Appendix G. 2023 Sound Modeling Assessment

ReGenerate
Renewable Energy Consulting

Sound Modeling Assessment

Project: Silver Queen (IA)

Date: December 19, 2023

ReGenerate Consulting
3413 Nest Ave.
Sheldon, IA 51201
Tel: (712) 577-1825
E-mail: chris@regenerateconsulting.com
Web: www.regenerateconsulting.com

Contents

Revision History

Issue	Date	Revision Purpose
1	10-Nov-23	Original
2	19-Dec-23	Updated Turbine Layout/Receptors

1. Executive Summary

The Silver Queen Project in western Iowa has been studied for the impact of sound on surrounding residences. Modeling and topographic reviews were completed to determine potential maximum results at receptor locations in and around the project.

The Project consists of 93 GE 3.4-140 LNTE turbines at 98 m hub-height provided by Scout Clean Energy. These turbines can cause additional sound throughout the Project area and this effect was studied at sensitive locations (receptors) to quantify the impact before the proposed Project is constructed.

ReGenerate used Openwind software to model the impact of sound for Silver Queen on 280 total receptors.

The effect on receptors has been quantified with the results shown in the table below.

Sound Pressure Level [dB(A)]	№ Receptors	% of Receptors
0 to 35	70	25.00%
35.1 to 40	68	24.29%
40.1 to 45	142	50.71%
45.1 to 50.0	0	0.00%

The maximum value of sound at any receptor location was found to be just under 45.0 dB(A) and this assessment has determined that Silver Queen does not cause or contribute to potential exceedance of the standard.

Appendix I shows the spatial mapping for sound results. Appendix II shows turbine coordinates provided for the Silver Queen Wind Farm. Appendix III shows the results at each receptor analyzed for this study.

2. Introduction

The Silver Queen Wind Farm (Project) is being developed by Scout Clean Energy (Scout) in western Iowa. Western EcoSystems Technology Inc. (WEST) (on behalf of Scout) retained ReGenerate Consulting (ReGenerate) to carry out an independent analysis of the potential sound effects caused by the proposed Project.

The objective of this assessment is to predict the sound levels generated by the project at all receptors within or near the project area, in accordance with applicable regulations as described in further detail later in the report. This report describes the Project site, modeling methodology and results of the analysis.

ReGenerate Consulting is an independent engineering consulting agency. The principal investigator for this report, Chris Nuckols, has 20 years engineering and management experience and 15 years of wind and solar resource assessment experience for clients such as renewable energy developers, owners, and OEMs. He has provided engineering support for more than 100 renewable energy projects -- large and small -- on five continents.

The ReGenerate team are members of the Institute of Noise Control Engineering of the USA (INCE-USA), a non-profit professional organization whose primary purpose is to promote noise control solutions through an international consortium of organizations with interests in acoustics and noise control. To become members of INCE-USA, ReGenerate staff qualifications were reviewed by the INCE-USA board to ensure a minimum of five years' experience in noise control engineering, involving professional practice, research, or teaching.

3. Background

Sound is commonly expressed in A-weighted [dB(A)] levels, an expression of the relative loudness of sounds in the air as perceived by the human ear. Typical sound levels associated with various outdoor activities are presented in the figure below. [1]

