COMMONWEALTH OF KENTUCKY
BEFORE THE KENTUCKY STATE BOARD
ON ELECTRIC GENERATION AND TRANSMISSION SITING

In the Matter of:

ELECTRONIC APPLICATION OF HORUS KENTUCKY 1 LLC FOR A CERTIFICATE OF CONSTRUCTION FOR AN APPROXIMATELY 69.3 MEGAWATT MERCHANT ELECTRIC SOLAR GENERATING FACILITY IN SIMPSON COUNTY, KENTUCKY PURSUANT TO KRS 278.700 AND 807 KAR 5:110	)	CASE NO. 2020-00417

HORUS KENTUCKY 1 LLC'S RESPONSE TO SITING BOARD STAFF'S POST-HEARING REQUEST FOR INFORMATION TO HORUS KENTUCKY 1 LLC

COMES NOW, Horus Kentucky 1 LLC, and hereby responds to the Siting Board Staff's Post-Hearing Request for Information to Horus Kentucky 1 LLC. For its response, it states as follows:

Horus Kentucky 1 LLC provides the following responses to the Siting Board Staff's Post-Hearing Request for Information. Pursuant to the previously filed and still pending motions for confidentiality, certain information has been redacted from public access and separately provided to the Siting Board.

1. Refer to the Application, Exhibit E, page 4, Tables IMPLAN Economic Indicators by Impact–Simpson County (IMPLAN Economic Indicators) and IMPLAN Tax Results-Simpson County (IMPLAN Tax Results). Also refer to Horus Kentucky 1's response to Siting Board Staff's First Request for Information (Staff's First Request), Item 55(e), Table Economic Indicators by Impact (Economic Indicators by Impact).

a. Reconcile the difference between the economic impact amount provided in IMPLAN Economic Indicators and the revised economic impact amount provided in Horus Kentucky 1's response to Staff's First Request, Item 55(e).

As stated in response to Request 38 of the Siting Board Staff's Second Request for Information to Horus Kentucky 1 LLC, following the submission of its application, the Applicant revised the estimate of output downward using a more precise estimate than the original $80 million estimate as certain aspects of the initial estimate would likely occur outside of Simpson County, Kentucky and outside the Commonwealth. The 6 million-dollar estimate used in response to the Siting Board Staff's First Request for Information to Horus Kentucky 1 LLC was incorrectly transposed from a further refined 60 million-dollar estimate. As the planning phase progressed, and as listed in response to the Siting Board Staff's Second Request for Information to Horus Kentucky 1 LLC, the current estimation is $52,379,245.41 in

output, which was submitted into the IMPLAN system for calculating the economic impact of the project during the construction phase.

b. Provide a line-by-line explanation of the assumptions and inputs used to calculate the economic impact of the proposed project in the original economic analysis contained in IMPLAN Economic Indicators and revised economic analysis in Economic Indicators by Impact, and the basis for the difference in the two amounts.

As stated in response to Request 1(a) above, the final figure of $52,379,245.41 reflects the most up-to-date figure reflecting the value added to the Kentucky and Simpson County economy for the Project. This figure was calculated using the expected value (including soft costs, construction costs, etc.) associated with the specific aspects of the project as reflected here:

The final figure was submitted into the IMPLAN system as the "value" input for the purposes of its calculation of economic impact to Simpson County, Kentucky.

c. Explain whether the Siting Board should consider the calculations presented in Economic Indicators by Impact instead of the calculations presented in IMPLAN Economic Indicators in rendering a decision in this matter.

The Siting Board should consider the below updated Economic Indicators by Impact in rendering a decision in this matter, which reflect the updated inputs as described above:

Impact	Employment	Labor Income	Value Added	Output
Direct	100.00	$8,005,846.91	$19,216,095.36	$52,379,245.41
Indirect	36.17	$1,561,842.45	$2,901,959.62	$5,285,115.14
Induced	27.66	$968,943.87	$2,016,085.44	$3,717,969.51
	163.82	$10,536,633.22	$24,134,140.41	$61,382,330.06

While not specifically requested, the Applicant would like to refer the Siting Board to the IMPLAN definitions of "direct", "indirect", and "induced" effects as defined below for consideration and clarification:

Direct Effects:

The set of expenditures applied to the I-O multipliers for impact analysis. It is one or more production changes or expenditures made by producers/consumers as a result of an activity or policy. Direct effects can be positive or negative.

See https://support.implan.com/hc/en-us/articles/115009668548-Direct-Effects.

I-O Multipliers refers to the multiplier utilized by IMPLAN for conducting its input-output analysis, which is defined as "[a] type of applied economic analysis that tracks the interdependence among various producing and consuming sectors of an economy. More particularly, it measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands." *See* https://support.implan.com/hc/en-us/articles/115009666948-Input-Output-I-O-Analysis.

Indirect Effects:

Economic Effects stemming from business to business purchases in the supply chain.

See https://support.implan.com/hc/en-us/articles/115009499547-Indirect-Effects.

Induced Effects:

Economic Effects stemming from household spending of Labor Income, after removal of taxes, savings, and commuter income.

See https://support.implan.com/hc/en-us/articles/115009668568-Induced-Effects.

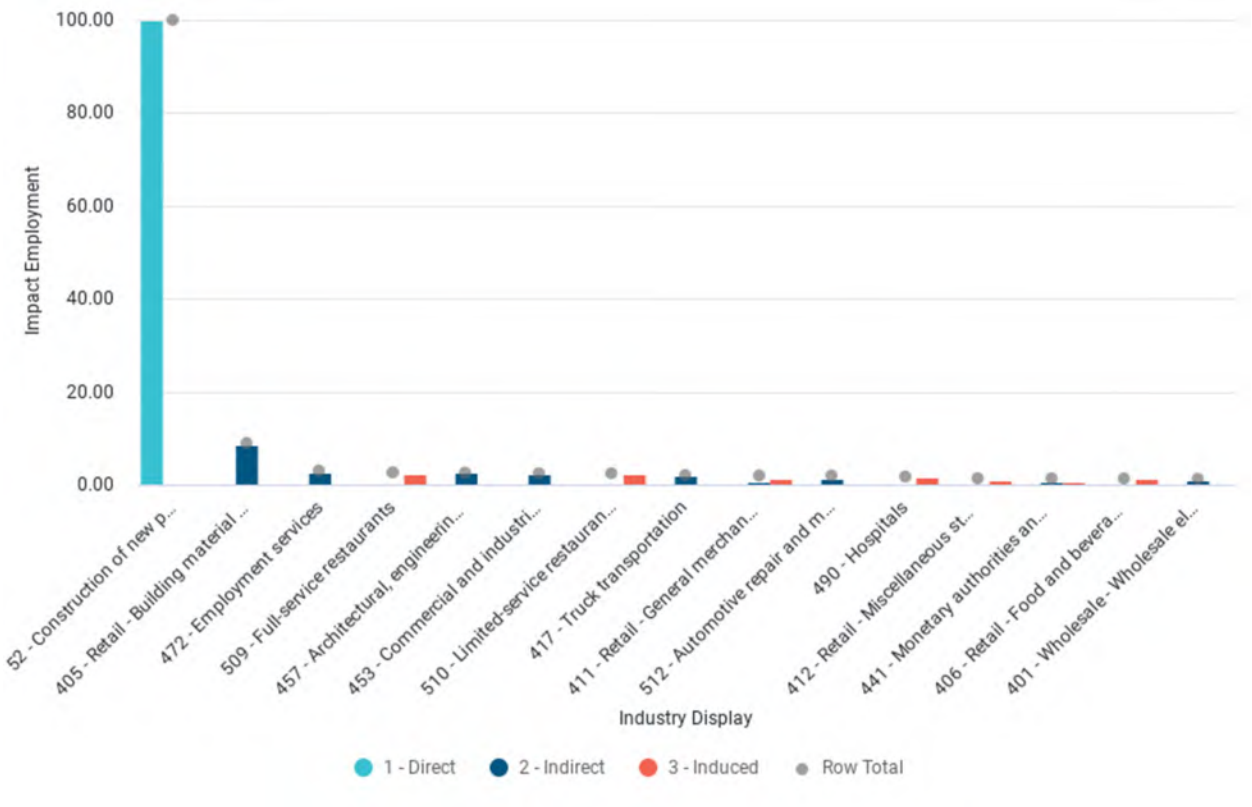
d. Provide updated IMPLAN economic and tax impact calculations for the state of Kentucky, which would include Simpson County, using the same conservative assumptions behind the Economic Indicators by Impact results.

See the Applicant's Response to 1(c) above and 3(a) below which reflect the most recent IMPLAN calculations using the $ 52,379,245.41 figure. Further, the Applicant would like to update the additional tables provided within Exhibit E to the Application using this updated figure:

Description	Industry Total Output	Impact Output	Estimated Growth Percentage
Construction of new power and communication structures	$6,935,732.53	$52,379,245.41	755.21%
Commercial and industrial machinery and equipment rental and leasing	$2,377,244.20	$574,808.96	24.18%
Architectural, engineering, and related services	$2,735,657.51	$236,205.32	8.63%
Retail - Building material and garden equipment and supplies stores	$21,879,582.88	$1,082,669.14	4.95%
Commercial and industrial machinery and equipment repair and maintenance	$1,791,057.91	$70,237.19	3.92%
General and consumer goods rental except video tapes and discs	$1,468,259.05	$40,331.95	2.75%
Electronic and precision equipment repair and maintenance	$1,431,512.19	$38,727.75	2.71%

Wholesale - Household appliances and electrical and electronic goods	$2,899,396.31	$77,643.01	2.68%
Personal and household goods repair and maintenance	$1,181,584.95	$29,776.36	2.52%
Business and professional associations	$785,058.39	$18,952.78	2.41%
Legal services	$2,657,840.45	$60,268.37	2.27%
Office administrative services	$576,478.29	$13,031.15	2.26%
Services to buildings	$1,832,165.53	$37,609.09	2.05%
Employment services	$8,842,771.15	$176,733.36	2.00%
Automotive repair and maintenance, except car washes	$9,656,689.05	$185,493.80	1.92%

The Following top 15 industries are predicted for direct impact in employment from the Project:



2. Refer to the Application, Exhibit E, Table IMPLAN Economic Indicators. Explain the meaning of the Value Added and Output columns, and how each was calculated.

The Applicant would refer the Siting Board to the following information provided by IMPLAN as it relates to these definitions and the related calculations:

> For all Industries, output equals the value of Industry production, which is equal to sales plus net inventory change. In IMPLAN these are annual production estimates for the year of the dataset in producer prices. Note that for wholesale and retail sectors, Output is equal to gross wholesale margin or gross retail margin, respectively, not gross sales. The value of production for wholesale and retail sectors is the value of the services they provide; it does not include the value of the items sold within their establishment.

See https://support.implan.com/hc/en-us/articles/115009668388-Output; *See also* https://support.implan.com/hc/en-us/articles/360035998833-The-Output-Equation-.

> Value Added represents the difference between Output and the cost of Intermediate Inputs throughout a defined economy during a specified period of time. It equals gross Output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from

other industries or imported). Value Added is equivalent to the Industry's contribution to GDP.

Value Added is a large portion of Output, as it encompasses Labor Income (LI), Proprietor Income (PI), Employee Compensation (EC), Other Property Income (OPI), and Taxes on Production and Imports (TOPI)."

See https://support.implan.com/hc/en-us/articles/360017144753-Understanding-Value-Added-VA-.

3. Refer to Application, Exhibit E, Table IMPLAN Tax Results, which contains incomplete column labels.

a. Provide a copy of this IMPLAN Tax Results with the full name of each column label clearly visible.

Impact	**Sub County General**	**Sub County Special Districts**	**County**	**State**	**Federal**	**Total**
Direct	$138,048.45	$234,002.77	$85,074.42	$1,385,475.78	$1,483,468.55	$3,326,069.97
Indirect	$45,228.09	$98,799.54	$26,316.27	$489,387.29	$322,193.25	$981,924.44
Induced	$18,523.36	$38,021.70	$10,859.03	$198,753.53	$197,968.11	$464,125.72
	$201,799.90	**$370,824.00**	**$122,249.72**	**$2,073,616.60**	**$2,003,629.91**	**$4,772,120.13**

b. Explain what each column represents and whether the columns relate to tax payments generated only in Simpson County.

As reflected within the table provided in response to Request 3(a) above, the estimates provided by IMPLAN reflect taxation at each level, including those outside Simpson County, Kentucky.

c. Provide an updated copy of the IMPLAN Tax Results based upon the updated calculations provided in Economic Indicators by Impact.

See the Applicant's response to Request 3(a) above.

4. Provide the status of the conditional use permits (CUPs) previously granted by the Franklin-Simpson County Planning and Zoning Board (P&Z Board) that were in effect at the time the application was filed in this proceeding.

Both CUP 1 and CUP 2 remain valid and enforceable. Intervenors Steve Baldwin and John Pitt challenged both CUP 1 and CUP 2 in the Circuit Court of Simpson County, Kentucky. As reflected in Intervenor's prehearing filing, the lawsuit challenging CUP 1 was dismissed in its entirety, with prejudice. Intervenors appealed this decision, which is pending. With respect to the lawsuit regarding CUP 2, Count II, a declaratory judgment claim, and Count III, a claim under KRS

100.203 and KRS 100.111, were dismissed with prejudice. Count I, a claim under KRS 100.347, remains pending as the Court found that Intervenors met the minimal pleading standard for alleging an injury (diminished property value) sufficient to survive a motion under CR 12.02, though there has been no adverse ruling affecting the validity of CUP 2.

a. If the CUPs have been deemed invalid, provide the date the CUPs were deemed invalid and a copy of any documents issued by the P&Z Board that deemed the CUPs invalid.

The CUPs have not been deemed invalid by any administrative or legislative body or any tribunal and remain in force and effect.

b. If the CUPs have been deemed invalid, state whether the P&Z Board indicated if there are further requirements that must be met for the CUPs to be value, or continue to be valid and enforceable.

