



November 14, 2016

Reference No. 11115752

Mr. Andrew Booth  
Engineering Services  
City Service Centre  
9505-112  
Grande Prairie, Alberta  
T8V 6H8

Dear Mr. Booth:

**Re: 2016 Arterial Traffic Noise Survey  
City of Grande Prairie  
Grande Prairie, Alberta**

## 1. Introduction

GHD limited (GHD) was retained by the City of Grande Prairie (City) to perform a Traffic Noise Survey (Survey) encompassing 16 residential location during August of 2016. The survey was required for the City's ongoing traffic monitoring program for use in city planning and traffic noise mitigation planning for residential areas.

## 2. Criteria

The City has previously identified traffic noise mitigation as an area of special concern with respect to transportation projects, with the following proposed limits in the City's 2002 Transportation Master Plan:

- For new residential areas, noise reduction be provided for traffic noise over 60 dBA for an existing or new road, within 1 year of completion of development in the area of the roadway, at the developer's responsibility.
- For existing residential areas, noise reduction for noise levels over 65 dBA for a new or modified roadway, within 10 years of construction, at the City's responsibility.

## 3. Methodology

A total of eight sound level meters were used to measure the sound levels at the 16 identified monitoring locations, and the site observations are provided in Attachment A. A summary of the measurement locations is provided in Figure 1, and a summary of the sound level meters used is provided in Table 1. At all monitoring locations the sound level meter were placed at least 3 m from any facade and at an approximate height of 1.5 m above grade. The sound level meters were configured to measure the one-minute energy-equivalent sound level,  $L_{EQ}$ , and the 24 Hour  $L_{EQ}$  was calculated from these values.



Data from the Environment Canada's "Grande Prairie A" meteorological station was reviewed, to confirm suitable weather conditions during the measurements campaign.

All sound level meters were within their annual calibration, as shown in Attachment B, and were field calibrated prior to and following the measurement period.

Table 1: Sound Level Meter Locations

Make	Model	Serial Number	Measurement Location
Larson Davis	LxT	004815	2
Quest	SoundPro	BLH010005	4,9,16
Quest	SoundPro	BLI050003	8a,12,17
Quest	SoundPro	BLI050004	1,11
Quest	SoundPro	BLN040005	8b,10
Quest	SoundPro	BLN050002	9,7,13
Quest	SoundPro	BLN050004	15
Quest	SoundPro	BLN050005	14

## 4. Results

The  $L_{EQ}$  sound level results from the Survey are summarized in Table 2 below. These are provided as the 24 hour average  $L_{EQ}$ , 16-hour daytime  $L_{EQ}$ , 8-hour nighttime  $L_{EQ}$ . Table 2 also provides the AM Peak, PM Peak, and daily maximum 1-hour  $L_{EQ}$ . For the purpose of this assessment, AM peak was defined as approximately 07:00 to 09:00 and the PM peak was defined as approximately 16:00 to 18:00. Note that while results are provided to one decimal point for comparison purposes, measurement accuracy is  $\pm 1$  dBA.

Table 2: Sound Level Results Summary

Location	Address	$L_{EQ}$ [24 hr]	Day $L_{EQ}$ [16 hr]	Night $L_{EQ}$ [8 hr]	$L_{EQ}$ [1 hr]		
					AM Peak	PM Peak	Maximum
1	9719 117 Avenue	61.6	63.0	54.4	65.0	65.1	70.3
2	9214 115 Avenue	55.0	56.2	50.3	57.4	57.1	57.4
4	9808 104 Avenue	53.6	54.8	49.1	61.2	53.8	61.2
6	9449 92A Street	60.1	61.2	57.1	65.5	60.8	65.5
7	8320 114A Street	61.1	62.3	57.6	63.9	63.9	63.9
8a	10013 85 Avenue	60.8	62.2	54.1	64.4	61.0	64.4
8b	8214 99A Street	55.3	56.5	50.9	57.8	56.1	58.5
9	8223 94 Street	61.9	63.3	55.9	61.2	66.1	66.5
10	7002 115B Street	54.0	56.0	47.9	56.5	56.0	57.5



Table 2: Sound Level Results Summary

Location	Address	L <sub>EQ</sub> [24 hr]	Day L <sub>EQ</sub> [16 hr]	Night L <sub>EQ</sub> [8 hr]	L <sub>EQ</sub> [1 hr]		
					AM Peak	PM Peak	Maximum
11	29 Pinnacle Key	63.4	65.0	53.6	57.4	69.0	73.4
12	7414 107A Street	55.8	57.2	50.2	55.8	58.5	60.5
13	6705 109 Street	57.9	58.9	56.1	58.8	58.3	61.5
14	7326 99A Street	54.5	55.5	51.4	58.0	55.9	58.0
15	9341 69 Avenue	54.0	53.6	54.7	51.9	54.3	62.7
16	7426 91 Street	52.2	53.4	47.4	55.1	52.3	55.1
17	6713 90A Street	64.5	65.7	59.8	66.3	66.5	69.4

It is GHD's understanding that the monitoring locations are all within existing residential areas, such that the City's 65 dBA limits applies. As shown in Table 2, the evaluated road noise is in compliance with the 65 dBA limit at all measurement locations.

Full details of the measurement results are provided graphically in Attachment C. Note that these figures have been filtered to remove any periods when the one-minute L<sub>EQ</sub> was below the measurement range of the sound level meter, known as an underload condition. No other filters have been applied. A comparison to previous sound level surveys and traffic counts is provided in Attachment D.

## 5. Conclusion

Based on the results of the survey, the evaluated roads within the study area meet the City's sound level limits. We trust this is sufficient for the City's current purpose.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

GHD

Prepared by:

Matthew Brenner, BASc.

MB/cb/1

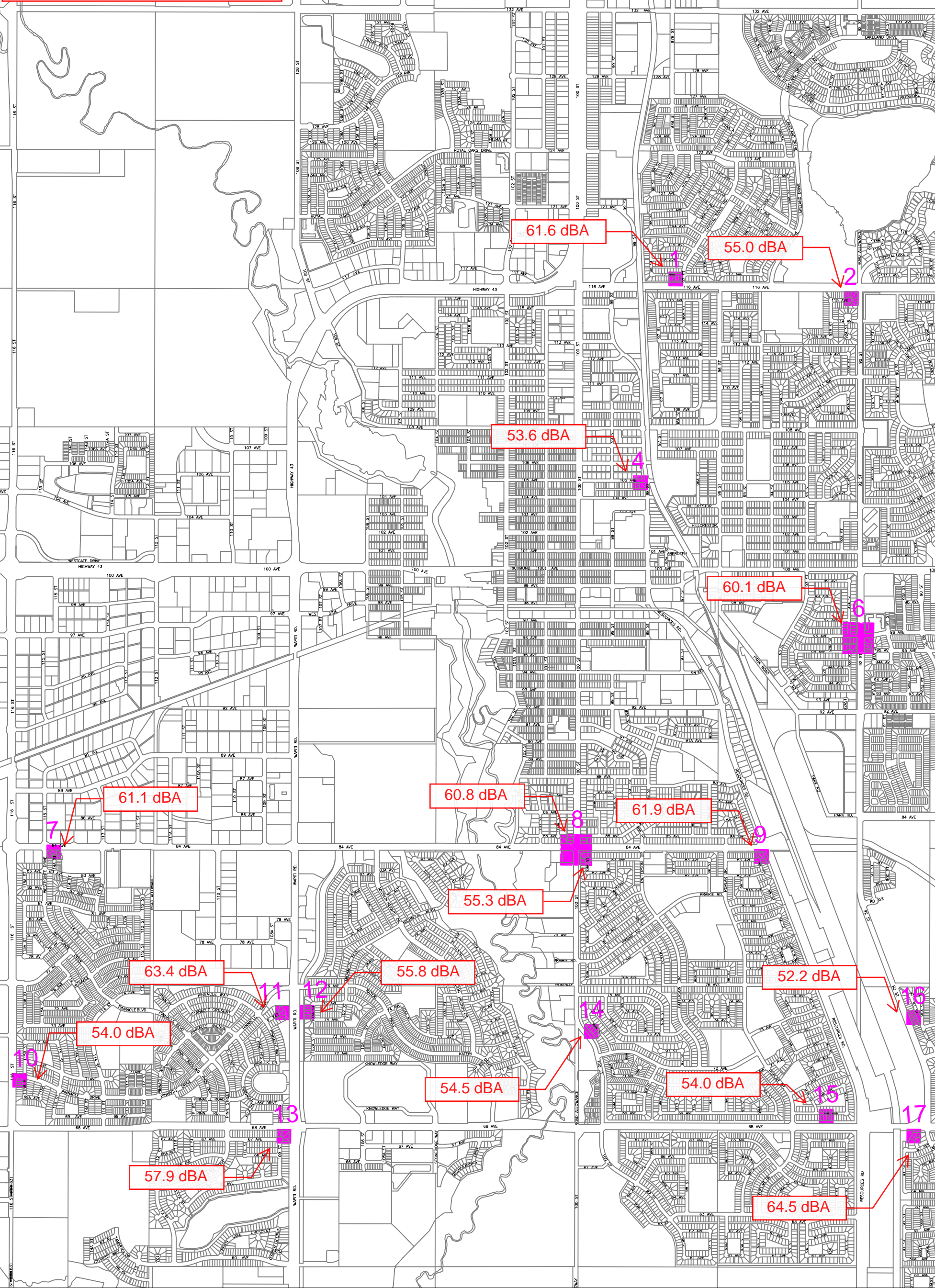
Encl.

Reviewed by:

Michael Masschaele, BES



Figure 1: Noise Monitoring Locations



LEGEND:

 Traffic Noise Sound Monitoring Site

**THE CITY OF GRANDE PRAIRIE**  
2016 Traffic Noise Sound Monitoring Program



NOTE: Sites are subject to change.

# Attachment A

**Table A1: Site Observations**

Location	Address	Comments
1	9719 117 Avenue	Road noise from 116 Avenue dominant.
2	9214 115 Avenue	Road noise from 116 Avenue and 92 Street audible. Traffic Noise on 92 Street Audible.
4	9808 104 Avenue	Road noise from 109 Avenue and 98 Street audible. Hospital on 98 Street.
6	9449 92A Street	Road noise from 92 Street audible. Increased human activity next door.
7	8320 114A Street	Road noise from 84 Avenue and 116 Street audible in addition to human activity at the nearby gas station.
8a	10013 85 Avenue	Road noise from 84 Avenue and 100 Street dominant.
8b	8214 99A Street	Road noise from 84 Avenue and 100 Street dominant.
9	8223 94 Street	Road noise from 84 Avenue and Resources Road audible. Fire hall on 98 Street.
10	7002 115B Street	Road noise from 116 Street and Resources Road audible.
11	29 Pinnacle Key	Road noise from 108 Street dominant. Road noise from Pinnacle Drive and audible
12	7414 107A Street	Road noise from 76 Avenue and 108 Street dominant. Road noise from Canfor Hauling Road audible
13	6705 109 Street	Road noise from 68 Avenue and 108 Street dominant. Road noise from Canfor Hauling Road audible
14	7326 99A Street	Road noise from 100 Street audible.
15	9341 69 Avenue	Road noise from 68 Avenue audible. Rail noise possible.
16	7426 91 Street	Road noise from 92 Street audible. Rail noise possible.
17	6713 90 A Street	Road noise from 68 Avenue and 92 Street dominant. Rail noise likely.