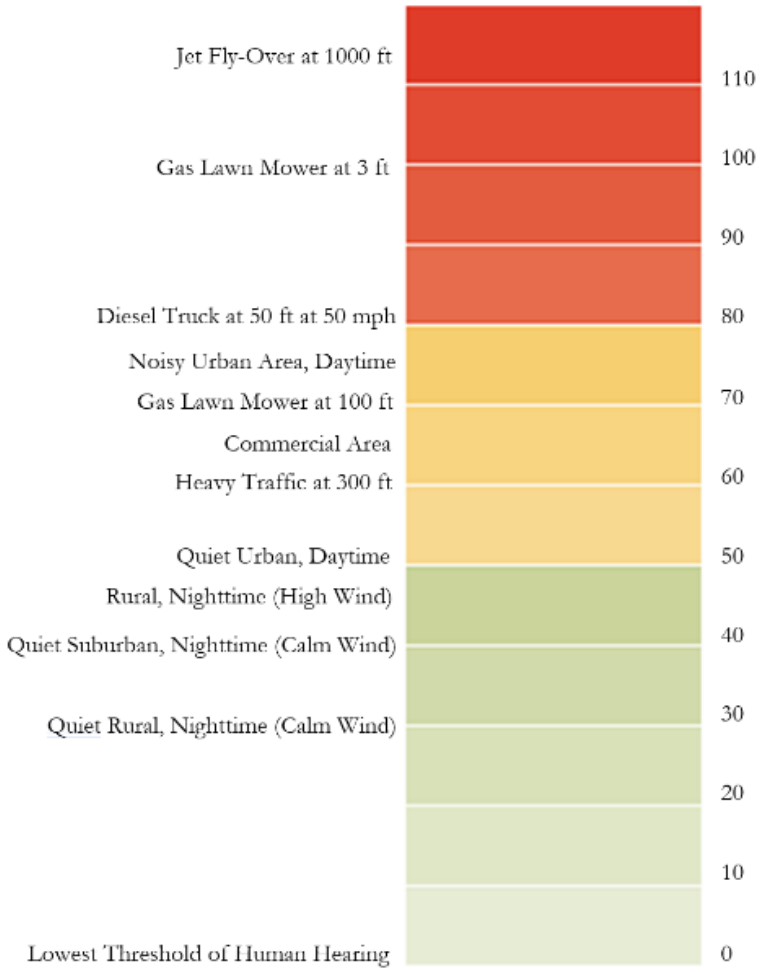

Figure 1: Sound Level of Various Outdoor Activities [dB(A)]

Sound is typically expressed using octave bands or 1/3 octave bands ranging from 32 to 16,000 Hz. Noise results are modeled for each respective octave band and then combined into a single sound emission level using the following equation [2]:

$$\Sigma = 10 \log \quad 10^{\overline{\ }} + 10^{\overline{\ }} + \cdots + 10^{\overline{\ }}$$

Noise from a wind turbine is generally categorized into one of two types, aerodynamic and mechanical noise.

Aerodynamic noise is caused by wind passing over the turbine blades. As the wind moves over the blades to extract energy, it interrupts the laminar air flow causing turbulence and noise as a byproduct. The resulting noise is dependent upon the blade angle and alignment of the rotor to the wind. Aerodynamic noise is the primary source of noise produced by wind turbines.

Mechanical noise originates from turbine components such as the generator, gearbox, yaw motors, tower ventilation system and transformer. Generally, the impact of these sounds are so minimal in newer wind turbines that they are a negligible fraction of the aerodynamic noise.

The sound pressure level from multiple turbines near a receptor can be noticeably louder than that of a single turbine. Under steady wind conditions, noise from a wind farm as a whole is calculated assuming that the turbines have similar frequency profiles and that the noise sources are uncorrelated. This impact is estimated by any ISO compliant sound modeling software.

4. Project Details

The Project is located near Westside, Iowa in agricultural land consisting primarily of rolling hills. There are scattered dwellings, farm buildings and trees throughout the project area.

Scout provided ReGenerate with the coordinates of turbines and receptors for the Project. The layout features 93 GE 3.4-140 LNTE turbines at 98 m hub-height, including both primary and alternate locations. The impact of the main power transformer at the project substation was also included in the modeling results. Turbine coordinates provided for the Project are shown in Appendix II. Coordinates for individual receptors can be found in Appendix III.

Information on operational neighboring projects was reviewed as part of this analysis based upon the U.S. Wind Turbine Database by USGS. [3] Three nearby projects were found, including:

- Carroll: 100x GE 1.6-91 h80 COD 2008
- Carroll Area: 9x SWT 2.3-108 h80 COD 2015
- Victory: 66x GE 1.5-87 h80 COD 2017

These neighboring turbines were not considered in this assessment, as the regulation only stipulates noise from the proposed Project. A cursory review of the impact of these existing projects shows minimal difference overall for receptors near the Project.