As stated in response to Request 4(a) above, the CUPs have not been deemed invalid. As stated during the evidentiary hearing and as stated in response to Request 11 of the Siting Board Staff's Second Request for Information to Horus Kentucky 1 LLC, and as recognized within the report of Harvey Economics following the Siting Board consultant's discussion with Mr. Carter Munday, the Simpson County Planning & Zoning Administrator, to exercise the CUPs, Horus Kentucky 1 LLC must have a development plan as outlined within Section 9.8 of the Franklin-Simpson Zoning Regulations approved by the P&Z Board.

5. Provide the status of the Decommissioning Plan, including but not limited the expected date that the Decommissioning Plan will be submitted to the P&Z Board.

Following the evidentiary hearing on this matter, Horus Kentucky 1 LLC transmitted a proposed draft decommissioning plan to the P&Z Board for review, and it is anticipated the Decommissioning Plan will be finalized and submitted to the P&Z Board for ultimate approval within the next few weeks.

6. Provide the status of the Project Development Plan, including but not limited to the expected date that the Project Development Plan will be submitted to the P&Z Board.

Horus Kentucky 1 LLC is in discussions with the P&Z Board and anticipates it will have a final Project Development Plan submitted to the P&Z Board that meets the requirements of Section 9.8 of the Franklin-Simpson Zoning Regulations in January of 2022 at the latest.

7. Refer to the November 15, 2021 hearing testimony of Braden Houston regarding changes to the site lay out, generally.

a. Provide the distances from all noise receptors to the nearest inverters and substation transformers under the new site lay out.

See the attached Exhibit A.

b. Provide a map indicating the location of each noise receptor and the inverters and substation transformers under the new site lay out.

See the attached Exhibit A.

c. Explain how Horus Kentucky 1 categorizes each noise receptor identified in the above responses.

See the attached Exhibit A.

8. Refer to the Application, Exhibit E, Economic Impact Analysis. Also refer to Horus Kentucky 1's response to Staff's First Request, Item 55e, Economic Indicators by Impact. Additionally, refer to KRS 278.706(2)(j), which requires an applicant to provide an analysis of the proposed facility's economic impact on the affected region and the state. Finally, refer to the November 15, 2021 hearing testimony of Woo Smith regarding the economic impact of the proposed project, generally.

a. Using the assumptions and inputs used in Economic Indicators by Impact, provide an analysis of the economic impact of the proposed project on the Commonwealth of Kentucky, including Simpson County, similar to the analysis of the economic impact of the proposed project on Simpson County.

The Applicant would refer the Siting Board to its above updated economic indicators by impact and tax results charts contained within Response to 1(c) and 3(a) above with the understanding that the Project is expected to produce a minimal impact on the Commonwealth of Kentucky, generally, outside that which is already reflected. Notably, and as explained above in Response to Request 3, the tax results for the construction phase reflects that which is estimated to impact the state at large.

b. Discuss the additional labor, economic, and tax impacts that are estimated to occur in Kentucky outside of Simpson County.

The Applicant would refer the Siting Board to its response to Request 8(a) above.

Further, and as directed in the Post-Hearing Data Request, Horus Kentucky 1 would like to clarify a statement made during the evidentiary hearing by its representative Jorge Medina, as allowable under the Siting Board's Request. *See* Siting Board Staff's Post-Hearing Request for Information to Horus Kentucky 1 LLC at 3 ("Horus Kentucky 1 shall make timely amendment to

any prior response if Horus Kentucky 1 obtains information that indicates the response was incorrect when made or, though correct when made, is now incorrect in any material respect."). At the 158:20 mark of evidentiary hearing (*see*, https://www.youtube.com/watch?v=eI8xJB-VnIg)m, Mr. Medina testified regarding the setback requirements of the Franklin-Simpson Zoning Regulations for the project. To clarify, the relevant regulation, Section 9.8 (found here http://www.simpsoncounty.us/pdf/P&ZRegulations.pdf) requires the project be set back as follows:

- 50 feet from any public road right-of-way
- 250 feet from any abutting residential zoned properties, rural village districts, churches, cemetery, school or nursing home
- 100 feet from any abutting internal or external AG zoned properties

As the surrounding properties are AG zoned, the zoning requirements only require setbacks of 100 feet from the abutting internal or external AG zoned properties regardless the presence of a residential restructure. However, and in an attempt to further accommodating surrounding property owners, Horus Kentucky 1 will set back the Project 250 feet from residential structures irrespective the Franklin-Simpson Zoning Regulations.

VERIFICATION

STATE OF MA.
COUNTY OF Middlesex. TO-WIT.

I, Braden Houston, Managing Director of Solar Development for OPDEnergy, state that I am authorized to make this verification on behalf of the Horus Kentucky 1 LLC, that the foregoing Responses to the Siting Board Staff's Post-Hearing Request for Information to Horus Kentucky 1 LLC were prepared under my direction and supervision, that the contents are true and correct to the best of my knowledge, information, and belief and formed after reasonable due diligence and inquiry.

Executed this 30 day of November 2021.

Braden Houston

Taken. sworn to and subscribed before me this 30 day of November, 2021.

My commission expires _____.

THOMAS E. WOLF
NOTARY PUBLIC
Commonwealth of Massachusetts
My Commission Expires
April 13, 2023

THOMAS E. WOLF
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS
MY COMMISSION EXPIRES
April 13, 2023

Notary Public

November 29, 2021

EXHIBIT A

Horus Kentucky 1 LLC
110 Front Street, Suite #330
Juniper, Florida 33477

Attn: Braden Houston, Senior Director - Solar Development
P: (617) 530-0029

Email: bhouston@opdenergy.com

Re: Sound Level Assessment
Horus Kentucky 1 Project
Tyree Chapel Road
Simpson County, Ky
Terracon Project No. 5720P073

Dear Mr. Houston:

Skelly and Loy, A Terracon Company (Terracon) is pleased to summarize the results of the sound level assessment completed for the above referenced project. We have revised the assessment based on the final site plan layout of the facility. After reviewing the construction and operation activities associated with the proposed 69.3MW solar farm, Terracon expects that the offsite sound influence from the operation of the proposed solar farm will be minimal.

A. PROJECT INFORMATION

The Horus Kentucky 1 Project will consist of approximately 550 acres of solar photovoltaic panels and associated racking (approximately 69.3MW), 22 inverters, and a project substation transformer which will connect to the Tennessee Valley Authority's L5402 – 161kv transmission line near the City of Franklin in Simpson County, Kentucky. The following local set-back requirements are applicable to this site:

- 50 feet from public road right-of-way.
- 100 feet from any abutting agricultural properties.
- 250 feet from any residential-zoned properties, churches, cemeteries, nursing homes, and schools.

B. EXISTING CONDITIONS

The proposed solar farm development site consists of multiple agricultural land use parcels approximately 4 miles southeast of the center of the City of Franklin in the northeast quadrant of the I-65 and US Route 31W interchange. Approximately 1,900 feet of the northwest perimeter of

the site is immediately adjacent to the northbound lanes of I-65. Approximately 3,700 feet of the western perimeter of the site is immediately adjacent to the CSX Transportation rail line. The remaining perimeter of the development site is adjacent to mostly other agricultural land use parcels. 59 residential parcels, the Tyree Chapel Church of Christ, and five hotels with outdoor usage areas are located within 2,400 feet of the development site, with 10 of these residential sites and the five hotels located west of I-65 and the remaining 49 residential sites and Tyree Chapel Church of Christ located east of I-65. These residential dwelling sites, church, and hotels with outdoor usage areas can be considered noise-sensitive receptors. Noise sensitive receptors are defined as locations where people reside or where the presence of unwanted sound may adversely affect the existing land use. Noise sensitive receptors can include residences, places of worship, hotels, auditoriums, athletic fields, day care centers, hospitals, offices, schools, parks, and recreational areas.

Environmental sound levels are generally presented in terms of A-weighted decibels (dBA). The decibel (dB) scale is used to measure sound level. However, because the human ear does not respond equally to all frequencies, the A-weighted scale has been developed to place an emphasis on those frequencies which are more detectable to the human ear. This is an adjusted measurement of noise that takes into account the sensitivity of the human ear to the various sound frequencies which we can hear.

The metric frequently used when evaluating environmental sound levels is the equivalent continuous sound pressure level, or L_{eq}. The L_{eq} represents the average sound level for a given time period that would have the same total sound energy as the fluctuating sound levels over the measured time period. Along with the L_{eq}, another frequently used metric when considering environmental sound levels and their effect on people is the day-night average sound level, the L_{dn}. The L_{dn} does not represent the sound level heard at any particular time but represents the average noise level over a 24-hour period, with sound levels between 10 PM and 7 AM artificially increased by 10 dB before averaging. The L_{dn} considers that household sound levels are typically lower during the evening and night than in the daytime and any exterior sound levels occurring between 10 PM and 7 AM are perceived to be louder and are more noticeable than the same exterior sound levels would be perceived during the daytime.

The Acoustical Society of America (ASA) through the American National Standards Institute (ANSI) has published a standard with estimates of general ambient sound levels (L_{eq} and L_{dn}) for six different land use categories, ranging from very noisy urban residential to very quiet suburban and rural residential. The six land use categories and their corresponding daytime, nighttime, and day-night average estimated sound levels are presented in Table 1.

Table 1: Representative Existing Conditions Based on Land Use[1]

Land Use Category	Typical L_{dn} (dBA)	Day Level L_d (dBA)	Night Level L_n (dBA)
1, Very noisy urban residential	67	66	58
2, Noisy urban residential	62	61	54
3, Urban and noisy suburban residential	57	55	49
4, Quiet urban and normal suburban residential	52	50	44
5, Quiet suburban residential	47	45	39
6, Very quiet suburban and rural residential	42	40	34

The existing acoustic environment for the proposed development site and the 65 noise sensitive receptors within 2,400 feet of the site can be estimated using the sound level data presented in Table 1. For the development site, existing sound levels can range from Land Use Category 1 for the region adjacent to I-65 to Land Use Category 6 for the region furthest to the southeast, approximately 8,500 feet, or 1.6 miles, away from I-65. Although the land use adjacent to I-65 would be considered rural agricultural (and not very noisy urban residential), the influence of traffic noise from I-65 dominates for several hundred feet past the edge of pavement of the highway causing elevated noise levels associated with Land Use Category 1. Traffic noise levels in the range from 60 to 70 dBA could be expected depending on proximity to the highway. As proximity to the highway decreases, the dominance of I-65 traffic noise lessens and a combination of traffic noise and typical rural farming and agricultural noise make up the ambient background conditions. As the distance away from I-65 continues to increase, farming and agricultural noise sources, such as tractors, backhoes, balers, plows, harrows, and seed drills (when in operation) become the more dominant noise sources. When farm equipment is not operating, ambient background noise levels for the southeastern portion of the proposed development site would range from 35 to 45 dBA, consistent with the sound levels presented for Land Use Category 6 in Table 1.

Table 2 presents a list of the 66 noise sensitive receptors located within 2,400 feet of the perimeter of the proposed development site, along with their estimated L_{dn} based on ASA data and their distances from the nearest proposed inverter location, the nearest proposed solar panel and substation location. Locations of these noise sensitive receptors are presented on Figure 2 and can be referenced by their receptor ID number. Additional data related to the number and category of all structures (shed, residence, etc.) within 2,400 feet of the site can be found in Attachment 1.

[1] Source: ANSI S12.902013/Part 3.

Table 2: Noise Sensitive Receptors Within 2,400 Feet of Development Site

Noise Sensitive Receptor ID	Noise Receptor Address	Estimated L_{dn} (dBA)	Closest Facility Component		
			Solar Panel Distance (ft)	Inverter Distance (ft)	Substation Distance (ft)
1	292 Tyree Chapel Road	57	289	1,356	3,432
2	141 Tyree Chapel Road	62	963	1,561	4,238
3	727 Peden Mill Road	67	552	796	4,505
4	155 Old County Farm Road	67	333	423	4,356
5	111 Old County Farm Road	67	398	431	4,394
6	139 Old County Farm Road	67	296	390	4,296
7	123 Old County Farm Road	62	552	630	4,551
8	583 Peden Mill Road	57	976	1,021	4,976
9	712 Peden Mill Road	57	1,139	1,311	5,159
10	570 Peden Mill Road	52	1,288	1,397	5,333
11	515 Peden Mill Road	52	1,239	1,308	5,235
12	491 Peden Mill Road	52	1,332	1,393	5,320
13	Super 8	62	2,333	2,696	6,203
14	Quality Inn	62	2,041	2,415	5,921
15	Baymont	62	1,842	2,142	5,655
16	Econo Lodge	62	2,071	2,210	5,731
17	Hampton Inn	62	1,744	1,784	5,253
18	4709 Nashville Road	67	2,180	2,797	5,926
19	4785 Nashville Road	67	2,291	2,870	6,011
20	4761 Nashville Road	67	2,416	2,974	6,121
21	4779 Nashville Road	67	2,508	3,036	6,190
22	4783 Nashville Road	67	2,587	3,091	6,249
23	4806 Nashville Road	67	2,520	2,934	6,100
24	262 Geddes Road	52	1,625	1,710	4,849
25	275 Geddes Road	52	1,767	1,843	4,958
26	716 Geddes Road	47	1,253	1,680	4,193
27	2180 Tyree Chapel Road	42	1,142	2,307	4,898
28	Tyree Chapel Church of Christ	42	1,556	2,733	5,282
29	2394 Tyree Chapel Road	42	1,708	3,026	5,595
30	2391 Tyree Chapel Road	42	2,102	3,389	5,916
31	2404 Tyree Chapel Road	42	1,937	3,357	6,034