# Attachment B

# Calibration Certificate

**Certificate Number** 2016006316

**Customer:**

GHD Services Inc.

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304, United States

**Model Number** LxT SE  
**Serial Number** 0004812  
**Test Results** Pass  
**Initial Condition** As Manufactured  
**Description** Sound Expert LxT

**Procedure Number** D0001.8378  
**Technician** Ron Harris  
**Calibration Date** 13 Jul 2016  
**Calibration Due**  
**Temperature** 23.31 °C ± 0.01 °C  
**Humidity** 49.8 %RH ± 0.5 %RH  
**Static Pressure** 86.63 kPa ± 0.03 kPa

**Evaluation Method** Tested electrically using PRMLxT1L S/N 042638 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 23.6 mV/Pa.

**Compliance Standards** Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.

**Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2008.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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## Standards Used

Description	Cal Date	Cal Due	Cal Standard
Hart Scientific 2626-S Humidity/Temperature Sensor	06/17/2016	06/17/2017	006946
SRS DS360 Ultra Low Distortion Generator	11/10/2015	11/10/2016	007167

Larson Davis, a division of PCB Piezotronics, Inc  
1681 West 820 North  
Provo, UT 84601, United States  
716-684-0001



**LARSON DAVIS**  
A PCB PIEZOTRONICS DIV.



# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

Pine Environmental Services, Inc

**Instrument ID** R10545  
**Description** Quest SoundPro DL-1-1/3  
**Calibrated** 11/24/2015

**Manufacturer** Quest  
**Model Number** SoundPro DL-1-1/3  
**Serial Number** BLH010005  
**Location** New Jersey  
**Temp** 75

**Classification**  
**Status** pass  
**Frequency** Yearly EOM  
**Department** Lab  
**Humidity** 22

## Calibration Specifications

**Group #** 1

**Group Name** Acoustic Tests Performed

**Test Performed:** Yes

**As Found Result:** Fail

**As Left Result:** Pass

## Test Instruments Used During the Calibration

<u>Test Instrument ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>(As Of Cal Entry Date)</u>	
				<u>Last Cal Date</u>	<u>Next Cal Date</u>
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	2/27/2015	2/27/2016
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	2/27/2015	2/27/2016
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	4/25/2015	4/25/2016

## Notes about this calibration

**Calibration Result** Calibration Successful

**Who Calibrated** Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

## Pine Environmental Services, Inc

Instrument ID 14609  
Description Quest SoundPro DL-1-1/3  
Calibrated 5/20/2016

Manufacturer Quest  
Model Number SoundPro DL-1-1/3  
Serial Number BLI050003  
Location New Jersey  
Temp 76

Classification  
Status pass  
Frequency Yearly EOM  
Department Lab  
Humidity 30

### Calibration Specifications

Group # 1  
Group Name Acoustic Tests Performed  
Test Performed: Yes As Found Result: Fail As Left Result: Pass

### Test Instruments Used During the Calibration

Test Instrument ID	Description	Manufacturer	Serial Number	(As Of Cal Entry Date)	
				Last Cal Date	Next Cal Date
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	5/6/2016	5/6/2017

### Notes about this calibration

Calibration Result Calibration Successful  
Who Calibrated David Galego

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

## Pine Environmental Services, Inc

**Instrument ID** 14607  
**Description** Quest SoundPro DL-1-1/3  
**Calibrated** 3/30/2016

**Manufacturer** Quest  
**Model Number** SoundPro DL-1-1/3  
**Serial Number** BLI050004  
**Location** New Jersey  
**Temp** 71

**Classification**  
**Status** pass  
**Frequency** Yearly EOM  
**Department** Lab  
**Humidity** 22

### Calibration Specifications

**Group #** 1  
**Group Name** Acoustic Tests Performed  
**Test Performed:** Yes **As Found Result:** Fail **As Left Result:** Pass

### Test Instruments Used During the Calibration

<u>Test Instrument ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>(As Of Cal Entry Date)</u>	
				<u>Last Cal Date</u>	<u>Next Cal Date</u>
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	4/25/2015	4/25/2016

### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

**Certificate of Calibration**

Certificate No: 5517146BLN040005

Submitted By: PINE ENVIRONMENTAL  
92 NORTH MAIN ST BLDG 20  
WINDSOR, NJ 08561

Serial Number: BLN040005  
Customer ID: 025507  
Model: SOUNDPRO DL-1-1/3 SLM  
Test Conditions:

Date Received: 3/9/2016  
Date Issued: 3/18/2016  
Valid Until: 3/18/2017

**Model Conditions:**

Temperature: 18°C to 29°C  
Humidity: 20% to 80%  
Barometric Pressure: 890 mbar to 1050 mbar

As Found: DAMAGED  
As Left: IN TOLERANCE

**SubAssemblies:****Description:**

MICROPHONE B&K 4936 1/2 IN. ELECTRET  
TYPE 1 PREAMP

**Serial Number:**

2827838  
10140131

Calibrated per Procedure: 53V899

**Reference Standard(s):**

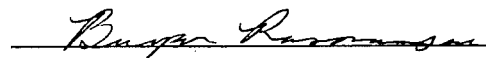
I.D. Number	Device
EF000138	QUEST-CAL
ET0000556	B&K ENSEMBLE
ET000304	FLUKE 45 MULTIMETER

Last Calibration	Date Calibration Due
12/15/2015	12/15/2016
4/8/2015	4/8/2016
2/18/2015	2/18/2017

**Measurement Uncertainty:**

+/- 2.2% ACOUSTIC (0.19DB)  
Estimated at 95% Confidence Level (k=2)

Calibrated By:

  
BRYAN RASMUSSEN Service Technician

3/18/2016

This report certifies that all calibration equipment used in the test is traceable to NIST, and applies only to the unit identified under equipment above. This report must not be reproduced except in its entirety without the written approval of 3M Detection Solutions.

# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

## Pine Environmental Services, Inc

**Instrument ID** 25720  
**Description** Quest SoundPro DL-1-1/3  
**Calibrated** 7/1/2016

**Manufacturer** Quest  
**Model Number** SoundPro DL-1-1/3  
**Serial Number** BLN050002  
**Location** New Jersey  
**Temp** 77

**Classification**  
**Status** pass  
**Frequency** Yearly EOM  
**Department** Lab  
**Humidity** 34

### Calibration Specifications

**Group #** 1  
**Group Name** Acoustic Tests Performed  
**Test Performed: Yes**      **As Found Result: Fail**      **As Left Result: Pass**

### Test Instruments Used During the Calibration

<u>Test Instrument ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>(As Of Cal Entry Date)</u>	
				<u>Last Cal Date</u>	<u>Next Cal Date</u>
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	5/6/2016	5/6/2017

### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Kevin Cole

**Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.**

# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

Pine Environmental Services, Inc

**Instrument ID** 29557  
**Description** Quest SoundPro DL-1-1/3  
**Calibrated** 7/19/2016

**Manufacturer** Quest  
**Model Number** SoundPro DL-1-1/3  
**Serial Number** BLN050004  
**Location** New Jersey  
**Temp** 75

**Classification**  
**Status** pass  
**Frequency** Yearly EOM  
**Department** Lab  
**Humidity** 33

## Calibration Specifications

**Group #** 1  
**Group Name** Acoustic Tests Performed  
**Test Performed: Yes** **As Found Result: Fail** **As Left Result: Pass**

## Test Instruments Used During the Calibration

<u>Test Instrument ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>(As Of Cal Entry Date)</u>	
				<u>Last Cal Date</u>	<u>Next Cal Date</u>
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	5/6/2016	5/6/2017

## Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Kevin Cole

Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.



# INSTRUMENT CALIBRATION REPORT



Advanced Labs, Inc.

## Pine Environmental Services, Inc

**Instrument ID** 29553  
**Description** Quest SoundPro DL-1-1/3  
**Calibrated** 7/26/2016

**Manufacturer** Quest  
**Model Number** SoundPro DL-1-1/3  
**Serial Number** BLN050005  
**Location** New Jersey  
**Temp** 77

**Classification**  
**Status** pass  
**Frequency** Yearly EOM  
**Department** Lab  
**Humidity** 35

### Calibration Specifications

**Group #** 1  
**Group Name** Acoustic Tests Performed  
**Test Performed:** Yes      **As Found Result:** Fail      **As Left Result:** Pass

### Test Instruments Used During the Calibration

<u>Test Instrument ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>(As Of Cal Entry Date)</u>	
				<u>Last Cal Date</u>	<u>Next Cal Date</u>
B&K 4226	Brüel & Kjær 4226	Brüel & Kjær	2590968	3/15/2016	3/15/2017
B&K 4228	Brüel & Kjær 4228	Brüel & Kjær	2667476	3/15/2016	3/15/2017
FLUKE 114	Fluke 114 NIST Traceable Multimeter	Fluke	15310288	5/6/2016	5/6/2017