5. Project Regulations

Scout provided the following language relating to sound levels from the Project, which they have committed to adhere to as part of permitting requirements: [4]

Developer agrees to site Project wind turbines such that sound levels resulting from Project wind turbines will not exceed 45 dBA at the residences of landowners occupied as of the start of construction unless waived in writing by the owner of the occupied residence.

6. Modeling Procedures

ReGenerate used Openwind software [5] to model sound for this project. This model complies with ISO 9613-2, the international standard for propagation and attenuation of industrial sound. [6]

Total sound power level and octave band specifications were provided by the customer for the GE 3.4-140 turbine as well as the main power transformer. [7,8] These specifications are considered the mean values gathered by the manufacturer according to International Electrotechnical Commission (IEC) standard 61400-11: *Acoustic Noise Measurement Techniques*. [8] Hub height for these turbines was specified by the customer as 98 m. Sound power levels utilized in modeling are shown in the table below. These values represent the critical wind speed or the worst-case scenario from a noise perspective.

Sound Source	1/1 Octave Band Levels [Hz] Sound Power Level [dB(A)]									
	31	63	125	250	500	1000	2000	4000	8000	Total
GE 3.4-140 LNTE	79.7	88.3	92.2	96.1	99.2	102.2	101.5	93.7	74.9	106.8
Main Power Transformer	74	80	82	77	77	71	66	61	54	86

Table 2: Turbine Sound Power Level Emission Summary

Modeling assumptions for the sound analysis include:

- Sound modeled in accordance with International Standard ISO 9613-2;
- Turbine is operating 100% of the time;
- Turbine sound emission used octave band sound power level provided by GE;
- Sound emission was assumed at rated power, 106.8 dB(A) for the GE 3.40-140 LNTE;
- Turbines are using the low noise serrated trailing edge (LNTE) option;
- A safety margin of +2 dB(A) was added to the sound power level;
- Ground porosity was set to 0.5;
- Miscellaneous attenuation was set to zero;
- Vegetative dampening effects were ignored; and
- Default observer eye level is 4 m.

This base-case run for both models is still likely to produce estimates higher than those which will actually be experienced. Factors that will lower the impact, but were not modeled include:

- Availability of the turbines;
- Turbines operating at lower wind speeds, resulting in lower sound emission;
- Alternate turbines not being constructed; and
- Impact of vegetation in dampening of sound.

7. Modeling Results

Using the methodology described above, the maximum value of sound at any receptor location was found to be just under 45.0 dB(A). A summary of the results can be seen in the table below; detailed results can be found in Appendix III.

Sound Pressure Level [dB(A)]	№ Receptors	% of Receptors
0 to 35	70	25.00%
35.1 to 40	68	24.29%
40.1 to 45	142	50.71%
45.1 to 50.0	0	0.00%

Table 3: Sound emission results summary

8. Conclusions

Predicted sound levels have been studied for receptors in the vicinity of the Project. No receptor is predicted to experience sound higher than 45.0 dB(A). All receptors are under the specified limit for residences of 45 dB(A), and this assessment finds that the Silver Queen Project does not cause or contribute to potential exceedance of the standard.

9. References

[1] Caltrans. (Sep 2013). Technical Noise Supplement to the Traffic Noise Analysis Protocol. Retrieved from http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

[2] Sengpie Audio. (Retrieved Jun 2018). Adding acoustic levels of sound sources. Retrieved from http://www.sengpielaudio.com/calculator-spl.htm

[3] United States Geological Survey. "The U.S. Wind Turbine Database." Retrieved from https://eerscmap.usgs.gov/uswtdb/.

[4] Email from Bobby Quinones to Chris Nuckols and Ryan McDevitt. 28-Jul-2023.

[5] AWS Truepower. (Feb 2017). OpenWind User Manual v1.8. Retrieved from http://ww2.awstruepower.com/openwind_user_manual.

[6] International Organization for Standardization (ISO) standard 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors.

[7] GE Renewable Energy. (07-Jul-2022). Technical Documentation Wind Turbine Generator Systems Sierra 140 – 60 Hz: Product Acoustic Specifications.

[8] Prolec. (02-Aug-2022). Technical Proposal Information for Main Power Transformer: Spec No: MDCTR-MPT-R2.

[9] International Electrotechnical Commission (IEC) standard 61400-11: Acoustic Noise Measurement Techniques.

