

Appendix G9

2017 Noise Monitoring Program



AGNICO EAGLE

MEADOWBANK GOLD PROJECT

2017 Noise Monitoring Report

In Accordance with NIRB Project Certificate No.004

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

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EXECUTIVE SUMMARY

The 2017 noise monitoring program at Meadowbank was conducted according to the Noise Monitoring and Abatement Plan (AEM, 2014). The objective of this program is to measure noise levels at five previously determined monitoring locations around the Meadowbank site, over at least two 24 h periods. Since high winds in the area tend to substantially reduce the quantity of available valid data, Agnico Eagle aims to conduct a minimum of two monitoring rounds of 2-4 days per station. In 2017, noise monitoring was conducted over 38 days, and the total usable amount of data for each station ranged from 10 - 91 hours. Daytime, night-time, 10-11pm, and 24 h L_{eq} values were calculated from recorded 1-min L_{eq} values for each monitoring event and location and are shown in Table 1.

The daytime target sound level (55 dBA) was not exceeded during any monitoring event. One night-time value at R1 slightly exceeded the target sound level (45 dBA), with a recorded $L_{eq,night}$ value of 46.2 dBA. An examination of the data indicated that as in previous years, 1-h L_{eq} values only exceeded 45 dBA in the early morning hours (6 – 7 am), which corresponds to shift change-over on the minesite and generally increased activity levels.

Overall, since targets were only marginally exceeded on one occasion, during peak helicopter season, and by a maximum of 1.2 dB, significant impacts to wildlife beyond impact predictions are not anticipated. Furthermore, regular wildlife monitoring continues to indicate that monitoring thresholds related to sensory disturbance are not being exceeded (see 2017 Wildlife Summary Report).

Table 1. Daytime, night-time, 10-11 pm, and 24-h L_{eq} values for monitoring locations R1 – R5, and percentage of the corresponding time period for which valid data was available (% coverage). Day- and night-time periods with fewer than 3 hours of valid data are excluded (-), and those exceeding corresponding target sound levels are shaded grey.

Site	Dates (2017)	$L_{eq, day}$ 7am-11pm (dBA)		$L_{eq, night}$ 11pm-7am (dBA)		$L_{eq, 1 h}$ 10-11pm (dBA)	$L_{eq, 24 h}$ (dBA)	
			% coverage		% coverage			% coverage
R1	Jul. 21	47.1	75%	-	0%	39.4	47.1	50%
	Aug. 8 - 10	45.9	31%	46.2	100%	24.6	46.1	54%
	Sept. 3 - 5	-	13%	30.4	75%	35.3	32.0	33%
R2	Jul. 7 - 10	-	6%	39.7	63%	36.8	39.3	25%
	Jul. 26 - 27	-	13%	-	0%	-	56.2	8%
R3	Jul. 2 - 4	38.6	100%	36.2	100%	31.0	37.9	100%
	Aug 8 - 10	48.4	31%	43.5	100%	49.1	46.1	54%
	Aug. 20 - 22	37.9	100%	35.0	100%	33.0	37.1	100%
R4	Jul. 10 - 12	41.4	94%	42.4	100%	32.2	41.8	96%
	Aug. 1 - 2	38.1	56%	40.7	100%	38.1	39.5	71%
	Aug. 16 - 18	39.6	25%	-	0%	41.9	39.6	17%
R5	Jul. 13 - 14	38.6	19%	41.7	63%	-	40.8	33%
	Aug. 4 - 6	44.1	81%	34.8	63%	32.8	42.9	75%
	Aug. 26 - 30	-	6%	25.6	75%	-	34.0	29%

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SECTION 1 • INTRODUCTION

Since 2008, Agnico Eagle Mines Ltd. (Agnico Eagle) has conducted outdoor noise monitoring at the Meadowbank site, near Baker Lake, Nunavut, in accordance with the Noise Monitoring and Abatement Plan (AEM, 2014). The objective of this monitoring program is to measure representative noise levels at the perimeter of the minesite, to inform the implementation of noise mitigation measures. Although no residential receptors are located nearby, Agnico Eagle aims to meet target sound levels identified in Environment Canada’s “Environmental Code of Practice for Metal Mines” (2009). These values are 55 dBA (daytime) and 45 dBA (night-time).

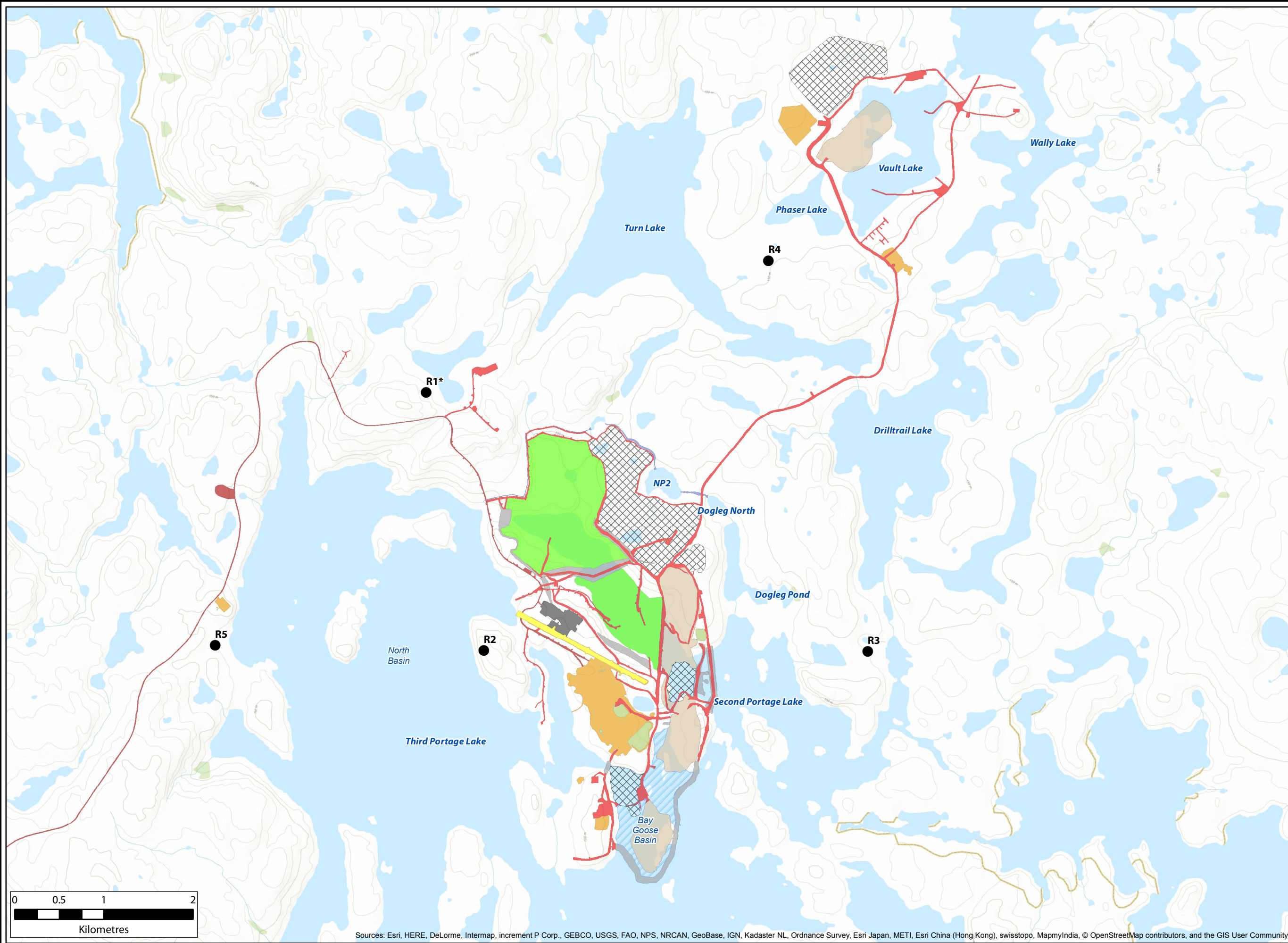
1.1 MONITORING LOCATIONS

To fulfill the monitoring objectives, the Noise Monitoring and Abatement Plan (AEM, 2014) indicates that at least two 24 h surveys of ambient outdoor noise will be conducted annually at five representative locations. However, due to a tendency towards sub-optimal weather conditions for noise monitoring (see Section 2.2), Agnico Eagle aims to conduct a minimum of 2 surveys for each location, with each survey lasting 2-4 days. In 2017, 2 - 3 surveys were conducted for each site. In total, monitoring occurred on 38 days, with 6 – 9 days for each site.

Noise monitoring locations have not changed since 2014 and were located as recommended in the Noise Monitoring and Abatement Plan (2014). UTM coordinates are provided in Table 2, and are shown in relation to mine site features in Figure 1. Photos of the monitoring locations are provided in Appendix A.

Table 2. UTM coordinates and dates of measurement for the Meadowbank noise monitoring locations.

Monitoring Location	Easting	Northing	Dates	# Days	Hours
R1	636149	7217332	July 21		9:16 am – 10:31 pm
			August 8 - 10	7	9:20 am – 8:20 am
			September 3 - 5		4:50 pm – 4:31 pm
R2	636795	7214435	July 7 - 10		5:06 pm – 9:12 am
			July 26 - 27	6	9:52 am – 7:14 am
R3	641104	7214427	July 2 - 4		2:09 pm – 8:39 am
			August 8 - 10	9	9:21 am – 8:20 am
			August 20 - 22		3:13 pm – 6:17 pm
R4	639990	7218810	July 10 - 12		12:20 pm – 8:32 am
			August 1 - 2	8	3:18 pm – 8:32 am
			August 16 - 18		10:52 am – 8:50 am
R5	633781	7214493	July 13 - 14		8:26 am – 1:02 pm
			August 4 - 6	9	2:02 pm – 9:14 am
			August 26 - 30		9:52 am – 9:52 am



Legend

- Noise Monitoring Location
* new 2014 location
- Mine Plan (2015)**
- Quarry
- AWP/AR Quarry
- ▨ Dewatered Lake
- Tailings Storage Facility
- Roads
- AWP/AR
- Dikes
- Diversion Ditch
- Stockpiles
- Pits
- Facility
- Airstrip
- ▨ Waste Dump

Noise Monitoring Locations



77 Wyndham Street South • Guelph ON N1E 5R3
 T 519.822.1609 • F 519.822.5389 • www.dougan.ca

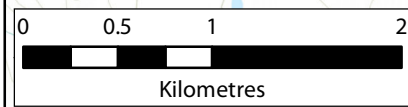
PROJECT: DA11-062-06

CLIENT: Agnico-Eagle Mines Ltd., Meadowbank Div.

<p>UTM Zone 14 NAD83</p>	DATE: MARCH 2016
	SCALE: 1:40,000
	DRAWN BY: LC
	CHECKED BY:

FIGURE: 1

The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should not be relied on as being a precise indicator of locations, features, or roads, nor as a guide to navigation. MNR data provided by Queen's Printer of Ontario. Use of the data in any derivative product does not constitute an endorsement by the MNR or the Ontario Government of such products.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

1.1.1 R1

Location R1 was formerly approximately 700 m south of the explosive storage area, and 400 m northeast of the all-weather access road. A spur road and a storage area were constructed within 100 m of this location in 2011. As a result, in 2014 Agnico Eagle moved this station approximately 700 m northwest of the explosives storage area to better represent the originally intended orientation.

1.1.2 R2

Location R2 is approximately 600 m west of the airstrip. Third Portage Lake is to the west and southwest and surrounding terrain is vegetated tundra with rocky outcrops.

1.1.3 R3

Location R3 is approximately 1,800 m east of the East Dike. Second Portage Lake is to the west and east, and surrounding terrain is vegetated tundra with rocky outcrops.

1.1.4 R4

Location R4 is approximately 1,500 m southwest of the future location of Vault Pit, and less than 1 km from the Vault Haul Road. Turn Lake is to the west, and surrounding terrain is vegetated tundra with rocky outcrops.

1.1.5 R5

Location R5 is approximately 500 m south of the exploration camp and 300 m east of the all-weather access road. Third Portage Lake is immediately to the east, and surrounding terrain away from the shoreline is vegetated tundra with rocky outcrops. This location is situated on a known caribou migration route.

SECTION 2 • METHODS

In 2017, Agnico Eagle technicians conducted noise surveys at each of the locations described in Section 1.1. These surveys provide data on average noise levels during a typical day, as well as variability of noise levels within the day.

2.1 SOUND LEVEL METER

For all stations a Bruel and Kjaer Model 2250 integrating sound level meter was used to conduct the noise survey. As in the past, the noise level logging rate was set at one-minute intervals, and sound was recorded in 10 minute intervals.

The parameters logged each minute included:

- Integrated average sound level, in dBA – L_{eq}
- Absolute maximum sound level, in dBA – L_{max}
- Absolute minimum sound level, in dBA – L_{min}

Calibration of the instrument was performed before and after each monitoring event using a Bruel and Kjaer Type 4231 Calibrator, to ensure variance was within 0.5 dB (see field notes, Appendix B). Estimated uncertainty of the calibrator is ± 0.12 dB at a 99% confidence level.

2.2 WEATHER DATA

Weather data for the noise monitoring periods was collected using the mine site's permanent weather station. Hourly data for wind, temperature and relative humidity was available from this station.

The Alberta Energy Resource Conservation Board (ERCB, 2007) has published preferred weather conditions for data to be used in noise complaint investigations because wind and precipitation can affect noise levels. Based on these guidelines, noise monitoring data was filtered to remove measurements collected outside of conditions where wind speed exceeded 15 km/h (4.17 m/s) or relative humidity exceeded 90% (assuming precipitation occurred) prior to data analysis. In 2017, as in all previous years, wind speeds commonly exceeded preferred levels, so the available data was significantly reduced.

2.3 FIELD NOTES

A pocket weather meter (Kestrel 3000) was used by field staff to record wind speed, direction and temperature at the beginning and end of each monitoring period. Other observations included precipitation, cloud cover and observed noises during instrument set-up and take-down. All field observations are provided in Appendix B.

2.4 DATA ANALYSIS

Since noise levels constantly vary over time, the monitoring instrument used at Meadowbank measures continuously and records a single-number value for each minute, representing the equivalent sound level (L_{eq}).

All datapoints associated with the first hour of measurement were filtered out to remove noise from technicians, and to ensure more than 30 min of data contributed to hourly averages. Since noise monitors were left in the field until the battery ran out, records from the last hour were only filtered out if less than 30 min of data were recorded.

Recorded one-minute L_{eq} values were then used to calculate hourly equivalent noise levels ($L_{eq, 1h}$). After further filtering based on weather considerations (Section 2.2), valid hourly L_{eq} values were energy-averaged across calendar days within a monitoring event (2 – 4 sequential days) and average values for each hour were used to calculate daytime (7am-11pm), night-time (11pm-7am) and 24 h L_{eq} values for each event. This approach was taken beginning in 2016 due to the frequency of high-wind conditions, in order to maximize the utility of the available data, and produce day- and night-time L_{eq} values with the greatest possible recorded coverage of their respective time periods, resulting in more representative measurements. However, for consistency, L_{eq} values for each 24-h period were also calculated as in previous years, and are presented in Appendix C. No differences in exceedances of target sound levels occurred between the two methods.

SECTION 3 • RESULTS

3.1 R1

One-minute filtered and unfiltered L_{eq} values, maximum sound levels (L_{max}), and minimum sound levels (L_{min}) over the three monitoring events at R1 are shown in Figures 2, 3 and 4. Filtered one-minute L_{eq} values exclude data collected in the first hour to remove technician interference, and data collected under non-optimal weather conditions (wind speed > 15 km/h, relative humidity > 90%). Filtered values were used in subsequent analyses, but unfiltered values are provided for reference. For station R1, a total of 33 h of data was available after filtering the total 111 h of recorded sound levels.

Hourly L_{eq} values were calculated as described in Section 2.4, and are shown in Table 3, and the hours filtered out for subsequent analyses are identified.

Weather data for noise monitoring dates at R1 is shown in Table 3. While wind speeds tended to be lower in July (event 1), hourly average wind speeds in excess of 4.17 m/s and/or probable precipitation occurred for more than half of events 2 and 3 (August and September).

Audible noises noted in the field log previously at this location include exploration helicopter noise, construction activities at the emulsion plant, AWAR traffic, insects and birds.

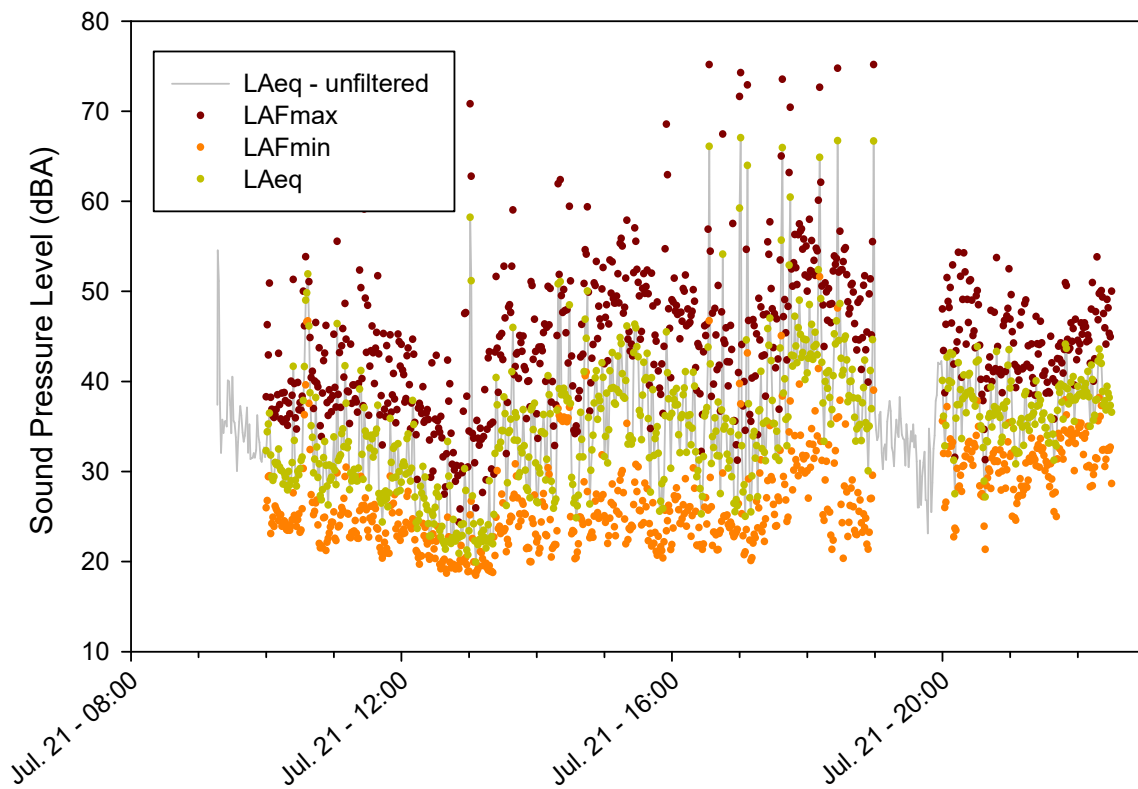


Figure 2. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R1 at the Meadowbank site during monitoring event 1. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 15 km/h, RH > 90%).