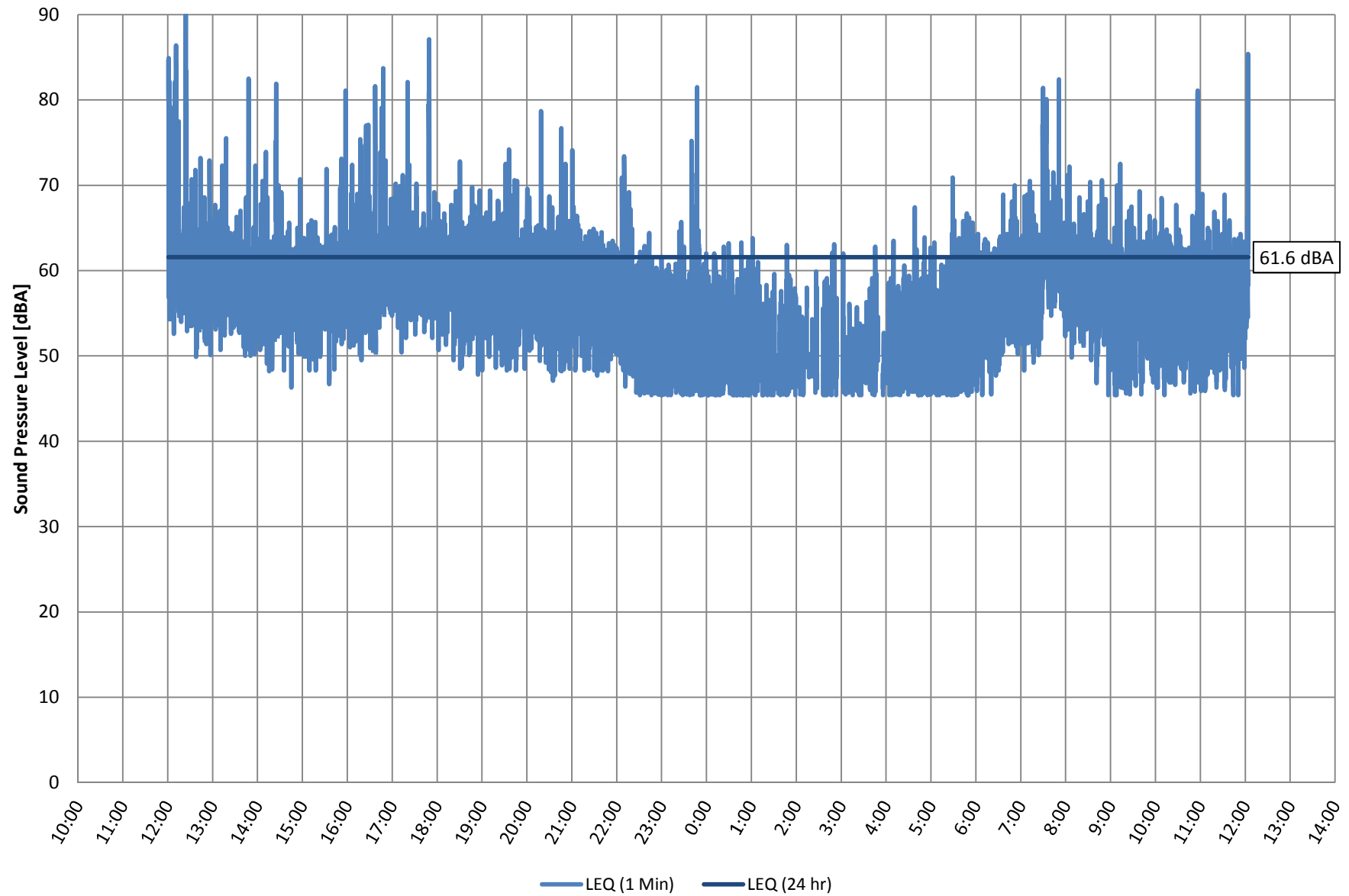
### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Kevin Cole

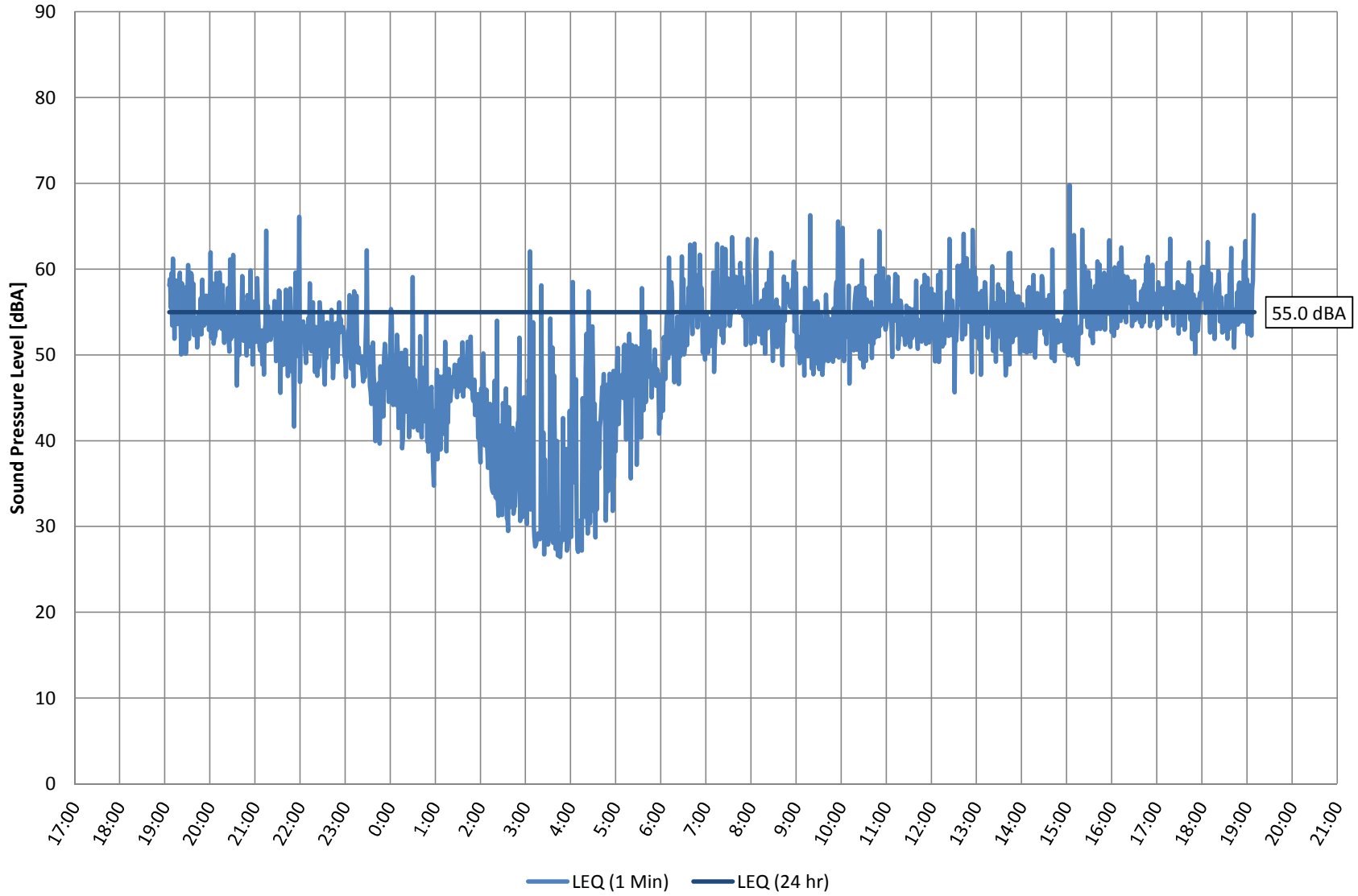
Advanced Labs, Inc. hereby certifies that this instrument is calibrated and functions to meet the manufacture's specifications using NIST traceable standards, or is derived from accepted values of physical constants.

# Attachment C

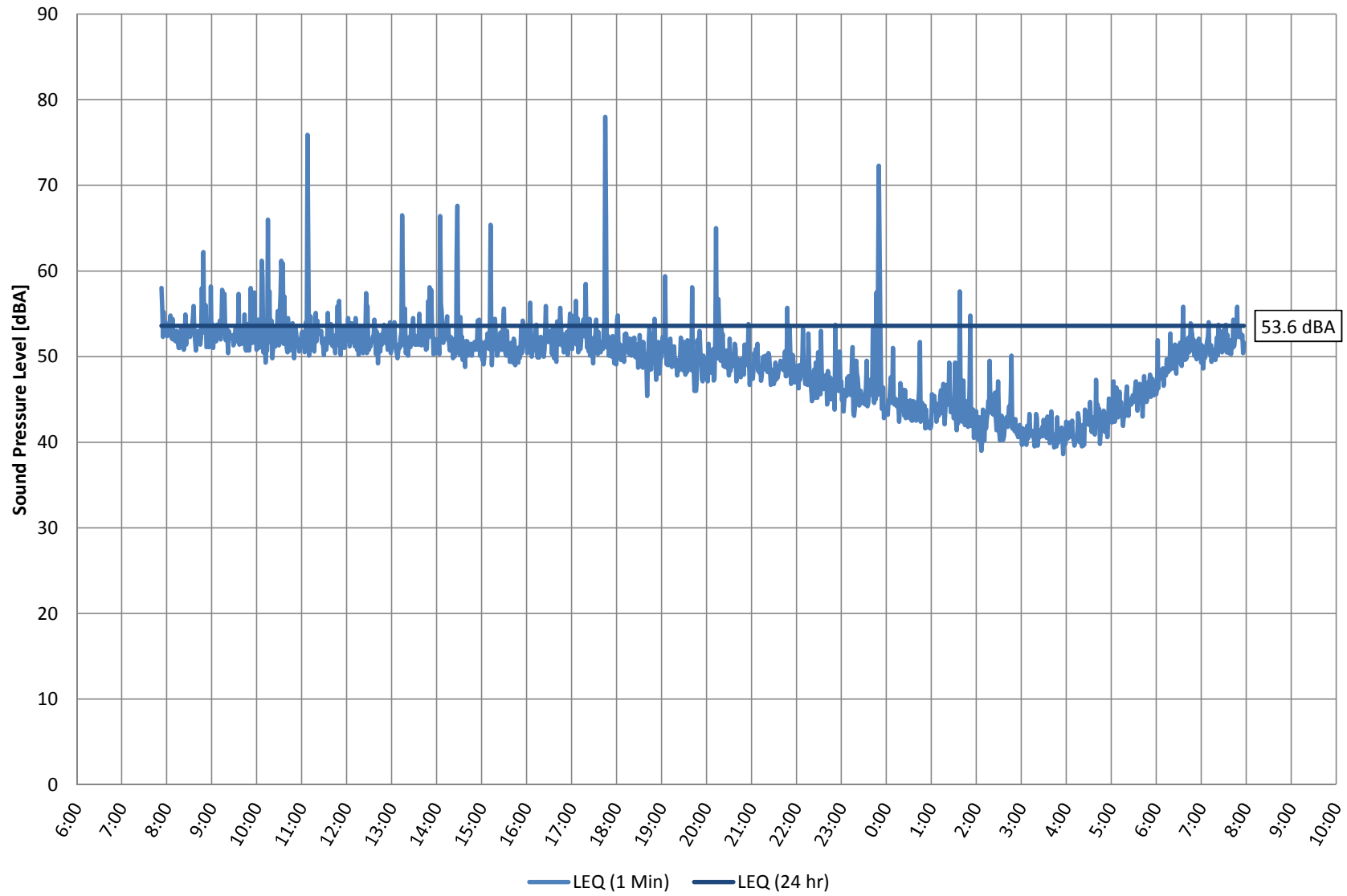
**Figure C1: Location 1 Monitoring Results**  
**9719 117 Avenue, Grande Prairie, AB. August 16-17, 2016**