Appendix I – Maps

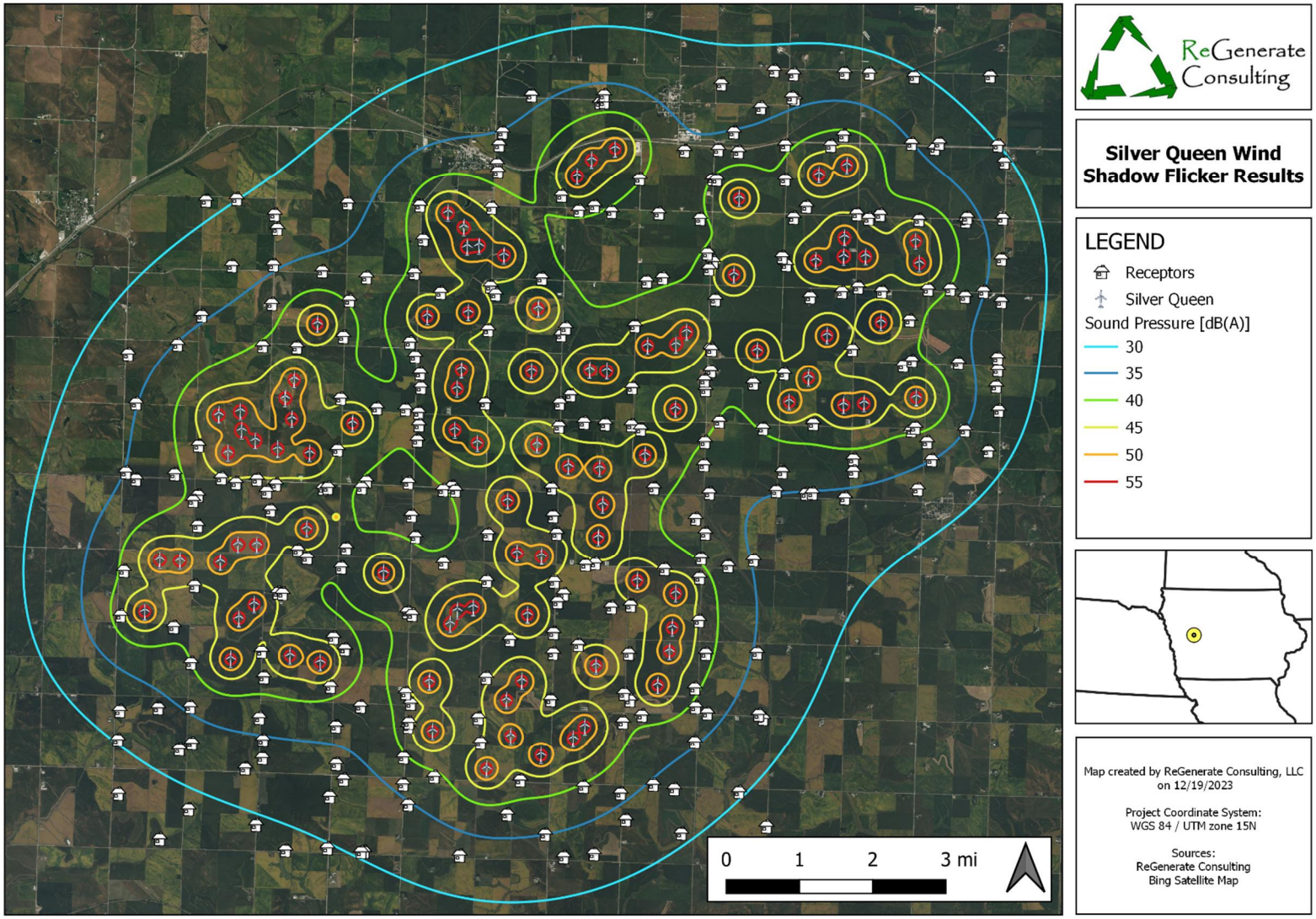

Figure 2: Sound Propagation Map of Silver Queen Wind Project

Appendix II – Project Turbine Coordinates (UTM WGS84 Zone 15)