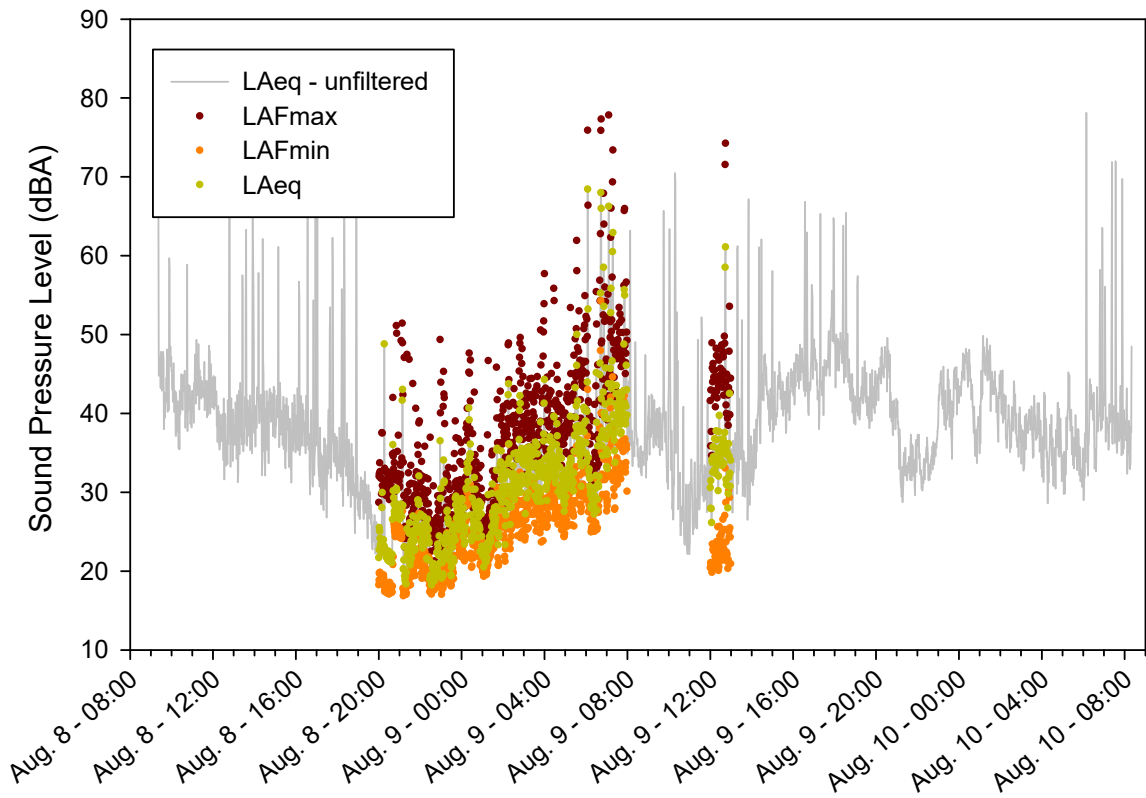


Figure 3. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R1 at the Meadowbank site during monitoring event 2. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 15 km/h, RH > 90%).

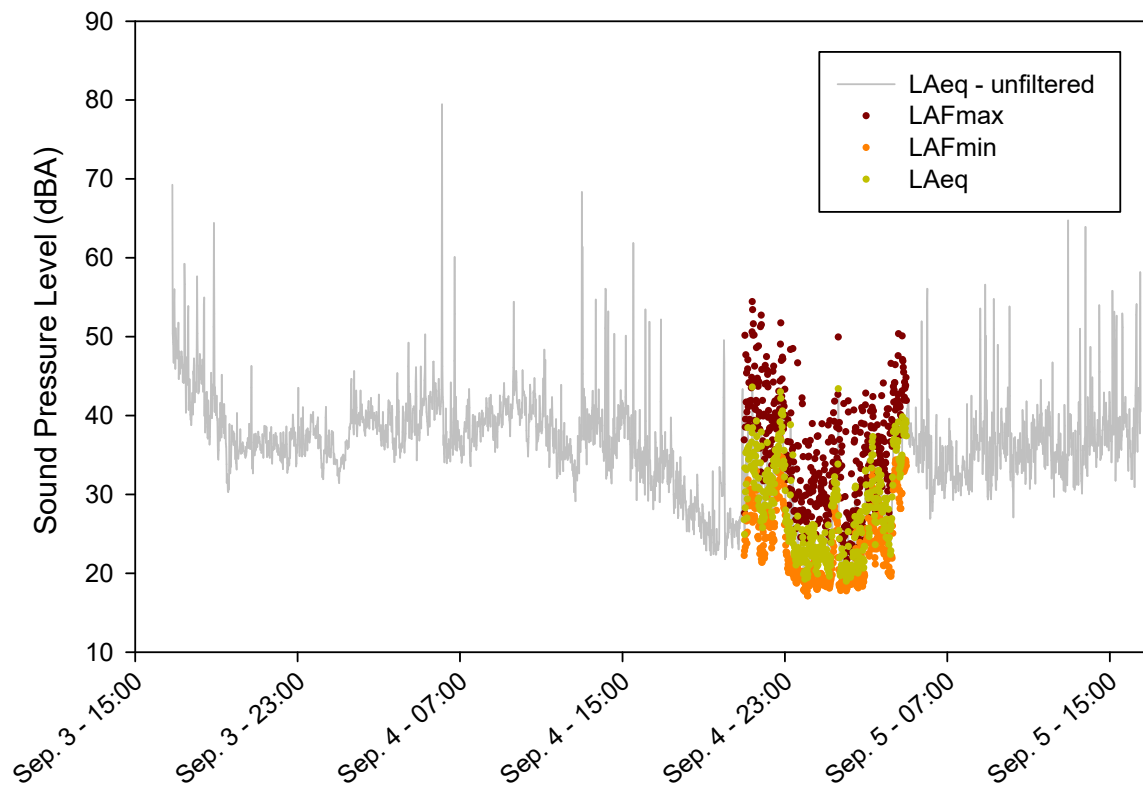


Figure 4. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R1 at the Meadowbank site during monitoring event 3. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 15 km/h, RH > 90%).

Table 3. Hourly L_{eq} values and weather data for monitoring station R1 at the Meadowbank site (monitoring events 1, 2 and 3). Hours filtered out due to set-up, take-down or non-optimal weather conditions are shaded grey.

Date	Start Hour	L_{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max Wind Speed (m/s)
7/21/17	9:00 AM	41.02	9.19	65.96	3.71	5.41
	10:00 AM	39.10	10.48	59.15	2.78	4.53
	11:00 AM	34.51	11.89	51.15	1.86	3.06
	12:00 PM	28.43	13.67	47.82	1.05	2.22
	1:00 PM	42.01	15.49	43.95	1.21	3.59
	2:00 PM	40.82	16.79	39.49	2.47	7.04
	3:00 PM	39.86	17.49	35.09	2.96	6.31
	4:00 PM	48.79	18.46	27.05	4.06	5.96
	5:00 PM	53.89	19.18	29.75	3.27	5.47

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max Wind Speed (m/s)
	6:00 PM	53.53	19.61	29.11	3.18	6.12
	7:00 PM	35.23	20.29	25.76	4.44	7.61
	8:00 PM	38.75	20.82	25.69	2.33	4.19
	9:00 PM	37.39	20.74	29.14	1.05	2.41
	10:00 PM	39.45	18.81	43.41	2.16	4.35
8/08/17	9:00:00 AM	54.59	6.08	90.30	8.05	10.92
	10:00:00 AM	44.60	6.38	86.30	7.91	11.31
	11:00:00 AM	44.22	7.49	75.96	7.00	11.11
	12:00:00 PM	51.55	8.99	67.99	6.85	9.39
	1:00:00 PM	51.66	10.11	60.63	6.34	9.76
	2:00:00 PM	46.90	10.92	53.93	6.22	9.17
	3:00:00 PM	44.75	11.83	48.41	6.84	9.70
	4:00:00 PM	54.44	12.61	46.55	6.20	9.66
	5:00:00 PM	53.31	13.24	42.39	5.74	8.19
	6:00:00 PM	52.85	13.68	44.65	5.71	8.64
	7:00:00 PM	27.99	13.84	42.05	4.91	6.90
	8:00:00 PM	32.24	13.79	41.75	3.85	6.41
	9:00:00 PM	29.57	13.26	46.04	2.60	4.16
	10:00:00 PM	24.61	12.38	50.96	1.76	2.57
	11:00:00 PM	26.27	11.35	59.76	1.27	2.04
8/09/17	12:00:00 AM	30.66	10.08	79.78	0.27	1.24
	1:00:00 AM	28.35	9.25	83.20	0.93	1.67
	2:00:00 AM	34.52	8.91	83.50	0.97	2.14
	3:00:00 AM	33.82	8.56	86.50	1.99	2.96
	4:00:00 AM	34.53	8.27	84.60	2.54	3.49
	5:00:00 AM	38.26	8.10	82.70	3.99	6.21
	6:00:00 AM	55.01	8.23	79.65	3.72	5.27
	7:00:00 AM	51.89	9.49	67.85	3.72	6.59
	8:00:00 AM	46.88	11.05	62.94	5.62	8.90
	9:00:00 AM	48.40	12.24	63.40	8.29	10.49
	10:00:00 AM	55.78	13.52	66.91	7.80	9.86
	11:00:00 AM	39.06	13.51	78.96	5.27	9.25
	12:00:00 PM	45.59	13.53	89.00	3.82	6.72
	1:00:00 PM	51.47	13.95	85.80	5.45	7.78
	2:00:00 PM	48.20	14.38	86.80	4.93	6.72
	3:00:00 PM	44.57	15.84	77.58	6.98	10.86
	4:00:00 PM	52.18	16.57	70.61	7.93	10.66
	5:00:00 PM	53.10	17.07	67.37	8.30	12.19

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max Wind Speed (m/s)
	6:00:00 PM	51.71	16.62	72.71	9.17	12.94
	7:00:00 PM	45.11	15.15	68.99	9.26	12.23
	8:00:00 PM	45.01	15.01	66.35	7.80	10.49
	9:00:00 PM	35.05	13.99	67.49	7.05	10.02
	10:00:00 PM	34.54	12.39	72.90	5.46	8.55
	11:00:00 PM	42.60	10.56	79.53	5.35	7.43
8/10/17	12:00:00 AM	43.90	9.09	84.10	5.81	9.09
	1:00:00 AM	44.82	7.12	88.10	7.07	10.11
	2:00:00 AM	39.91	6.18	92.70	7.06	10.80
	3:00:00 AM	38.24	5.65	97.80	5.85	8.76
	4:00:00 AM	37.03	5.02	99.70	6.05	8.21
	5:00:00 AM	37.48	4.66	100.00	5.54	7.72
	6:00:00 AM	60.57	4.62	100.00	4.71	7.47
	7:00:00 AM	58.42	4.58	100.00	4.84	7.33
	8:00:00 AM	39.37	4.61	100.00	4.97	7.15
9/03/17	4:00 PM	59.86	10.20	42.98	9.25	13.01
	5:00 PM	48.21	10.98	42.02	8.47	12.74
	6:00 PM	49.61	11.00	42.43	8.05	11.52
	7:00 PM	38.13	10.68	47.78	7.18	11.11
	8:00 PM	37.06	9.91	56.11	6.84	10.00
	9:00 PM	36.73	8.49	65.74	5.15	7.94
	10:00 PM	36.25	7.40	66.22	5.90	8.06
	11:00 PM	38.03	6.75	69.14	5.47	8.62
9/04/17	12:00 AM	35.97	5.81	77.70	5.71	8.06
	1:00 AM	38.46	5.18	81.30	5.97	9.45
	2:00 AM	39.85	4.47	86.80	5.31	8.06
	3:00 AM	39.16	3.83	91.10	5.94	8.13
	4:00 AM	40.39	3.35	95.90	5.73	8.68
	5:00 AM	42.57	2.78	99.30	5.45	8.09
	6:00 AM	61.76	1.72	100.00	4.89	7.10
	7:00 AM	38.38	1.28	100.00	5.37	8.15
	8:00 AM	39.69	1.43	100.00	3.76	6.74
	9:00 AM	42.79	1.39	100.00	4.61	6.78
	10:00 AM	40.85	1.84	95.70	5.48	7.19
	11:00 AM	39.67	2.96	92.20	5.02	6.94
	12:00 PM	35.35	4.54	76.35	5.87	8.80
	1:00 PM	51.78	6.34	62.29	5.62	7.70
	2:00 PM	44.31	7.79	65.05	6.58	8.82

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max Wind Speed (m/s)
	3:00 PM	45.24	8.66	58.82	5.94	8.49
	4:00 PM	40.63	9.34	54.25	5.55	8.90
	5:00 PM	33.12	10.32	51.30	5.25	7.80
	6:00 PM	28.25	10.34	51.67	5.31	7.29
	7:00 PM	29.32	9.76	59.63	4.82	6.29
	8:00 PM	35.20	8.77	66.06	4.22	6.51
	9:00 PM	34.39	7.09	74.48	4.03	5.14
	10:00 PM	35.28	6.42	76.72	3.90	5.33
	11:00 PM	27.14	6.34	75.97	3.97	5.16
9/05/17	12:00 AM	23.10	6.36	75.63	4.08	5.70
	1:00 AM	29.09	6.25	72.79	3.55	5.55
	2:00 AM	24.90	6.33	76.92	3.39	5.08
	3:00 AM	30.67	5.97	81.00	2.92	4.76
	4:00 AM	35.61	5.76	88.70	2.77	4.51
	5:00 AM	39.03	5.14	94.10	2.91	4.68
	6:00 AM	41.41	4.66	99.20	3.38	4.90
	7:00 AM	34.02	4.91	100.00	5.51	7.31
	8:00 AM	43.07	5.16	100.00	5.58	7.55
	9:00 AM	41.08	5.24	94.30	5.76	7.43
	10:00 AM	39.33	5.63	85.80	6.33	8.74
	11:00 AM	37.83	5.73	86.40	6.20	8.94
	12:00 PM	47.32	5.99	89.50	6.44	9.21
	1:00 PM	46.78	6.48	79.55	5.84	7.84
	2:00 PM	41.09	7.04	68.58	5.78	8.00
	3:00 PM	44.90	7.44	74.74	6.06	9.31
	4:00 PM	46.22	7.37	65.84	6.31	9.06

3.2 R2

One-minute filtered and unfiltered L_{eq} value, maximum sound levels (L_{max}), and minimum sound levels (L_{min}) over the two monitoring events at R2 are shown in Figures 5 and 6.

Hourly L_{eq} values were calculated as described in Section 2.4, and are shown in Table 4, and data points filtered out from subsequent calculations are indicated.

Weather data for noise monitoring dates at R2 is shown in Table 4. Wind exceeded 4.17 m/s for more than 75% of each monitoring event at this site. Monitoring was conducted for a total of 88 h, and just 10 h were available after filtering.

Audible noises noted in the field log at this location include road traffic and helicopters.

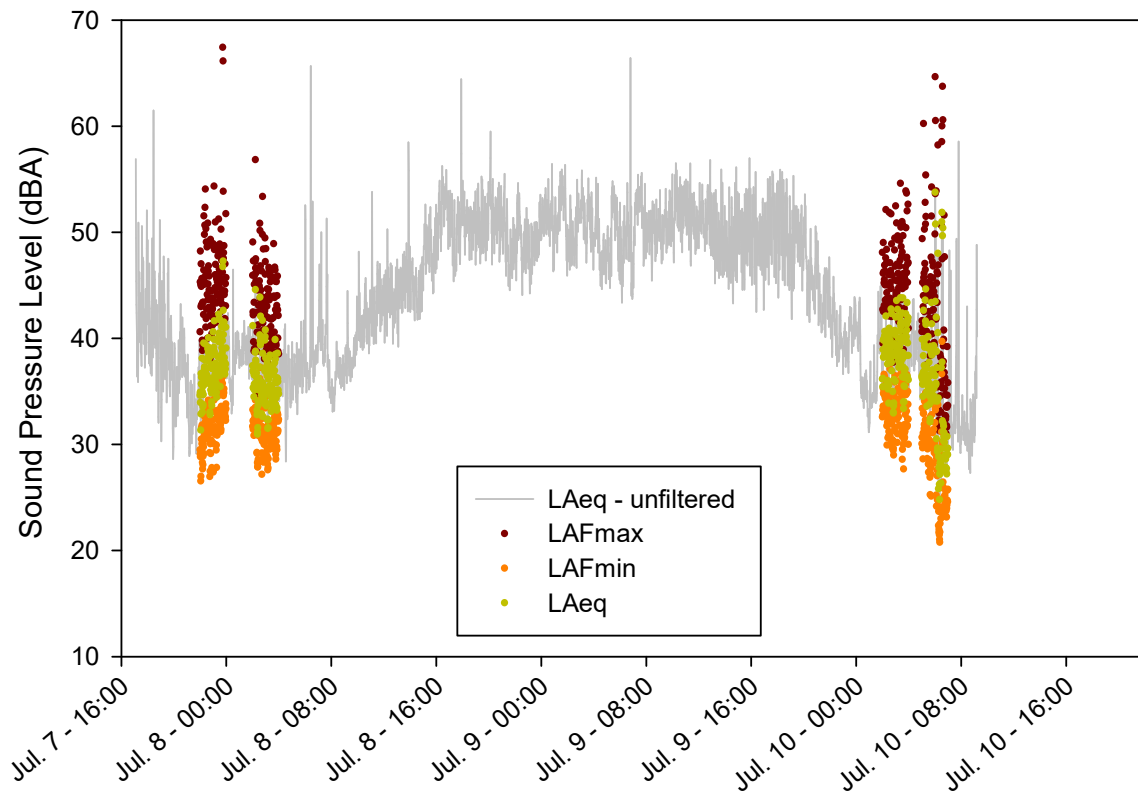


Figure 5. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R2 at the Meadowbank site during monitoring event 1. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 4.17 m/s, RH > 90%).