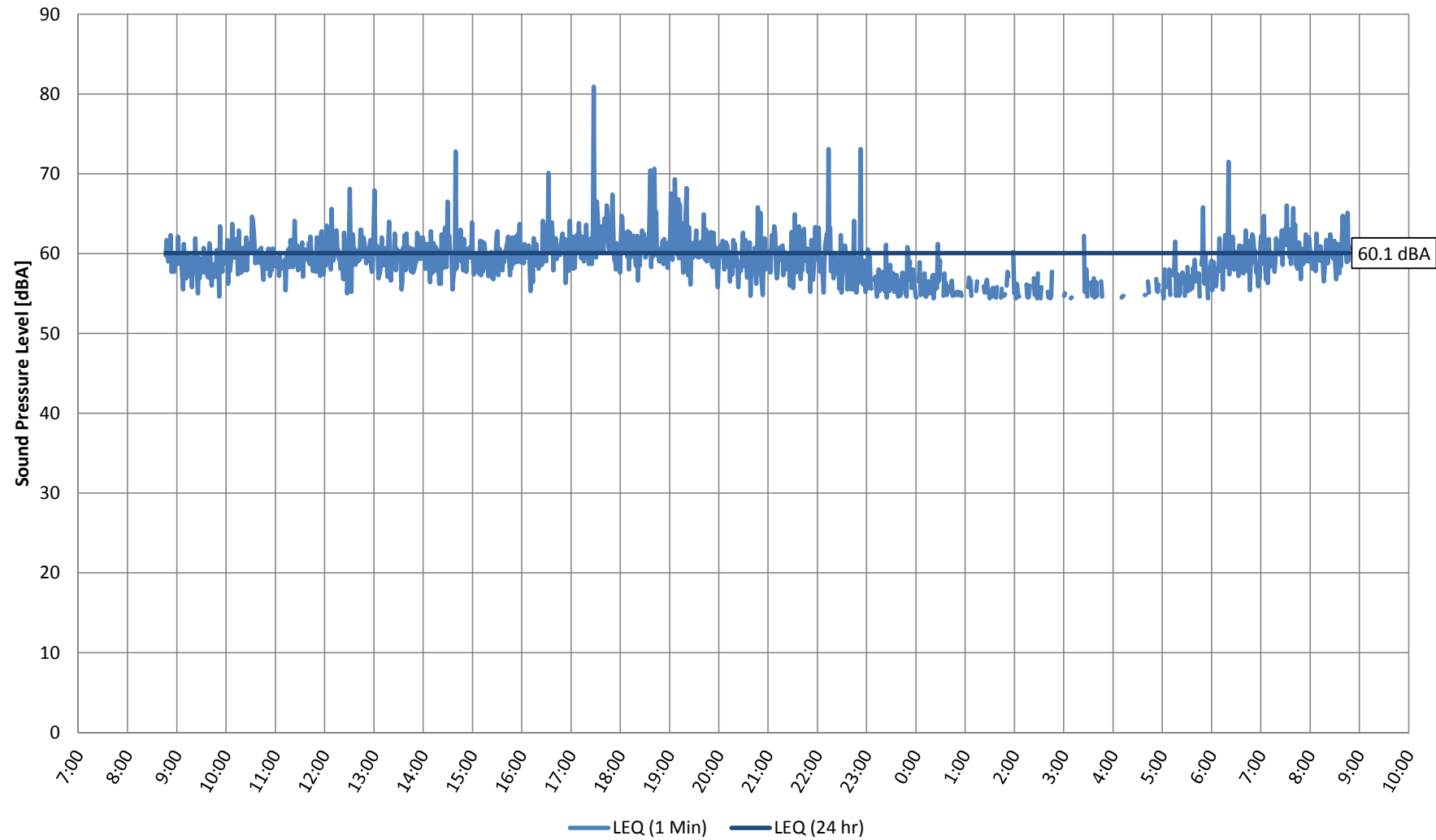
**Figure C2: Location 2 Monitoring Results**  
**9214 115 Avenue, Grande Prairie, AB. August 29-30, 2016**