Turbine ID	X [m]	Y [m]	Turbine Model	Type
S01	327672	4650089	GE 3.4-140 LNTE h98	Primary
S02	327883	4653831	GE 3.4-140 LNTE h98	Primary
S04	322544	4655255	GE 3.4-140 LNTE h98	Primary
S05	323055	4656491	GE 3.4-140 LNTE h98	Primary
S06	325924	4658930	GE 3.4-140 LNTE h98	Primary
S08	327911	4656829	GE 3.4-140 LNTE h98	Primary
S09	332209	4657567	GE 3.4-140 LNTE h98	Primary
S10	334257	4656238	GE 3.4-140 LNTE h98	Primary
S11	335442	4656529	GE 3.4-140 LNTE h98	Primary
S12	336218	4654864	GE 3.4-140 LNTE h98	Primary
S13	336286	4657820	GE 3.4-140 LNTE h98	Primary
S15	332324	4659246	GE 3.4-140 LNTE h98	Primary
S16	334078	4659777	GE 3.4-140 LNTE h98	Primary
S17	334695	4659981	GE 3.4-140 LNTE h98	Primary
T01	326772	4646703	GE 3.4-140 LNTE h98	Primary
T02	327967	4647005	GE 3.4-140 LNTE h98	Primary
T03	328674	4647373	GE 3.4-140 LNTE h98	Primary
T05	325585	4647536	GE 3.4-140 LNTE h98	Primary
T06	327300	4647426	GE 3.4-140 LNTE h98	Primary
S07	326273	4658610	GE 3.4-140 LNTE h98	Primary
T08	325515	4648627	GE 3.4-140 LNTE h98	Primary
T09	327546	4648637	GE 3.4-140 LNTE h98	Primary
T10	329178	4648972	GE 3.4-140 LNTE h98	Primary
T11	330534	4648546	GE 3.4-140 LNTE h98	Primary
T12	330793	4649286	GE 3.4-140 LNTE h98	Primary
T14	330930	4650550	GE 3.4-140 LNTE h98	Primary
T15	330086	4650837	GE 3.4-140 LNTE h98	Primary
T16	326479	4650249	GE 3.4-140 LNTE h98	Primary
T18	325972	4649883	GE 3.4-140 LNTE h98	Primary
T20	323114	4649045	GE 3.4-140 LNTE h98	Primary
T21	322449	4649187	GE 3.4-140 LNTE h98	Primary
T22	321145	4649117	GE 3.4-140 LNTE h98	Primary
T24	321661	4650312	GE 3.4-140 LNTE h98	Primary
T25	319258	4650156	GE 3.4-140 LNTE h98	Primary
T26	319586	4651289	GE 3.4-140 LNTE h98	Primary
T27	320033	4651271	GE 3.4-140 LNTE h98	Primary