Noise Sensitive Receptor ID	Noise Receptor Address	Estimated L_{dn} (dBA)	Closest Facility Component		
			Solar Panel Distance (ft)	Inverter Distance (ft)	Substation Distance (ft)
32	2480 Tyree Chapel Road	42	2,160	3,592	6,256
33	90 Blue Door Church Road	42	2,214	3,686	6,473
34	112 Blue Door Church Road	42	2,151	3,635	6,481
35	136 Blue Door Church Road	42	2,106	3,601	6,513
36	172 Blue Door Church Road	42	2,049	3,552	6,523
37	394 Blue Door Church Road	42	1,677	3,158	6,450
38	478 Blue Door Church Road	42	1,038	2,449	5,940
39	514 Blue Door Church Road	42	1,459	2,865	6,360
40	536 Blue Door Church Road	42	1,485	2,867	6,390
41	554 Blue Door Church Road	42	1,520	2,870	6,422
42	582 Blue Door Church Road	42	1,573	2,891	6,465
43	602 Blue Door Church Road	42	1,616	2,903	6,494
44	60 Blue Door Church Road	42	2,033	3,115	6,768
45	3965 Peden Mill Road	42	1,403	2,576	6,219
46	3880 Peden Mill Road	42	1,430	2,712	6,312
47	3835 Peden Mill Road	42	721	2,002	5,596
48	3735 Peden Mill Road	42	1,046	2,391	5,841
49	3070 Peden Mill Road	42	2,181	2,901	4,089
50	2892 Peden Mill Road	42	2,389	2,750	4,002
51	2792 Peden Mill Road	47	1,758	1,968	3,330
52	2703 Peden Mill Road	47	1,237	1,454	2,829
53	2651 Peden Mill Road	47	1,140	1,371	2,748
54	2622 Peden Mill Road	47	1,187	1,424	2,769
55	2598 Peden Mill Road	47	1,229	1,465	2,787
56	2538 Peden Mill Road	47	1,288	1,517	2,778
57	2445 Peden Mill Road	47	1,673	1,860	2,870
58	1743 Peden Mill Road	52	2,532	3,594	3,627
59	1595 Peden Mill Road	52	2,671	3,739	4,208
60	1325 Peden Mill Road	57	1,840	2,812	4,153
61	1319 Peden Mill Road	57	1,711	2,688	4,072
62	1271 Tyree Chapel Road	47	296	269	1,942
63	172 Hendricks Road	47	473	1,316	951

Noise Sensitive Receptor ID	Noise Receptor Address	Estimated L_{dn} (dBA)	Closest Facility Component		
			Solar Panel Distance (ft)	Inverter Distance (ft)	Substation Distance (ft)
63.1	172 Hendricks Road	47	989	1,002	1,043
64	Hendricks Road	42	456	917	2,235
65	1666 Tyree Chapel Road	47	202	651	2,058

Ten (10) noise sensitive receptor locations with estimated existing ambient noise levels consistent with Land Use Category 1 include four residential parcels adjacent or in close proximity to I-65 and six residential parcels adjacent to US Route 31W (Nashville Road). These include 727 Peden Mill Road, 155 Old County Farm Road, 111 Old County Farm Road, 139 Old County Farm Road, 4709 Nashville Road, 4785 Nashville Road, 4761 Nashville Road, 4779 Nashville Road, 4783 Nashville Road, and 4806 Nashville Road. For these noise sensitive receptors, I-65 traffic noise and Nashville Road, respectively, dominates the existing acoustic environment with occasional audible railroad noise from the CSX Transportation line.

Seven (7) noise sensitive receptor locations slightly further from I-65 consistent with estimated existing ambient noise levels consistent with Land Use Category 2 include the two residential properties located at 141 Tyree Chapel Road and 123 Old County Farm Road and the five hotels west of I-65 along US Route 31W. Although 141 Tyree Chapel Road is located only approximately 200 feet from the northbound lanes of I-65, the topography between the highway and this residence provides a degree of traffic noise attenuation. Traffic noise from I-65 and US Route 31W dominates the existing acoustic environment for these noise sensitive receptors, but at less of a magnitude then the previously listed residential properties. Occasional railroad noise from the CSX Transportation line is also audible at these receptors.

Five (5) noise sensitive receptor locations at a greater distance from I-65 (between 775 and 1,000 feet) with estimated existing ambient noise levels consistent with Land Use Category 3 would include the residential properties located at 292 Tyree Chapel Road, 583 Peden Mill Road, 712 Peden Mill Road, 1325 Peden Mill Road, and 1319 Peden Mill Road. I-65 traffic noise is still the dominant component of the existing acoustic environment for these noise sensitive receptors, although occasional railroad noise from the CSX Transportation line, and noise from farming or other agricultural activities all contribute to the overall background noise levels. In the absence of noise from agricultural operations, other audible components in the ambient environment would be noise from insects, birds, dogs, and other wildlife and livestock, along with infrequent traffic noise from vehicles on rural roadways such as Peden Mill Road and Tyree Chapel Road.

Seven (7) noise sensitive receptor locations at a greater distance from I-65 (between 1,000 and 3,000 feet) with estimated existing ambient noise levels consistent with Land Use Category 4 would include the residential properties located at 570 Peden Mill Road, 515 Peden Mill Road,

491 Peden Mill Road, 262 Geddes Road, 275 Geddes Road, 1743 Peden Mill Road, and 1595 Peden Mill Road. I-65 traffic noise is still the dominant component of the existing acoustic environment for these noise sensitive receptors, although occasional railroad noise from the CSX Transportation line, and noise from farming or other agricultural activities all contribute to the overall background noise levels. In the absence of noise from agricultural operations, other audible components in the ambient environment would be noise from insects, birds, dogs, and other wildlife and livestock, along with infrequent traffic noise from vehicles on rural roadways such as Peden Mill Road and Tyree Chapel Road.

Eleven (11) noise sensitive receptor locations at a greater distance from I-65 (between 3,000 and 7,000 feet) with estimated existing ambient noise levels consistent with Land Use Category 5 would include the residential properties located at 172 Hendricks Road, 716 Geddes Road, 2792 Peden Mill Road, 2703 Peden Mill Road, 2651 Peden Mill Road, 2622 Peden Mill Road, 2598 Peden Mill Road, 2538 Peden Mill Road, 2445 Peden Mill Road, 1666 Tyree Chapel Road and 1271 Tyree Chapel Road. I-65 traffic noise is still an audible component of the existing acoustic environment for these noise sensitive receptors when no farming or other agricultural activities are occurring, along with traffic noise from US Route 31W and occasional railroad noise from the CSX Transportation rail line. In the absence of noise from agricultural operations, other audible components in the ambient environment would be noise from insects, birds, dogs, other wildlife and livestock, and infrequent traffic noise from vehicles on Peden Mill Road, Geddes Road, and Tyree Chapel Road.

Twenty-five (25) noise sensitive receptor locations at a considerable distance from I-65 (greater than 7,000 feet) with estimated existing ambient noise levels consistent with Land Use Category 6 would include 24 residential properties and the Tyree Chapel Church of Christ. For these 24 noise sensitive receptors, identified as receptors 27 through 50 in Table 2 and on Figure 2, I-65 traffic noise is a much-diminished component of the existing acoustic environment. In the absence of noise from agricultural operations, the existing acoustic environment for noise sensitive receptors at a considerable distance from I-65 would include slightly audible traffic noise from I-65 and US Route 31W, along with other noise from insects, birds, dogs, other wildlife and livestock, and infrequent railroad noise from the CSX Transportation rail line and infrequent traffic noise from vehicles on Tyree Chapel Road, Blue Door Church Road, and Peden Mill Road.

C. CONSTRUCTION NOISE

Construction of the solar farm is expected to start in October 2021 and last for 12 months. It is anticipated that the weekly construction schedule will occur during typical work hours, Monday through Friday between 7:00 AM and 7:00 PM, however some construction activities could also occur on weekends if necessary. Construction noise is expected to cause temporary and short-term adverse impacts to the ambient sound environment within the development site and for noise sensitive receptors near the site. To predict the magnitude of construction noise that will temporarily affect noise sensitive receptors, modeling of construction noise levels was performed.

The U.S. Department of Transportation Federal Highway Administration (FHWA) has developed a model for the prediction of construction noise that is based on actual sound level measurements of various equipment types. The FHWA Roadway Construction Noise Model (RCNM) has noise levels for various types of equipment pre-programmed into the software. Therefore, the noise level associated with the equipment is typical for the equipment type and not based on any specific make or model. Some examples of common construction equipment and their measured maximum noise levels at a distance of 50 feet that are used in the RCNM construction noise level predictions are presented in Table 3.

Table 3: Common Construction Equipment Noise Levels[2]

Equipment Description	Actual Measured L_{max} @ 50 feet (dBA, slow) (Samples Averaged)
Backhoe	78
Compressor (air)	78
Crane	81
Dozer	82
Drill Rig Truck	79
Dump Truck	76
Excavator	81
Front End Loader	79
Grader	85
Jackhammer	89
Man Lift	75
Pickup Truck	75
Rock Drill	81
Scraper	84
Tractor	84
Vibratory Pile Driver	101

Most of the construction equipment would not be operating for the entire construction period but would be phased in and out and moved to different areas within the development site as construction activities progress. Based on the RCNM measured noise levels of the equipment to be used during construction, the equipment most likely to make the most noise would be the pile driving activities that will occur during the installation of the solar panel arrays. To predict the worst-case construction noise scenario for each noise sensitive receptor, equipment associated

[2] Knauer, H., & Pederson, S. U.S. Dept. of Transportation, Federal Highway Administration, *Highway Construction Noise Handbook*. Jan. 2006.

with solar panel array installation was modeled for the nearest solar array to that receptor. The equipment used for the RCNM construction noise calculations include a backhoe, crane, dozer, pickup truck, tractor, and vibratory pile driver. Results of the RCNM construction noise calculations for noise sensitive receptors within 2,400 feet of the development site are presented in Table 4 as both L_{eq} and L_{max} values. Data from RCNM calculations is located in Attachment 2.

The estimated construction noise levels presented above are representative of piledriving activities to construct the solar panel array closest to each noise sensitive receptor. As this is anticipated to be the loudest construction activity that would be experienced at each noise sensitive receptor, this is a worst-case scenario. These worst-case loudest construction noise levels would be temporary and intermittent, as it would not be expected to take more than a day or two to construct the nearest solar panel array. As construction noise generating activities will progressively move across the development site during the duration of the construction phase, the highest noise levels would not be expected to be experienced at a single receptor for more than a day or two, as construction equipment and activities would only be in a single area for a short period of time. All other construction activities that occur would be at greater distances away from the receptor, resulting in construction noise levels that would be lower in magnitude than the estimates presented in Table 4.

Table 4: Estimated Construction Noise Levels for Receptors Within 2,400 Feet of Development Site

Noise Receptor Address	Noise Receptor ID	Distance from Perimeter (ft)	Distance from Nearest Solar Panel (ft)	Estimated Construction Noise Level L_{eq} (dBA)	Estimated Construction Noise Level L_{max} (dBA)
292 Tyree Chapel Road	1	140	289	78.9	85.6
141 Tyree Chapel Road	2	440	963	68.5	75.1
727 Peden Mill Road	3	370	552	73.3	80.0
155 Old County Farm Road	4	290	333	77.7	84.4
111 Old County Farm Road	5	350	398	76.1	82.8
139 Old County Farm Road	6	270	296	78.7	85.4
123 Old County Farm Road	7	520	552	73.3	80.0
583 Peden Mill Road	8	950	976	68.4	75.0
712 Peden Mill Road	9	1,020	1,139	67.0	73.7
570 Peden Mill Road	10	1,250	1,288	65.9	72.6
515 Peden Mill Road	11	1,204	1,239	66.3	72.9
491 Peden Mill Road	12	1,288	1,332	65.7	72.3
Super 8	13	2,275	2,333	60.8	67.4
Quality Inn	14	1,993	2,041	61.9	68.6

Noise Receptor Address	Noise Receptor ID	Distance from Perimeter (ft)	Distance from Nearest Solar Panel (ft)	Estimated Construction Noise Level L_{eq} (dBA)	Estimated Construction Noise Level L_{max} (dBA)
Baymont	15	1,810	1,842	62.8	69.5
Econo Lodge	16	2,060	2,071	61.8	68.5
Hampton Inn	17	1,715	1,744	63.3	70.0
4709 Nashville Road	18	2,000	2,180	61.4	68.0
4785 Nashville Road	19	2,085	2,291	60.9	67.6
4761 Nashville Road	20	2,195	2,416	60.5	67.1
4779 Nashville Road	21	2,300	2,508	60.2	66.8
4783 Nashville Road	22	2,360	2,587	59.9	66.5
4806 Nashville Road	23	2,290	2,520	60.1	66.8
262 Geddes Road	24	1,500	1,625	63.9	70.6
275 Geddes Road	25	1,670	1,767	63.2	69.9
716 Geddes Road	26	1,150	1,253	66.2	72.8
2180 Tyree Chapel Road	27	970	1,142	67.0	73.6
Tyree Chapel Church of Christ	28	1,390	1,556	64.3	71.0
2394 Tyree Chapel Road	29	1,587	1,708	63.5	70.1
2391 Tyree Chapel Road	30	2,000	2,102	61.7	68.3
2404 Tyree Chapel Road	31	1,815	1,937	62.4	69.1
2480 Tyree Chapel Road	32	2,055	2,160	61.5	68.1
90 Blue Door Church Road	33	2,078	2,214	61.2	67.9
112 Blue Door Church Road	34	2,045	2,151	61.5	68.1
136 Blue Door Church Road	35	1,980	2,106	61.7	68.3
172 Blue Door Church Road	36	1,940	2,049	61.9	68.6
394 Blue Door Church Road	37	1,575	1,677	63.7	70.3
478 Blue Door Church Road	38	1,000	1,038	67.8	74.5
514 Blue Door Church Road	39	1,440	1,459	64.9	71.5
536 Blue Door Church Road	40	1,450	1,485	64.7	71.4
554 Blue Door Church Road	41	1,470	1,520	64.5	71.2
582 Blue Door Church Road	42	1,505	1,573	64.2	70.9
602 Blue Door Church Road	43	1,545	1,616	64.0	70.6
60 Blue Door Church Road	44	1,920	2,033	62.0	68.6
3965 Peden Mill Road	45	1,280	1,403	65.2	71.9
3880 Peden Mill Road	46	1,270	1,430	65.0	71.7
3835 Peden Mill Road	47	570	721	71.0	77.6