**Figure C3: Location 4 Monitoring Results**  
**9808 104 Avenue, Grande Prairie, AB. August 16-17, 2016**

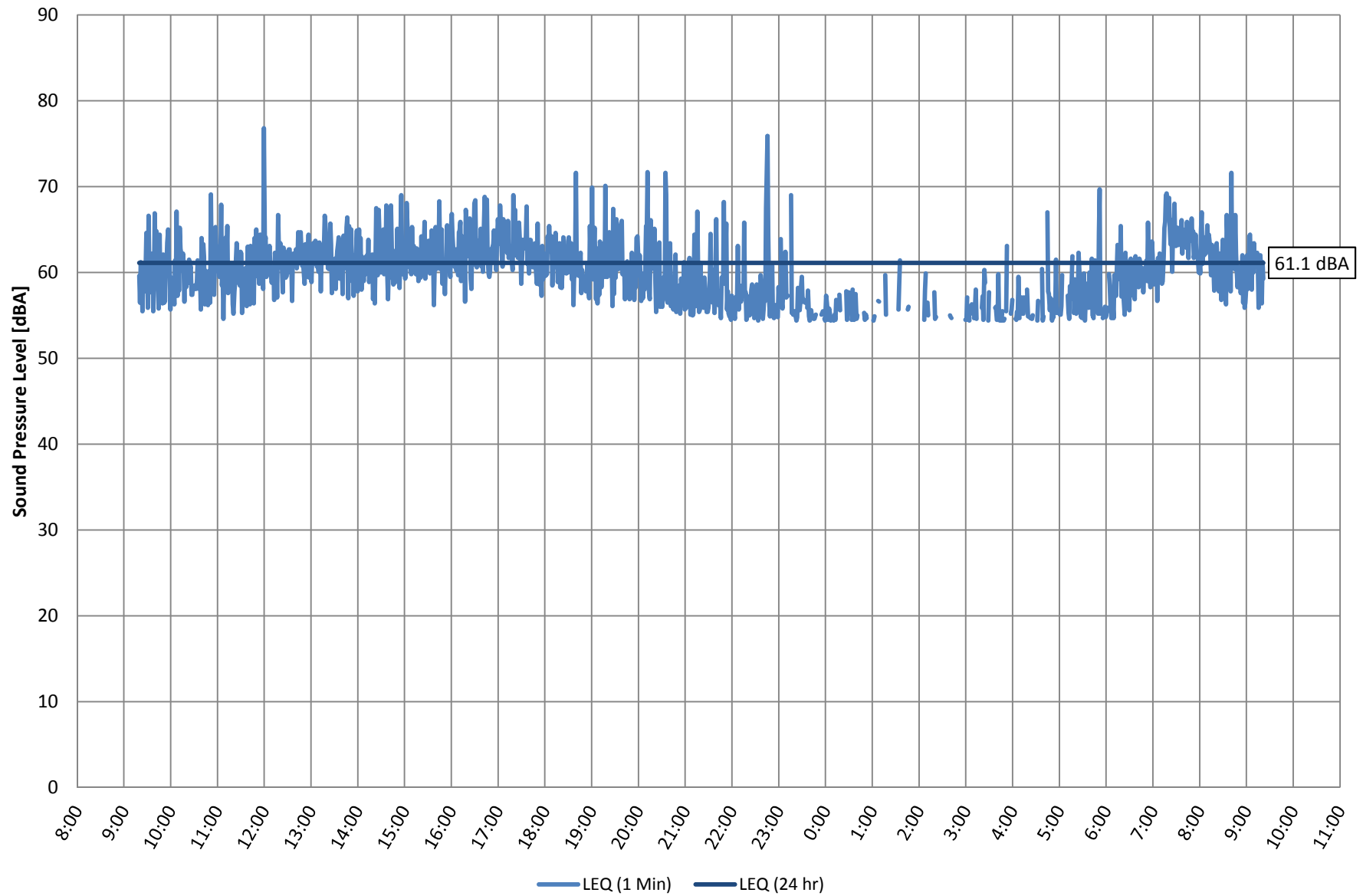


**Figure C4: Location 6 Monitoring Results**  
**9449 92A Street, Grande Prairie, AB. August 16-17, 2016**

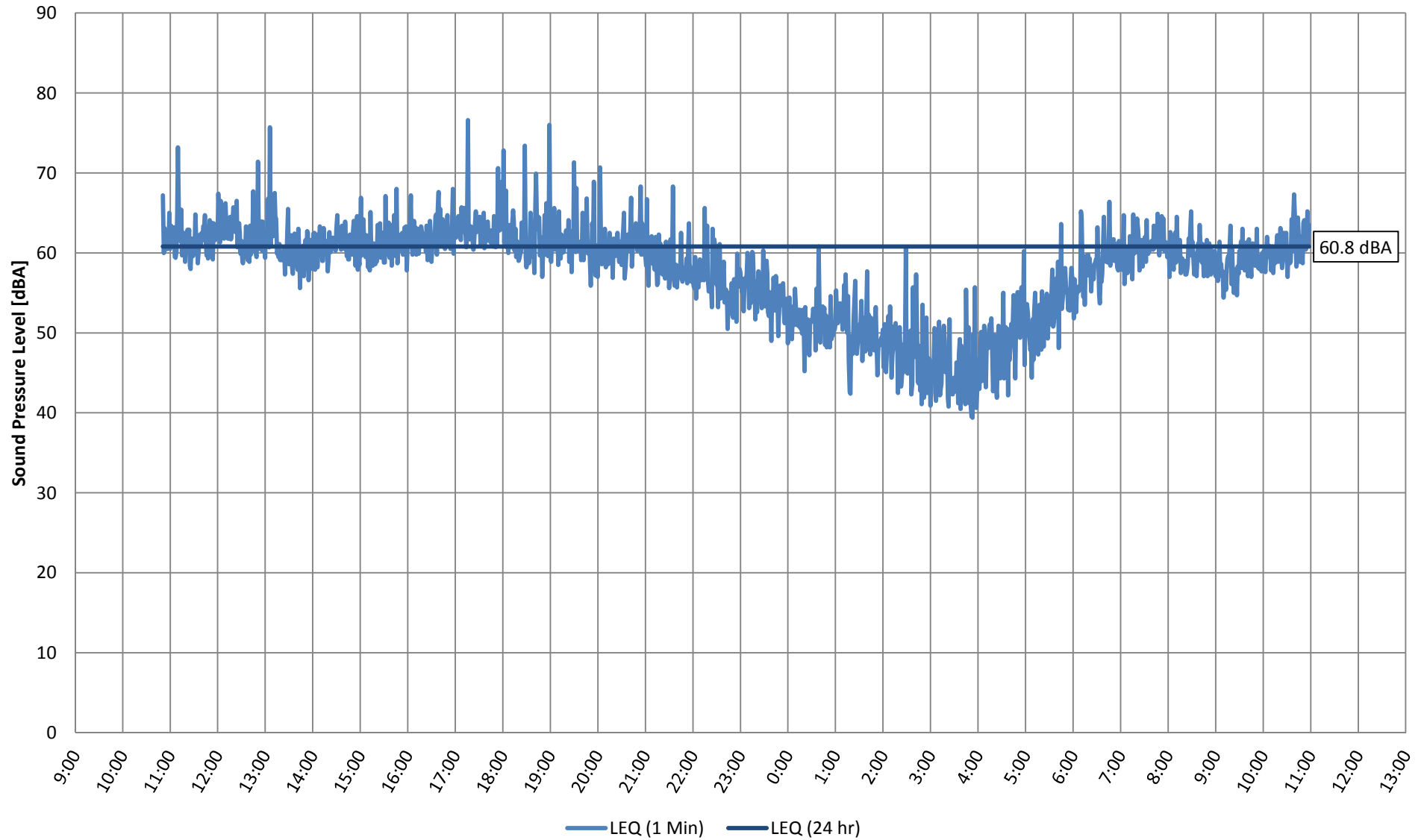




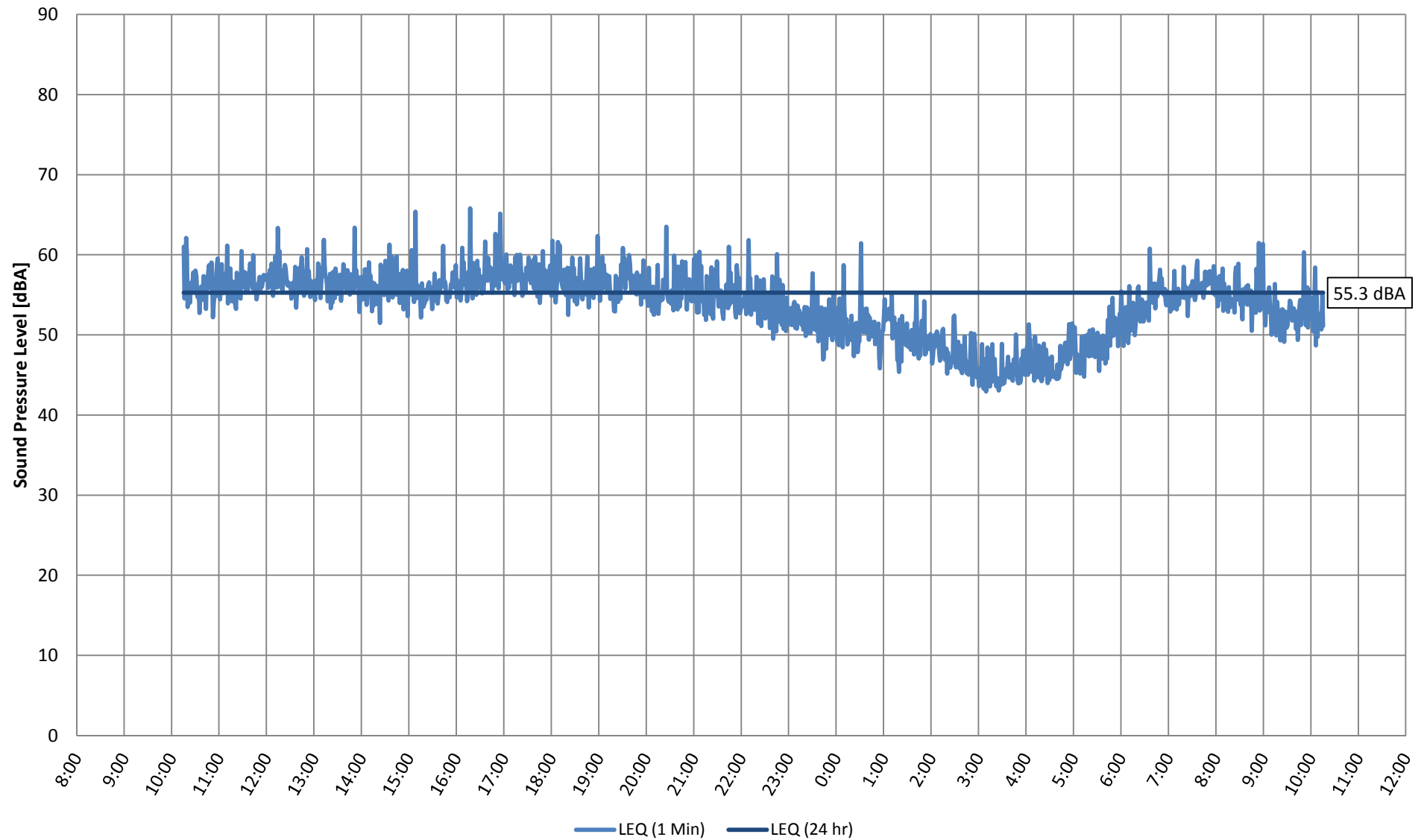
**Figure C5: Location 7 Monitoring Results**  
**8320 114A Street, Grande Prairie, AB. August 17-18, 2016**



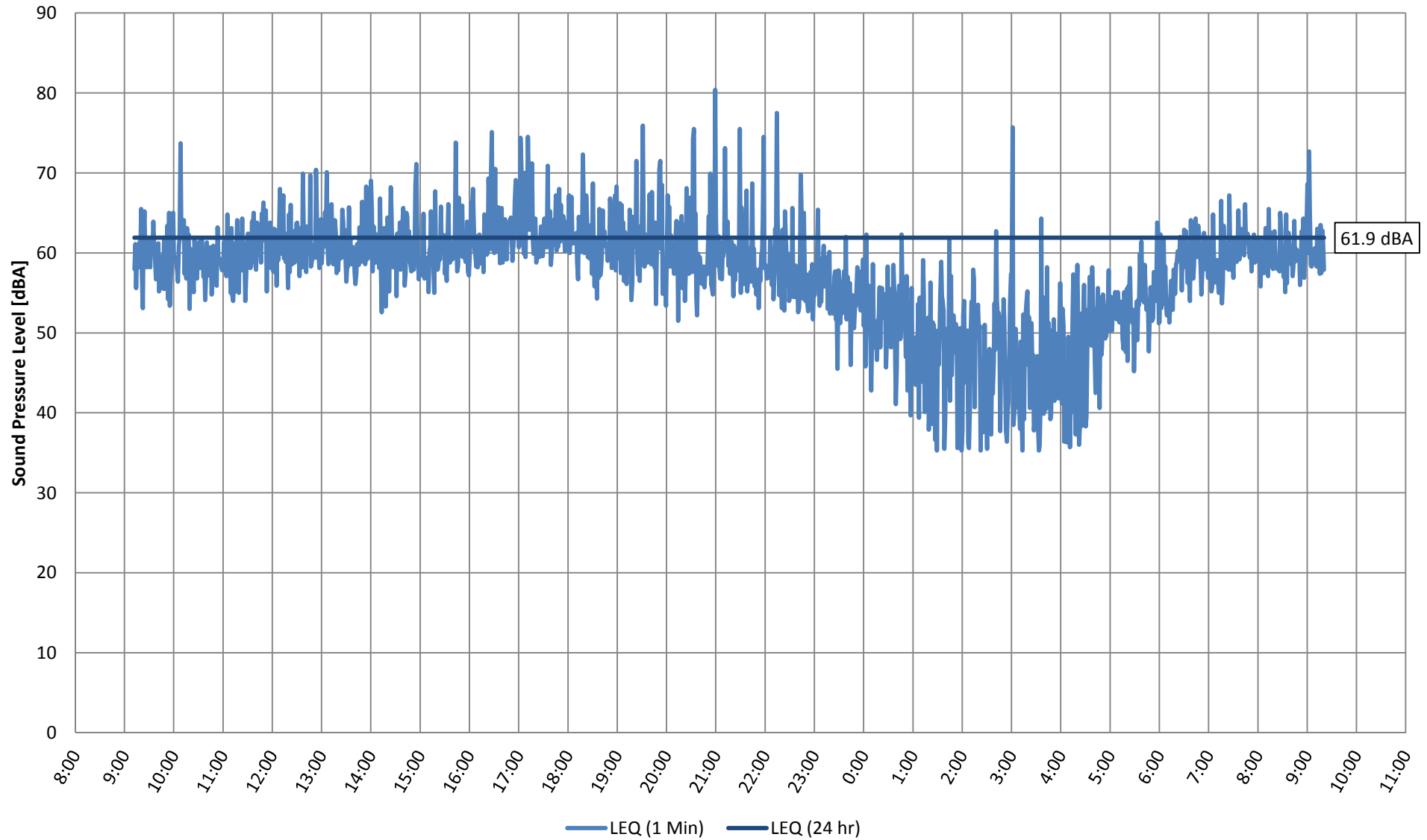
**Figure C6a: Location 8 Monitoring Results**  
**10013 85 Avenue, Grande Prairie, AB. August 16-17, 2016**



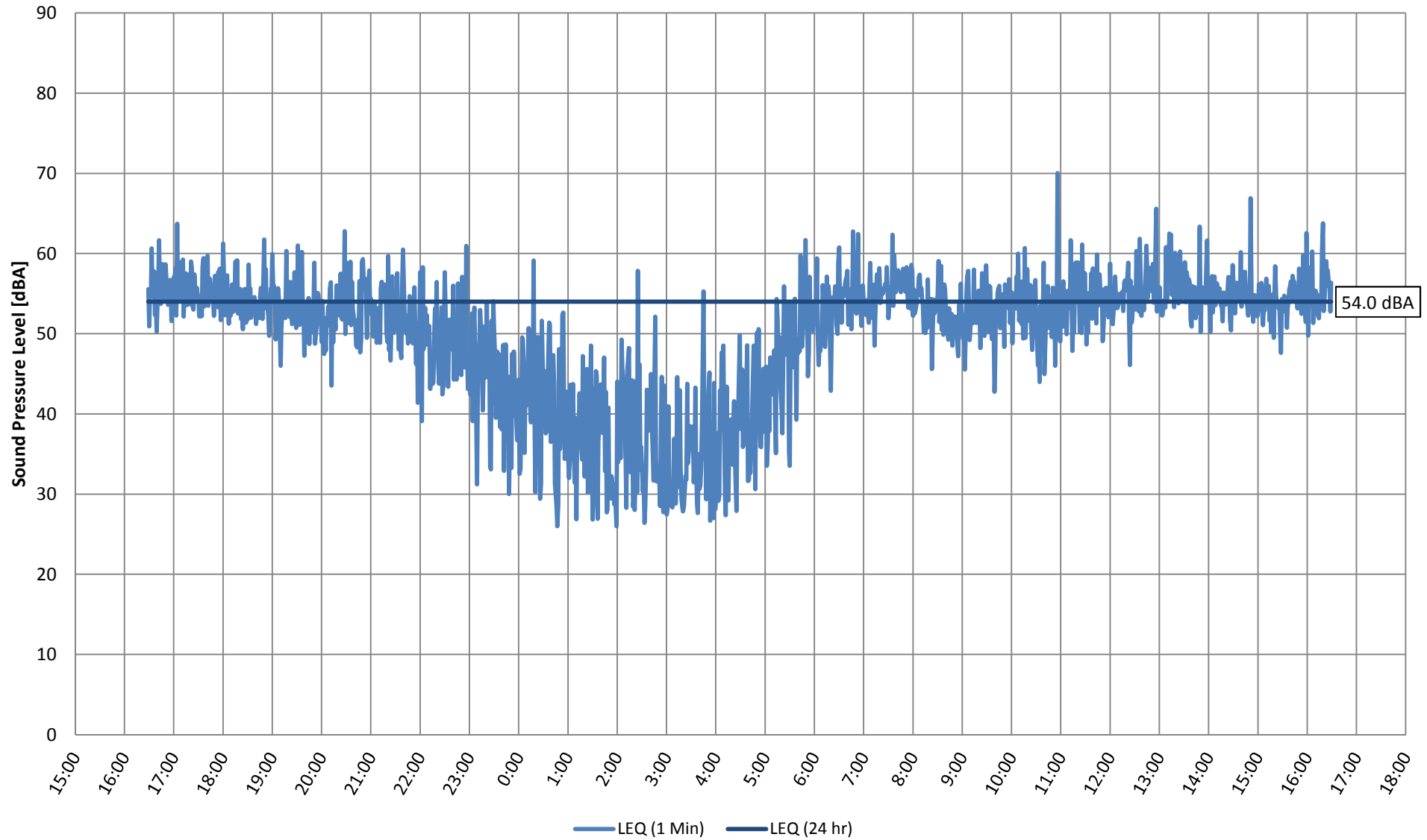
**Figure C6b: Location 8 Monitoring Results**  
**8214 99A Street, Grande Prairie, AB. August 16-17, 2016**