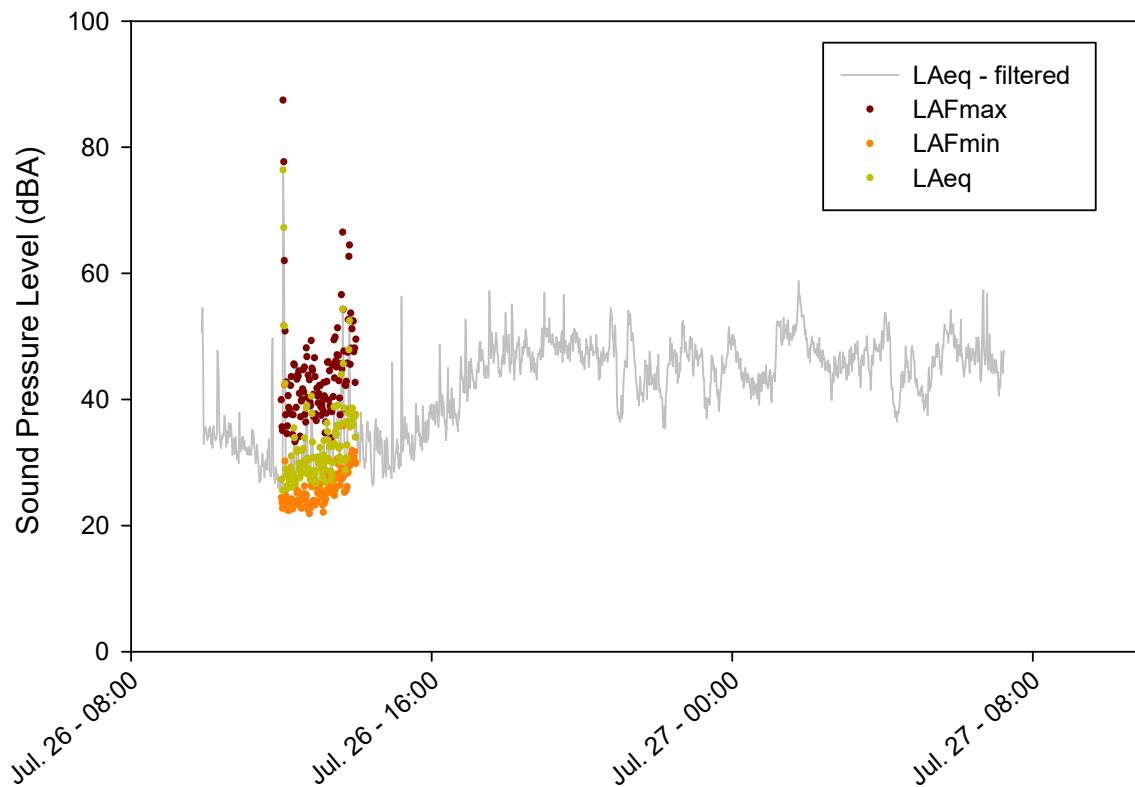


Figure 6. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R2 at the Meadowbank site during monitoring event 2. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 4.17 m/s, RH > 90%).

Table 4. Hourly L_{eq} values for monitoring station R2 at the Meadowbank site. Data points filtered out of subsequent analyses due to set-up or non-optimal weather conditions are shaded grey.

Date	Start Hour	L_{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
7/07/17	5:00 PM	45.65	16.71	23.67	6.48	9.80
	6:00 PM	46.61	16.90	23.88	6.10	8.96
	7:00 PM	41.06	16.75	21.10	5.71	8.72
	8:00 PM	38.10	16.48	17.92	6.10	9.15
	9:00 PM	33.80	15.80	26.59	4.66	7.47
	10:00 PM	36.75	14.61	34.57	4.07	6.00
	11:00 PM	39.55	12.85	42.70	3.86	5.86
7/08/17	12:00 AM	38.64	11.71	49.61	5.06	7.76
	1:00 AM	38.73	10.90	53.23	5.02	7.27

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	2:00 AM	37.60	9.72	59.88	4.06	5.59
	3:00 AM	35.77	8.85	53.62	3.39	6.27
	4:00 AM	36.74	8.44	63.10	4.56	6.49
	5:00 AM	37.65	8.55	63.91	4.52	6.55
	6:00 AM	49.06	9.28	56.45	5.60	7.80
	7:00 AM	41.73	10.37	45.41	5.68	8.17
	8:00 AM	36.42	11.55	36.07	5.44	8.04
	9:00 AM	38.83	12.11	34.24	6.42	9.31
	10:00 AM	41.90	12.60	40.53	7.19	10.09
	11:00 AM	44.39	12.92	43.57	7.79	10.54
	12:00 PM	44.16	13.24	43.27	7.75	10.94
	1:00 PM	47.20	13.29	47.23	8.43	11.25
	2:00 PM	44.93	13.15	46.75	8.07	10.86
	3:00 PM	48.79	13.62	45.77	9.15	12.09
	4:00 PM	52.51	13.88	46.92	10.41	13.48
	5:00 PM	52.27	14.18	44.49	10.06	13.84
	6:00 PM	51.30	14.60	41.41	10.21	13.17
	7:00 PM	51.43	14.82	42.42	10.04	14.31
	8:00 PM	52.60	14.53	49.46	10.24	13.96
	9:00 PM	49.71	13.51	57.10	9.04	13.09
	10:00 PM	50.06	12.46	60.36	8.82	11.88
	11:00 PM	49.39	11.01	71.03	8.30	11.84
7/09/17	12:00 AM	51.62	9.71	79.88	9.45	12.62
	1:00 AM	52.58	9.27	78.67	9.72	13.58
	2:00 AM	50.38	8.90	82.00	9.23	12.56
	3:00 AM	51.63	8.02	86.10	9.45	13.25
	4:00 AM	49.32	7.78	89.70	8.10	12.07
	5:00 AM	50.79	7.91	90.00	9.37	12.49
	6:00 AM	51.88	8.07	89.50	9.16	11.70
	7:00 AM	52.15	8.86	83.70	10.03	13.09
	8:00 AM	50.41	9.34	76.40	9.00	12.23
	9:00 AM	51.17	10.27	69.98	9.84	12.70
	10:00 AM	52.61	12.31	63.71	10.12	12.74
	11:00 AM	51.76	12.94	55.95	10.13	13.27
	12:00 PM	51.81	14.34	47.16	9.94	13.58
	1:00 PM	50.22	15.37	41.90	9.12	13.25
	2:00 PM	49.90	16.25	31.18	8.94	12.98
	3:00 PM	51.12	16.82	31.48	9.41	13.37

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	4:00 PM	50.21	8.90	82.00	9.23	12.56
	5:00 PM	51.48	17.13	32.13	8.91	12.68
	6:00 PM	50.93	17.44	29.86	9.18	13.54
	7:00 PM	49.61	17.41	33.07	9.24	13.21
	8:00 PM	47.62	17.16	35.78	9.12	13.01
	9:00 PM	44.56	16.66	33.01	8.60	11.25
	10:00 PM	40.91	15.77	41.67	8.02	11.43
	11:00 PM	40.63	14.78	46.96	6.75	9.35
7/10/17	12:00 AM	37.97	13.25	54.77	5.42	7.62
	1:00 AM	38.54	12.37	57.72	5.05	7.84
	2:00 AM	38.65	11.63	64.16	4.87	6.94
	3:00 AM	39.98	10.96	71.61	4.15	6.08
	4:00 AM	39.40	10.30	75.61	4.12	6.02
	5:00 AM	38.29	10.01	78.78	4.51	6.15
	6:00 AM	42.33	10.37	75.30	3.51	5.17
	7:00 AM	42.95	10.97	72.32	3.83	5.84
	8:00 AM	32.52	12.36	61.98	4.30	5.82
	9:00 AM	40.30	13.97	50.95	4.41	6.06
7/26/17	9:00 AM	48.70	8.61	95.00	5.17	7.29
	10:00 AM	36.55	9.38	78.85	4.77	6.92
	11:00 AM	35.40	10.02	74.31	4.38	6.57
	12:00 PM	59.10	10.40	71.06	4.14	6.53
	1:00 PM	40.79	10.80	69.36	3.80	6.14
	2:00 PM	34.06	11.49	60.49	4.46	7.70
	3:00 PM	40.04	12.09	60.93	4.30	6.66
	4:00 PM	42.08	12.29	53.92	4.94	7.62
	5:00 PM	47.89	12.62	56.70	5.91	8.45
	6:00 PM	48.06	12.45	54.06	7.77	10.45
	7:00 PM	49.88	11.95	56.46	8.16	11.02
	8:00 PM	48.20	11.37	55.32	8.02	10.58
	9:00 PM	46.41	10.65	65.72	7.74	10.66
	10:00 PM	46.73	10.16	64.70	6.81	11.21
	11:00 PM	45.66	9.86	59.90	6.70	9.60
7/27/17	12:00 AM	44.68	9.20	71.93	5.90	8.60
	1:00 AM	51.61	8.78	76.17	5.94	8.21
	2:00 AM	46.58	8.60	84.30	7.63	11.80
	3:00 AM	47.02	8.08	81.50	6.72	8.98
	4:00 AM	46.80	8.09	82.60	6.88	8.84

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	5:00 AM	47.94	7.17	83.80	6.35	12.49
	6:00 AM	48.72	7.46	88.30	6.53	9.74
	7:00 AM	45.09	7.25	86.50	7.18	9.23

3.3 R3

One-minute filtered and unfiltered L_{eq} value, maximum sound levels (L_{max}), and minimum sound levels (L_{min}) over the two monitoring events at R3 are shown in Figures 7, 8 and 9.

Hourly L_{eq} values were calculated as described in Section 2.4, and are shown in Table 5.

Weather data for noise monitoring dates at R3 is shown in Table 5. Wind speeds were low during the first event, but exceeded 4.17 m/s for the majority of the second event, and part of the third event. Between the three events, a total of 91 out of 143 h of data collected were usable.

Audible noises previously noted in the field log at this location include boats, birds, insects, traffic and pit noise. Activities contributing to the acoustic environment at this location include Vault road traffic and increased helicopter activity due to exploration works.

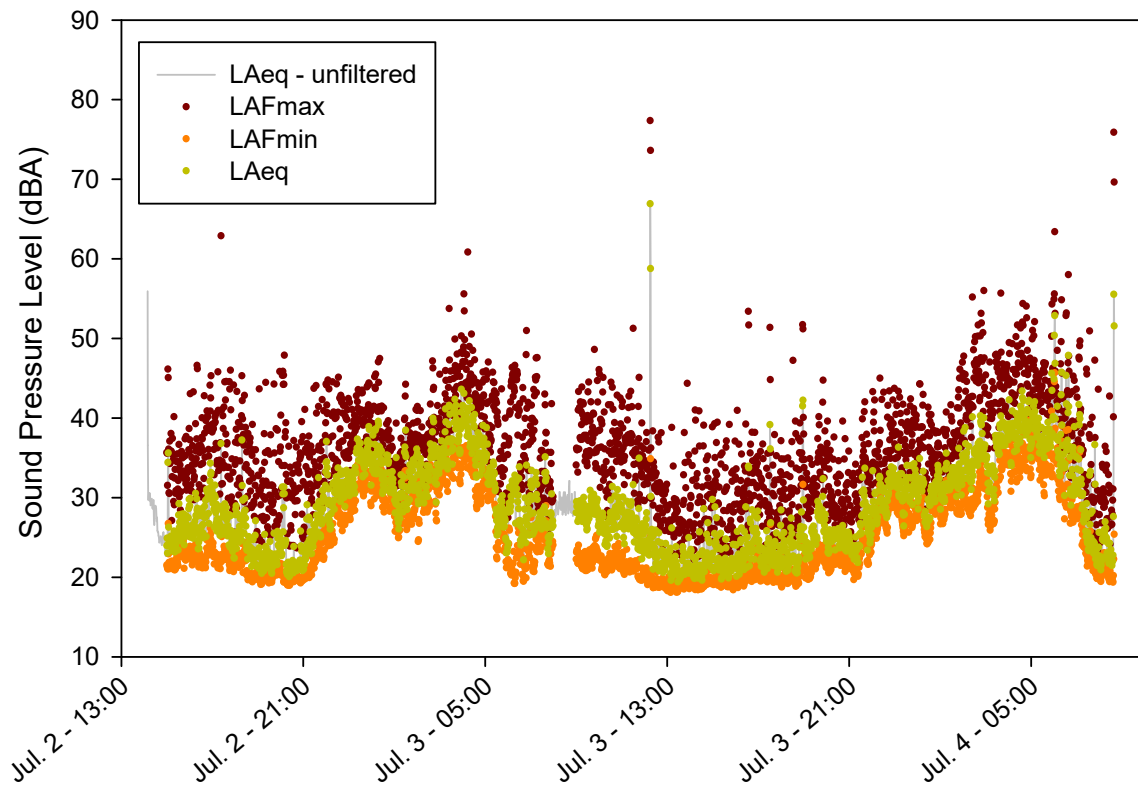


Figure 7. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R3 at the Meadowbank site during monitoring event 1. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 4.17 m/s, RH > 90%).

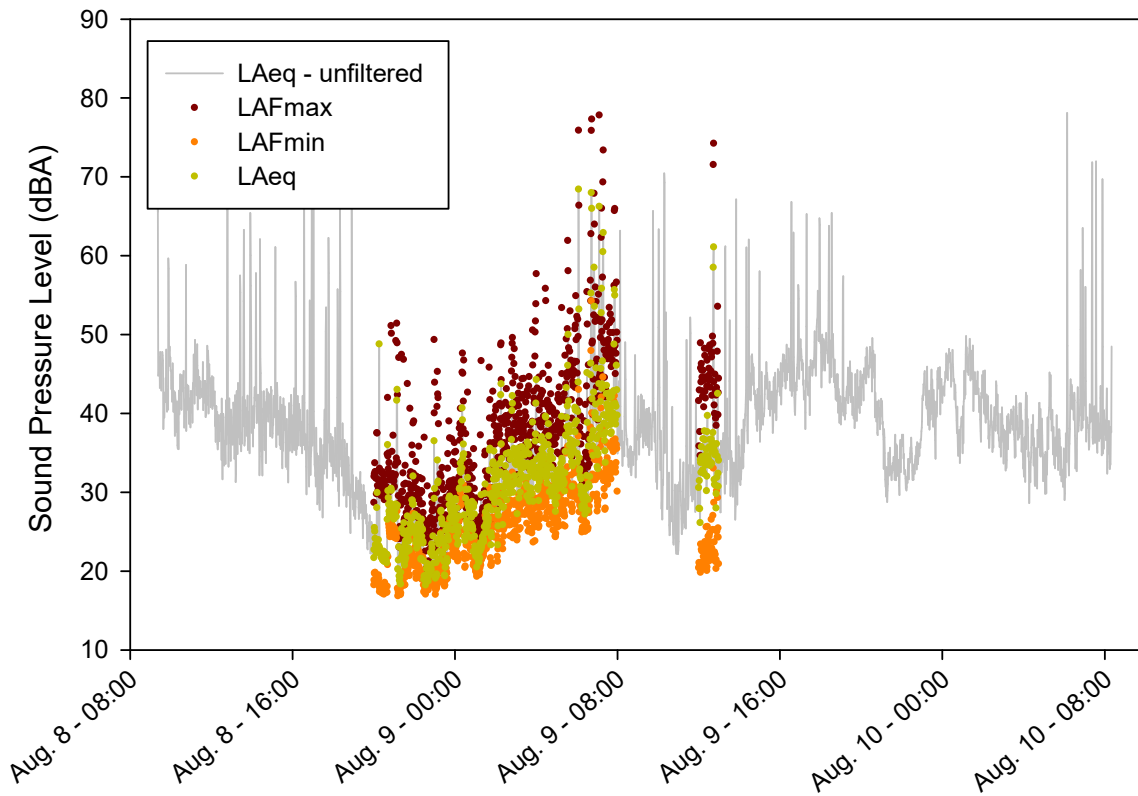


Figure 8. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R3 at the Meadowbank site during monitoring event 2. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 4.17 m/s, RH > 90%).

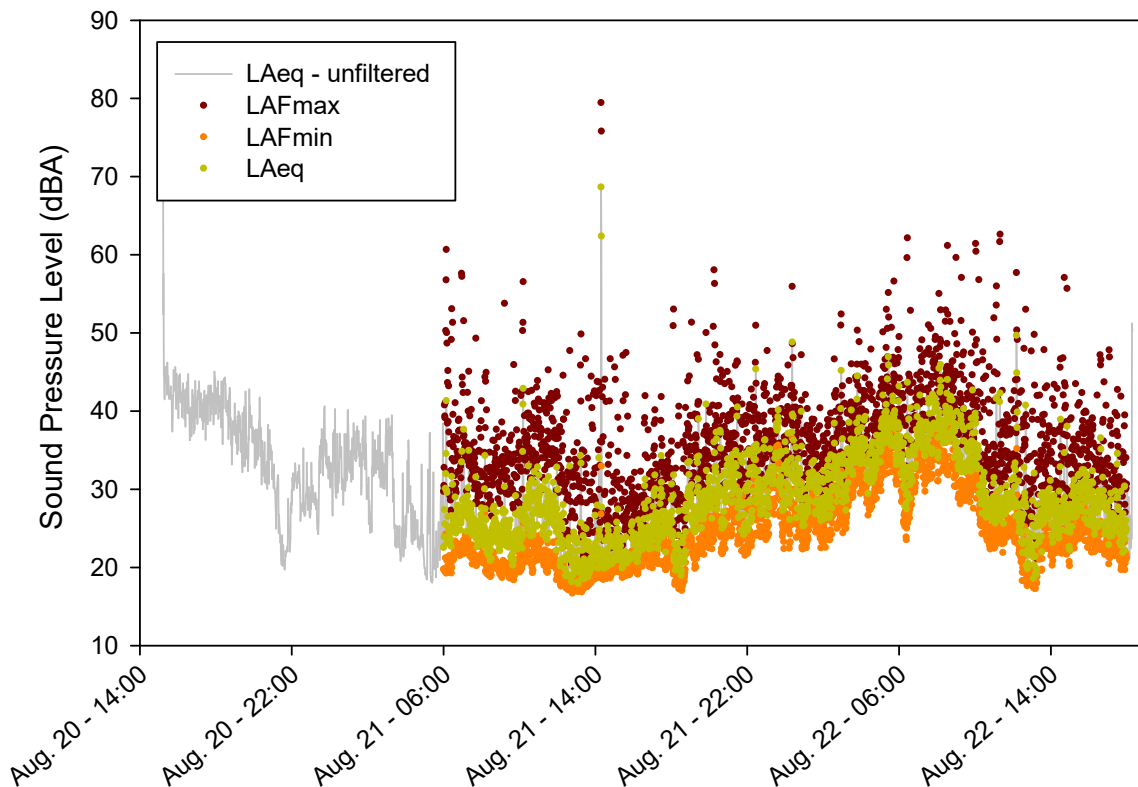


Figure 9. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R3 at the Meadowbank site during monitoring event 3. Filtered data excludes those measurements taken outside of optimal conditions (set-up, take-down, wind > 4.17 m/s, RH > 90%).

Table 5. Hourly L_{eq} values for monitoring station R3 at the Meadowbank site. Data points filtered out of subsequent analyses due to set-up or non-optimal weather conditions are shaded grey.