Turbine ID	X [m]	Y [m]	Turbine Model	Type
T28	320918	4651241	GE 3.4-140 LNTE h98	Primary
T29	321306	4651631	GE 3.4-140 LNTE h98	Primary
T30	321720	4651633	GE 3.4-140 LNTE h98	Primary
T31	322819	4651983	GE 3.4-140 LNTE h98	Primary
T32	327440	4651443	GE 3.4-140 LNTE h98	Primary
T33	327980	4651375	GE 3.4-140 LNTE h98	Primary
T34	327234	4652595	GE 3.4-140 LNTE h98	Primary
T35	329230	4651790	GE 3.4-140 LNTE h98	Primary
T37	328568	4653353	GE 3.4-140 LNTE h98	Primary
T38	329256	4653310	GE 3.4-140 LNTE h98	Primary
T39	330256	4653599	GE 3.4-140 LNTE h98	Primary
T40	321087	4653649	GE 3.4-140 LNTE h98	Primary
T43	321686	4653916	GE 3.4-140 LNTE h98	Primary
T44	322179	4653728	GE 3.4-140 LNTE h98	Primary
T46	322490	4654389	GE 3.4-140 LNTE h98	Primary
T49	326570	4653861	GE 3.4-140 LNTE h98	Primary
T50	326075	4654151	GE 3.4-140 LNTE h98	Primary
T52	326220	4655478	GE 3.4-140 LNTE h98	Primary
T53	327760	4655448	GE 3.4-140 LNTE h98	Primary
T54	329036	4655468	GE 3.4-140 LNTE h98	Primary
T55	329416	4655450	GE 3.4-140 LNTE h98	Primary
T56	330924	4654608	GE 3.4-140 LNTE h98	Primary
T57	330312	4656012	GE 3.4-140 LNTE h98	Primary
T59	331169	4656319	GE 3.4-140 LNTE h98	Primary
T60	332724	4655908	GE 3.4-140 LNTE h98	Primary
T61	333422	4654765	GE 3.4-140 LNTE h98	Primary
T62	334618	4654693	GE 3.4-140 LNTE h98	Primary
T63	335072	4654732	GE 3.4-140 LNTE h98	Primary
T64	333849	4655297	GE 3.4-140 LNTE h98	Primary
T65	325469	4656659	GE 3.4-140 LNTE h98	Primary
T66	326370	4656748	GE 3.4-140 LNTE h98	Primary
T68	326606	4658206	GE 3.4-140 LNTE h98	Primary
T69	327153	4657993	GE 3.4-140 LNTE h98	Primary
T73	328763	4659741	GE 3.4-140 LNTE h98	Primary
T74	329079	4660102	GE 3.4-140 LNTE h98	Primary
T75	329598	4660353	GE 3.4-140 LNTE h98	Primary
T76	334009	4657883	GE 3.4-140 LNTE h98	Primary
T77	334622	4657963	GE 3.4-140 LNTE h98	Primary
T79	335104	4657970	GE 3.4-140 LNTE h98	Primary

Turbine ID	X [m]	Y [m]	Turbine Model	Type
T80	323824	4654293	GE 3.4-140 LNTE h98	Primary
T81	322883	4653640	GE 3.4-140 LNTE h98	Primary
T82	324507	4651007	GE 3.4-140 LNTE h98	Primary
S03	321359	4654559	GE 3.4-140 LNTE h98	Alternate
S14	336205	4658312	GE 3.4-140 LNTE h98	Alternate
T04	328933	4647641	GE 3.4-140 LNTE h98	Alternate
T07	327208	4648216	GE 3.4-140 LNTE h98	Alternate
T13	330855	4649804	GE 3.4-140 LNTE h98	Alternate
T17	326130	4650176	GE 3.4-140 LNTE h98	Alternate
T23	321326	4650006	GE 3.4-140 LNTE h98	Alternate
T36	329324	4652508	GE 3.4-140 LNTE h98	Alternate
T41	320886	4654481	GE 3.4-140 LNTE h98	Alternate
T42	321387	4654138	GE 3.4-140 LNTE h98	Alternate
T47	322345	4654846	GE 3.4-140 LNTE h98	Alternate
T51	326122	4655055	GE 3.4-140 LNTE h98	Alternate
T58	330933	4656032	GE 3.4-140 LNTE h98	Alternate
T67	326346	4658179	GE 3.4-140 LNTE h98	Alternate
T78	334640	4658389	GE 3.4-140 LNTE h98	Alternate

Appendix III – Individual Receptor Results (UTM WGS84 Zone 15)

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
1	319568	4645170	27.4
2	326164	4644809	32.7
3	325030	4645925	34.7
4	325295	4655401	42.2
5	326720	4654747	44.8
6	325260	4654537	41.9
7	325314	4655090	42.4
8	323481	4653724	45.0
9	324111	4653030	39.7
10	325037	4653003	38.7
11	325270	4654264	41.9
12	325998	4652917	40.6
13	325192	4651810	39.5
14	325802	4652842	39.8
15	326067	4652830	40.6
16	324008	4652890	39.7
17	325106	4652280	38.6
18	323669	4651561	40.9
19	323163	4652870	42.6
20	323266	4652890	42.3
21	322124	4652966	44.1
22	322607	4651512	44.7
23	322003	4652400	43.6
24	320413	4652722	40.9
25	321923	4652806	43.4
26	321246	4652995	44.2
27	320406	4652058	43.0
28	319048	4653076	36.0
29	320305	4652604	40.6
30	324062	4644891	30.4
31	324921	4646371	36.1
32	323610	4646477	33.2
33	323998	4644886	30.3
34	324345	4654634	42.7
35	325185	4655785	41.7
36	324974	4654609	40.8
37	318782	4651055	40.8