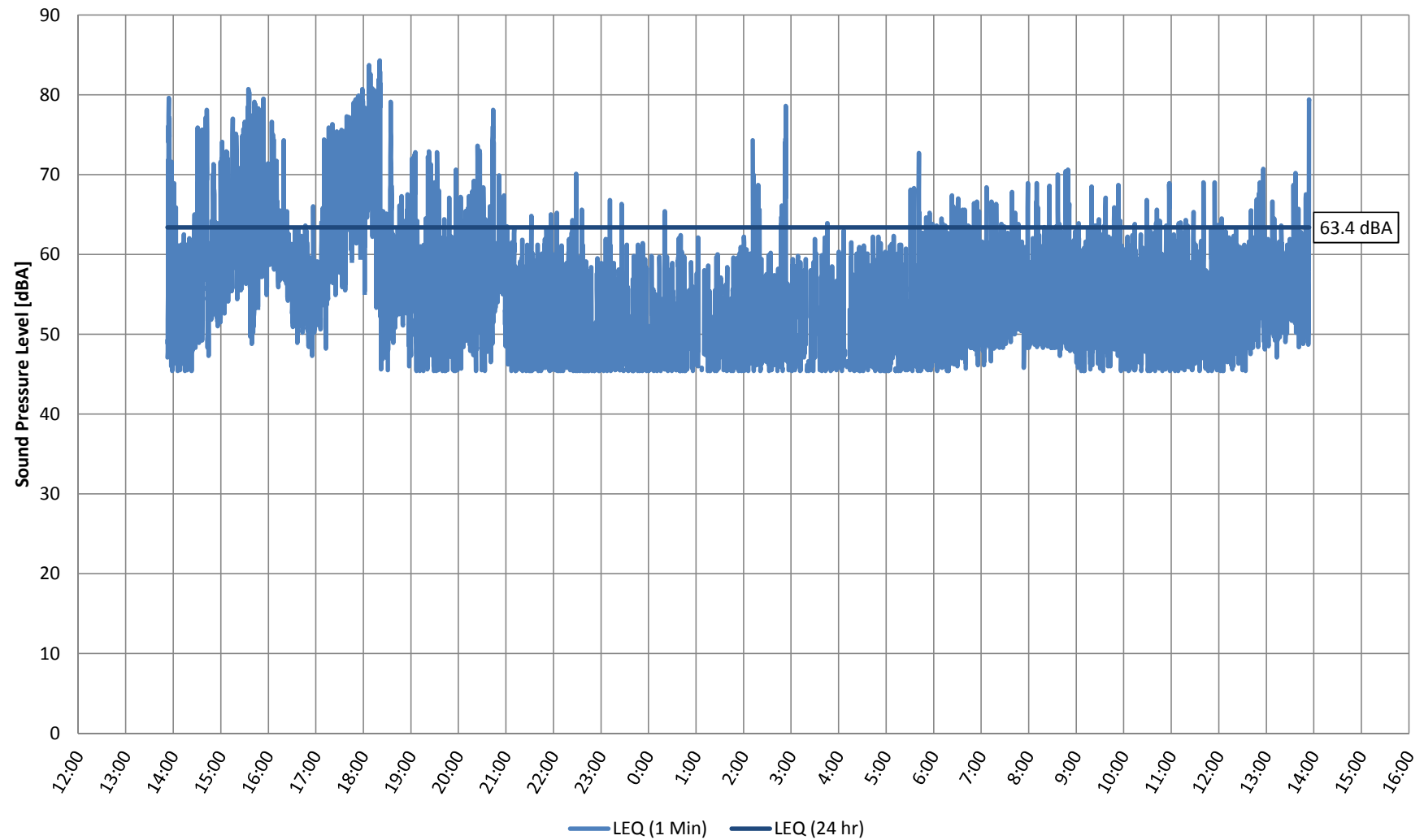
**Figure C7: Location 9 Monitoring Results**  
**8223 94 Street, Grande Prairie, AB. August 18-19, 2016**