Date	Start Hour	L_{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
7/02/17	2:00 PM	39.19	22.11	32.18	2.36	3.76
	3:00 PM	26.79	22.74	27.65	3.47	4.88
	4:00 PM	28.51	22.76	33.12	3.82	5.57
	5:00 PM	27.89	22.69	29.87	3.66	5.29
	6:00 PM	26.54	22.44	28.25	2.68	4.65
	7:00 PM	22.70	22.58	30.79	2.23	3.69
	8:00 PM	24.01	21.86	35.46	1.24	2.72
	9:00 PM	27.15	20.14	47.84	2.00	3.16
	10:00 PM	31.45	18.77	55.53	1.15	2.00
	11:00 PM	34.71	17.43	42.51	0.51	1.49

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
7/03/17	12:00 AM	34.43	18.30	42.25	0.41	1.25
	1:00 AM	32.23	16.58	64.72	1.14	1.73
	2:00 AM	34.04	13.84	59.51	0.76	2.20
	3:00 AM	38.25	14.29	61.62	0.19	1.00
	4:00 AM	38.28	13.56	65.40	0.69	1.78
	5:00 AM	31.46	15.04	54.67	0.29	1.57
	6:00 AM	29.41	16.41	53.60	1.44	3.06
	7:00 AM	29.10	16.79	46.53	3.15	5.27
	8:00 AM	29.18	18.32	40.47	4.25	5.63
	9:00 AM	28.70	18.89	36.98	4.03	5.17
	10:00 AM	27.46	20.22	32.72	3.64	5.31
	11:00 AM	27.35	21.34	29.17	3.69	5.84
	12:00 PM	49.76	21.99	27.27	2.55	4.33
	1:00 PM	21.71	22.25	26.26	1.91	3.67
	2:00 PM	22.65	23.22	30.34	1.61	3.98
	3:00 PM	22.67	23.25	23.48	1.70	4.19
	4:00 PM	25.46	23.71	22.91	1.75	3.74
	5:00 PM	26.02	23.71	24.06	2.28	5.66
	6:00 PM	28.79	23.50	28.96	2.33	4.29
	7:00 PM	26.30	23.13	27.31	3.32	5.63
	8:00 PM	24.90	22.92	27.71	3.25	4.67
	9:00 PM	26.65	21.04	41.72	2.46	4.37
	10:00 PM	30.61	19.61	41.60	0.79	1.57
	11:00 PM	31.66	18.38	50.73	0.63	1.29
7/04/17	12:00 AM	30.91	17.67	47.70	0.46	1.31
	1:00 AM	32.30	17.46	46.04	0.30	1.27
	2:00 AM	35.95	17.00	57.17	0.53	1.57
	3:00 AM	36.39	16.77	52.98	1.20	2.00
	4:00 AM	39.37	16.73	53.41	1.60	2.37
	5:00 AM	38.80	16.70	56.37	1.99	2.76
	6:00 AM	40.98	17.08	52.93	2.38	3.08
	7:00 AM	31.80	18.05	43.88	2.02	2.84
	8:00 AM	41.06	19.00	43.00	2.28	3.31
8/08/17	9:00 AM	45.65	6.08	90.30	8.05	10.92
	10:00 AM	46.61	6.38	86.30	7.91	11.31
	11:00 AM	41.06	7.49	75.96	7.00	11.11
	12:00 PM	38.10	8.99	67.99	6.85	9.39
	1:00 PM	33.80	10.11	60.63	6.34	9.76

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	2:00 PM	36.75	10.92	53.93	6.22	9.17
	3:00 PM	39.55	11.83	48.41	6.84	9.70
	4:00 PM	38.64	12.61	46.55	6.20	9.66
	5:00 PM	38.73	13.24	42.39	5.74	8.19
	6:00 PM	37.60	13.68	44.65	5.71	8.64
	7:00 PM	35.77	13.84	42.05	4.91	6.90
	8:00 PM	36.74	13.79	41.75	3.85	6.41
	9:00 PM	37.65	13.26	46.04	2.60	4.16
	10:00 PM	49.06	12.38	50.96	1.76	2.57
	11:00 PM	41.73	11.35	59.76	1.27	2.04
8/09/17	12:00 AM	36.42	10.08	79.78	0.27	1.24
	1:00 AM	38.83	9.25	83.20	0.93	1.67
	2:00 AM	41.90	8.91	83.50	0.97	2.14
	3:00 AM	44.39	8.56	86.50	1.99	2.96
	4:00 AM	44.16	8.27	84.60	2.54	3.49
	5:00 AM	47.20	8.10	82.70	3.99	6.21
	6:00 AM	44.93	8.23	79.65	3.72	5.27
	7:00 AM	48.79	9.49	67.85	3.72	6.59
	8:00 AM	52.51	11.05	62.94	5.62	8.90
	9:00 AM	52.27	12.24	63.40	8.29	10.49
	10:00 AM	51.30	13.52	66.91	7.80	9.86
	11:00 AM	51.43	13.51	78.96	5.27	9.25
	12:00 PM	52.60	13.53	89.00	3.82	6.72
	1:00 PM	49.71	13.95	85.80	5.45	7.78
	2:00 PM	50.06	14.38	86.80	4.93	6.72
	3:00 PM	49.39	15.84	77.58	6.98	10.86
	4:00 PM	51.62	16.57	70.61	7.93	10.66
	5:00 PM	52.58	17.07	67.37	8.30	12.19
	6:00 PM	50.38	16.62	72.71	9.17	12.94
	7:00 PM	51.63	15.15	68.99	9.26	12.23
	8:00 PM	49.32	15.01	66.35	7.80	10.49
	9:00 PM	50.79	13.99	67.49	7.05	10.02
	10:00 PM	51.88	12.39	72.90	5.46	8.55
	11:00 PM	52.15	10.56	79.53	5.35	7.43
8/10/17	12:00 AM	50.41	9.09	84.10	5.81	9.09
	1:00 AM	51.17	7.12	88.10	7.07	10.11
	2:00 AM	52.61	6.18	92.70	7.06	10.80
	3:00 AM	51.76	5.65	97.80	5.85	8.76
	4:00 AM	51.81	5.02	99.70	6.05	8.21

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	5:00 AM	50.22	4.66	100.00	5.54	7.72
	6:00 AM	49.90	4.62	100.00	4.71	7.47
	7:00 AM	51.12	4.58	100.00	4.84	7.33
	8:00 AM	50.21	4.61	100.00	4.97	7.15
8/20/17	3:00 PM	54.43	13.73	31.26	7.13	10.88
	4:00 PM	41.38	14.46	28.35	6.39	9.47
	5:00 PM	41.28	14.87	29.90	6.75	9.68
	6:00 PM	40.98	15.01	29.46	6.88	9.19
	7:00 PM	38.03	14.79	34.78	6.75	9.39
	8:00 PM	35.30	14.09	37.89	6.42	9.02
	9:00 PM	27.18	13.03	39.72	5.91	8.45
	10:00 PM	30.11	11.73	50.59	4.88	7.35
	11:00 PM	33.56	10.85	48.83	4.86	8.00
8/21/17	12:00 AM	34.04	10.27	54.49	5.53	8.02
	1:00 AM	34.93	9.50	54.09	6.06	9.31
	2:00 AM	33.26	8.81	59.88	5.23	8.53
	3:00 AM	32.11	8.46	60.66	4.47	7.02
	4:00 AM	27.44	8.17	60.66	4.74	7.13
	5:00 AM	27.56	7.93	66.72	4.27	6.94
	6:00 AM	28.96	6.62	73.51	3.20	4.86
	7:00 AM	27.63	6.29	77.03	4.06	5.51
	8:00 AM	25.34	6.99	69.63	3.67	5.53
	9:00 AM	24.70	8.02	63.91	3.41	5.14
	10:00 AM	30.64	9.49	47.51	3.19	4.90
	11:00 AM	27.99	10.69	39.79	3.87	5.16
	12:00 PM	23.88	11.80	36.27	3.49	5.17
	1:00 PM	23.46	12.52	38.77	2.94	4.68
	2:00 PM	51.79	13.09	38.97	2.17	3.96
	3:00 PM	22.59	13.90	32.47	1.59	3.21
	4:00 PM	24.70	14.75	31.79	1.24	3.14
	5:00 PM	26.94	15.21	30.77	1.65	4.21
	6:00 PM	26.35	15.51	25.80	2.57	4.65
	7:00 PM	30.25	15.52	32.06	3.40	4.82
	8:00 PM	31.40	15.28	33.75	2.67	4.08
	9:00 PM	31.94	14.13	38.90	2.35	3.53
	10:00 PM	33.04	12.53	45.27	2.56	4.31
	11:00 PM	33.56	11.30	51.61	2.79	3.72
8/22/17	12:00 AM	35.09	10.17	55.45	1.76	4.12

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	1:00 AM	29.89	9.81	58.39	1.40	3.31
	2:00 AM	33.31	9.03	63.41	1.62	3.92
	3:00 AM	35.50	8.57	77.29	2.40	3.88
	4:00 AM	34.62	8.30	74.14	3.02	4.74
	5:00 AM	38.94	7.89	80.10	2.07	3.45
	6:00 AM	35.62	7.47	81.90	2.39	4.00
	7:00 AM	38.45	7.56	86.10	1.48	2.88
	8:00 AM	39.50	7.90	74.88	2.97	4.67
	9:00 AM	35.98	9.62	62.78	2.88	4.14
	10:00 AM	31.83	11.21	57.15	3.07	4.02
	11:00 AM	32.13	12.63	53.18	3.13	4.65
	12:00 PM	34.79	13.63	50.61	3.03	6.27
	1:00 PM	26.90	14.51	39.70	2.80	4.72
	2:00 PM	28.72	14.99	41.22	2.76	5.55
	3:00 PM	29.29	15.52	34.97	2.47	4.18
	4:00 PM	28.78	15.93	30.10	3.05	5.78
	5:00 PM	26.82	16.42	25.03	2.33	3.61
	6:00 PM	41.33	16.90	23.81	3.21	5.04

3.4 R4

One-minute filtered and unfiltered L_{eq} value, maximum sound levels (L_{max}), and minimum sound levels (L_{min}) over the three monitoring events at R4 are shown in Figure 10, 11 and 12.

Hourly L_{eq} values were calculated as described in Section 2.4, and are shown in Table 6, along with data filtered out for subsequent calculations.

Weather data for noise monitoring dates at R4 is shown in Table 6. After 110 h of monitoring, 52 h were available for analysis after filtering data. Relatively good conditions occurred throughout events one and two but precipitation as well as high winds occurred throughout nearly the entirety of the third event.

Noises noted in the field log include wind, rain, traffic, and birds.

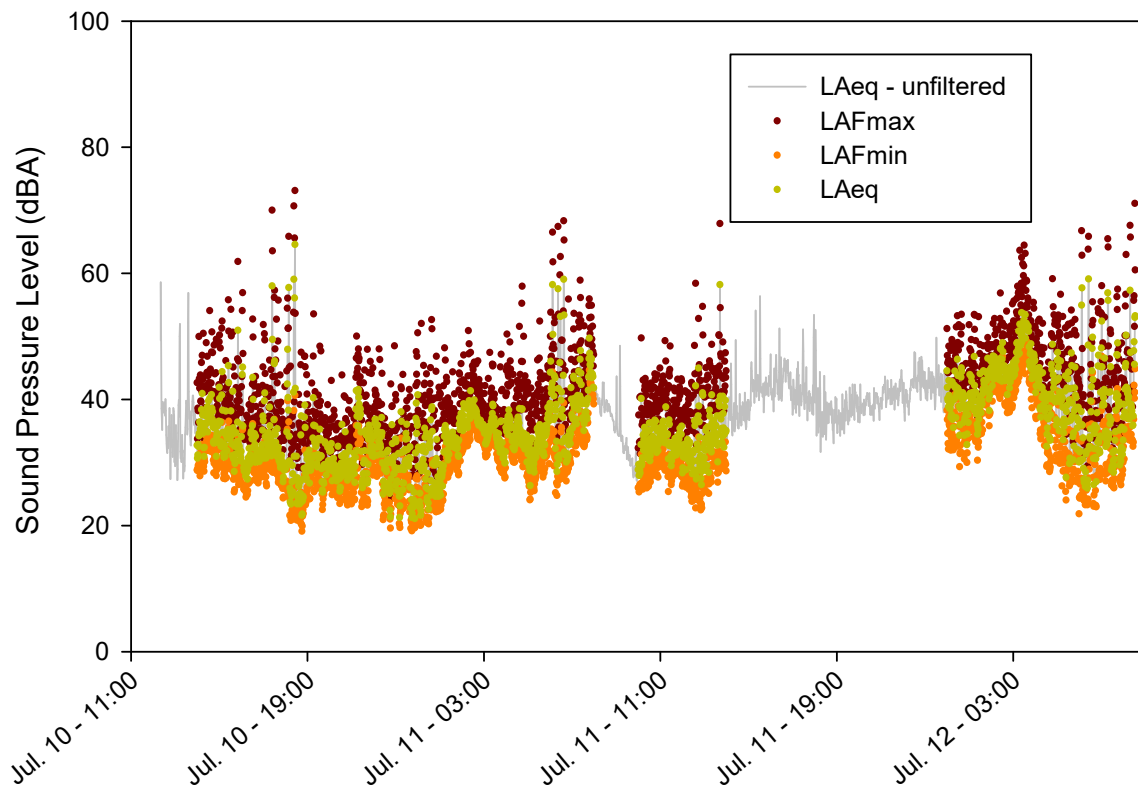


Figure 10. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R4 at the Meadowbank site during monitoring event 1. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

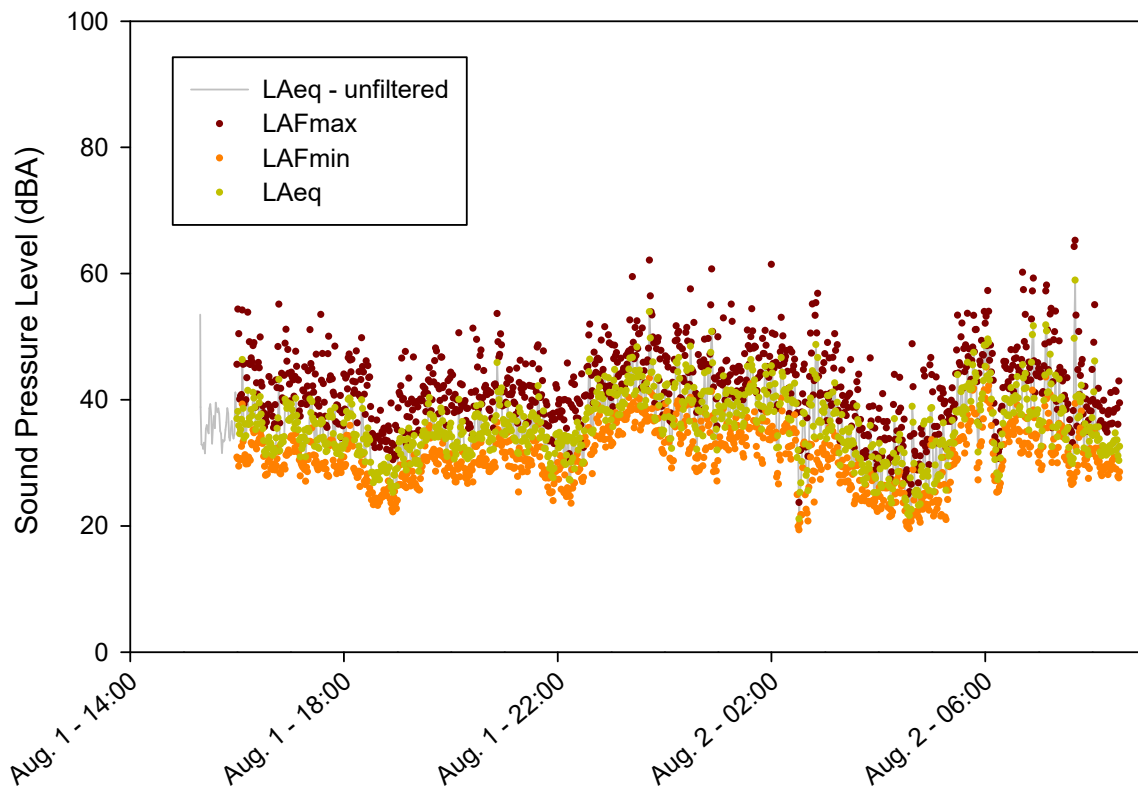


Figure 11. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R4 at the Meadowbank site during monitoring event 2. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

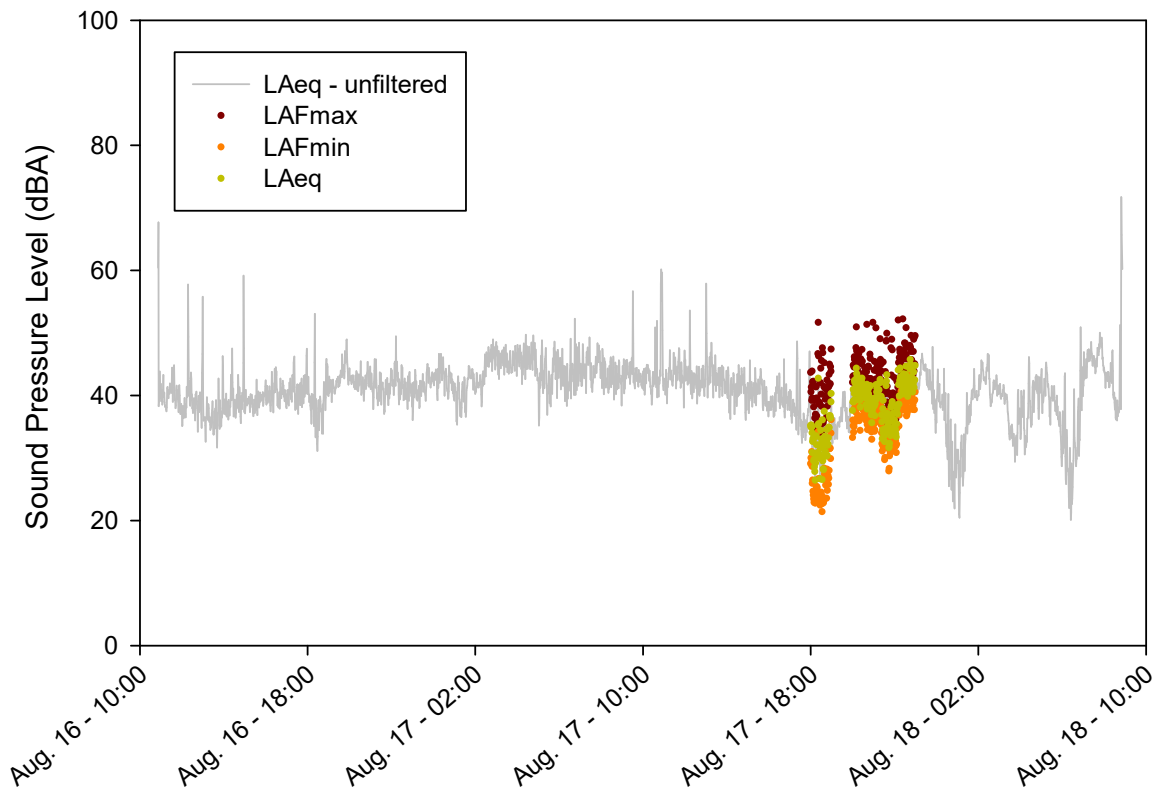


Figure 12. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R4 at the Meadowbank site during monitoring event 3. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

Table 6. Hourly L_{eq} values for monitoring station R4 at the Meadowbank site. Data points filtered out of subsequent analyses due to set-up or non-optimal weather conditions are shaded grey.