Noise Receptor Address	Noise Receptor ID	Distance from Perimeter (ft)	Distance from Nearest Solar Panel (ft)	Estimated Construction Noise Level L_{eq} (dBA)	Estimated Construction Noise Level L_{max} (dBA)
3735 Peden Mill Road	48	860	1,046	67.8	74.4
3070 Peden Mill Road	49	2,060	2,181	61.4	68.0
2892 Peden Mill Road	50	2,355	2,389	60.6	67.2
2792 Peden Mill Road	51	1,715	1,758	63.2	69.9
2703 Peden Mill Road	52	1,200	1,237	66.3	73.0
2651 Peden Mill Road	53	1,080	1,140	67.0	73.7
2622 Peden Mill Road	54	1,110	1,187	66.7	73.3
2598 Peden Mill Road	55	1,160	1,229	66.4	73.0
2538 Peden Mill Road	56	1,215	1,288	65.9	72.6
2445 Peden Mill Road	57	1,600	1,673	63.7	70.3
1743 Peden Mill Road	58	2,500	2,532	60.1	66.7
1595 Peden Mill Road	59	2,515	2,671	59.6	66.3
1325 Peden Mill Road	60	1,620	1,840	62.8	69.5
1319 Peden Mill Road	61	1,490	1,711	63.5	70.1
1271 Tyree Chapel Road	62	170	296	78.7	85.4
172 Hendricks Road	63	370	473	74.6	81.3
172 Hendricks Road	63.1	900	989	68.2	74.9
XX Hendricks Road	64	73	456	75.0	81.6
1666 Tyree Chapel Road	65	60	202	82.0	88.7

The estimated construction noise levels presented in Table 4 are representative of the cumulative effects of multiple construction activities that would be occurring simultaneously to construct the solar panel array closest to each noise sensitive receptor as calculated by RCNM. Of these multiple construction activities, construction noise from piledriving is anticipated to be the loudest construction activity that would be experienced at each noise sensitive receptor. Considering a scenario in which overlapping construction activities were to occur in the vicinity of a receptor, such as the installation of two sets of solar panel arrays concurrently, a worst-case calculation would assume a doubling of the noise sources resulting in up to an additional +3 dBA if the overlapping construction activities were occurring at the same distance away from the receptor. For example, if construction activities to install two different sets of solar panel arrays near receptor 47 were occurring simultaneously, assuming both at a distance of 721 feet away (the distance to the nearest solar panel from receptor 47), the resulting cumulative noise level would be 74 dBA, a 3 dBA increase from the predicted 71 dBA construction noise level associated with the installation of one solar panel array. These worst-case loudest construction noise levels both would be temporary and intermittent, as it would not be expected to take more than a day or two

to construct the nearest solar panel array. As construction noise generating activities will progressively move across the development site during the duration of the construction phase, the highest noise levels would not be expected to be experienced at a single receptor for more than a day or two, as construction equipment and activities would only be in a single area for a short period of time. All other construction activities that occur would be at greater distances away from the receptor, resulting in construction noise levels that would be lower in magnitude than the estimates presented in Table 4.

Construction noise can be minimized by implementing specific measures to help mitigate the noise at the source. Best practices to minimize construction equipment noise require for regular and thorough maintenance procedures for all construction equipment. Replacement of failing or ineffective muffling and exhaust systems, periodic lubrication of moving parts, and properly tuned engines are necessary in order to keep construction equipment noise emissions to a minimum. Proper scheduling and implementing duration limits for the noisiest construction events can reduce the severity of noise impacts during the construction phase.

D. SOLAR FARM OPERATIONAL NOISE

The solar facilities primarily generate noise from three main sources: tracking motors, inverters and transformers. Sound emission data for the tracking motors, inverters and transformer are outlined in Table 5 (refer to Attachment 3 for factory rated noise emissions).

Table 5: Sound Source Emissions

Source	Sound Pressure Level (dBA)	Distance (Meters)	Sound Power Level (dB)
Inverter	79	1	100
Transformer	76	3	97
Tracking Motors	50	10	78

The solar array for this project will use motorized tracking panels distributed across the site in order to keep the panels facing the sun and optimize output during different times of the day and year. The motors used to move the panels are small, brushless DC motors and are a potential source of noise included in this assessment. These motors produce relatively insignificant contributions to the sound emitted onsite and are often inaudible at close range, equating to less than 50 dBA at 10 meters. The facility will have 22 inverters distributed around on the property, as outlined on Figure 2. The sound produced by an inverter can be described as a low hum and has roughly the same acoustical output of a household air conditioning unit. According to the manufacturer's specifications, the noise emission produced by the inverter is rated at 79 dBA at 1 meter. The transformer to be used is a 55 MVA ONAF2 located within the planned substation, which is anticipated to cover approximately 1/2 acre along Hendricks Road. The transformer noise emissions are rated at 76 dBA at 3 meters. The nearest sensitive receptor to the transformer is a residence approximately 1,900 feet west.

Site Operations and Maintenance

Anticipated operational maintenance operations will include grass mowing and general solar panel maintenance. The upkeep and small fixes are not anticipated to generate any loud or distinguishable noise from off the site. The site will have the grass mowed three to four times a year; this will be done during the day. Riding lawn mowers typically operate around 90 dBA. Due to the large area being mowed, the distance from the mower to anywhere offsite would create an environment where the sound generated from mowing would largely go unnoticed. Secondly, the mowing of grass already takes place at each resident's household and is generally accepted as a common noise. Finally, the last potential for increasing the ambient noise level of the site would be an increase in traffic into and around the site. The estimated number of vehicles needed to service the solar farm amounts to 10 vehicles on days when the panels are serviced.

Noise Modeling Methodology

The future operating acoustical environment for the proposed sources was simulated using the SoundPLAN v.4.1 software. SoundPLAN implements International Organization for Standardization (ISO) ISO-9613-2 1996 (Attenuation of sound during propagation outdoors – Part 2: General method of calculation), which is an international standard method for calculating sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. A three-dimensional topographical model was created to assess the sound propagation of the proposed facility. A digital terrain model was created using existing ground elevations and contours obtained from topographic mapping derived from USGS mapping at 1-meter intervals.

SoundPLAN is capable of either predicting A-weighted sound levels at discrete receptors (single locations) or calculating sound contours given the three-dimensional terrain. Sound level projections were calculated for all sensitive receptor locations (65 receptors) within 2400' radius around the project boundaries. In addition, sound contour modeling was used for the proposed site to graphically display the future acoustical environment and illustrate the influence of the facility on adjoining properties.

Since no local, county, or state noise thresholds were identified for the study area, the U.S. EPA "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin on Safety" was used as an impact threshold. In this publication, the U.S. EPA evaluated the effects of environmental noise with respect to health and safety and determined a L_{dn} of 55 dBA (equivalent to a continuous noise level of 48.6 dBA) to be the maximum sound level that will not adversely affect public health and welfare by interfering with speech or other activities in outdoor areas. Since no other local, county, or state thresholds were identified, a L_{dn} of 55 dBA (~49 L_{eq}) has been used to determine if the project would adversely affect public health and welfare.

Noise Modeling Results

The sensitive receptor locations, source locations and calculation area are located on Figure 2. The combined operational sound level projections for each of the sensitive receptors outlined on Figure 2 are found in Table 6 (see Attachment 1). Sound level contributions associated with the project at the sensitive

receptor locations ranged from 32 to 52 dBA. Several receptors (R-3 through R-7) were predicted to range from 43-45 dBA, though are located across I-65 and background traffic noise emitted from the highway will dominate the acoustical environment in this area. Receptor 62 (1271 Tyree Chapel Road) was predicted at 52 dBA and is the owned by the landowners of the project and is within the boundaries of the project. The remainder of the receptors analyzed are below 40 dBA and the facility will not be audible at these discrete locations.

The visual results (isopleth) of the sound dispersion model results for the maximum worst-case operating condition scenario is depicted on Figure 3. The inverter array and substation sound dispersion are contained within the agricultural buffer areas. Based on the results of the SoundPLAN analysis, the solar project is not anticipated to have a significant impact on surrounding community noise levels or sensitive receptors and will comply with EPA's recommended value (55 dBA L_{dn}/49 dBA L_{eq}).

E. CONCLUSION

Based on the data presented in Section C, construction noise may elevate sound levels temporarily. The worst-case loudest construction noise levels outlined in this document would be temporary and intermittent, as it would not be expected to take more than a day or two to construct the nearest solar panel array. As construction noise generating activities will progressively move across the development site during the duration of the construction phase, the highest noise levels would not be expected to be experienced at a single receptor for more than a day or two, as construction equipment and activities would only be in a single area for a short period of time.

The results of the modeling presented in Section D, Operating Conditions, indicate noise generated by the equipment proposed on the development site (tracker motors, inverters and transformers) is primarily contained within the property, off site noise at the sensitive receptor locations would be minimal and the solar project is not anticipated to have a significant impact on surrounding community noise levels or sensitive receptors.

Sincerely,
Terracon Consultants, Inc.

Bill Kaufell
Skelly and Loy, Inc., A Terracon Company
Acoustics Group Leader`

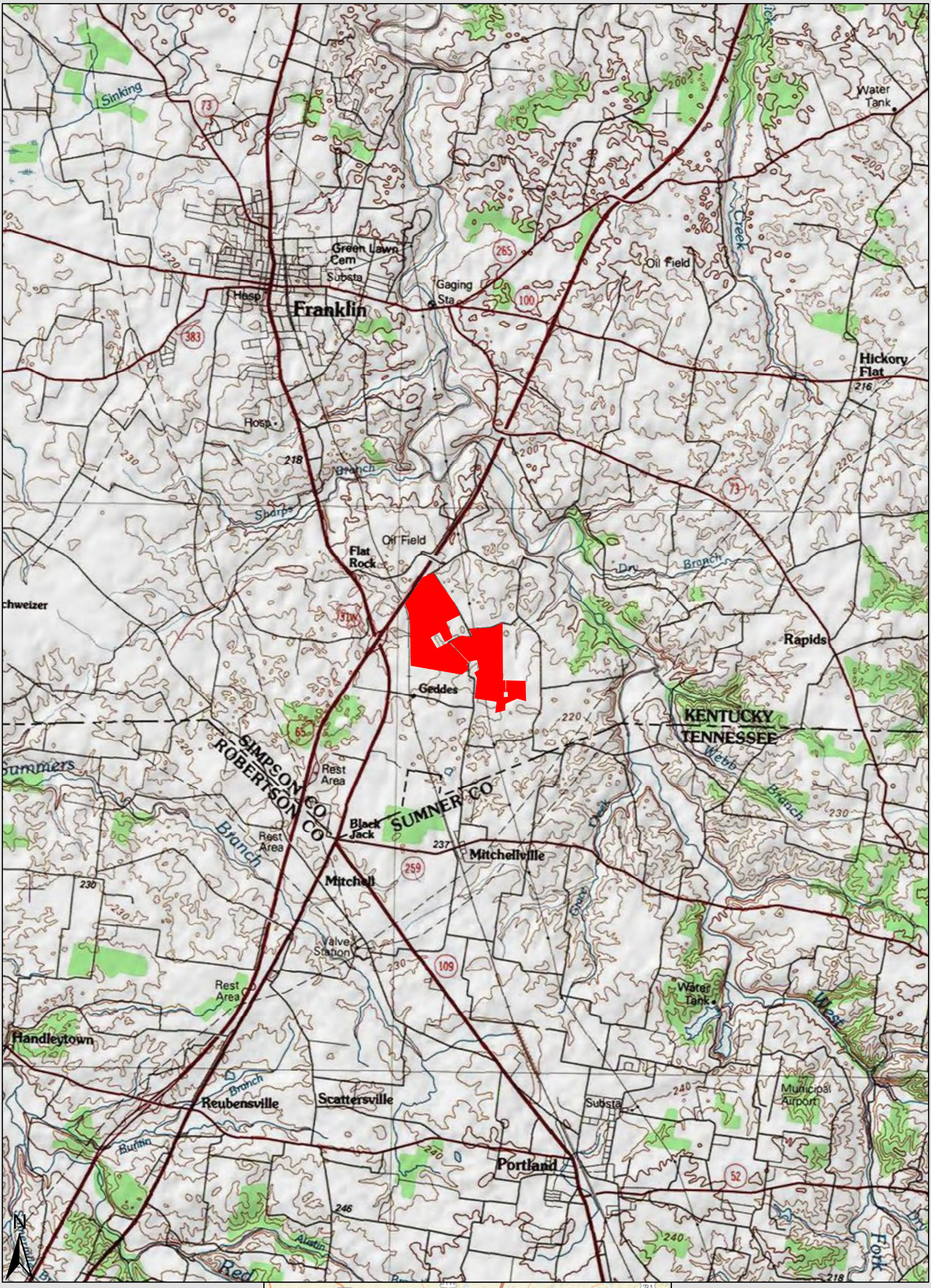
Woo Smith
Terracon Consultants, Inc.
Department Manager

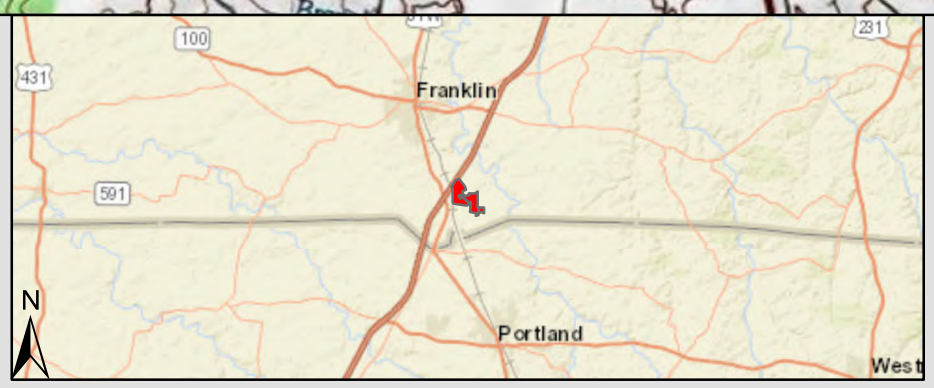
Figures: Figure 1 Project Location Map
Figure 2 Sensitive Noise Receptors
Figure 3 Sound Contours

