;
 4. Verify that the animated run arrow is lit to the right of the battery indicator.
- iv. Use the thermo-anemometer to view and record (on the field data sheet) the following weather data (see [anemometer SOP](#)):
1. Temperature (°F);
 2. Relative humidity (%);
 3. Wind speed (mph) and gust;
 4. Wind direction (degrees);
 5. Measurements shall not be taken when the average wind velocity exceeds 7 miles per hour (3 meters per second) measured 5 feet (1.5 meters) above the ground, or if humidity is greater than 90 percent; no measurements shall be collected during rain events; sound measurements shall not be made under any condition that allows the instrumentation to become wet (i.e. when raining or snowing).
- v. Finish logging data:

Conduct Quarterly Sound Survey

1. After 10 minutes⁴, press the “Stop/Store” button twice;
 2. At the “Save File” query, highlight “Yes” then press “Enter.”
- 8) Repeat steps 6 & 7 for the remaining measurement points.
- 9) Calibrate the meter:
- i. Turn on the calibrator, set at 94 dB;
 - ii. Place the calibrator over the end of the microphone;
 - iii. Read the value in dB;
 - iv. Record the value at the top of the field data sheet under “Cal After.” NOTE: the calibrator turns off automatically.
- 10) After all readings are completed, turn off the meter by pressing and holding the “On/Off” button until it shuts off.
- 11) Replace and store all equipment.
- **Records**
 - 1) Download logged data.
 - 2) Lehigh shall provide DEH with a report of the monitoring results collected during the preceding calendar quarter. The data will include a table of the measured noise levels, meteorological conditions, and any noted extraneous noises during each measurement. Full octave band and overall dBA data should be included in the report. Overall dBA data should be inclusive of average (Leq) and 90% exceedance sound levels (L90). Field data sheets used should be included. Additionally, the report should include the names of all personnel who conducted and witnessed the testing.
 - **NOTES**
 - 1) As part of the present sound monitoring program, Burns & McDonnell recommends that the monitoring consist of regular sound level measurements at certain onsite locations. Collecting measurements from these existing “baseline” locations will allow an ongoing comparison between current sound levels and levels recorded during the December 2015 study. Using onsite locations allows the most accurate tracking of the facility noise levels over time while minimizing the influence of extraneous noise sources known to dominate offsite locations. If the sound measured is less than or approximately equal to baseline levels recorded in the prior study, the data indicates that sound emitted from the facility has not increased and that the facility remains in compliance with respect to sound generated by Lehigh at offsite receivers. If sound levels at one or more locations exceed the baseline levels, further investigation may be warranted. Burns & McDonnell recommends the use of the following industry standards to guide the monitoring program with respect to procedures and other details not specifically addressed in

⁴ The sound meter will stop recording automatically at 10 minutes.

Conduct Quarterly Sound Survey

this letter: the American National Standards Institute, Inc. (ANSI) S1.4, ANSI S12.13, ANSI S12.18, and American Society of Mechanical Engineers (ASME) PTC-36-2004.

- 2) Sound level measurements shall be made using Lehigh's sound level meter. The meter is a Type 1 meter as defined in ANSI S1.4. Type 1 meters are typically used for measuring environmental noise including overall and frequency data. Type 1 meters must meet the tolerances provided in the standard. Wind Screen: A microphone windscreen shall be used for all measurements. The windscreen shall not affect the response of the sound level meter by more than 0.5 decibel (dB) at frequencies below 2,000 Hertz (Hz) and 1.0 dB at frequencies from 2,000 Hz to 10,000 Hz. Anemometer: Wind speed, atmospheric temperature, and relative humidity will be recorded once per each set of field measurements. Calibrator: The sound level meter shall be field-calibrated using a sound level calibrator with accuracy of 0.5 dB. The standard reference sound pressure shall be 20 micropascals. Field calibrations shall be performed before and after each measurement series, and upon any significant change in recording conditions (i.e. battery change operation). The field-calibration frequency shall be 1,000 Hz. A field-calibration level change exceeding 1.0 dB will require that the measurement series be repeated.



Mounting flange



Mounting bracket

Date: _____
Tech Name: _____ Signature: _____

Operating Conditions: _____ tph Fan Speed: _____ rpm

Temperature: _____ F
Humidity: _____ %
Wind Speed: _____ mph _____ mph (gust)
Wind Direction: _____ degrees

Measurement Point #1

Location: MP1 (Rock Plant)
Start Time: _____ End Time: _____
Sound Level: Minimum _____ dBA Average _____ dBA Maximum _____ dBA
Field Notes: _____

Measurement Point #2

Location: MP2 (RR Tracks)
Start Time: _____ End Time: _____
Sound Level: Minimum _____ dBA Average _____ dBA Maximum _____ dBA
Field Notes: _____

Measurement Point #3

Location: MP3 (EMSA)
Start Time: _____ End Time: _____
Sound Level: Minimum _____ dBA Average _____ dBA Maximum _____ dBA
Field Notes: _____

1. Do not take readings in rain or if humidity exceeds 90%.
2. Give Control Room operator your cell number; have him call you if fan speed changes significantly during inspection (comment in field notes)



<p>● Measurement Points</p>	<p>Scale in Feet</p>		<p>Figure A-1 Monitoring Locations</p>
-----------------------------	----------------------	--	--