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
38	318711	4650078	42.6
39	320335	4650728	44.9
40	322171	4650573	44.4
41	322270	4650557	43.6
42	322807	4651341	43.0
43	323560	4651130	40.6
44	325016	4650148	41.7
45	325807	4651233	41.0
46	325119	4650094	42.1
47	325087	4648153	43.2
48	326865	4659051	43.7
49	325360	4658355	42.6
50	323639	4649341	42.6
51	324979	4648382	43.1
52	325291	4659099	42.2
53	325167	4657616	40.8
54	323324	4648524	42.9
55	323388	4649592	42.9
56	321858	4648731	42.6
57	323704	4659149	33.5
58	322154	4658587	32.3
59	323142	4657658	36.8
60	321808	4649290	44.8
61	320257	4649042	39.9
62	322097	4658901	31.5
63	320589	4659206	29.2
64	321262	4659241	29.9
65	322068	4657792	34.4
66	321159	4657776	32.7
67	319878	4649828	42.0
68	323304	4646102	32.0
69	322334	4644923	29.0
70	323256	4644969	29.8
71	322586	4655988	43.6
72	323548	4654850	43.9
73	319536	4648057	33.7
74	320002	4647146	31.8
75	318691	4647994	31.8
76	318649	4647353	30.2
77	320277	4647279	32.6

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
78	321449	4646723	32.2
79	320239	4648081	35.6
80	321762	4647840	36.9
81	320495	4656683	34.4
82	322036	4656941	37.7
83	321826	4646951	33.2
84	321838	4647348	34.6
85	323606	4656218	42.4
86	323450	4646819	33.9
87	323985	4648092	37.9
88	323443	4647655	36.5
89	324931	4646966	39.2
90	325072	4656094	42.3
91	324116	4657521	37.3
92	323739	4657015	39.5
93	325034	4647643	43.1
94	325046	4647737	43.1
95	326572	4647833	43.9
96	325602	4646538	39.2
97	326790	4656366	44.4
98	326841	4657322	44.7
99	325746	4657185	44.5
100	320203	4645825	29.0
101	321688	4645480	29.5
102	321834	4656016	40.6
103	318660	4646165	28.0
104	318876	4655834	32.4
105	319052	4654742	34.8
106	319964	4656046	35.1
107	318826	4653228	35.1
108	319900	4653190	39.1
109	320924	4653103	44.5
110	320424	4653817	44.0
111	321710	4653073	44.7
112	325235	4653927	41.3
113	327207	4645713	38.2
114	328043	4645273	35.1
115	328450	4644775	32.7
116	329116	4644842	32.2
117	328883	4646319	39.6

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
118	329703	4646172	36.1
119	329815	4645592	33.6
120	331035	4645293	30.6
121	330881	4646266	33.2
122	332909	4645444	28.3
123	332304	4646202	30.4
124	332834	4647822	32.1
125	331607	4647941	37.0
126	332739	4647911	32.5
127	331575	4649244	41.8
128	332701	4649262	34.6
129	331565	4651886	37.3
130	332066	4651160	37.1
131	332624	4651296	34.8
132	331653	4652773	37.1
133	333124	4652820	35.2
134	332833	4654189	40.5
135	333256	4653236	36.4
136	333776	4652758	34.9
137	333917	4652772	34.9
138	334630	4652663	34.3
139	334819	4653515	38.3
140	334819	4653245	36.7
141	336235	4652857	33.1
142	336091	4654145	40.9
143	336540	4653500	35.1
144	336439	4653893	37.8
145	337784	4653695	31.7
146	337275	4654151	35.1
147	338015	4654584	32.3
148	337957	4655116	32.9
149	337996	4655476	32.8
150	337129	4655633	36.7
151	337989	4655749	32.9
152	338073	4656987	33.2
153	337276	4657097	37.1
154	336949	4657264	39.8
155	337681	4657211	35.2
156	338072	4657920	33.7
157	337290	4658750	37.2