Attachments: Attachment 1: Table 6: Sensitive Receptor Noise Summary
Table 7: Structure Count

Attachment 2: RCNM Output
Attachment 3: Equipment Sound Emissions Data

FIGURES





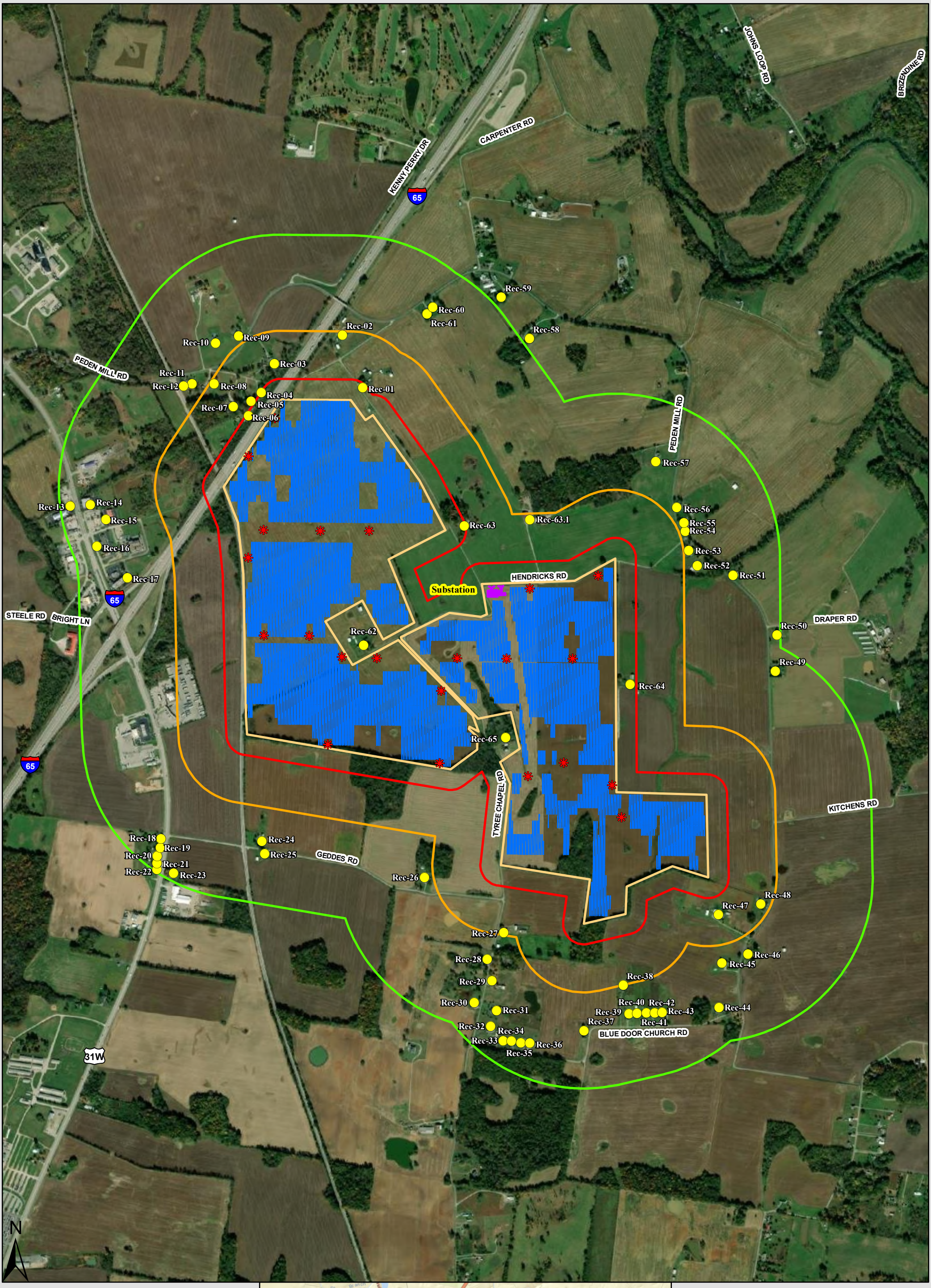
Legend:

Project Limits

0 1,950 3,900 7,800 Feet

FIGURE A-1
Project Location Map
Horus Renewables TVA
Tyree Chapel Road
Simpson County, Kentucky

SKELLY AND LOY
A Terracon COMPANY



Legend:

- Receptors
- Inverter
- Solar Tracker
- Substation
- Project Limits
- 300ft Buffer
- 1000ft Buffer
- 2400ft Buffer

0 500 1,000 2,000 Feet

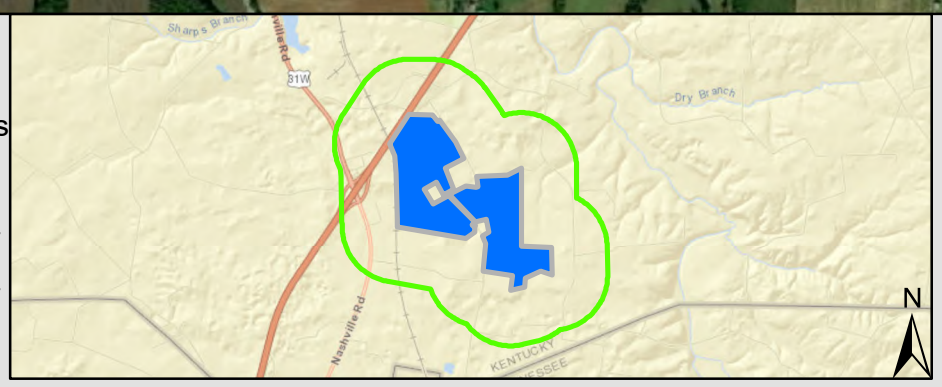


FIGURE 2
Project Location Map
Horus Renewables TVA
Tyree Chapel Road
Simpson County, Kentucky

SKELLY AND LOY
A Terracon COMPANY

FIGURE 3
Sound Contours
Horus Renewables TVA
Hoffman Solar

Tyree Chapel Road
Simpson County, Kentucky

Legend:

Levels in dB(A)

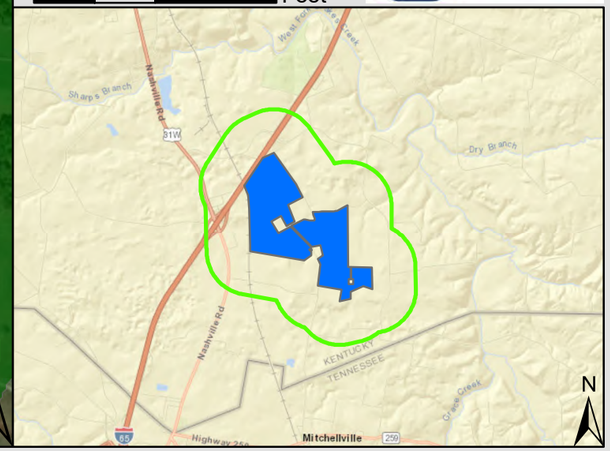
- < 45
- 45 - 47
- 47 - 49
- 49 - 51
- 51 - 53
- 53 - 55
- 55 - 57
- 57 - 59
- 59 - 61
- 61 - 63
- 63 - 65
- 65- 67
- 67 - 69
- 69 - 73
- > 73

- NoiseReceptors
- Project Limits
- 300ft Buffer
- 1000ft Buffer
- 2400ft Buffer
- Substation

0 500 1,000 2,000 Feet

SKELLY AND LOY
A Terracon COMPANY

N



ATTACHMENTS

ATTACHMENT 1

Table 6: Sensitive Receptor Noise Summary

Sensitive Receptor ID	Address	Description	Estimated Ambient L_{dn} (dBA)	Closest Facility Component (Feet)			Combined Operational Sound Level
				Inverter Distance	Panel Distance	Substation Distance	
Rec-01	292 Tyree Chapel Road	Residence	57	1,356	289	3,432	40
Rec-02	141 Tyree Chapel Road	Residence	62	1,561	963	4,238	38
Rec-03	727 Peden Mill Road	Residence	67	796	552	4,505	42
Rec-04	155 Old County Farm Road	Residence	67	423	333	4,356	45
Rec-05	111 Old County Farm Road	Residence	67	431	398	4,394	45
Rec-06	139 Old County Farm Road	Residence	67	390	296	4,296	46
Rec-07	123 Old County Farm Road	Residence	62	630	552	4,551	44
Rec-08	583 Peden Mill Road	Residence	57	1,021	976	4,976	41
Rec-09	712 Peden Mill Road	Residence	57	1,311	1,139	5,159	38
Rec-10	570 Peden Mill Road	Residence	52	1,397	1,288	5,333	38
Rec-11	515 Peden Mill Road	Residence	52	1,308	1,239	5,235	39
Rec-12	491 Peden Mill Road	Residence	52	1,393	1,332	5,320	39
Rec-13	Super 8	Hotel pool	62	2,696	2,333	6,203	35
Rec-14	Quality Inn	Hotel pool	62	2,415	2,041	5,921	36
Rec-15	Baymont	Hotel pool	62	2,142	1,842	5,655	37
Rec-16	Econo Lodge	Hotel pool	62	2,210	2,071	5,731	37
Rec-17	Hampton Inn	Hotel pool	62	1,784	1,744	5,253	38
Rec-18	4709 Nashville Road	Residence	67	2,797	2,180	5,926	35
Rec-19	4785 Nashville Road	Residence	67	2,870	2,291	6,011	35
Rec-20	4761 Nashville Road	Residence	67	2,974	2,416	6,121	34
Rec-21	4779 Nashville Road	Residence	67	3,036	2,508	6,190	34
Rec-22	4783 Nashville Road	Residence	67	3,091	2,587	6,249	34
Rec-23	4806 Nashville Road	Residence	67	2,934	2,520	6,100	34
Rec-24	262 Geddes Road	Residence	52	1,710	1,625	4,849	38
Rec-25	275 Geddes Road	Residence	52	1,843	1,767	4,958	37
Rec-26	716 Geddes Road	Residence	47	1,680	1,253	4,193	39
Rec-27	2180 Tyree Chapel Road	Residence	42	2,307	1,142	4,898	37
Rec-28	Tyree Chapel Church of Chris	Church	42	2,733	1,556	5,282	36
Rec-29	2394 Tyree Chapel Road	Residence	42	3,026	1,708	5,595	35
Rec-30	2391 Tyree Chapel Road	Residence	42	3,389	2,102	5,916	34
Rec-31	2404 Tyree Chapel Road	Residence	42	3,357	1,937	6,034	34
Rec-32	2480 Tyree Chapel Road	Residence	42	3,592	2,160	6,256	33
Rec-33	90 Blue Door Church Road	Residence	42	3,686	2,214	6,473	33
Rec-34	112 Blue Door Church Road	Residence	42	3,635	2,151	6,481	33
Rec-35	136 Blue Door Church Road	Residence	42	3,601	2,106	6,513	33
Rec-36	172 Blue Door Church Road	Residence	42	3,552	2,049	6,523	33
Rec-37	394 Blue Door Church Road	Residence	42	3,158	1,677	6,450	33
Rec-38	478 Blue Door Church Road	Residence	42	2,449	1,038	5,940	35
Rec-39	514 Blue Door Church Road	Residence	42	2,865	1,459	6,360	34
Rec-40	536 Blue Door Church Road	Residence	42	2,867	1,485	6,390	34
Rec-41	554 Blue Door Church Road	Residence	42	2,870	1,520	6,422	33
Rec-42	582 Blue Door Church Road	Residence	42	2,891	1,573	6,465	33
Rec-43	602 Blue Door Church Road	Residence	42	2,903	1,616	6,494	33
Rec-44	60 Blue Door Church Road	Residence	42	3,115	2,033	6,768	32
Rec-45	3965 Peden Mill Road	Residence	42	2,576	1,403	6,219	34
Rec-46	3880 Peden Mill Road	Residence	42	2,712	1,430	6,312	33
Rec-47	3835 Peden Mill Road	Residence	42	2,002	721	5,596	36
Rec-48	3735 Peden Mill Road	Residence	42	2,391	1,046	5,841	34
Rec-49	3070 Peden Mill Road	Residence	42	2,901	2,181	4,089	35
Rec-50	2892 Peden Mill Road	Residence	42	2,750	2,389	4,002	35
Rec-51	2792 Peden Mill Road	Residence	47	1,968	1,758	3,330	36
Rec-52	2703 Peden Mill Road	Residence	47	1,454	1,237	2,829	38
Rec-53	2651 Peden Mill Road	Residence	47	1,371	1,140	2,748	38
Rec-54	2622 Peden Mill Road	Residence	47	1,424	1,187	2,769	38
Rec-55	2598 Peden Mill Road	Residence	47	1,465	1,229	2,787	38
Rec-56	2538 Peden Mill Road	Residence	47	1,517	1,288	2,778	38
Rec-57	2445 Peden Mill Road	Residence	47	1,860	1,673	2,870	37
Rec-58	1743 Peden Mill Road	Residence	52	3,594	2,532	3,627	35
Rec-59	1595 Peden Mill Road	Residence	52	3,739	2,671	4,208	34
Rec-60	1325 Peden Mill Road	Residence	57	2,812	1,840	4,153	35
Rec-61	1319 Peden Mill Road	Residence	57	2,688	1,711	4,072	35
Rec-62	1271 Tyree Chapel Road	Residence	47	269	296	1,942	52
Rec-63	172 Hendricks Road	Outdoor activity	47	1,316	473	951	42
Rec-63.1	172 Hendricks Road	Residence	47	1,002	989	1,043	43
Rec-64	Hendricks Road	Residence	42	917	456	2,235	43
Rec-65	1666 Tyree Chapel Road	Residence	47	651	202	2,058	46