Date	Start Hour	L_{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
7/10/17	12:00 PM	44.28	16.39	32.63	5.31	8.57
	1:00 PM	42.81	17.00	35.78	5.30	9.41
	2:00 PM	36.31	17.72	35.29	4.01	7.17
	3:00 PM	38.01	18.58	30.70	3.79	8.90
	4:00 PM	34.78	18.50	36.92	3.83	7.13
	5:00 PM	41.85	18.34	37.25	2.10	4.16
	6:00 PM	49.07	18.90	35.43	2.04	3.55
	7:00 PM	31.62	19.25	36.24	1.65	4.59
	8:00 PM	29.89	19.16	38.27	1.43	4.06
	9:00 PM	34.72	19.12	39.82	1.68	2.82

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	10:00 PM	32.15	18.30	40.37	1.20	1.96
	11:00 PM	31.48	16.83	51.50	0.84	1.67
7/11/17	12:00 AM	31.50	15.59	54.16	0.50	1.08
	1:00 AM	33.21	13.76	66.34	2.68	4.96
	2:00 AM	37.41	13.33	69.86	2.96	4.68
	3:00 AM	34.67	13.42	59.81	4.15	6.92
	4:00 AM	35.19	12.52	67.47	2.37	5.29
	5:00 AM	33.95	13.16	65.30	3.73	6.72
	6:00 AM	46.96	13.17	65.23	1.26	3.80
	7:00 AM	42.34	13.91	57.98	1.59	6.25
	8:00 AM	39.30	15.55	56.14	5.30	7.29
	9:00 AM	35.39	15.94	58.03	5.60	7.80
	10:00 AM	33.54	16.77	54.38	4.09	5.84
	11:00 AM	33.87	17.07	56.53	4.03	6.53
	12:00 PM	34.29	17.57	52.43	3.41	5.57
	1:00 PM	41.68	18.16	47.06	3.61	6.17
	2:00 PM	38.99	18.45	36.58	4.95	7.64
	3:00 PM	44.44	18.40	30.60	5.53	8.23
	4:00 PM	43.90	17.70	34.36	6.79	10.23
	5:00 PM	43.14	17.19	34.19	7.01	9.84
	6:00 PM	40.01	17.40	26.31	6.54	9.41
	7:00 PM	38.62	17.13	24.92	5.57	7.55
	8:00 PM	39.44	17.07	28.88	5.78	8.41
	9:00 PM	41.29	16.21	40.72	5.87	8.13
	10:00 PM	42.81	15.17	45.33	5.93	8.13
	11:00 PM	42.82	14.14	54.63	4.70	7.21
7/12/17	12:00 AM	40.54	13.21	57.78	3.96	6.59
	1:00 AM	41.70	12.64	59.48	3.73	6.37
	2:00 AM	44.92	11.93	67.85	1.83	2.90
	3:00 AM	49.28	11.38	68.02	1.36	2.23
	4:00 AM	41.81	9.44	89.40	1.29	3.00
	5:00 AM	40.96	9.30	84.00	0.79	1.98
	6:00 AM	45.71	9.61	85.30	1.16	2.23
	7:00 AM	44.30	10.12	82.50	2.02	3.88
	8:00 AM	46.69	10.44	82.10	3.89	5.41
8/01/17	3:00 PM	39.81	12.68	41.17	4.12	6.86
	4:00 PM	37.34	12.79	42.66	3.63	7.00
	5:00 PM	35.65	13.10	42.08	4.14	7.08

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	6:00 PM	33.80	13.10	41.47	4.12	8.17
	7:00 PM	34.52	13.37	43.87	3.86	6.96
	8:00 PM	36.50	13.39	41.44	2.94	5.63
	9:00 PM	35.55	13.33	41.20	2.89	5.57
	10:00 PM	38.05	12.94	44.99	2.40	4.59
	11:00 PM	43.43	11.95	51.61	0.94	2.22
8/02/17	12:00 AM	42.11	10.63	57.06	0.58	1.33
	1:00 AM	40.67	10.14	70.68	0.46	1.10
	2:00 AM	40.52	9.02	77.79	0.62	1.55
	3:00 AM	35.11	9.06	78.70	0.61	1.45
	4:00 AM	31.06	8.73	74.48	1.29	2.04
	5:00 AM	39.92	8.44	77.18	2.23	3.45
	6:00 AM	42.49	8.46	76.74	2.57	4.18
	7:00 AM	44.19	8.38	84.80	3.32	4.96
	8:00 AM	35.58	9.03	79.76	2.63	3.92
8/16/17	10:00 AM	59.44	9.63	91.40	6.00	7.94
	11:00 AM	40.54	9.49	91.50	5.67	7.76
	12:00 PM	43.03	9.24	94.70	6.46	8.58
	1:00 PM	40.85	9.36	94.90	6.36	8.00
	2:00 PM	43.73	9.75	98.60	5.24	6.90
	3:00 PM	39.24	9.83	97.10	4.84	7.17
	4:00 PM	40.75	10.59	93.20	4.99	7.25
	5:00 PM	41.68	11.18	88.10	5.36	7.61
	6:00 PM	41.05	11.61	88.50	5.63	7.82
	7:00 PM	43.46	11.62	86.30	5.33	7.90
	8:00 PM	42.50	11.69	80.90	5.29	8.06
	9:00 PM	41.49	11.50	81.70	5.89	8.72
	10:00 PM	42.30	11.37	84.90	5.11	7.39
	11:00 PM	41.85	11.37	90.10	5.09	7.61
8/17/17	12:00 AM	43.06	11.44	88.80	5.51	9.23
	1:00 AM	41.61	11.17	84.50	6.08	9.09
	2:00 AM	44.77	10.65	88.00	6.01	8.86
	3:00 AM	45.78	9.79	87.80	6.19	9.07
	4:00 AM	46.16	9.78	87.60	6.17	9.51
	5:00 AM	44.09	10.11	83.00	6.37	8.94
	6:00 AM	44.51	9.99	83.10	7.26	9.76
	7:00 AM	45.07	10.05	80.40	6.95	9.43
	8:00 AM	43.48	10.13	79.32	6.51	9.33

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	9:00 AM	44.84	10.20	85.40	5.98	10.21
	10:00 AM	49.17	10.04	87.90	5.81	9.11
	11:00 AM	43.78	10.08	84.20	6.03	8.33
	12:00 PM	43.69	10.49	78.30	6.50	8.33
	1:00 PM	45.19	11.00	71.87	6.30	8.53
	2:00 PM	41.55	11.82	63.81	5.59	8.55
	3:00 PM	41.02	12.31	59.40	5.64	8.33
	4:00 PM	39.88	12.61	59.78	5.26	7.80
	5:00 PM	39.30	12.57	59.54	4.74	6.92
	6:00 PM	34.03	12.53	58.19	4.08	6.06
	7:00 PM	36.95	12.48	59.54	4.18	6.39
	8:00 PM	40.57	12.15	64.22	3.80	5.72
	9:00 PM	38.47	11.51	69.20	3.01	4.68
	10:00 PM	41.92	11.05	73.40	2.52	3.90
	11:00 PM	43.01	9.98	90.10	2.06	2.74
8/18/17	12:00 AM	37.29	9.15	94.70	2.10	2.61
	1:00 AM	37.46	8.88	98.30	2.36	3.18
	2:00 AM	42.60	8.35	97.20	2.52	3.31
	3:00 AM	37.93	8.51	97.30	2.68	4.53
	4:00 AM	39.81	8.37	100.00	2.83	4.59
	5:00 AM	40.05	7.82	100.00	1.95	2.94
	6:00 AM	38.30	7.66	100.00	2.32	3.33
	7:00 AM	46.23	7.39	100.00	1.88	3.04
	8:00 AM	55.95	7.85	100.00	2.43	3.78

3.5 R5

One-minute filtered and unfiltered L_{eq} values, maximum sound levels (L_{max}), and minimum sound levels (L_{min}) over the three monitoring events at R5 are shown in Figure 13, 14, and 15.

Hourly L_{eq} values were calculated as described in Section 2.4, and are shown in Table 7, along with data filtered out for subsequent calculations.

Weather data for noise monitoring dates at R5 is also shown in Table 7. Winds tended to be high during about half of events 1 and 2, and probable precipitation occurred throughout much of the third event. Out of 171 monitoring hours, 34 were available for analysis after filtering the data.

Audible noises noted in the field log at this location include birds, insects, road traffic, wind, and activities at the nearby former exploration camp. Increased exploration activities related to the Amaruq project since 2014 have resulted in higher helicopter traffic throughout the summer months.

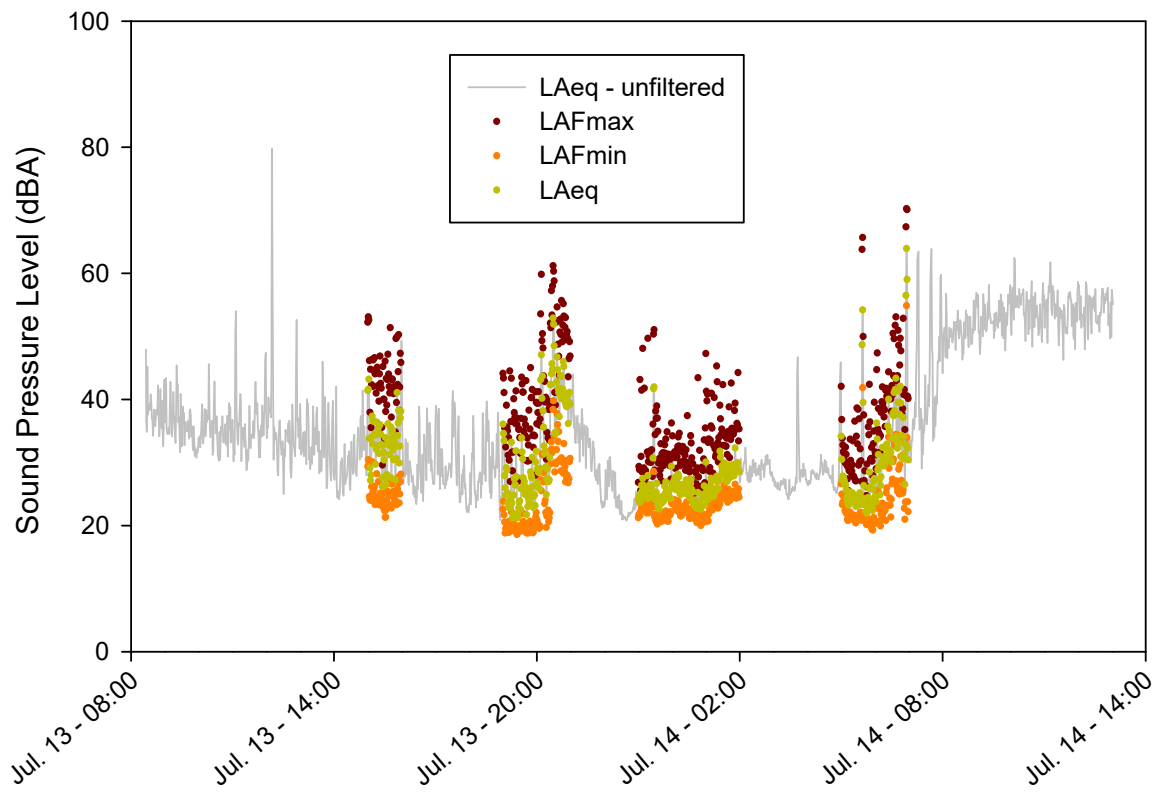


Figure 13. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R5 at the Meadowbank site during monitoring event 1. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

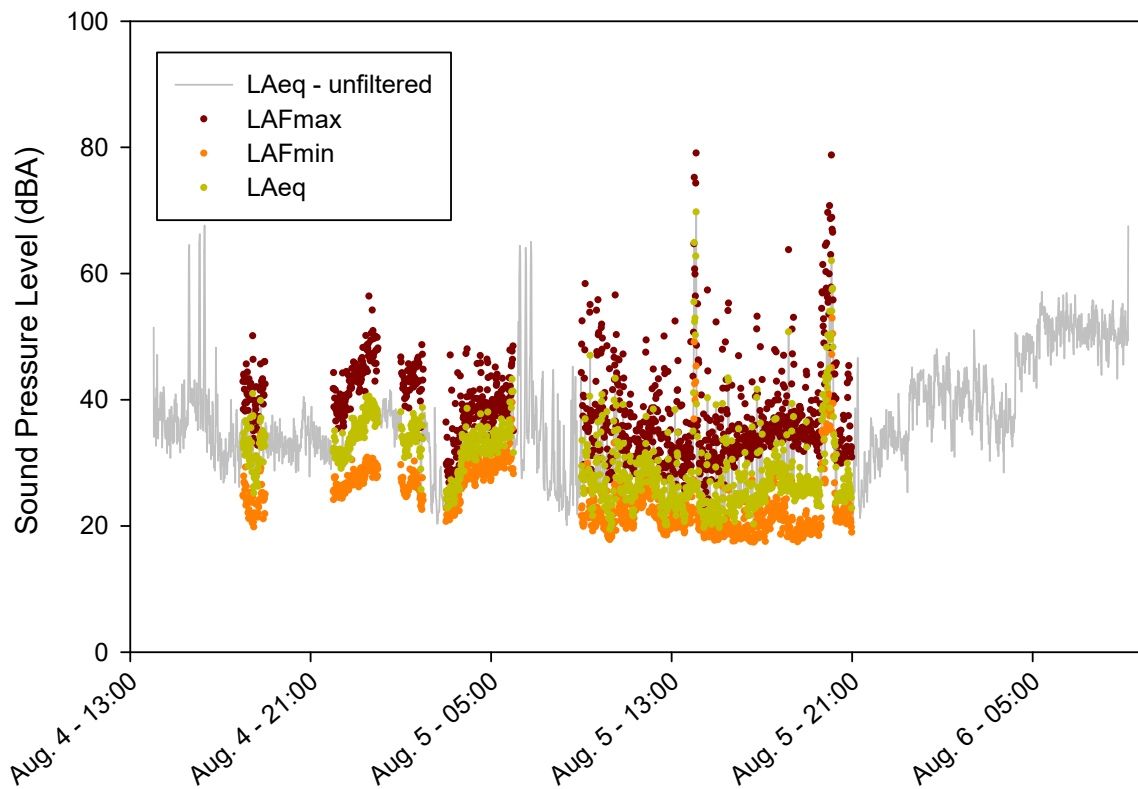


Figure 14. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R5 at the Meadowbank site during monitoring event 2. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

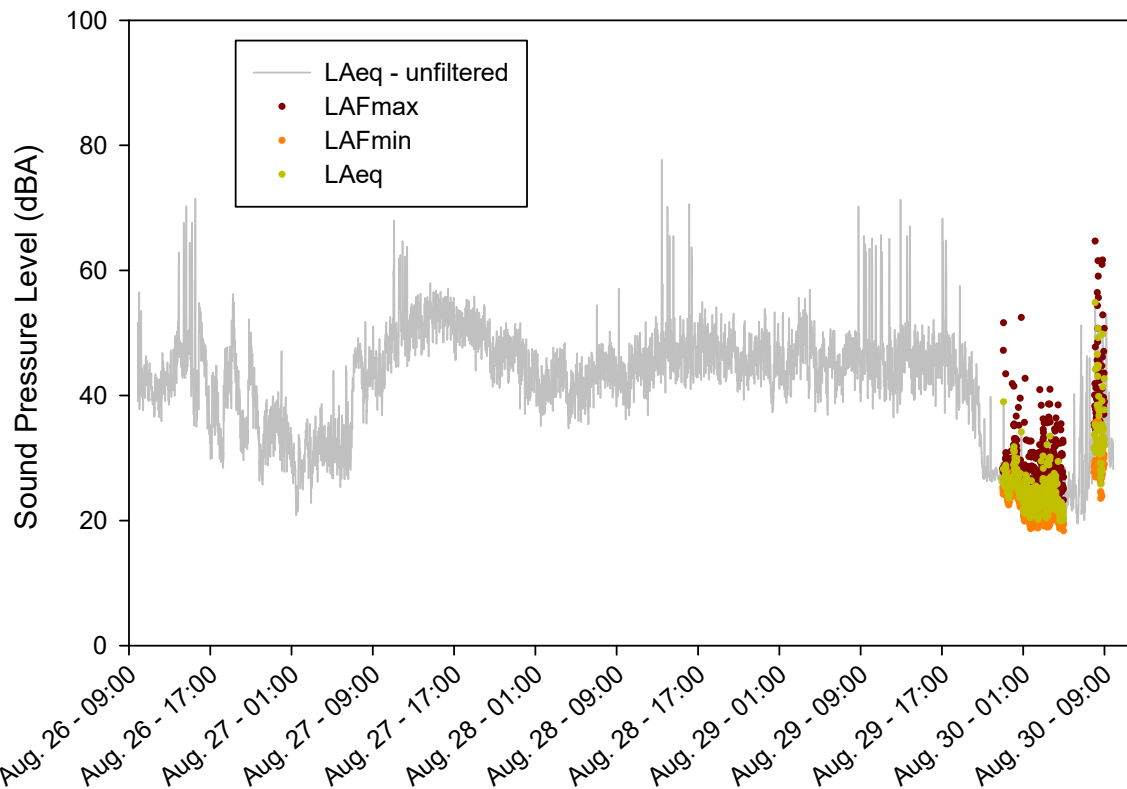


Figure 15. One-minute L_{eq} , L_{max} and L_{min} values recorded at monitoring station R5 at the Meadowbank site during monitoring event 3. Filtered data excludes those measurements taken outside of optimal conditions (set-up, wind > 4.17 m/s, RH > 90%).

Table 7. Hourly L_{eq} values for monitoring station R5 at the Meadowbank site. Data points filtered out of subsequent analyses due to set-up or non-optimal weather conditions are shaded grey.