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
158	337322	4658833	36.7
159	338102	4658812	32.8
160	338138	4660058	30.4
161	336607	4660362	33.8
162	336710	4660477	33.2
163	337998	4660432	30.1
164	337825	4661952	27.8
165	336100	4660470	35.2
166	336156	4661938	30.4
167	335172	4662011	31.6
168	334605	4660653	41.4
169	334624	4662024	32.0
170	333505	4661996	31.9
171	333534	4661449	34.0
172	333467	4661488	33.8
173	332191	4660721	35.2
174	332785	4661258	33.8
175	333078	4662074	31.5
176	331917	4661780	31.9
177	329252	4661369	37.9
178	329341	4661384	37.8
179	329341	4661535	36.7
180	327745	4661529	33.8
181	327110	4660721	35.2
182	326623	4647291	44.9
183	327497	4646458	43.4
184	329754	4647744	41.8
185	330419	4646363	34.6
186	331330	4647306	35.4
187	330171	4647897	41.6
188	329907	4648225	42.8
189	331332	4648489	41.2
190	331347	4648076	39.1
191	329881	4649246	43.5
192	329780	4648369	43.0
193	328773	4649436	43.2
194	328165	4648233	44.3
195	326748	4648719	44.1
196	328218	4649253	42.6
197	327271	4649545	44.0

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
198	328227	4649698	43.0
199	326759	4650833	44.5
200	328246	4650816	44.2
201	328451	4650544	42.4
202	328319	4650371	43.0
203	329498	4650254	42.0
204	329923	4650297	44.3
205	331426	4649963	44.2
206	331439	4650905	42.4
207	330667	4651096	44.6
208	331472	4651335	39.4
209	331352	4652210	37.6
210	329145	4651220	44.2
211	328932	4651191	43.6
213	328217	4652267	43.5
214	326786	4651869	42.9
215	328184	4652879	44.7
216	328349	4654235	44.2
217	328900	4654320	42.8
218	329364	4654286	42.7
219	329940	4654262	43.2
220	330431	4652883	42.2
221	331536	4653390	38.5
222	331555	4653896	39.9
223	330142	4654171	44.2
224	328364	4654741	42.9
225	328397	4656255	43.0
226	326956	4657152	44.2
227	336179	4654208	41.5
228	335914	4655577	41.8
229	333936	4654294	43.5
231	331872	4654343	39.9
232	332618	4655182	42.7
233	331683	4655454	42.3
234	331570	4655036	42.1
235	331550	4655246	42.3
236	328603	4654925	43.7
237	329955	4655083	44.2
238	328496	4656412	42.8
239	330014	4656456	44.6

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
240	331786	4657036	42.9
241	331675	4655960	44.4
242	331701	4655931	44.1
243	334795	4655934	44.2
244	334568	4657201	44.3
245	333870	4657089	42.9
246	336105	4655681	41.1
247	336059	4656581	42.7
248	335445	4657210	44.2
249	334924	4657305	44.9
250	336461	4657257	43.1
251	336263	4658785	44.6
252	335154	4658809	44.2
253	333344	4657796	42.9
254	333504	4658831	41.5
255	331737	4657863	43.0
256	333256	4657969	42.3
257	330275	4657434	38.8
258	330625	4657509	39.0
259	331643	4657705	42.8
260	331609	4658048	40.8
261	331453	4658807	38.9
262	330542	4658930	37.0
263	329504	4658960	39.4
264	328785	4658988	41.2
265	327968	4657500	42.9
266	327033	4660439	36.0
267	326986	4660022	37.6
268	327004	4659850	38.4
269	328404	4659316	43.4
270	329125	4659086	41.5
271	330120	4659688	40.4
272	331106	4660315	36.2
273	331724	4659680	40.1
274	331815	4659671	40.9
275	331851	4660336	36.5
276	332293	4660292	37.5
277	333320	4659676	41.4
278	333322	4660436	38.6
279	333789	4659074	42.6

Receptor ID	X [m]	Y [m]	Sound Pressure [dB(A)]
280	334898	4658908	44.7
281	334322	4660427	43.8
282	335410	4658895	42.7