Table 7: Structure Count Varying Distances - Inverter, Substation and Panel Array

Structure Type	Distance to Inverter (Feet)							
	0-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400
Church	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	1	1	4
Hotel	0	0	0	0	0	1	2	1
Residence	1	3	2	1	9	4	4	2
Shed/Barn	2	12	6	5	12	13	10	7

Structure Type	Distance to Substation (Feet)							
	0-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400
Church	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0
Hotel	0	0	0	0	0	0	0	0
Residence	0	0	0	0	0	0	1	0
Shed/Barn	0	0	0	4	0	1	7	9

Structure Type	Distance to Panel (Feet)							
	0-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400
Church	0	0	0	0	0	1	0	0
Commercial	0	0	0	1	0	3	2	2
Hotel	0	0	0	0	0	2	2	2
Residence	3	4	1	8	11	10	4	9
Shed/Barn	13	13	8	10	18	6	15	8

ATTACHMENT 2

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/23/2021
Case Description:

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
292 Tyree Chapel Road	Residential	55.0	52.0	49.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	289.0	0.0	
Dozer	No	40	81.7	289.0	0.0	
Pickup Truck	No	40		75.0	289.0	0.0
Tractor	No	40		84.0	289.0	0.0
Vibratory Pile Driver	No	20		100.8	289.0	0.0

Results

Noise Limits (dBA)			Noise Limit Exceedance (dBA)								
Calculated (dBA)			Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	62.3	58.3	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	66.4	62.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	59.8	55.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	68.8	64.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	85.6	78.6	85.0	N/A	85.0	N/A	80.0	N/A	0.6	N/A	0.6	N/A
Total	85.6	78.9	85.0	N/A	85.0	N/A	80.0	N/A	0.6	N/A	0.6	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
141 Tyree Chapel Road	Residential	61.0	57.0	54.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	963.0	0.0	
Dozer	No	40	81.7	963.0	0.0	

Pickup Truck No 40 75.0 963.0 0.0
Tractor No 40 84.0 963.0 0.0
Vibratory Pile Driver No 20 100.8 963.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 51.9 47.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 56.0 52.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 49.3 45.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 58.3 54.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 75.1 68.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 75.1 68.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #3 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
727 Peden Mill Road	Residential	66.0	62.0	58.0

Equipment

Spec Impact	Actual Usage	Receptor Lmax	Estimated Lmax	Distance	Shielding	Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	77.6	552.0	0.0							
Dozer	No	40	81.7	552.0	0.0							
Pickup Truck	No	40	75.0	552.0	0.0							
Tractor	No	40	84.0	552.0	0.0							
Vibratory Pile Driver	No	20	100.8	552.0	0.0							

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 56.7 52.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 60.8 56.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 54.1 50.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 63.1 59.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 80.0 73.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 80.0 73.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #4 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
155 Old County Farm Road	Residential	66.0	62.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	77.6	333.0	0.0	
Dozer	No	40	81.7	333.0	0.0	
Pickup Truck	No	40	75.0	333.0	0.0	
Tractor	No	40	84.0	333.0	0.0	
Vibratory Pile Driver	No	20	100.8	333.0	0.0	

Results

Calculated (dBA)	Noise Limits (dBA)			Noise Limit Exceedance (dBA)		
	Day	Evening	Night	Day	Evening	Night
Equipment	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq
Backhoe	61.1 57.1	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Dozer	65.2 61.2	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Pickup Truck	58.5 54.6	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Tractor	67.5 63.6	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Vibratory Pile Driver	84.4 77.4	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	4.4 N/A
Total	84.4 77.7	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	4.4 N/A

**** Receptor #5 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
111 Old County Farm Road	Residential	66.0	62.0	58.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	77.6	398.0	0.0	
Dozer	No	40	81.7	398.0	0.0	
Pickup Truck	No	40	75.0	398.0	0.0	
Tractor	No	40	84.0	398.0	0.0	
Vibratory Pile Driver	No	20	100.8	398.0	0.0	

Results

Noise Limits (dBA)			Noise Limit Exceedance (dBA)		
Day	Evening	Night	Day	Evening	Night

---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 59.5 55.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 63.7 59.7 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 57.0 53.0 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 66.0 62.0 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 82.8 75.8 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A 2.8 N/A Total 82.8 76.1 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A 2.8 N/A

**** Receptor #6 ****

Baselines (dBA) Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
139 Old County Farm Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 296.0 0.0
Dozer No 40 81.7 296.0 0.0
Pickup Truck No 40 75.0 296.0 0.0
Tractor No 40 84.0 296.0 0.0 Vibratory Pile Driver No 20 100.8 296.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 62.1 58.1 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 66.2 62.2 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 59.6 55.6 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 68.6 64.6 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 85.4 78.4 85.0 N/A
85.0 N/A 80.0 N/A 0.4 N/A 0.4 N/A 5.4 N/A Total 85.4 78.7 85.0 N/A 85.0 N/A
80.0 N/A 0.4 N/A 0.4 N/A 5.4 N/A
**** Receptor #7 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
123 Old County Farm Road Residential 61.0 57.0 54.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 552.0 0.0
Dozer No 40 81.7 552.0 0.0
Pickup Truck No 40 75.0 552.0 0.0 Tractor No 40 84.0 552.0 0.0
Vibratory Pile Driver No 20 100.8 552.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 56.7 52.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 60.8 56.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 54.1 50.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 63.1 59.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 80.0 73.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 80.0 73.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #8 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---
583 Peden Mill Road Residential 55.0 52.0 49.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 976.0 0.0
Dozer No 40 81.7 976.0 0.0
Pickup Truck No 40 75.0 976.0 0.0
Tractor No 40 84.0 976.0 0.0
Vibratory Pile Driver No 20 100.8 976.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 51.8 47.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 55.9 51.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 49.2 45.2 85.0 N/A 85.0 N/A

A 80.0 N/A None N/A None N/A None N/A Tractor 58.2 54.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 75.0 68.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 75.0 68.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #9 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
712 Peden Mill Road Residential 55.0 52.0 49.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA) ---------- ------ ----- ----
- ----- -------- ---
Backhoe No 40 77.6 1139.0 0.0
Dozer No 40 81.7 1139.0 0.0
Pickup Truck No 40 75.0 1139.0 0.0
Tractor No 40 84.0 1139.0 0.0
Vibratory Pile Driver No 20 100.8 1139.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---

Calculated (dBA) Day Evening Night Day Evening Night   ---

------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---
----- ------ ------ ------ ------ ------ ------ Backhoe 50.4 46.4 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 54.5 50.5 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 47.8 43.9 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 56.8 52.9 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 73.7 66.7 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 73.7 67.0 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #10 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
570 Peden Mill Road Residential 61.0 57.0 54.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding Description Device (%) (dBA) (dBA)
(feet) (dBA)
---------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 1288.0 0.0

Dozer No 40 81.7 1288.0 0.0
Pickup Truck No 40 75.0 1288.0 0.0
Tractor No 40 84.0 1288.0 0.0
Vibratory Pile Driver No 20 100.8 1288.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 49.3 45.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 53.5 49.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 46.8 42.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 55.8 51.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 72.6 65.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 72.6 65.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #11 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
515 Peden Mill Road	Residential	61.0	57.0	54.0

Equipment

Impact	Usage	Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40	77.6	1239.0	0.0	
Dozer	No	40	81.7	1239.0	0.0	
Pickup Truck	No	40	75.0	1239.0	0.0	
Tractor	No	40	84.0	1239.0	0.0	
Vibratory Pile Driver	No	20	100.8	1239.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 49.7 45.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 53.8 49.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 47.1 43.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 56.1 52.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 72.9 65.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 72.9 66.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #12 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
491 Peden Mill Road	Residential	61.0	57.0	54.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1332.0	0.0	
Dozer	No	40	81.7	1332.0	0.0	
Pickup Truck	No	40	75.0	1332.0	0.0	
Tractor	No	40	84.0	1332.0	0.0	
Vibratory Pile Driver	No	20	100.8	1332.0	0.0	

Results

Noise Limits (dBA)			Noise Limit Exceedance (dBA)		
Calculated (dBA)	Day	Evening	Night	Day	Evening	Night
Equipment	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq
Backhoe	49.0 45.1	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Dozer	53.2 49.2	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Pickup Truck	46.5 42.5	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Tractor	55.5 51.5	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Vibratory Pile Driver	72.3 65.3	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Total	72.3 65.7	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A

**** Receptor #13 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Super 8	Commercial	66.0	62.0	58.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	2333.0	0.0	
Dozer	No	40	81.7	2333.0	0.0	
Pickup Truck	No	40	75.0	2333.0	0.0	
Tractor	No	40	84.0	2333.0	0.0	
Vibratory Pile Driver	No	20	100.8	2333.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---------- ---------- ---------- ---------- ---------- ----------

Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ----------

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

---------- ---------- ---------- ---------- ---------- ----------

Backhoe 44.2 40.2 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Dozer 48.3 44.3 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Pickup Truck 41.6 37.6 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Tractor 50.6 46.6 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Vibratory Pile Driver 67.4 60.5 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Total 67.4 60.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

**** Receptor #14 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Quality Inn	Commercial	66.0	62.0	58.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	2041.0	0.0	
Dozer	No	40	81.7	2041.0	0.0	
Pickup Truck	No	40	75.0	2041.0	0.0	
Tractor	No	40	84.0	2041.0	0.0	
Vibratory Pile Driver	No	20	100.8	2041.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---------- ---------- ---------- ---------- ---------- ----------

Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ----------

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

---------- ---------- ---------- ---------- ---------- ----------

Backhoe 45.3 41.4 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Dozer 49.5 45.5 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Pickup Truck 42.8 38.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Tractor 51.8 47.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Vibratory Pile Driver 68.6 61.6 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

Total 68.6 61.9 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

**** Receptor #15 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Baymont	Commercial	66.0	62.0	58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 1842.0 0.0
Dozer No 40 81.7 1842.0 0.0
Pickup Truck No 40 75.0 1842.0 0.0
Tractor No 40 84.0 1842.0 0.0
Vibratory Pile Driver No 20 100.8 1842.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 46.2 42.3 N/A N/A N/A
N/A N/A N/A N/A N/A N/A N/A N/A N/A Dozer 50.3 46.4 N/A N/A N/A N/A N/A N/A
N/A N/A N/A N/A N/A N/A N/A Pickup Truck 43.7 39.7 N/A N/A N/A N/A N/A N/A N/A N/
A N/A N/A N/A N/A Tractor 52.7 48.7 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A
N/A N/A Vibratory Pile Driver 69.5 62.5 N/A N/A N/A N/A N/A N/A N/A N/A N/A
N/A N/A N/A Total 69.5 62.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

**** Receptor #16 ****

Baselines (dBA)
Description Land Use Daytime Evening Night ---------- -------- ------- -----
-- -----
Econo Lodge Commercial 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2071.0 0.0
Dozer No 40 81.7 2071.0 0.0
Pickup Truck No 40 75.0 2071.0 0.0
Tractor No 40 84.0 2071.0 0.0
Vibratory Pile Driver No 20 100.8 2071.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -

----- ------ ------ ------ ------ ------ ------ Backhoe 45.2 41.2 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Dozer 49.3 45.3 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Pickup Truck 42.7 38.7 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Tractor 51.7 47.7 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Vibratory Pile Driver 68.5 61.5 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Total 68.5 61.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

**** Receptor #17 ****

Baselines (dBA)
Description Land Use Daytime Evening Night ----------- -------- ------- ----- -- -----
Hapton Inn Commercial 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 1744.0 0.0
Dozer No 40 81.7 1744.0 0.0
Pickup Truck No 40 75.0 1744.0 0.0
Tractor No 40 84.0 1744.0 0.0
Vibratory Pile Driver No 20 100.8 1744.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ------------------------- ------------------ --
Calculated (dBA) Day Evening Night Day Evening Night ---------------- ----- --------- ------------ ------------- ------------- ------------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------------------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 46.7 42.7 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Dozer 50.8 46.8 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Pickup Truck 44.1 40.2 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Tractor 53.1 49.2 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Vibratory Pile Driver 70.0 63.0 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A Total 70.0 63.3 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A

**** Receptor #18 ****

Baselines (dBA) Description Land Use Daytime Evening Night
----------- -------- ------- ------- -----
4709 Nashville Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2180.0 0.0

Dozer No 40 81.7 2180.0 0.0
Pickup Truck No 40 75.0 2180.0 0.0
Tractor No 40 84.0 2180.0 0.0 Vibratory Pile Driver No 20 100.8 2180.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 44.8 40.8 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 48.9 44.9 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.2 38.2 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 51.2 47.2 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.0 61.0 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.0 61.4 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A
**** Receptor #19 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
4785 Nashville Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2291.0 0.0
Dozer No 40 81.7 2291.0 0.0
Pickup Truck No 40 75.0 2291.0 0.0 Tractor No 40 84.0 2291.0 0.0
Vibratory Pile Driver No 20 100.8 2291.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 44.3 40.4 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 48.4 44.5 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 41.8 37.8 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 50.8 46.8 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 67.6 60.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 67.6 60.9 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #20 ****

Baselines (dBA)
Description Land Use Daytime Evening Night

4761 Nashville Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2416.0 0.0 Dozer No 40 81.7 2416.0 0.0
Pickup Truck No 40 75.0 2416.0 0.0
Tractor No 40 84.0 2416.0 0.0
Vibratory Pile Driver No 20 100.8 2416.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 43.9 39.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 48.0 44.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 41.3 37.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 50.3 46.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 67.1 60.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 67.1 60.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #21 ****