**Figure C8: Location 10 Monitoring Results**  
**7002 115B Street, Grande Prairie, AB. August 18-19, 2016**

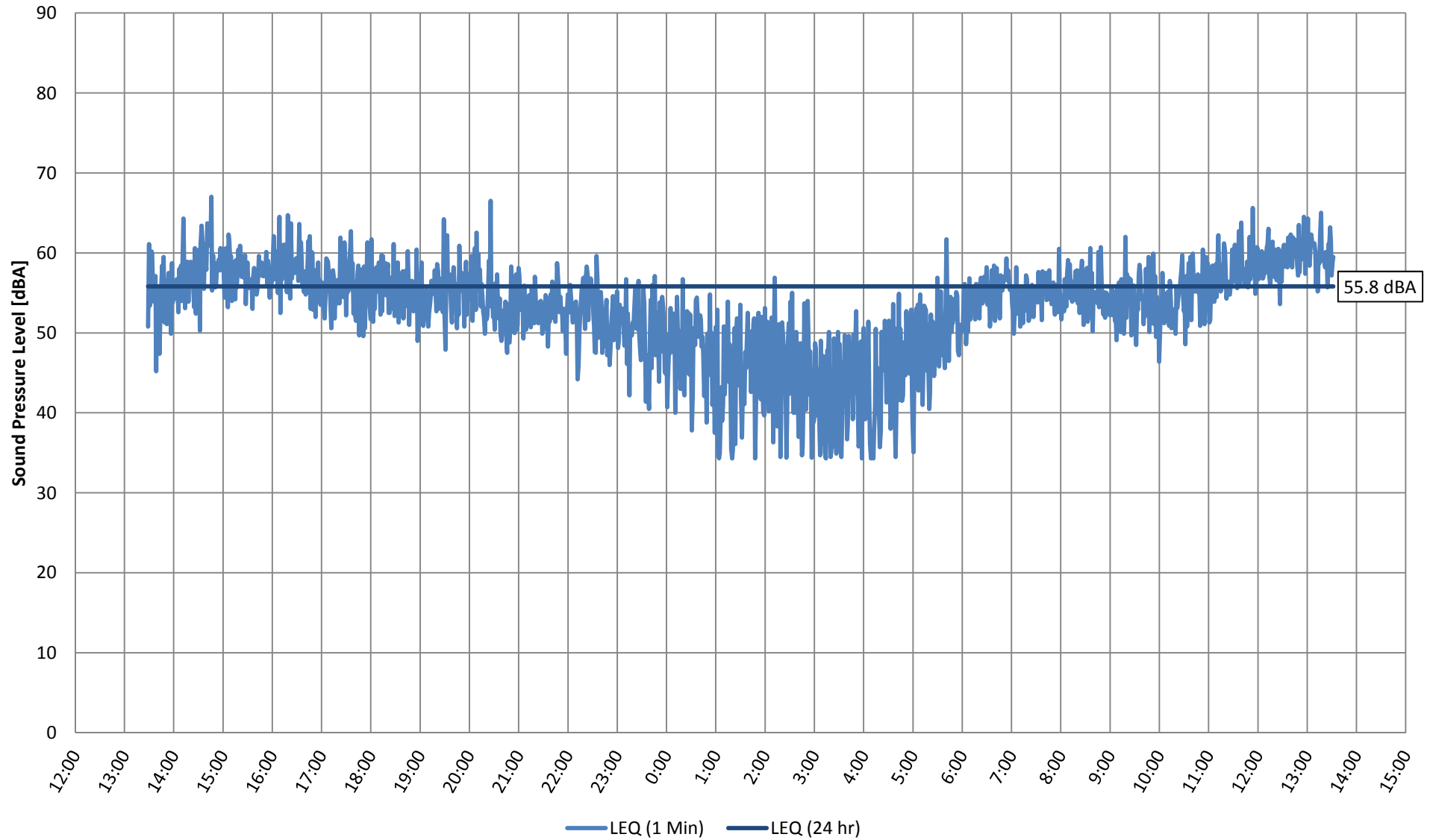


**Figure C9: Location 11 Monitoring Results**  
**29 Pinnacle Key, Grande Prairie, AB. August 18-19, 2016**

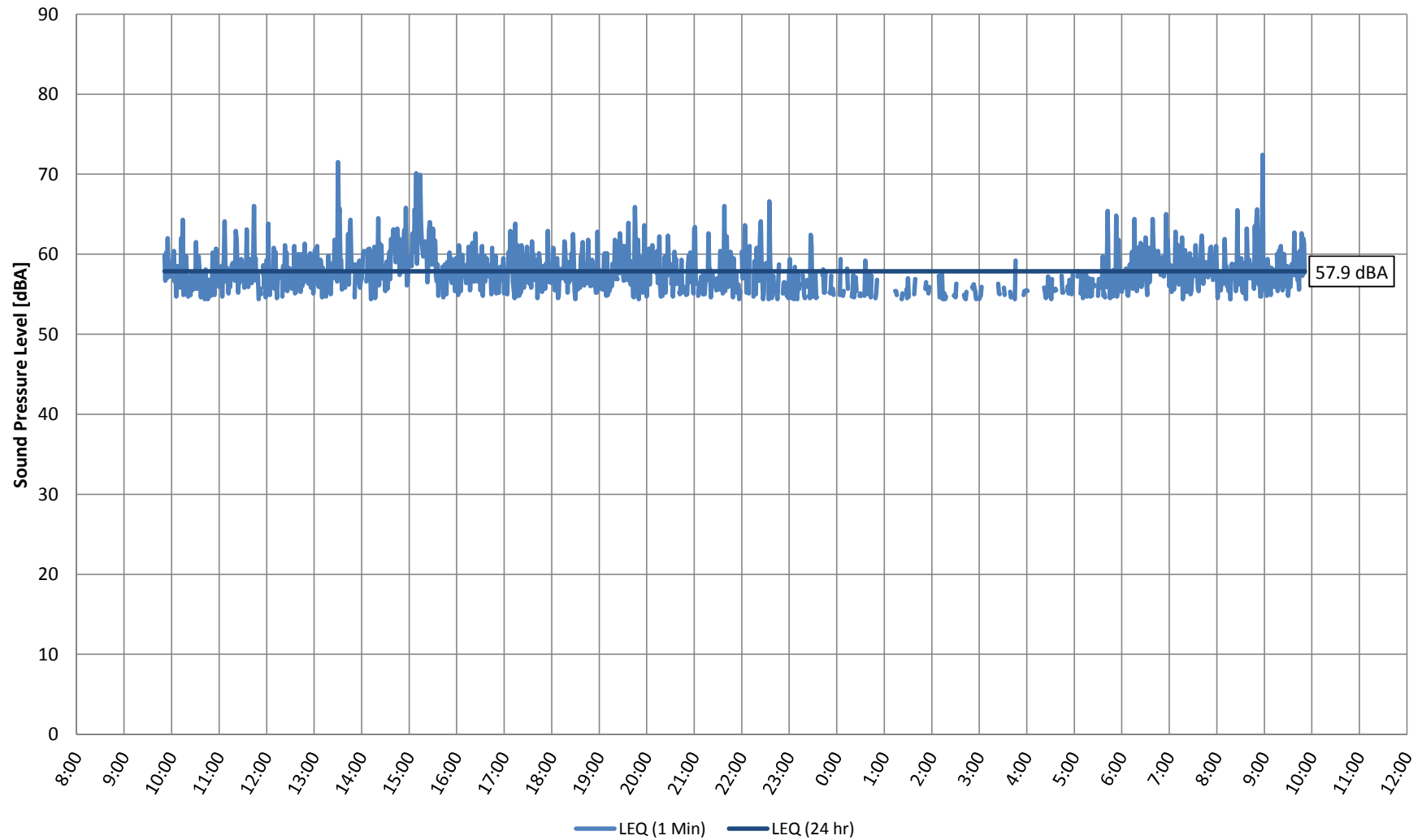




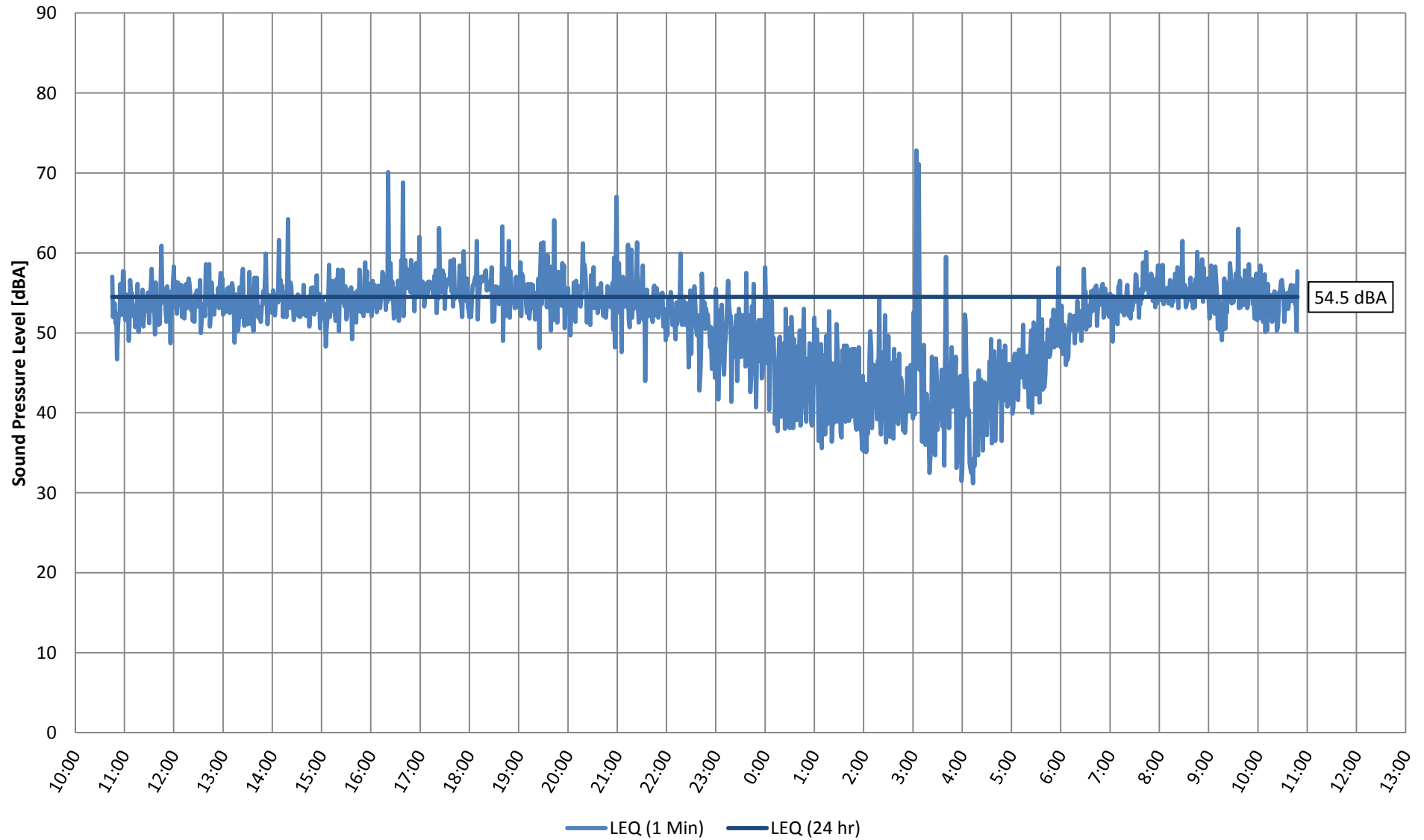
**Figure C10: Location 12 Monitoring Results**  
**7414 107A Street, Grande Prairie, AB. August 18-19, 2016**



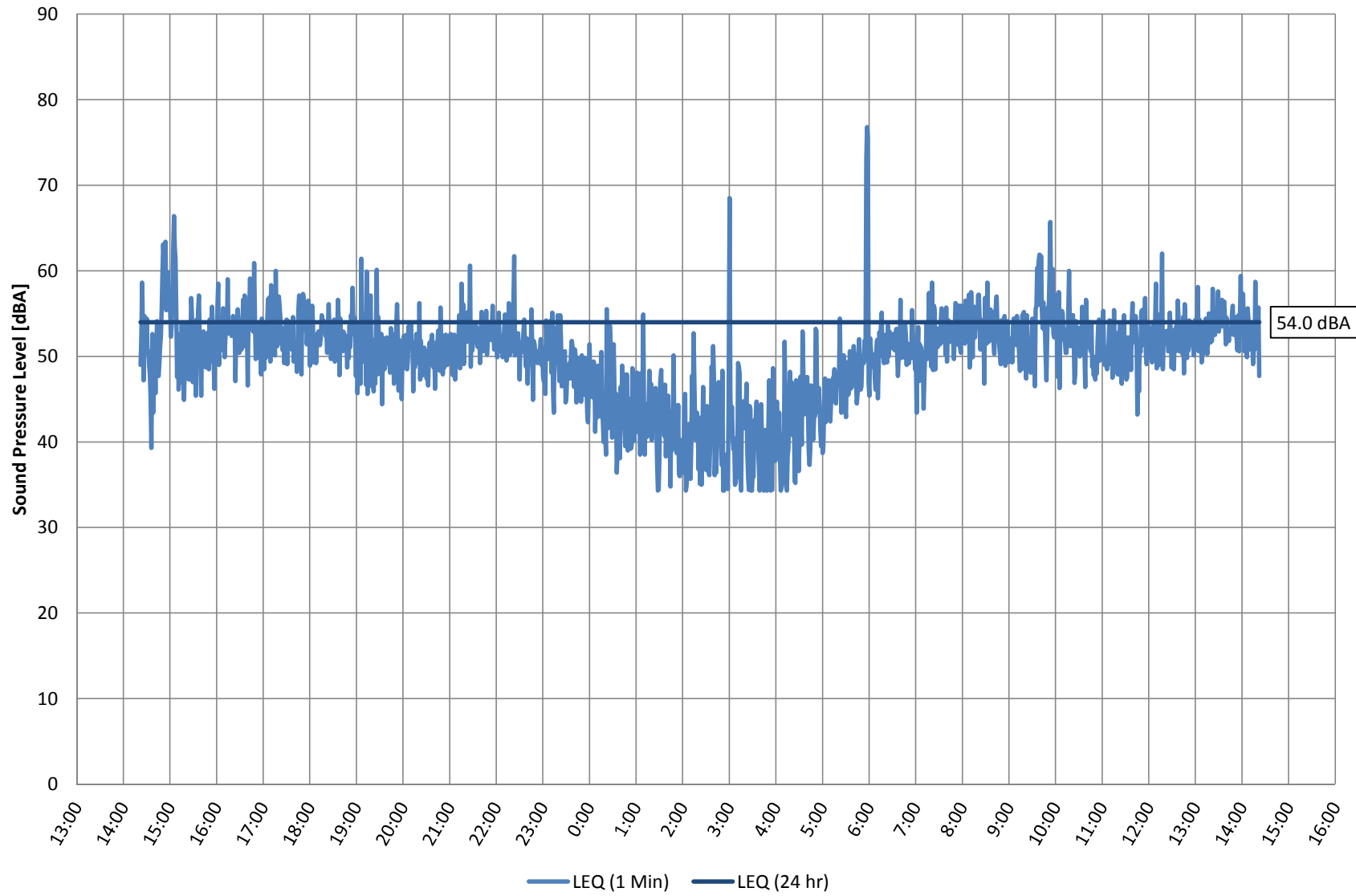
**Figure C11: Location 13 Monitoring Results**  
**6705 109 Street, Grande Prairie, AB. August 18-19, 2016**