Date	Start Hour	L_{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
7/13/17	8:00 AM	39.58	5.51	63.25	5.57	8.09
	9:00 AM	37.33	5.85	61.58	5.75	8.82
	10:00 AM	36.45	6.16	60.46	5.14	7.94
	11:00 AM	40.58	6.68	59.92	4.70	7.78
	12:00 PM	62.05	7.46	55.11	5.01	7.29
	1:00 PM	35.72	8.40	51.38	4.78	7.08
	2:00 PM	32.51	8.79	48.57	5.21	8.37
	3:00 PM	35.06	9.96	45.69	4.13	7.15
	4:00 PM	34.42	11.47	42.22	4.89	7.68
	5:00 PM	32.83	12.54	41.20	4.88	7.78

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	6:00 PM	31.88	13.14	39.92	4.65	7.31
	7:00 PM	28.05	13.43	40.90	3.65	6.12
	8:00 PM	42.57	13.30	42.96	3.92	6.61
	9:00 PM	34.67	12.49	64.52	5.74	10.80
	10:00 PM	25.03	11.93	67.06	5.39	8.06
	11:00 PM	29.24	11.15	73.03	2.78	4.10
7/14/17	12:00 AM	25.52	10.14	71.27	2.20	3.12
	1:00 AM	28.10	10.08	76.31	2.41	3.76
	2:00 AM	29.18	9.92	71.38	4.49	6.00
	3:00 AM	32.38	9.11	68.89	4.59	6.17
	4:00 AM	32.20	7.91	71.50	4.21	5.37
	5:00 AM	37.84	7.40	73.53	4.12	5.16
	6:00 AM	48.15	7.60	80.30	3.94	5.37
	7:00 AM	53.44	8.21	65.40	4.99	6.76
	8:00 AM	51.43	8.91	68.89	6.10	11.92
	9:00 AM	53.63	9.45	60.92	10.17	13.78
	10:00 AM	55.53	9.57	61.32	11.40	15.64
	11:00 AM	54.96	9.63	56.92	11.40	15.19
	12:00 PM	55.01	9.64	57.50	11.64	15.23
	1:00 PM	56.30	10.01	53.60	11.35	15.41
8/04/17	2:00 PM	39.43	19.54	31.74	4.75	6.74
	3:00 PM	49.85	19.79	34.48	5.24	7.08
	4:00 PM	54.21	19.93	36.98	5.28	7.08
	5:00 PM	33.07	19.99	37.18	5.13	7.51
	6:00 PM	33.52	19.75	42.87	4.10	5.57
	7:00 PM	33.66	19.73	43.24	4.31	5.70
	8:00 PM	34.50	19.39	49.76	4.99	6.76
	9:00 PM	33.48	18.04	47.23	4.80	6.02
	10:00 PM	32.77	17.19	54.92	3.66	5.39
	11:00 PM	37.33	15.86	54.58	2.80	4.08
8/05/17	12:00 AM	37.72	15.61	59.22	4.58	6.39
	1:00 AM	34.60	14.81	72.90	4.07	5.47
	2:00 AM	31.17	14.03	76.35	4.37	5.57
	3:00 AM	29.74	13.93	83.50	1.82	5.80
	4:00 AM	33.48	14.15	81.00	2.14	3.69
	5:00 AM	35.73	13.96	86.10	2.99	4.74
	6:00 AM	54.47	13.61	91.60	2.04	4.21
	7:00 AM	36.02	13.50	91.60	2.81	4.35

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	8:00 AM	34.12	13.50	92.20	3.20	4.90
	9:00 AM	33.87	14.11	84.90	1.43	2.69
	10:00 AM	32.24	15.36	80.70	0.95	2.20
	11:00 AM	28.50	16.60	71.53	0.90	1.90
	12:00 PM	27.93	17.88	66.42	1.05	2.61
	1:00 PM	38.24	19.10	62.59	1.06	2.92
	2:00 PM	53.95	19.56	60.97	1.71	4.18
	3:00 PM	31.28	20.39	53.87	1.42	3.67
	4:00 PM	29.60	21.09	52.11	1.05	2.49
	5:00 PM	29.62	21.39	49.31	1.25	2.71
	6:00 PM	34.49	21.54	51.67	1.27	2.92
	7:00 PM	38.62	21.08	51.11	2.59	3.74
	8:00 PM	47.81	20.69	72.21	3.12	5.19
	9:00 PM	34.09	17.04	94.20	2.54	9.45
	10:00 PM	33.93	16.03	100.00	3.56	5.41
	11:00 PM	39.24	15.79	100.00	4.83	7.47
8/06/17	12:00 AM	42.55	15.21	100.00	5.73	9.15
	1:00 AM	41.58	14.60	100.00	6.49	9.58
	1:00 AM	41.58	13.49	100.00	6.42	10.13
	2:00 AM	42.38	13.09	100.00	6.23	8.60
	3:00 AM	37.56	12.83	100.00	5.51	8.00
	4:00 AM	46.76	12.65	100.00	7.20	11.62
	5:00 AM	51.64	11.38	100.00	10.42	13.54
	6:00 AM	52.59	9.93	100.00	10.47	14.17
	7:00 AM	51.53	14.11	84.90	1.43	2.69
	8:00 AM	51.12	9.35	100.00	10.22	13.39
	9:00 AM	56.83	9.40	100.00	10.29	13.80
8/26/17	9:00 AM	46.39	13.97	85.60	6.75	9.55
	10:00 AM	44.53	14.23	89.20	6.51	8.92
	11:00 AM	41.12	15.29	83.50	6.80	8.94
	12:00 PM	42.15	16.59	78.49	5.94	8.43
	1:00 PM	49.19	17.82	72.82	6.31	9.35
	2:00 PM	56.86	18.46	72.75	8.35	11.58
	3:00 PM	57.30	18.47	68.66	8.77	12.21
	4:00 PM	46.86	17.33	58.91	8.39	11.21
	5:00 PM	39.32	16.60	66.59	7.58	12.07
	6:00 PM	42.09	16.86	66.96	6.71	9.09
	7:00 PM	47.72	16.95	63.00	7.30	10.31

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	8:00 PM	40.73	16.02	72.37	8.01	13.09
	9:00 PM	41.45	14.89	89.50	7.00	12.21
	10:00 PM	33.99	12.89	100.00	5.53	10.27
	11:00 PM	36.57	12.93	100.00	5.91	8.39
8/27/17	12:00 AM	35.53	12.57	100.00	5.65	7.06
	1:00 AM	28.77	12.18	100.00	5.22	7.15
	2:00 AM	31.49	11.60	100.00	3.67	5.61
	3:00 AM	32.96	12.11	100.00	4.92	7.15
	4:00 AM	32.10	12.09	100.00	5.34	8.09
	5:00 AM	32.97	11.73	100.00	5.88	7.98
	6:00 AM	34.76	11.69	100.00	4.68	6.66
	7:00 AM	45.87	12.30	100.00	5.21	6.94
	8:00 AM	44.18	12.02	100.00	7.77	10.53
	9:00 AM	44.50	11.14	100.00	8.40	10.60
	10:00 AM	48.00	10.48	100.00	8.06	10.66
	11:00 AM	56.36	9.68	100.00	9.23	11.54
	12:00 PM	53.52	8.97	100.00	8.69	11.25
	1:00 PM	52.47	8.32	100.00	9.49	12.43
	2:00 PM	53.40	8.04	100.00	10.65	14.13
	3:00 PM	53.82	7.76	100.00	10.00	13.09
	4:00 PM	53.65	7.60	89.90	8.99	12.76
	5:00 PM	51.43	7.81	87.20	8.72	12.17
	6:00 PM	51.89	7.64	85.20	9.20	11.96
	7:00 PM	51.05	7.18	83.20	9.51	12.37
	8:00 PM	48.35	6.77	84.30	8.45	12.13
	9:00 PM	47.06	6.23	83.90	7.89	10.84
	10:00 PM	47.55	5.74	85.60	7.76	10.29
	11:00 PM	47.26	5.27	85.30	7.93	10.35
8/28/17	12:00 AM	44.36	5.05	85.10	7.80	11.07
	1:00 AM	41.69	4.91	93.10	6.51	9.53
	2:00 AM	42.46	4.06	94.40	6.27	9.47
	3:00 AM	44.39	3.48	93.60	6.28	8.55
	4:00 AM	40.82	3.16	96.80	6.09	9.00
	5:00 AM	41.06	2.83	100.00	6.09	8.39
	6:00 AM	42.96	2.83	100.00	6.58	9.49
	7:00 AM	45.83	2.78	98.70	6.20	8.64
	8:00 AM	45.19	2.93	94.20	7.26	10.05
	9:00 AM	44.36	2.82	96.30	6.78	9.11
	10:00 AM	44.56	2.89	89.90	6.56	9.21

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	11:00 AM	46.01	3.11	87.00	6.77	9.70
	12:00 PM	46.21	3.61	80.00	7.28	10.27
	1:00 PM	60.94	4.12	77.67	7.17	10.39
	2:00 PM	54.11	4.85	74.18	7.34	10.92
	3:00 PM	47.66	5.29	65.35	7.65	10.58
	4:00 PM	55.19	6.15	62.02	7.43	11.52
	5:00 PM	49.32	6.29	62.19	7.73	12.07
	6:00 PM	48.44	6.26	69.33	7.73	11.11
	7:00 PM	47.09	5.80	65.00	8.16	11.35
	8:00 PM	47.82	5.45	63.65	7.93	11.47
	9:00 PM	45.38	4.90	66.87	7.90	10.78
	10:00 PM	46.24	4.26	80.40	7.09	9.92
	11:00 PM	48.44	3.85	74.77	7.92	10.84
8/29/17	12:00 AM	45.96	3.48	76.67	8.06	11.56
	1:00 AM	45.74	2.77	86.80	7.27	11.64
	2:00 AM	47.84	2.31	80.70	7.29	10.21
	3:00 AM	49.70	2.28	79.59	6.91	9.88
	4:00 AM	47.64	2.17	70.86	8.09	11.23
	5:00 AM	45.45	2.04	81.40	7.12	9.88
	6:00 AM	46.32	2.04	81.10	7.11	10.19
	7:00 AM	46.23	2.01	76.95	6.99	10.33
	8:00 AM	53.91	2.31	80.10	7.60	10.43
	9:00 AM	55.08	2.50	73.05	7.77	11.21
	10:00 AM	53.42	2.65	84.90	7.33	9.70
	11:00 AM	54.40	2.94	79.63	7.33	10.27
	12:00 PM	54.21	3.70	73.95	7.79	10.70
	1:00 PM	54.43	4.22	74.93	7.71	11.62
	2:00 PM	46.04	4.80	68.19	7.94	11.11
	3:00 PM	46.07	5.36	67.58	7.71	11.00
	4:00 PM	46.73	5.95	65.34	8.13	11.31
	5:00 PM	55.79	6.47	61.98	8.31	11.45
	6:00 PM	46.10	6.58	68.55	8.18	11.33
	7:00 PM	43.67	6.47	68.69	7.87	10.82
	8:00 PM	38.53	6.46	66.08	7.23	9.90
	9:00 PM	29.35	5.98	68.05	6.74	9.66
	10:00 PM	27.59	4.96	70.97	4.61	6.37
	11:00 PM	27.28	4.56	75.08	3.76	4.94
8/30/17	12:00 AM	27.48	4.06	79.66	2.51	3.86

Date	Start Hour	L _{eq} (1 h)	Air Temp. (°C)	Relative Humidity (%)	Avg. Wind Speed (m/s)	Max. Wind Speed (m/s)
	1:00 AM	23.39	3.86	81.40	1.64	2.59
	2:00 AM	24.03	4.36	78.58	2.01	2.63
	3:00 AM	25.78	4.27	80.10	2.55	3.47
	4:00 AM	23.58	4.36	87.20	2.59	3.59
	5:00 AM	24.04	3.97	100.00	2.57	3.84
	6:00 AM	36.98	3.40	94.20	1.84	2.92
	7:00 AM	34.64	3.83	92.80	1.63	2.29
	8:00 AM	41.90	4.64	88.20	1.33	2.27
	9:00 AM	39.32	5.50	90.90	1.42	2.29

SECTION 4 • SUMMARY

4.1 DAYTIME, NIGHT-TIME, AND 24 H L_{EQ}

L_{eq} values were calculated for daytime (7am-11pm), night-time (11pm-7am), 10pm-11pm, and 24 h time periods as in previous years, based on Health Canada recommendations (as described in the initial noise monitoring report - Golder, 2012). These L_{eq} values and the total hours of filtered data available for the calculations as a percent of the corresponding time period are shown in Table 8. Alberta ERCB guidance (ERCB 2007) indicates that 3 hours of valid data are required to contribute to daytime and night-time averages, so time periods with a lower percent coverage are excluded (19% daytime, 38% night-time). Time periods for which insufficient data was available are indicated with a dash ("-").

The daytime target sound level (55 dBA) was not exceeded during any monitoring event. One value at R1 slightly exceeded the night-time target sound level (45 dBA), with a recorded L_{eq,night} value of 46.2 dBA. Further investigation of the data indicated that an exceedance of this target only occurred from 6-7 am, which is considered the last night-time hour, but is also the time of shift change-over on the minesite, resulting in increased activity. Historically, exceedances of the night-time target are common during this hour (see e.g. 2016 Noise Monitoring Report).

Table 8. Daytime, night-time, 10-11 pm, and 24-h L_{eq} values for monitoring locations R1 – R5, and percentage of the corresponding time period for which valid data was available (% coverage). Day- and Night-time periods with fewer than 3 hours of valid data are excluded (-), and those exceeding corresponding target sound levels are shaded grey.

Site	Dates (2017)	L _{eq, day} 7am-11pm (dBA)	% coverage	L _{eq, night} 11pm-7am (dBA)	% coverage	L _{eq, 1 h} 10-11pm (dBA)	L _{eq, 24 h} (dBA)	% coverage
R1	Jul. 21	47.1	75%	-	0%	39.4	47.1	50%
	Aug. 8 - 10	45.9	31%	46.2	100%	24.6	46.1	54%
	Sept. 3 - 5	-	13%	30.4	75%	35.3	32.0	33%
R2	Jul. 7 - 10	-	6%	39.7	63%	36.8	39.3	25%
	Jul. 26 - 27	-	13%	-	0%	-	56.2	8%
R3	Jul. 2 - 4	38.6	100%	36.2	100%	31.0	37.9	100%
	Aug 8 - 10	48.4	31%	43.5	100%	49.1	46.1	54%
	Aug. 20 - 22	37.9	100%	35.0	100%	33.0	37.1	100%
R4	Jul. 10 - 12	41.4	94%	42.4	100%	32.2	41.8	96%
	Aug. 1 - 2	38.1	56%	40.7	100%	38.1	39.5	71%
	Aug. 16 - 18	39.6	25%	-	0%	41.9	39.6	17%
R5	Jul. 13 - 14	38.6	19%	41.7	63%	-	40.8	33%
	Aug. 4 - 6	44.1	81%	34.8	63%	32.8	42.9	75%
	Aug. 26 - 30	-	6%	25.6	75%	-	34.0	29%

4.2 HISTORICAL COMPARISON

L_{eq} measurements for all valid time periods from 2009 - 2017 are shown in Figure 16. Daytime values during one monitoring event (August 8 – 10) at R3 were somewhat elevated compared to previous years, and examination of the sound files indicated that helicopter flyovers were audible in association with noise peaks. In general, L_{eq} values observed in 2017 were within the range of those observed previously site-wide, and onsite sound levels don't appear to be increasing. Daytime values at R3 will be examined in 2018 to determine if there is a trend towards increasing noise levels at that site.

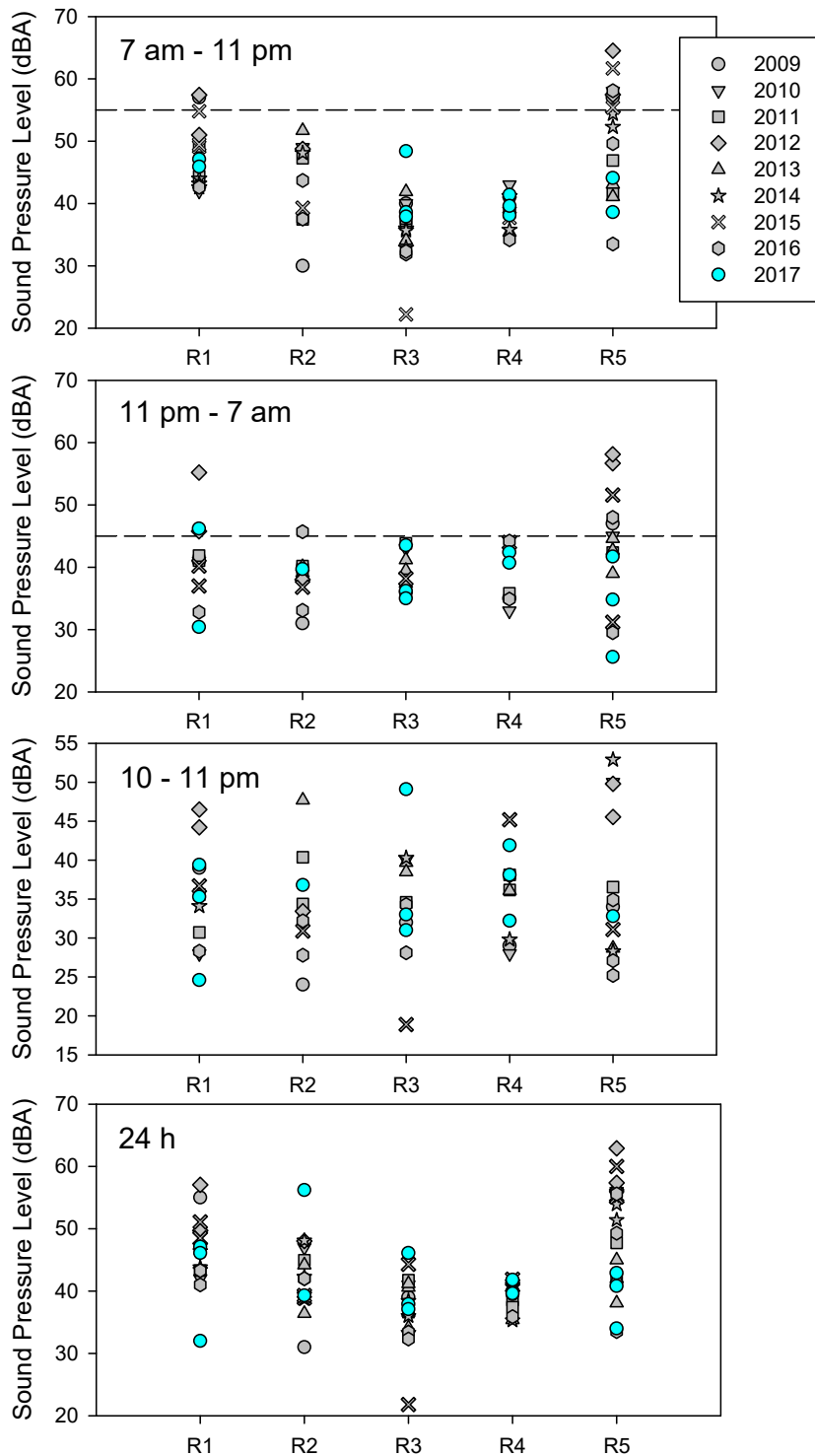


Figure 16. L_{eq} values calculated from filtered data for various time periods at locations R1 – R5 on the Meadowbank site in surveys from 2009 - 2017. Dashed lines indicate target sound levels (day-time and night-time only).

SECTION 5 • CONCLUSION

The objective of the noise monitoring program at Meadowbank is to measure noise levels at five previously determined monitoring locations over at least two 24 h periods. Agnico Eagle plans to conduct a minimum of two monitoring rounds of two to four days per station, since high winds in the area tend to substantially reduce the quantity of available valid data. In 2017, monitoring was conducted for over 30 days, with 2 -3 events per station (greatest amount of monitoring to date). Following removal of datapoints obtained under sub-optimal weather conditions, 10 – 91 hours of data were available for each station, with at least one valid measurement for each Health Canada monitoring period (daytime, night-time, 10-11 pm, 24 h).

Target sound levels (55 dBA daytime, 45 dBA night-time) were met in all cases, with the exception of the one night-time value (R1). However, this exceedance only occurred for the last hour of the night-time period (6 – 7 am) which coincides with shift change-over on the minesite and thus increased activity levels. Recorded sound levels were generally within the range of those observed historically site-wide, and though daytime levels were somewhat elevated for one monitoring period at R3, no trends towards increasing noise levels are apparent.