Baselines (dBA)
Description Land Use Daytime Evening Night

4779 Nashville Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2508.0 0.0
Dozer No 40 81.7 2508.0 0.0
Pickup Truck No 40 75.0 2508.0 0.0
Tractor No 40 84.0 2508.0 0.0
Vibratory Pile Driver No 20 100.8 2508.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 43.6 39.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 47.7 43.7 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 41.0 37.0 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 50.0 46.0 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 66.8 59.8 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 66.8 60.2 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #22 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
4783 Nashville Road Residential 66.0 62.0 58.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding Description Device (%) (dBA) (dBA)
(feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2587.0 0.0
Dozer No 40 81.7 2587.0 0.0
Pickup Truck No 40 75.0 2587.0 0.0
Tractor No 40 84.0 2587.0 0.0
Vibratory Pile Driver No 20 100.8 2587.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 43.3 39.3 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 47.4 43.4 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 40.7 36.7 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 49.7 45.7 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 66.5 59.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 66.5 59.9 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #23 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
4806 Nashville Road Residential 66.0 62.0 58.0

Equipment
--------- Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2520.0 0.0
Dozer No 40 81.7 2520.0 0.0
Pickup Truck No 40 75.0 2520.0 0.0
Tractor No 40 84.0 2520.0 0.0
Vibratory Pile Driver No 20 100.8 2520.0 0.0

Results
------- Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 43.5 39.5 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 47.6 43.6 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 41.0 37.0 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 50.0 46.0 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 66.8 59.8 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 66.8 60.1 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #24 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
262 Geddes Road Residential 50.0 47.0 44.0
Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 1625.0 0.0
Dozer No 40 81.7 1625.0 0.0
Pickup Truck No 40 75.0 1625.0 0.0
Tractor No 40 84.0 1625.0 0.0
Vibratory Pile Driver No 20 100.8 1625.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 47.3 43.3 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 51.4 47.5 85.0 N/A 85.0 N/

A 80.0 N/A None N/A None N/A None N/A Pickup Truck 44.8 40.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 53.8 49.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 70.6 63.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 70.6 63.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #25 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
275 Geddes Road	Residential	50.0	47.0	44.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1767.0	0.0	
Dozer	No	40	81.7	1767.0	0.0	
Pickup Truck	No	40	75.0	1767.0	0.0	
Tractor	No	40	84.0	1767.0	0.0	
Vibratory Pile Driver	No	20	100.8	1767.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	46.6	42.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Dozer	50.7	46.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Pickup Truck	44.0	40.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Tractor	53.0	49.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Vibratory Pile Driver	69.9	62.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Total	69.9	63.2	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A

**** Receptor #26 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
716 Geddes Road	Residential	45.0	42.0	39.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1253.0	0.0	
Dozer	No	40	81.7	1253.0	0.0	

Pickup Truck No 40 75.0 1253.0 0.0
Tractor No 40 84.0 1253.0 0.0
Vibratory Pile Driver No 20 100.8 1253.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 49.6 45.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 53.7 49.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 47.0 43.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 56.0 52.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 72.8 65.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 72.8 66.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #27 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2180 Tyree Chapel Road	Residential	45.0	42.0	39.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1142.0	0.0	
Dozer	No	40	81.7	1142.0	0.0	
Pickup Truck	No	40	75.0	1142.0	0.0	
Tractor	No	40	84.0	1142.0	0.0	
Vibratory Pile Driver	No	20	100.8	1142.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 50.4 46.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 54.5 50.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 47.8 43.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 56.8 52.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 73.6 66.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 73.6 67.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #28 ****

Baselines (dBA) Description Land Use Daytime Evening Night

Tyree Chapel Church of Christ Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 1556.0 0.0
Dozer No 40 81.7 1556.0 0.0
Pickup Truck No 40 75.0 1556.0 0.0
Tractor No 40 84.0 1556.0 0.0 Vibratory Pile Driver No 20 100.8 1556.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 47.7 43.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 51.8 47.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 45.1 41.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 54.1 50.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 71.0 64.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 71.0 64.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #29 ****

Baselines (dBA)
Description Land Use Daytime Evening Night

2394 Tyree Chapel Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 1708.0 0.0
Dozer No 40 81.7 1708.0 0.0
Pickup Truck No 40 75.0 1708.0 0.0 Tractor No 40 84.0 1708.0 0.0
Vibratory Pile Driver No 20 100.8 1708.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ---------- ---------- ---------- ---------- ---------- Backhoe 46.9 42.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 51.0 47.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 44.3 40.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 53.3 49.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 70.1 63.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 70.1 63.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #30 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2391 Tyree Chapel Road	Residential	45.0	42.0	39.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	2102.0	0.0	
Dozer	No	40	81.7	2102.0	0.0	
Pickup Truck	No	40	75.0	2102.0	0.0	
Tractor	No	40	84.0	2102.0	0.0	
Vibratory Pile Driver	No	20	100.8	2102.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---------- ---------- ---------- ---------- ---------- ---------- Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ---------- ---------- ---------- ---------- ---------- Backhoe 45.1 41.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 49.2 45.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.5 38.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 51.5 47.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.3 61.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.3 61.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #31 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2404 Tyree Chapel Road	Residential	45.0	42.0	39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA) ---------- ------ ----- ----
- ----- -------- ---------
Backhoe No 40 77.6 1937.0 0.0
Dozer No 40 81.7 1937.0 0.0
Pickup Truck No 40 75.0 1937.0 0.0
Tractor No 40 84.0 1937.0 0.0
Vibratory Pile Driver No 20 100.8 1937.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 45.8 41.8 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 49.9 45.9 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 43.2 39.3 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 52.2 48.3 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 69.1 62.1 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 69.1 62.4 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #32 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
2480 Tyree Chapel Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding Description Device (%) (dBA) (dBA)
(feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2160.0 0.0
Dozer No 40 81.7 2160.0 0.0
Pickup Truck No 40 75.0 2160.0 0.0
Tractor No 40 84.0 2160.0 0.0
Vibratory Pile Driver No 20 100.8 2160.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -

----- ------ ------ ------ ------ ------ ------ Backhoe 44.9 40.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 49.0 45.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.3 38.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 51.3 47.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.1 61.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.1 61.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #33 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
----------- -------- ------- ------- -----
90 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment
--------- Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 2214.0 0.0
Dozer No 40 81.7 2214.0 0.0
Pickup Truck No 40 75.0 2214.0 0.0
Tractor No 40 84.0 2214.0 0.0
Vibratory Pile Driver No 20 100.8 2214.0 0.0

Results
------- Noise Limits (dBA) Noise Limit Exceedance (dBA) ------------------
--------------------------- --
Calculated (dBA) Day Evening Night Day Evening Night   ---------------- -----
--------- ------------ ------------- ------------- ------------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------------------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 44.6 40.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 48.7 44.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.1 38.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 51.1 47.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 67.9 60.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 67.9 61.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #34 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
----------- -------- ------- ------- ----- 112 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---------

Backhoe No 40 77.6 2151.0 0.0
Dozer No 40 81.7 2151.0 0.0
Pickup Truck No 40 75.0 2151.0 0.0
Tractor No 40 84.0 2151.0 0.0
Vibratory Pile Driver No 20 100.8 2151.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 44.9 40.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 49.0 45.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 42.3 38.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 51.3 47.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 68.1 61.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 68.1 61.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #35 ****

Baselines (dBA) Description Land Use Daytime Evening Night

136 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2106.0 0.0
Dozer No 40 81.7 2106.0 0.0
Pickup Truck No 40 75.0 2106.0 0.0
Tractor No 40 84.0 2106.0 0.0 Vibratory Pile Driver No 20 100.8 2106.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq

Backhoe 45.1 41.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Dozer 49.2 45.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Pickup Truck 42.5 38.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Tractor 51.5 47.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Vibratory Pile Driver 68.3 61.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

Total 68.3 61.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #36 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
172 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 2049.0 0.0
Dozer No 40 81.7 2049.0 0.0
Pickup Truck No 40 75.0 2049.0 0.0 Tractor No 40 84.0 2049.0 0.0
Vibratory Pile Driver No 20 100.8 2049.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---

------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---
--- ------ ------ ------ ------ ------ Backhoe 45.3 41.3 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 49.4 45.4 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.7 38.8 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 51.7 47.8 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.6 61.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.6 61.9 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #37 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
394 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 1677.0 0.0 Dozer No 40 81.7 1677.0 0.0
Pickup Truck No 40 75.0 1677.0 0.0
Tractor No 40 84.0 1677.0 0.0
Vibratory Pile Driver No 20 100.8 1677.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---
---------- ----------

Calculated (dBA) Day Evening Night Day Evening Night ---------- ----- --------- ------------ ------------- ------------- ------------- -------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ------ ------ ------ ------ ------ ------ ------ ----- ------ ------ ------ ------ ------ ------ Backhoe 47.0 43.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 51.2 47.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 44.5 40.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 53.5 49.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 70.3 63.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 70.3 63.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #38 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
478 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA) ---------- ------ ----- ---- - ----- -------- ---
Backhoe No 40 77.6 1038.0 0.0
Dozer No 40 81.7 1038.0 0.0
Pickup Truck No 40 75.0 1038.0 0.0
Tractor No 40 84.0 1038.0 0.0
Vibratory Pile Driver No 20 100.8 1038.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---

Calculated (dBA) Day Evening Night Day Evening Night ---------- ----- --------- ------------ ------------- ------------- ------------- -------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ------ ------ ------ ------ ------ ------ ------ ----- ------ ------ ------ ------ ------ ------ Backhoe 51.2 47.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 55.3 51.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 48.7 44.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 57.7 53.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 74.5 67.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 74.5 67.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #39 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
514 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 1459.0 0.0
Dozer No 40 81.7 1459.0 0.0
Pickup Truck No 40 75.0 1459.0 0.0
Tractor No 40 84.0 1459.0 0.0
Vibratory Pile Driver No 20 100.8 1459.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 48.3 44.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 52.4 48.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 45.7 41.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 54.7 50.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 71.5 64.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 71.5 64.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #40 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---
536 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 1485.0 0.0
Dozer No 40 81.7 1485.0 0.0
Pickup Truck No 40 75.0 1485.0 0.0
Tractor No 40 84.0 1485.0 0.0
Vibratory Pile Driver No 20 100.8 1485.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 48.1 44.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 52.2 48.2 85.0 N/A 85.0 N/

A 80.0 N/A None N/A None N/A None N/A Pickup Truck 45.5 41.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 54.5 50.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 71.4 64.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 71.4 64.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #41 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
----------- -------- ------- ------- ----- 554 Blue Door Church Road
Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 1520.0 0.0
Dozer No 40 81.7 1520.0 0.0
Pickup Truck No 40 75.0 1520.0 0.0
Tractor No 40 84.0 1520.0 0.0
Vibratory Pile Driver No 20 100.8 1520.0 0.0
Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night   ---------- -----
--- ---------- ---------- ---------- ---------- ---------- ---
--- Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 47.9 43.9 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 52.0 48.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 45.3 41.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 54.3 50.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 71.2 64.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 71.2 64.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #42 ****

Baselines (dBA) Description Land Use Daytime Evening Night

---
582 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
----------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 1573.0 0.0
Dozer No 40 81.7 1573.0 0.0

Pickup Truck No 40 75.0 1573.0 0.0
Tractor No 40 84.0 1573.0 0.0 Vibratory Pile Driver No 20 100.8 1573.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA)	Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	47.6	43.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	51.7	47.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	45.0	41.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	54.0	50.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	70.9	63.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	70.9	64.2	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #43 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
602 Blue Door Church Road	Residential	40.0	37.0	34.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1616.0	0.0	
Dozer	No	40	81.7	1616.0	0.0	
Pickup Truck	No	40	75.0	1616.0	0.0	
Tractor	No	40	84.0	1616.0	0.0	
Vibratory Pile Driver	No	20	100.8	1616.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA)	Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	47.4	43.4	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	51.5	47.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	44.8	40.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	53.8	49.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	70.6	63.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	70.6	64.0	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #44 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---
60 Blue Door Church Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2033.0 0.0 Dozer No 40 81.7 2033.0 0.0
Pickup Truck No 40 75.0 2033.0 0.0
Tractor No 40 84.0 2033.0 0.0
Vibratory Pile Driver No 20 100.8 2033.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---

Calculated (dBA) Day Evening Night Day Evening Night ---

------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---
------ Backhoe 45.4 41.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 49.5 45.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.8 38.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 51.8 47.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.6 61.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.6 62.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #45 ****

Baselines (dBA)
Description Land Use Daytime Evening Night

3965 Peden Mill Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA) ---

Backhoe No 40 77.6 1403.0 0.0
Dozer No 40 81.7 1403.0 0.0
Pickup Truck No 40 75.0 1403.0 0.0
Tractor No 40 84.0 1403.0 0.0
Vibratory Pile Driver No 20 100.8 1403.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---

---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 48.6 44.6 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 52.7 48.7 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 46.0 42.1 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 55.0 51.1 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 71.9 64.9 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 71.9 65.2 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #46 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
3880 Peden Mill Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding Description Device (%) (dBA) (dBA)
(feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 1430.0 0.0
Dozer No 40 81.7 1430.0 0.0
Pickup Truck No 40 75.0 1430.0 0.0
Tractor No 40 84.0 1430.0 0.0
Vibratory Pile Driver No 20 100.8 1430.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 48.4 44.5 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 52.5 48.6 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 45.9 41.9 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 54.9 50.9 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 71.7 64.7 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 71.7 65.0 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #47 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
3835 Peden Mill Road Residential 40.0 37.0 34.0

Equipment
--------- Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 721.0 0.0
Dozer No 40 81.7 721.0 0.0
Pickup Truck No 40 75.0 721.0 0.0
Tractor No 40 84.0 721.0 0.0
Vibratory Pile Driver No 20 100.8 721.0 0.0

Results
------- Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night   ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 54.4 50.4 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 58.5 54.5 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 51.8 47.8 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 60.8 56.8 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 77.6 70.7 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 77.6 71.0 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #48 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- ----- 3735 Peden Mill Road Residential
40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---------
Backhoe No 40 77.6 1046.0 0.0
Dozer No 40 81.7 1046.0 0.0
Pickup Truck No 40 75.0 1046.0 0.0
Tractor No 40 84.0 1046.0 0.0
Vibratory Pile Driver No 20 100.8 1046.0 0.0
  Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ----------
---------- ----------
Calculated (dBA) Day Evening Night Day Evening Night   ---------- -----
--------- ---------- ---------- ---------- ---------- --------
------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq ---------- ------ ------ ------ ------ ------ ------ ------ -
----- ------ ------ ------ ------ ------ ------ Backhoe 51.1 47.2 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 55.3 51.3 85.0 N/A 85.0 N/