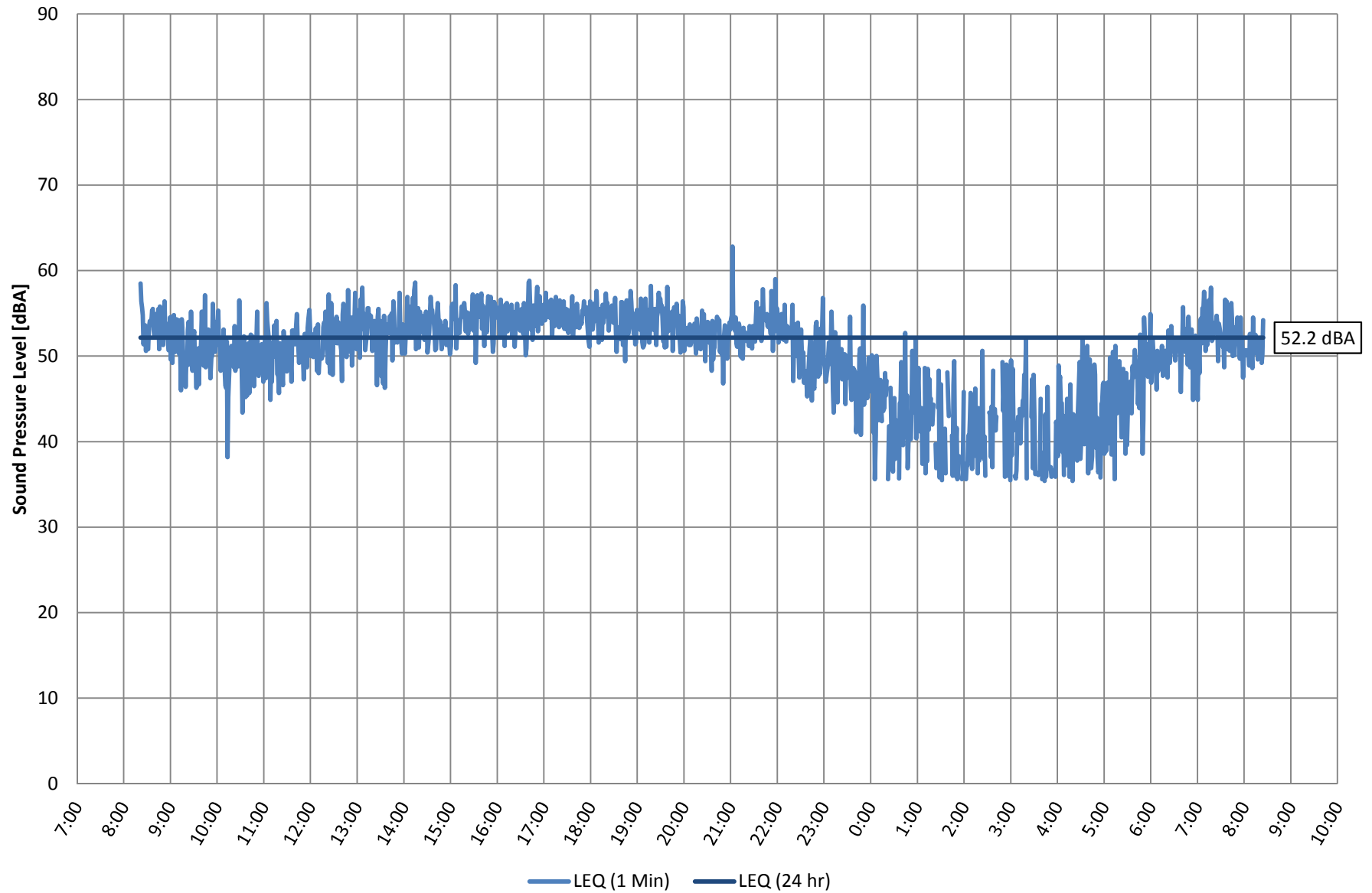
**Figure C12: Location 14 Monitoring Results**  
**7326 99A Street, Grande Prairie, AB. August 18-19, 2016**



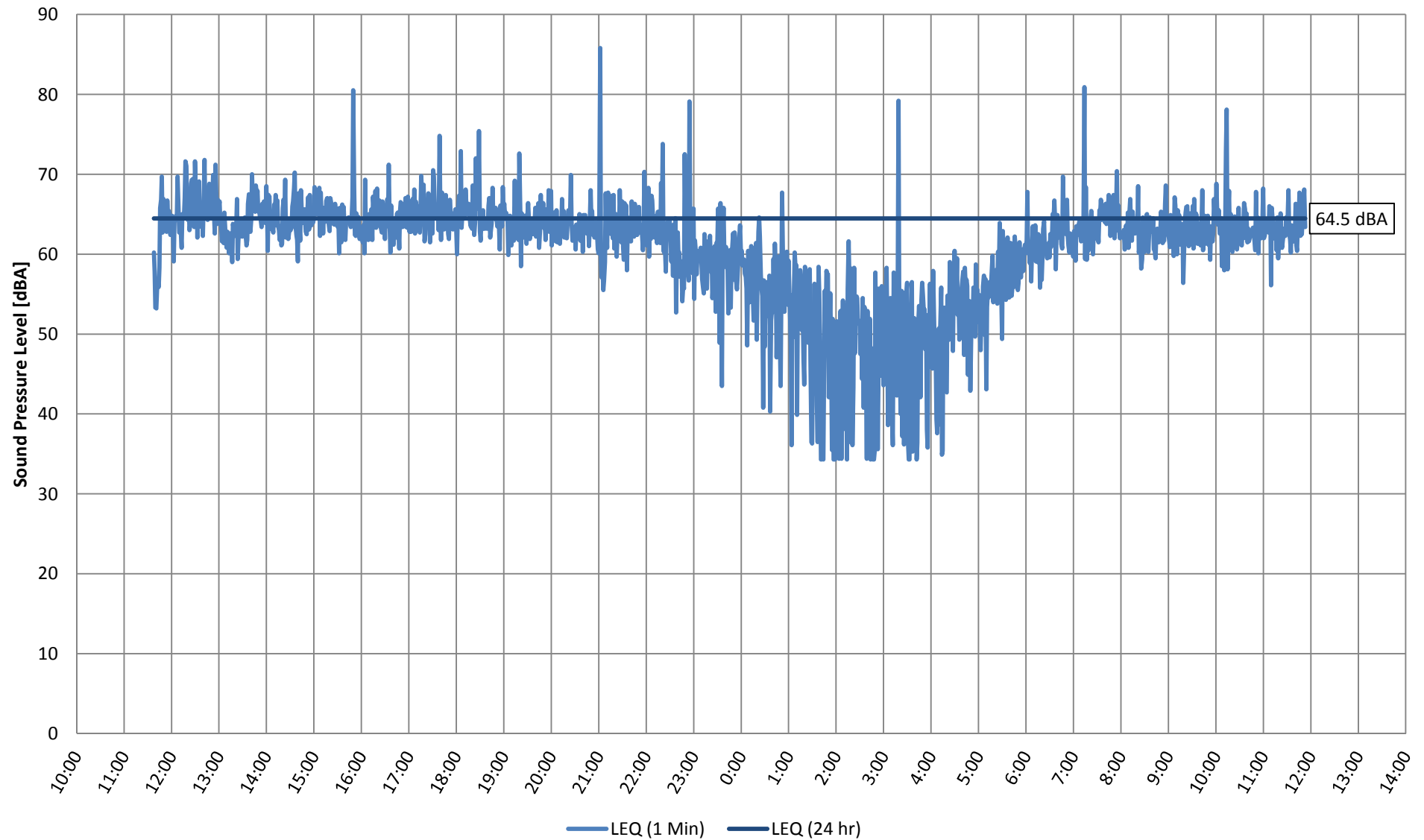
**Figure C13: Location 15 Monitoring Results**  
**9341 69 Avenue, Grande Prairie, AB. August 18-19, 2016**



**Figure C14: Location 16 Monitoring Results**  
**7426 91 Street, Grande Prairie, AB. August 17-18, 2016**



**Figure C15: Location 17 Monitoring Results**  
**6713 90A Street, Grande Prairie, AB. August 17-18, 2016**





# Attachment D

Tabld D1: Comparison of Sound Level Results L<sub>EQ</sub> (24), dBA

ADDRESS	2002	2003	2004	2005	2007	2008	2010	2012	2014	2016	AADT	Intersection
<b>116 Avenue</b>												
10122 - 115 Ave				54.9								
9201 - 115 Ave									60.0			
9214 - 115 Ave										55.0	18159	116 Ave, 92 St (2012)
9719 - 117 Ave	59.2		59.7	58.3						61.6	18070	116 Ave, 97 St (2015)
9401 - 117 Ave					57.8		58.4					
9121 - 117 Ave						51.4	48.7					
9509 - 117 Ave									55.0			
<b>98 Street</b>												
9805 - 111 Ave				58.2								
9804 - 104 Ave			65.5					57.3				
9808 - 104 Ave									60.0	53.6	23791	105 Ave, 98 St (2008)
<b>84 Avenue</b>												
10013 - 85 Ave										60.8	31743	84 Ave, 100 St (2009)
10015 - 85 Ave					62.0	61.5						
9824 - 83 Ave	57.2		55.8	54.0	56.0							
9559 - 85 Ave	54.7		56.6	58.0								
9654 - 83 Ave								57.4				
8320 - 114A St									61.0	61.1	8638	84 Ave, 115 St (2010)
<b>100 Street</b>												
8202 - 99 A St				62.1		61.6						
8214 - 99 A St										55.3	17201	99 Ave, 99 St (2008)
7922 - 99 A St			59.3									
7612 - 99 A St					57.2							
7310 - 99 A St	56.7					50.8		59.9				
7326 - 99 A St										54.5	11787	75 Ave, 100 St (2015)
7214 - 99 A St			54.2	52.3								
8410 - 100 St									54.0			
<b>Resources Road</b>												
8223 - 94 St										61.9	20316	84 Ave, Resource Road (2016)
8219 - 94 St					60.0							
7923 - 94 St	54.1						54.2					
7031 - 93 St	48.8											
6345 - 93 St	54.8		48.8				51.1					
<b>68 Avenue</b>												
10954 - 67 Ave					48.8			63.7				
6705 - 109 St										57.9	30812	68 Ave, 108 St (2013)
11030 - 67 Ave									51.0			
9901 - 69 Ave	51.5	53.6	54.6	56.5								
9925 - 69 Ave									58.0			
9437 - 69 Ave	54.8	55.4	56.7									
9329 - 69 Ave								56.5				
9341 - 69 Ave										54.0	17462	68 Ave, Poplar Dr (2010)
6902 - Poplar Dr					57.0							
9326 - 67 Ave			56.1					48.6				
9318 - 67 Ave				54.9		54.2						
9304 - 67 Ave					56.9							
6713 - 90 A St								63.5		64.5	23864	68 Ave, Resources Rd (2009)
6716 - 90 A St		60.2	62.1	61.6		62.1	60.5		58.0			
8575 - 69 Ave						47.9						

Tabld D1: Comparison of Sound Level Results  $L_{eq}$  (24), dBA

ADDRESS	2002	2003	2004	2005	2007	2008	2010	2012	2014	2016	AADT	Intersection
<b>108 Street</b>												
25 Pinnacle Key			54.1	57.8	53.6	55.7	56.1	50.1				
29 Pinnacle Key										63.4	27673	76 Ave, 108 St (2015)
7414 - 107A										55.8	27673	76 Ave, 108 St (2015)
7406 - 107 A St			59.3	57.5		53.6		53				
<b>92 Street</b>												
9204 - 108 Ave					54.5		55.2	58.7				
9609 - 92 A St					56.3							
9449 - 92 A St				55.0			58.4			60.1	15211	92 Ave, 92 St (2016)
10427 - 92 A St								57.4				
10901 - 92 A St									58.0			
7422 - 91 St							53.2					
7426 - 91 St										52.2	13502	72 Ave, 92 St (2015)
7118 - 90 St									56.0			
<b>102 Street</b>												
11314 - 101 B St					48.5	53.6	54.5	58.4				
10202 - 114 A Ave						60.6	55.1	53.4				
10209 - 114 A Ave									52.0			
<b>116 Street</b>												
116 St / Pinnacle Dr								58.4				
7002 - 115B St										54.0	11028	68 Ave, 116 St (2015)
6934 - 115B St									56.0			
<b>100 Avenue</b>												
9029 - 101 Ave									56.0			
<b>132 Avenue</b>												
9338 - 131 Ave									58.0			
<b>Other Sites</b>												
13107 - 93 St					57.3							
9025 - 101 Ave		54.2	53.4	54.2		55.6		52.4				

Figure D1: Correlation Between Daily Traffic Volumes and Road Noise