Overall, since targets were exceeded on only one occasion during peak helicopter season, and by a maximum of 1.6 dB, significant impacts are not anticipated. Elevated wind speeds and snow cover tend to preclude monitoring during the rest of the year, but measurements recorded in July and August are expected to represent the highest noise levels occurring onsite, since helicopter and general traffic activity is greatest during this period. Based on the noise data collected in 2017, it is anticipated that target sound levels are only exceeded occasionally during the busiest summer months of July and August, and are not likely to be exceeded during the rest of the year (including during the spring and fall caribou migration).

Further, regular wildlife monitoring (see 2017 Wildlife Summary Report) indicates no exceedances of thresholds related to noise on the minesite (i.e. sensory disturbance) for wildlife. Therefore, it is unlikely that the observed occasional exceedances of target sound levels are significantly affecting wildlife beyond impact predictions.

SECTION 6 • ACTIONS

No specific actions for adaptive monitoring or management were identified for 2017 in the 2016 Noise Monitoring Report.

The following actions are identified for 2018:

- Daytime L_{eq} values at R3 will be examined to determine if there is a trend towards increased noise levels at that site.

SECTION 7 • REFERENCES

AEM, 2013. Noise Monitoring and Abatement Plan, Meadowbank Gold Project. Version 2. Prepared by Agnico Eagle Mines Ltd. January, 2014.

AEM, 2009. Noise Management and Abatement Plan. Meadowbank Gold Project. Version 1. Prepared by Agnico Eagle Mines Ltd. September, 2009.

Cumberland, 2006. Terrestrial Ecosystem Management Plan. Meadowbank Gold Project. Cumberland Resources Ltd. December, 2006.

Cumberland, 2005. Access and Air Traffic Management Plan. Meadowbank Gold Project. Cumberland Resources Ltd. October, 2005.

ERCB, 2007. Noise Control Directive 038. Alberta Energy Resources Conservation Board. Calgary, Alberta.

Golder Associates (Golder), 2012. 2011 Noise Monitoring, Meadowbank Division, Nunavut. Prepared for Agnico-Eagle Mines Ltd. February, 2012.

APPENDIX A

Site Photos

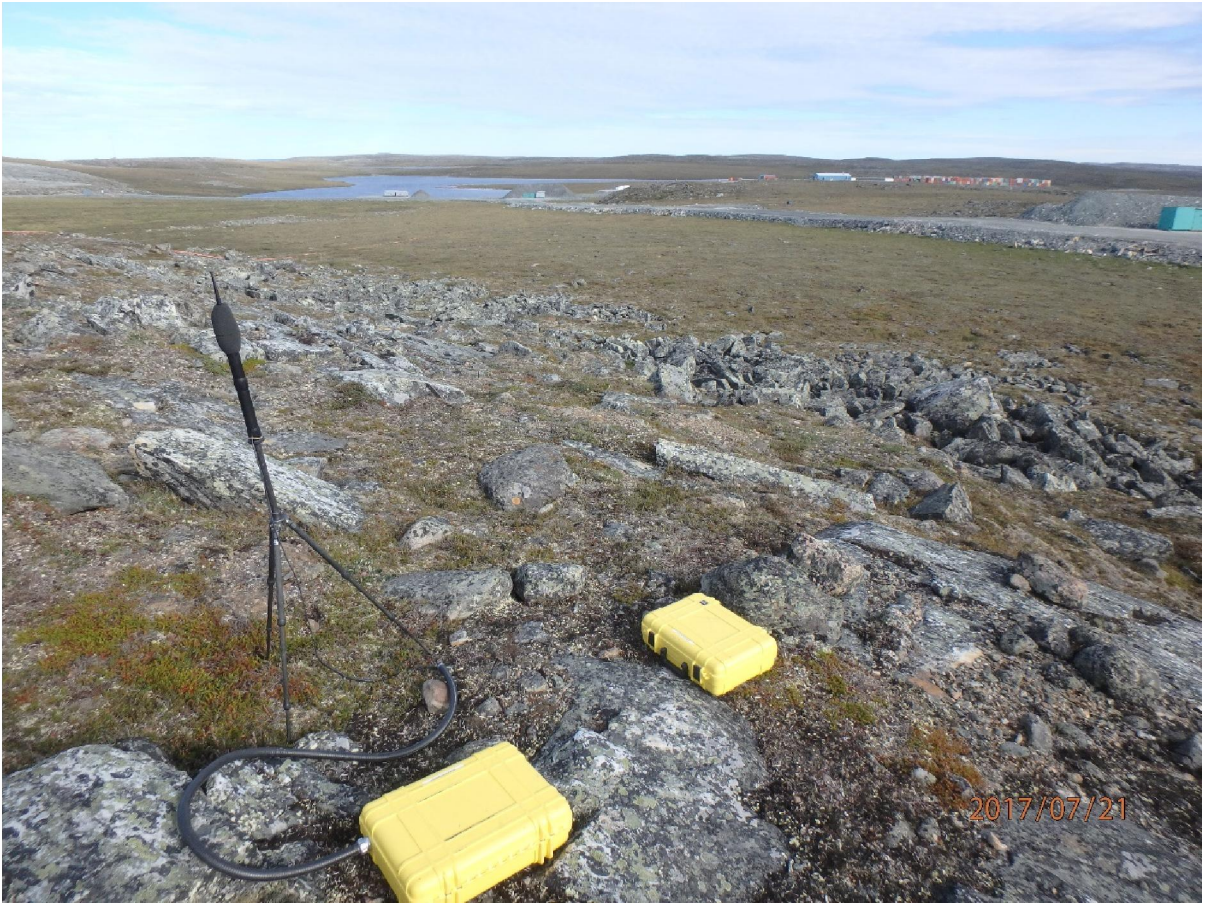


Figure -Apx 1: Monitoring location R1 (July 21, 2017).

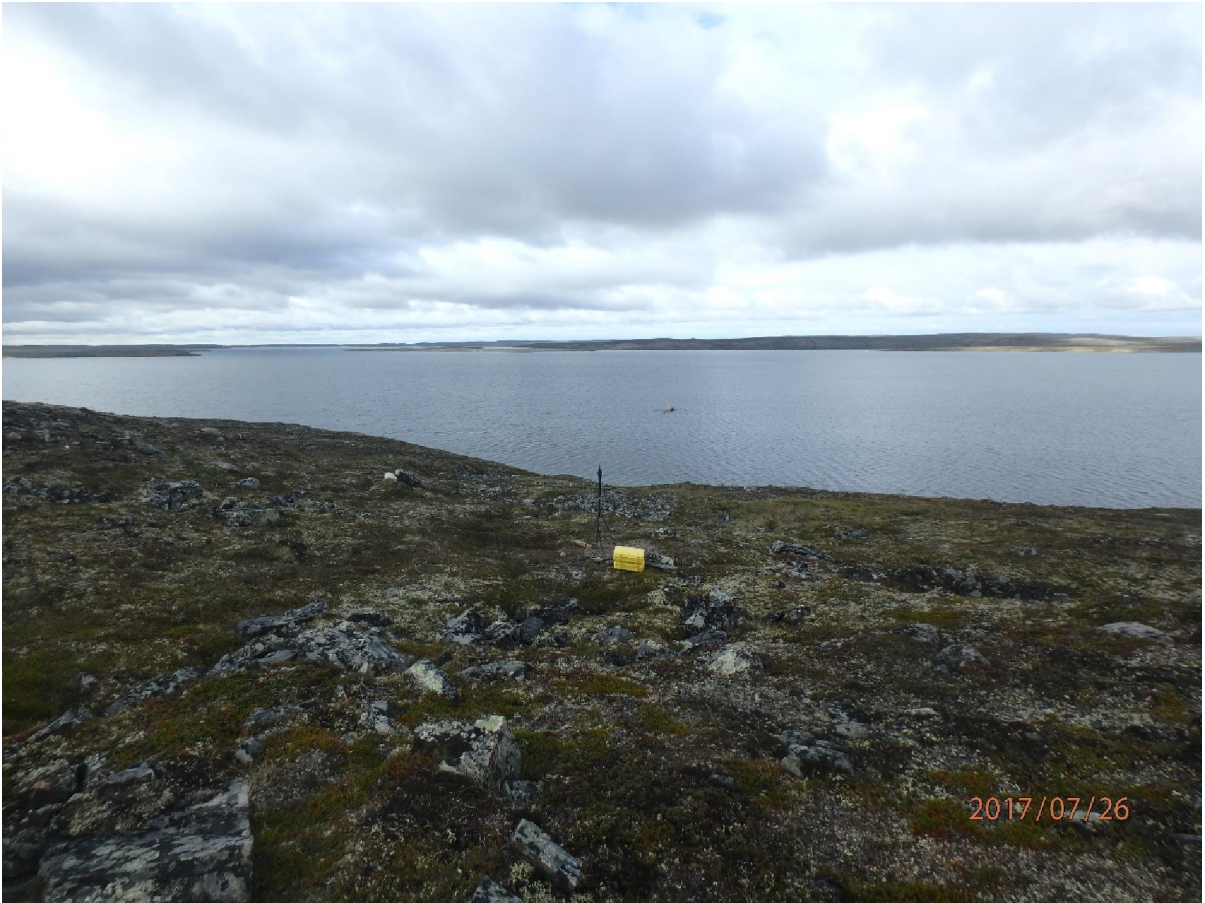


Figure -Apx 2: Monitoring location R2 (July 26, 2017).

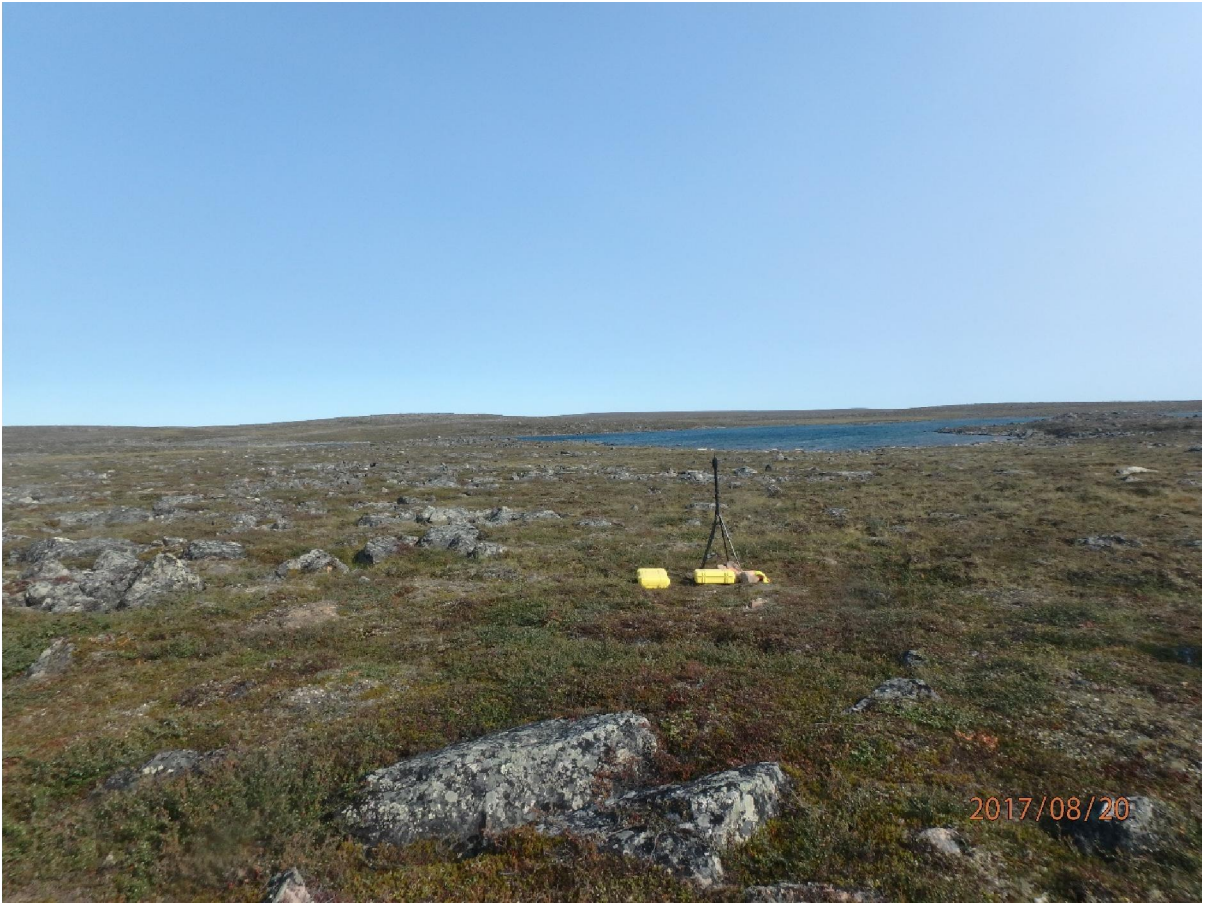


Figure -Ap3: Monitoring location R3 (August 20, 2017).



Figure -ApX 4: Monitoring location R4 (August 16, 2017).

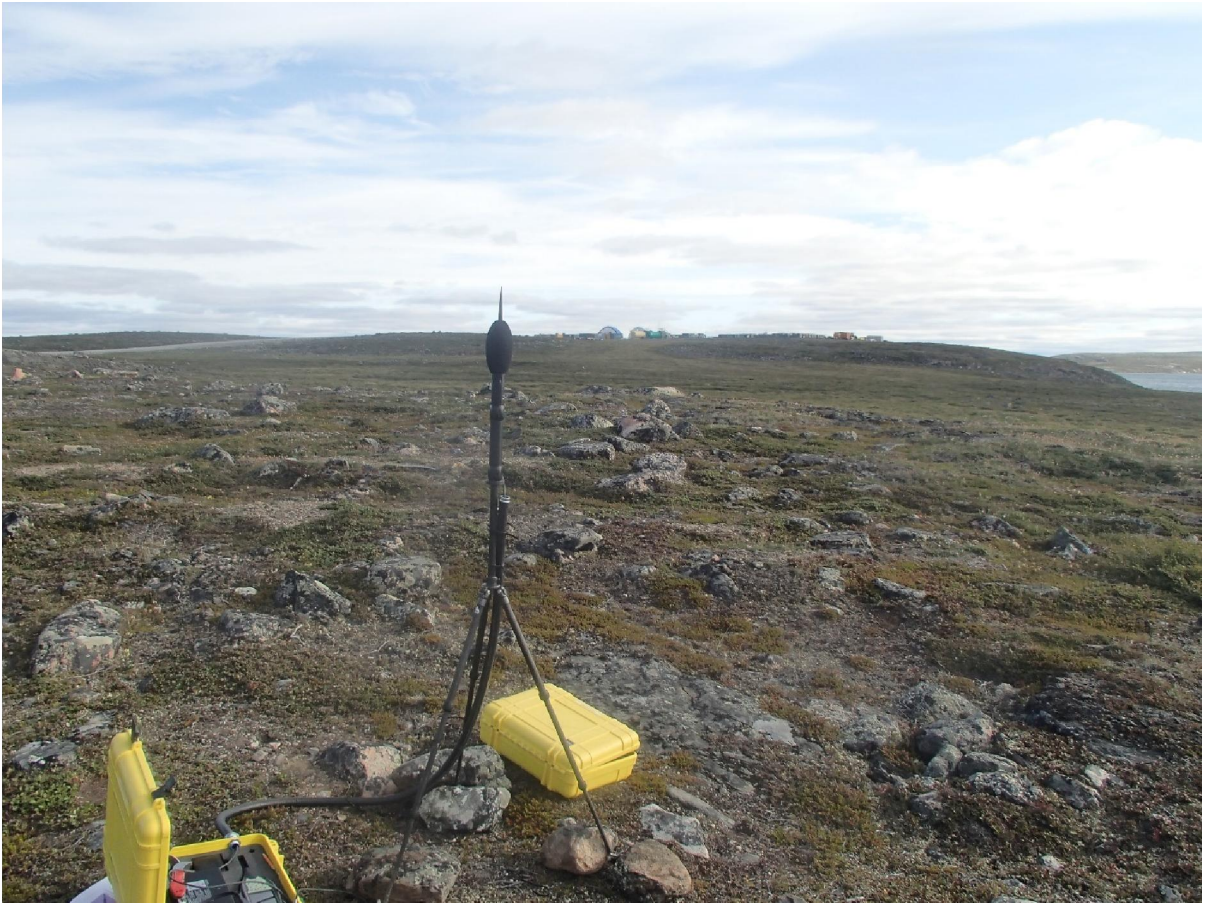
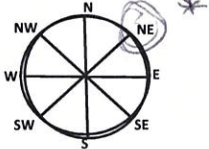
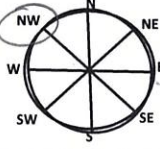


Figure -ApX 5: Monitoring location R5 (July 13, 2017).

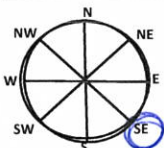
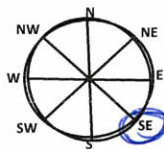
APPENDIX B

Field Logs

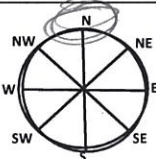
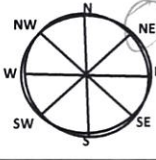
MONITORING STARTS			
Operator:	Fanny L. / PAT AHERN		
Location:	R2 J		
Noise Meter Start Time:			
Date:	2017-07-26		
Calibration complete ?:	Y		
Sensitivity	51.05		
Derviation	0.00		
Time of Calibration:	8:00 AM		
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	10.2		
Wind Speed (km/hr):	6.5		
Wind Direction:			
North wind (wind blows from North)	Aug-3.5 Max=7.0		
Barometric Pressure (kPa):	6.9		
Relative Humidity (%)	75%		
Precipitation:	none <input checked="" type="checkbox"/>	drizzle <input type="checkbox"/>	rain <input type="checkbox"/>
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	14W	0636795	7214435
Type of Ground Surface:	Tundra		
Acoustic Environment:			
Traffic	Helicopter, Air Craft		
Human activities			
Animal	Birds, INSECTS		
Other noise sources			
MONITORING ENDS			
Operator:	TT / MBA		
Record Data File Name:			
Total Monitoring Period	2017-07-29 8:57		
Noise Meter End Time:			
Date:			
Calibration complete ?:	Y		
Sensitivity	51.17		
Derviation	0.02		
Time of Calibration:	10:43		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po <input checked="" type="checkbox"/>	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):			
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	8.3 °C Max. 14.7 Avg. 8.8		
Barometric Pressure (kPa):	54.9		
Relative Humidity (%)			
Precipitation:	none <input checked="" type="checkbox"/>	drizzle <input type="checkbox"/>	rain <input type="checkbox"/>
Departure Time:			

2017-07-29 9:05

1/1

MONITORING STARTS			
Operator:	Tom T / Robin A - R3		
Location:			
Noise Meter Start Time:	2017-07-02 14:05		
Date:			
Calibration complete ?:	Yes		
Sensitivity	50.76		
Derviation	0.04		
Time of Calibration:	14:01		
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:	cloudy	partly cloudy	sunny <input checked="" type="checkbox"/>
Height of cloud (feet):	0-10,000	10,000-25,000	25,000+ <input checked="" type="checkbox"/>
Air Temperature (C):	28.5 °C		
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	1.4 Avg 2.3 Max		
Barometric Pressure (kPa):			
Relative Humidity (%)	30.6		
Precipitation:	none <input checked="" type="checkbox"/>	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	Tom T		
Record Data File Name:			
Total Monitoring Period			
Noise Meter End Time:	2017-07-04 8:37		
Date:			
Calibration complete ?:			
Sensitivity	50.98		
Derviation	0.04		
Time of Calibration:	8:46		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po <input checked="" type="checkbox"/>	
Cloud cover:	cloudy	partly cloudy <input checked="" type="checkbox"/>	sunny
Height of cloud (feet):	0-10,000	10,000-25,000 <input checked="" type="checkbox"/>	25,000+
Air Temperature (C):	20.8		
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	2.0 Avg 4.9 Max		
Barometric Pressure (kPa):			
Relative Humidity (%)	72.9		
Precipitation:	none <input checked="" type="checkbox"/>	drizzle	rain
Departure Time:			

MONITORING STARTS			
Operator:	M.T./I.C.		
Location:	R3		
Noise Meter Start Time:			
Date:	August 20th, 2017		
Calibration complete ?:			
Sensitivity	51.20 mv/pa		
Derivation	-0.04 db		
Time of Calibration:	1:17 pm		
Battery Power Check:	isors@agnicoagle.com>; Meadow Brook Field S	Poor	<input checked="" type="checkbox"/>
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:		partly cloudy	sunny
Height of cloud (feet):		10,000-25,000	25,000 +
Air Temperature (C):	16		
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	Average wind 6.2 max wind 10.3		
Barometric Pressure (kPa):			
Relative Humidity (%)	39.1%		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	14W 0641 III	7214 420	
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal	Caribous		
Other noise sources			
MONITORING ENDS			
Operator:	PA B E F		
Record Data File Name:	R3		
Total Monitoring Period			
Noise Meter End Time:	5:40 pm		
Date:	22 Aug, 2017		
Calibration complete ?:	YES		
Sensitivity	51.05		
Derivation	-0.02		
Time of Calibration:	7:30 AM		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po	<input checked="" type="checkbox"/>
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	16.1		
Wind Speed (km/hr):	5.1 MAX, 2.1		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):	31.8		
Relative Humidity (%)	31.8		
Precipitation:	none	drizzle	rain
Departure Time:	5:50 pm		

MONITORING STARTS			
Operator:	T.T / I.C		
Location:			
Noise Meter Start Time:			
Date:	2017-08-08 9:07		
Calibration complete ?:			
Sensitivity	51.53		
Derviation	0.09		
Time of Calibration:			
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:	cloudy <input checked="" type="checkbox"/>	partly cloudy <input type="checkbox"/>	sunny <input type="checkbox"/>
Height of cloud (feet):	0-10,000 <input checked="" type="checkbox"/>	10,000-25,000 <input type="checkbox"/>	25,000 + <input type="checkbox"/>
Air Temperature (C):	6.2°C		
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	Max. 15.5 Avg. 9.6		
Barometric Pressure (kPa):			
Relative Humidity (%)	75.1		
Precipitation:	none <input type="checkbox"/>	drizzle <input type="checkbox"/>	rain <input type="checkbox"/>
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	PA, MBA, VMO		
Record Data File Name:	ENR		
Total Monitoring Period			
Noise Meter End Time:	9:30 AM		
Date:	2017-08-10		
Calibration complete ?:			
Sensitivity			
Derviation			
Time of Calibration:			
Check file size (GB)			
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Cloud cover:	cloudy <input checked="" type="checkbox"/>	partly cloudy <input type="checkbox"/>	sunny <input type="checkbox"/>
Height of cloud (feet):	0-10,000 <input checked="" type="checkbox"/>	10,000-25,000 <input type="checkbox"/>	25,000 + <input type="checkbox"/>
Air Temperature (C):	4.7		
Wind Speed (km/hr):	6.7 MAX, AVG 4.1		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):			
Relative Humidity (%)	82.2		
Precipitation:	none <input type="checkbox"/>	drizzle <input checked="" type="checkbox"/>	rain <input type="checkbox"/>
Departure Time:	9:30 AM		

MONITORING STARTS			
Operator:	VMOB / MPA		
Location:	R4		
Noise Meter Start Time:	15:15		
Date:	08-01-2017		
Calibration complete ?:	51.02		
Sensitivity	-0.03		
Derviation	08-01-2017 - 19:15		
Time of Calibration:			
Battery Power Check:	(Good)	Good	Poor Good
Photographs of Setup (Y/N)	N		
Photographs of Surrounding (Y/N)	N		
Check available disk memory (Y/N)			
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	15.0°C		
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	MAX 10.2 mph AVG 2.6		
Barometric Pressure (kPa):	43.9		
Relative Humidity (%)			
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
	14W0639185	7218523	143
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	VMOB / MPA		
Record Data File Name:			
Total Monitoring Period	2 days (43:45)		
Noise Meter End Time:	08-03-2017 10:00		
Date:			
Calibration complete ?:	50.95		
Sensitivity	-0.01		
Derviation	11:25		
Time of Calibration:			
Check file size (GB)			
Battery Power Check:	Good	Good	Good
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):			
Wind Speed (km/hr):			
Wind Direction:			
North wind (wind blows from North)	MAX 2.4 AVG 0.2		
Barometric Pressure (kPa):	38.5		
Relative Humidity (%)			
Precipitation:	none	drizzle	rain
Departure Time:			

MONITORING STARTS

Operator:	VMOR / IC		
Location:	R4 / VAULT		
Noise Meter Start Time:			
Date:	2017/08/16		
Calibration complete ?:			
Sensitivity	51.3		
Derviation	-0.03 db		
Time of Calibration:	10h35		
Battery Power Check:	sors@agnicoeagle.com>; Meadow	Field S	Poor
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:		partly cloudy	sunny
Height of cloud (feet):		10,000-25,000	25,000 +
Air Temperature (C):	10.9		
Wind Speed (km/hr):	1.6 km		
Wind Direction:			
North wind (wind blows from North)	2.2 max 1.3 avg		<p>14W 0639441 721 8730</p>
Barometric Pressure (kPa):	10.0		
Relative Humidity (%)	78.0		
Precipitation:	none	drizzle	rain

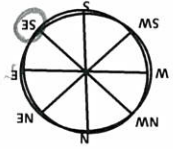
GENERAL SITE DESCRIPTION

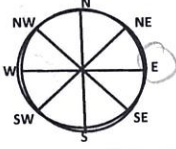
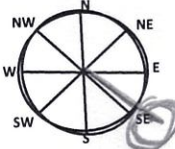
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic	HEAVY TRUCKS		
Human activities			
Animal	Caribou / birds		
Other noise sources	Rain wind		

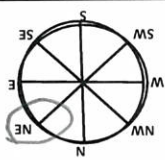

MONITORING ENDS

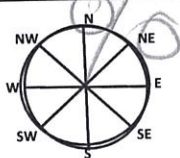
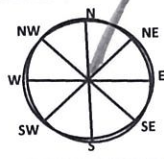
Operator:	VMOR / IC		
Record Data File Name:			
Total Monitoring Period			
Noise Meter End Time:	2017/08/18 8:51		
Date:			
Calibration complete ?:			
Sensitivity	51.4		
Derviation	0.02		
Time of Calibration:	10h16		
Check file size (GB)			
Battery Power Check:		Po	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	8.6		
Wind Speed (km/hr):	4.3		
Wind Direction:			
North wind (wind blows from North)	7.3 max 5.3 avg		<p>14W 0639</p>
Barometric Pressure (kPa):	9.9		
Relative Humidity (%)	71.0		
Precipitation:	none	drizzle	rain
Depature Time:			

MONITORING STARTS	
Operator:	MBA / VMPK / MT
Location:	W 063947S 7218220
Noise Meter Start Time:	2017-07-10 11:59
Date:	2017-07-10
Calibration complete %:	51.01
Sensitivity:	-0.01
Derivation:	
Time of Calibration:	
Battery Power Check:	Good
Photographs of Setup (Y/N):	
Photographs of Surrounding (Y/N):	
Check available disk memory (Y/N):	
Cloud cover:	cloudy
Height of cloud (feet):	0-10,000
Air Temperature (C):	21.7
Wind Speed (km/hr):	4.9
Wind Direction:	
North wind (wind blows from North):	Max 9.4 AVG 3.4
Barometric Pressure (kPa):	31.5
Relative Humidity (%):	none
Precipitation:	drizzle
GENERAL SITE DESCRIPTION	
GPS Location	Latitude: 063947S Longitude: 7218220 Altitude: 132
Type of Ground Surface:	063947S furta
Acoustic Environment:	helicopter and haul truck (1 km)
Traffic:	
Human activities:	
Animal:	
Other noise sources:	
MONITORING ENDS	
Operator:	MBA / VMPK / MT
Record Data File Name:	Project 001
Total Monitoring Period:	2017-07-12 9:00
Date:	
Calibration complete %:	51.34
Sensitivity:	0.06
Derivation:	
Time of Calibration:	9:30
Check file size (GB):	
Battery Power Check:	Good
Cloud cover:	partly cloudy
Height of cloud (feet):	0-10,000
Air Temperature (C):	13.4
Wind Speed (km/hr):	
Wind Direction:	Max 9.1 MPH AV 5.3 MPH
North wind (wind blows from North):	
Barometric Pressure (kPa):	101.3
Relative Humidity (%):	66.9
Precipitation:	none
Departure Time:	



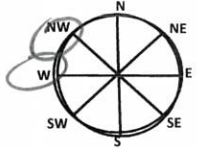
MONITORING STARTS			
Operator:	FANNY LAPORTE / PATRICK ARLSTEN		
Location:	RJ EXPIO		
Noise Meter Start Time:	4:51		
Date:	2017/08/25		
Calibration complete ?:	Y		
Sensitivity	51.44		
Derviation	0.04		
Time of Calibration:	8:55AM		
Battery Power Check:	sors@agnicoeagle.com>; Meadow Lake Field S	Poor	<input checked="" type="checkbox"/>
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	partly cloudy		sunny
Height of cloud (feet):	10,000-25,000		25,000 +
Air Temperature (C):	K		
Wind Speed (km/hr):	MAX 15, AVG 5.7		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):	61.9		
Relative Humidity (%)	24.6		
Precipitation:	none	drizzle	rain
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	MT and II		
Record Data File Name:			
Total Monitoring Period	124 hrs		
Noise Meter End Time:	14h05		
Date:	2017-08-30		
Calibration complete ?:	Y		
Sensitivity	51.23		
Derviation	-0.03		
Time of Calibration:	2017-09-03 16h14		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po <input checked="" type="checkbox"/>	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	16.1		
Wind Speed (km/hr):	max 11.2 Avg. 6.8		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):	49.2		
Relative Humidity (%)	none		
Precipitation:	none	drizzle	rain
Depature Time:	14h15		

MONITORING STARTS		
Operator:	MBA / WHOR	
Location:	RS	
Noise Meter Start Time:	8:11	
Date:	2017-07-13	
Calibration complete? :	51.00	
Sensitivity	-0.06	
Derivation	13.02	
Time of Calibration:	13:02	
Battery Power Check:	Good	
Photographs of Setup (Y/N)	-	
Photographs of Surrounding (Y/N)	-	
Cloud cover:	partly cloudy	
Height of cloud (feet):	0-10,000	10,000-25,000
Air Temperature (C):	7.9	
Wind Speed (km/hr):	10.2 max 3.0 avg	
Wind Direction:		
Barometric Pressure (kPa):	67.7	
Relative Humidity (%):	none	
Precipitation:	drizzle	
GENERAL SITE DESCRIPTION		
GPS Location	Latitude	Longitude
	14W 0633378	7219495
Type of Ground Surface:	199	
Acoustic Environment:	OLD TRUCKS / PICK UPS EXPLOSION / CAMP BIRDS / GROUND SQUIREL / MOSQUITOS / FOX WIND /	
Traffic		
Human activities		
Animal		
Other noise sources		
MONITORING ENDS		
Operator:	PATRICIA AHERN	
Record Data File Name:	RS	
Total Monitoring Period	2017-07-13 -> 2017-07-15	
Noise Meter End Time:	9:25 AM	
Date:	2017-07-15	
Calibration complete? :	51.27	
Sensitivity	0.05	
Derivation	10:22 AM	
Time of Calibration:		
Check file size (GB)		
Battery Power Check:	Good	
Cloud cover:	partly cloudy	
Height of cloud (feet):	0-10,000	10,000-25,000
Air Temperature (C):	12.4	
Wind Speed (km/hr):	13.4	
Wind Direction:	NW (13.4 MAX) (5.1 avg)	
North wind (wind blows from North)		
Barometric Pressure (kPa):	65.13	
Relative Humidity (%):	none	
Precipitation:	drizzle	
Departure Time:	9:35	

MONITORING STARTS			
Operator:	PAT H MARTIN		
Location:	121		
Noise Meter Start Time:	16150 2017-09-03		
Date:	2017-09-03		
Calibration complete ?:	Y		
Sensitivity	51.23		
Derivation	0.03		
Time of Calibration:	16h14		
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photographs of Setup (Y/N)	Y		
Photographs of Surrounding (Y/N)	Y		
Check available disk memory (Y/N)	Y		
Cloud cover:	partly cloudy	sunny	25,000 +
Height of cloud (feet):	10,000-25,000		
Air Temperature (C):	15.3		
Wind Speed (km/hr):			
Wind Direction:	MAX 13.2 AVG: 8.8		
North wind (wind blows from North)			
Barometric Pressure (kPa):	50.9		
Relative Humidity (%)	none	drizzle	rain
Precipitation:	none		
GENERAL SITE DESCRIPTION			
GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			
MONITORING ENDS			
Operator:	MT		
Record Data File Name:	48 hr		
Total Monitoring Period	16h27		
Noise Meter End Time:	7017-09-05		
Date:	2017-09-05		
Calibration complete ?:	Y		
Sensitivity	51.95		
Derivation	0.11		
Time of Calibration:	16 59		
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po <input type="checkbox"/>	
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	9.2		
Wind Speed (km/hr):			
Wind Direction:	MAX 11.2 mph AVG 8.4 mph		
North wind (wind blows from North)			
Barometric Pressure (kPa):			
Relative Humidity (%)	60.4%		
Precipitation:	none	drizzle	rain
Departure Time:	16h40		

MONITORING STARTS

Operator:	T.J. / M3N R2		
Location:			
Noise Meter Start Time:	2017-07-07 16:55		
Date:			
Calibration complete ?:	51.09		
Sensitivity	0.02		
Derivation	17:05		
Time of Calibration:			
Battery Power Check:	Good <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photographs of Setup (Y/N)			
Photographs of Surrounding (Y/N)			
Check available disk memory (Y/N)			
Cloud cover:	16.7% cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	9.2		
Wind Speed (km/hr):	9.2		
Wind Direction:	MAX. 12.1		
North wind (wind blows from North)	AUG. 7.2		
Barometric Pressure (kPa):	39.6		
Relative Humidity (%)			
Precipitation:	none	drizzle	rain

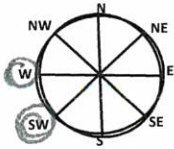


GENERAL SITE DESCRIPTION

GPS Location	Latitude	Longitude	Altitude
Type of Ground Surface:			
Acoustic Environment:			
Traffic			
Human activities			
Animal			
Other noise sources			

MONITORING ENDS

Operator:	MBA / VMOR R2		
Record Data File Name:			
Total Monitoring Period			
Noise Meter End Time:	2017-07-10 9:05		
Date:			
Calibration complete ?:			
Sensitivity			
Derivation			
Time of Calibration:			
Check file size (GB)			
Battery Power Check:	<input checked="" type="checkbox"/>	Po <input type="checkbox"/>	<input checked="" type="checkbox"/>
Cloud cover:	cloudy	partly cloudy	sunny
Height of cloud (feet):	0-10,000	10,000-25,000	25,000 +
Air Temperature (C):	16.9		
Wind Speed (km/hr):	64 mph		
Wind Direction:			
North wind (wind blows from North)			
Barometric Pressure (kPa):	41.1		
Relative Humidity (%)			
Precipitation:	none	drizzle	rain
Departure Time:	9:25		



APPENDIX C

L_{eq} Values by Day

Appx C - Table 1. Daytime, night-time, 10-11 pm and 24 h L_{eq} values for each monitoring day and total hours used to calculate each L_{eq} . Time periods with fewer than 3 hours of valid data are excluded (-), and those exceeding corresponding target sound levels are shaded grey. NA indicates the time period was not assessed. Dates for which all data were excluded from analyses due to sub-optimal weather conditions are not shown.

Site	Start Date (2017)	$L_{eq, day}$ 7am-11pm (dBA)	Total Hrs	$L_{eq, night}$ 11pm-7am (dBA)	Total Hrs	$L_{eq, 1 h}$ 10-11pm (dBA)	$L_{eq, 24 h}$ (dBA)	Total Hrs
R1	Jul. 21	47.1	12	-	0	39.4	47.1	12
	Aug. 8	29.2	3	-	1	24.6	29.2	4
	Aug. 9	-	2	46.8	7	-	47.7	9
	Sept. 4	-	2	-	1	35.3	33.4	3
	Sept. 5	-	0	30.9	5	-	30.9	5
R2	Jul. 7	38.4	1	39.5	1	36.8	38.4	2
	Jul. 8	-	0	-	2	-	36.8	2
		-	0	-	0	-	-	0
	Jul. 10	-	0	40.1	4	-	40.1	4
	Jul. 26	-	2	-	0	-	56.2	2
R3	Jul. 2	29.2	8	-	1	31.4	29.2	9
	Jul. 3	38.3	15	34.8	8	30.6	37.4	23
	Jul. 4	-	2	37.6	7	-	37.8	9
	Aug. 8	44.2	3	-	1	49.1	44.2	4
	Aug. 9	-	2	43.7	7	-	46.7	9
	Aug. 21	40.1	16	-	2	33.0	39.6	18
	Aug. 22	34.3	11	35.4	7	-	34.7	18
R4	Jul. 10	40.7	9	-	1	32.2	40.7	10
	Jul. 11	38.9	5	39.8	7	-	39.5	12
	Jul. 12	-	2	44.7	7	-	44.9	9
	Aug. 1	38.0	7	-	1	38.1	38.0	8
	Aug. 2	-	2	40.1	7	-	40.5	9
	Aug. 17	39.6	4	-	0	41.9	39.6	4
R5	Jul. 13	37.6	3	-	1	-	37.6	4
	Jul. 14	-	0	42.6	4	-	42.6	4
	Aug. 4	-	2	-	1	32.8	35.0	3
	Aug. 5	44.4	12	33.9	4	-	43.3	16
	Aug. 29	-	0	-	1	-	27.3	1
	Aug. 30	-	1	25.2	5	-	34.6	6