A 80.0 N/A None N/A None N/A None N/A Pickup Truck 48.6 44.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 57.6 53.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 74.4 67.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 74.4 67.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #49 ****

Baselines (dBA) Description Land Use Daytime Evening Night

3070 Peden Mill Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2181.0 0.0
Dozer No 40 81.7 2181.0 0.0
Pickup Truck No 40 75.0 2181.0 0.0
Tractor No 40 84.0 2181.0 0.0 Vibratory Pile Driver No 20 100.8 2181.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---

Calculated (dBA) Day Evening Night Day Evening Night   ---

------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---
------ ------ ------ ------ ------ ------ ------ Backhoe 44.8 40.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 48.9 44.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 42.2 38.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 51.2 47.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 68.0 61.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 68.0 61.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #50 ****

Baselines (dBA)
Description Land Use Daytime Evening Night

2892 Peden Mill Road Residential 40.0 37.0 34.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 2389.0 0.0
Dozer No 40 81.7 2389.0 0.0
Pickup Truck No 40 75.0 2389.0 0.0 Tractor No 40 84.0 2389.0 0.0

Vibratory Pile Driver No 20 100.8 2389.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA)	Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	44.0	40.0	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	48.1	44.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	41.4	37.4	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	50.4	46.4	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	67.2	60.2	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	67.2	60.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #51 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2792 Peden Mill Road	Residential	45.0	42.0	39.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1758.0	0.0	
Dozer	No	40	81.7	1758.0	0.0	
Pickup Truck	No	40	75.0	1758.0	0.0	
Tractor	No	40	84.0	1758.0	0.0	
Vibratory Pile Driver	No	20	100.8	1758.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA)	Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	46.6	42.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	50.7	46.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	44.1	40.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	53.1	49.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	69.9	62.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	69.9	63.2	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #52 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
2703 Peden Mill Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA) ---------- ------ ----- ----
- ----- -------- ---
Backhoe No 40 77.6 1237.0 0.0
Dozer No 40 81.7 1237.0 0.0
Pickup Truck No 40 75.0 1237.0 0.0
Tractor No 40 84.0 1237.0 0.0
Vibratory Pile Driver No 20 100.8 1237.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---
---- ---
Calculated (dBA) Day Evening Night Day Evening Night ---- ---
--- --- --- --- --- ---
--- Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax
Leq --- --- --- --- --- --- -
--- --- --- --- --- --- --- Backhoe 49.7 45.7 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 53.8 49.8 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Pickup Truck 47.1 43.2 85.0 N/A 85.0 N/
A 80.0 N/A None N/A None N/A None N/A Tractor 56.1 52.2 85.0 N/A 85.0 N/A
80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 73.0 66.0 85.0 N/A
85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 73.0 66.3 85.0 N/A 85.0
N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #53 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
2651 Peden Mill Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding Description Device (%) (dBA) (dBA)
(feet) (dBA)
---------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 1140.0 0.0
Dozer No 40 81.7 1140.0 0.0
Pickup Truck No 40 75.0 1140.0 0.0
Tractor No 40 84.0 1140.0 0.0
Vibratory Pile Driver No 20 100.8 1140.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---------- ---------- Calculated (dBA) Day Evening Night Day Evening Night ---------- ----- ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ Backhoe 50.4 46.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 54.5 50.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 47.8 43.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 56.8 52.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 73.7 66.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 73.7 67.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #54 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2622 Peden Mill Road	Residential	45.0	42.0	39.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	77.6	1187.0	0.0	
Dozer	No	40	81.7	1187.0	0.0	
Pickup Truck	No	40	75.0	1187.0	0.0	
Tractor	No	40	84.0	1187.0	0.0	
Vibratory Pile Driver	No	20	100.8	1187.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ---------- ---------- Calculated (dBA) Day Evening Night Day Evening Night ---------- ----- ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ ------ Backhoe 50.1 46.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 54.2 50.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 47.5 43.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 56.5 52.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 73.3 66.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 73.3 66.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #55 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2598 Peden Mill Road	Residential	45.0	42.0	39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
Backhoe No 40 77.6 1229.0 0.0
Dozer No 40 81.7 1229.0 0.0
Pickup Truck No 40 75.0 1229.0 0.0
Tractor No 40 84.0 1229.0 0.0
Vibratory Pile Driver No 20 100.8 1229.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
Backhoe 49.7 45.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 53.9 49.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 47.2 43.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 56.2 52.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 73.0 66.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Total 73.0 66.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #56 ****

Baselines (dBA) Description Land Use Daytime Evening Night
2538 Peden Mill Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
Backhoe No 40 77.6 1288.0 0.0
Dozer No 40 81.7 1288.0 0.0
Pickup Truck No 40 75.0 1288.0 0.0
Tractor No 40 84.0 1288.0 0.0 Vibratory Pile Driver No 20 100.8 1288.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
Backhoe 49.3 45.4 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 53.5 49.5 85.0 N/A 85.0 N/

A 80.0 N/A None N/A None N/A None N/A Pickup Truck 46.8 42.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 55.8 51.8 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 72.6 65.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 72.6 65.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #57 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2445 Peden Mill Road	Residential	45.0	42.0	39.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	1673.0	0.0	
Dozer	No	40	81.7	1673.0	0.0	
Pickup Truck	No	40	75.0	1673.0	0.0	
Tractor	No	40	84.0	1673.0	0.0	
Vibratory Pile Driver	No	20	100.8	1673.0	0.0	

Results

Noise Limits (dBA)			Noise Limit Exceedance (dBA)		
Calculated (dBA)	Day	Evening	Night	Day	Evening	Night
Equipment	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq	Lmax Leq
Backhoe	47.1 43.1	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Dozer	51.2 47.2	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Pickup Truck	44.5 40.5	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Tractor	53.5 49.5	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Vibratory Pile Driver	70.3 63.3	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A
Total	70.3 63.7	85.0 N/A	85.0 N/A	80.0 N/A	None N/A	None N/A	None N/A

**** Receptor #58 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
1743 Peden Mill Road	Residential	55.0	52.0	49.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	2532.0	0.0	
Dozer	No	40	81.7	2532.0	0.0	
Pickup Truck	No	40	75.0	2532.0	0.0	

Tractor No 40 84.0 2532.0 0.0
Vibratory Pile Driver No 20 100.8 2532.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	43.5	39.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	47.6	43.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	40.9	36.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	49.9	45.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	66.7	59.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	66.7	60.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #59 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
1595 Peden Mill Road	Residential	55.0	52.0	49.0

Equipment

Description	Spec Impact Device	Actual Usage (%)	Receptor Lmax (dBA)	Estimated Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	2671.0	0.0	
Dozer	No	40	81.7	2671.0	0.0	
Pickup Truck	No	40	75.0	2671.0	0.0	
Tractor	No	40	84.0	2671.0	0.0	
Vibratory Pile Driver	No	20	100.8	2671.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	43.0	39.0	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	47.1	43.1	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	40.4	36.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	49.4	45.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	66.3	59.3	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	66.3	59.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #60 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
1325 Peden Mill Road	Residential	55.0	52.0	49.0

Equipment

Impact	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)	Description	Device
No	40	77.6		1840.0	0.0		Backhoe
No	40	81.7		1840.0	0.0		Dozer
No	40	75.0		1840.0	0.0		Pickup Truck
No	40	84.0		1840.0	0.0		Tractor
No	20	100.8		1840.0	0.0		Vibratory Pile Driver

Results

Noise Limits (dBA)			Noise Limit Exceedance (dBA)														
Calculated (dBA)	Day		Evening		Night		Day		Evening		Night						
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq					
Backhoe	46.2	42.3	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			
Dozer	50.4	46.4	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			
Pickup Truck	43.7	39.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			
Tractor	52.7	48.7	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			
Vibratory Pile Driver	69.5	62.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			
Total	69.5	62.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A			

**** Receptor #61 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
1319 Peden Mill Road	Residential	55.0	52.0	49.0

Equipment

Impact	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)	Description	Device
No	40	77.6		1711.0	0.0		Backhoe
No	40	81.7		1711.0	0.0		Dozer
No	40	75.0		1711.0	0.0		Pickup Truck
No	40	84.0		1711.0	0.0		Tractor
No	20	100.8		1711.0	0.0		Vibratory Pile Driver

Results

------- Noise Limits (dBA) Noise Limit Exceedance (dBA) ------------------ ---------- ---------- Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ---------- ---------- ---------- ---------- ---------- ---------- Backhoe 46.9 42.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 51.0 47.0 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 44.3 40.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 53.3 49.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 70.1 63.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 70.1 63.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #62 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---------- -------- ------- ------- ----- 1271 Tyree Chapel Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)
---------- ------ ----- ----- ----- -------- ---
Backhoe No 40 77.6 296.0 0.0
Dozer No 40 81.7 296.0 0.0
Pickup Truck No 40 75.0 296.0 0.0
Tractor No 40 84.0 296.0 0.0
Vibratory Pile Driver No 20 100.8 296.0 0.0
Results

Noise Limits (dBA) Noise Limit Exceedance (dBA) ------------------ ---------- ---------- Calculated (dBA) Day Evening Night Day Evening Night ---------- ---------- ---------- ---------- ---------- ---------- ------ Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq ---------- ---------- ---------- ---------- ---------- ---------- ---------- Backhoe 62.1 58.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Dozer 66.2 62.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Pickup Truck 59.6 55.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 68.6 64.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 85.4 78.4 85.0 N/A 85.0 N/A 80.0 N/A 0.4 N/A 0.4 N/A 5.4 N/A Total 85.4 78.7 85.0 N/A 85.0 N/A 80.0 N/A 0.4 N/A 0.4 N/A 5.4 N/A

**** Receptor #63 ****

Baselines (dBA) Description Land Use Daytime Evening Night
---------- -------- ------- ------- -----
172 Hendricks Road Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 473.0 0.0
Dozer No 40 81.7 473.0 0.0
Pickup Truck No 40 75.0 473.0 0.0
Tractor No 40 84.0 473.0 0.0 Vibratory Pile Driver No 20 100.8 473.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 58.0 54.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 62.2 58.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Pickup Truck 55.5 51.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Tractor 64.5 60.5 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Vibratory Pile Driver 81.3 74.3 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A 1.3 N/A
Total 81.3 74.6 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A 1.3 N/A

**** Receptor #64 ****

Baselines (dBA)
Description Land Use Daytime Evening Night
---
172 Hendricks Road (63.1) Residential 45.0 42.0 39.0

Equipment

Spec Actual Receptor Estimated
Impact Usage Lmax Lmax Distance Shielding
Description Device (%) (dBA) (dBA) (feet) (dBA)

Backhoe No 40 77.6 989.0 0.0
Dozer No 40 81.7 989.0 0.0
Pickup Truck No 40 75.0 989.0 0.0 Tractor No 40 84.0 989.0 0.0
Vibratory Pile Driver No 20 100.8 989.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night Day Evening Night

Equipment Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq Lmax Leq
---
Backhoe 51.6 47.7 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A
Dozer 55.7 51.8 85.0 N/A 85.0 N/

A 80.0 N/A None N/A None N/A None N/A Pickup Truck 49.1 45.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Tractor 58.1 54.1 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Vibratory Pile Driver 74.9 67.9 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A Total 74.9 68.2 85.0 N/A 85.0 N/A 80.0 N/A None N/A None N/A None N/A

**** Receptor #65 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Hendricks Road	Residential	40.0	37.0	34.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	456.0	0.0	
Dozer	No	40	81.7	456.0	0.0	
Pickup Truck	No	40	75.0	456.0	0.0	
Tractor	No	40	84.0	456.0	0.0	
Vibratory Pile Driver	No	20	100.8	456.0	0.0	

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA) Day			Night			Day			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	58.4	54.4	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Dozer	62.5	58.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Pickup Truck	55.8	51.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Tractor	64.8	60.8	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Vibratory Pile Driver	81.6	74.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A
Total	81.6	75.0	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A

**** Receptor #66 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
1666 Tyree Chapel Road	Residential	45.0	42.0	39.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Backhoe	No	40	77.6	202.0	0.0	

Dozer No 40 81.7 202.0 0.0
Pickup Truck No 40 75.0 202.0 0.0
Tractor No 40 84.0 202.0 0.0
Vibratory Pile Driver No 20 100.8 202.0 0.0

Results

Noise Limits (dBA) Noise Limit Exceedance (dBA)

Calculated (dBA)	Day			Evening			Night		
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	65.4	61.5	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Dozer	69.5	65.6	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Pickup Truck	62.9	58.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Tractor	71.9	67.9	85.0	N/A	85.0	N/A	80.0	N/A	None	N/A	None	N/A	None	N/A
Vibratory Pile Driver	88.7	81.7	85.0	N/A	85.0	N/A	80.0	N/A	3.7	N/A	3.7	N/A	8.7	N/A
Total	88.7	82.0	85.0	N/A	85.0	N/A	80.0	N/A	3.7	N/A	3.7	N/A	8.7	N/A

ATTACHMENT 3

Date: Jun/05/2016

TRANSFORMER
TEST REPORT

33.000 / 44.000 / 55.000 MVA

138.00Y - 34.50Y - 13.80 kV

ONAN / ONAF1 / ONAF2

Serial No: **G3529-01**

Purchaser: **SITE CONSTRUCTORS INC**

Test Engineer	Moisés Rodríguez C. Test Leader	Design Engineer

Purchaser: SITE CONSTRUCTORS INC **Serial No.:** G3529-01

Rating: 33.000/44.000/55.000 MVA **Date:** 06/09/2016

SOUND LEVEL TEST

Taps Positions: **HV:** 3 **LV:** NOM

Test Voltage: 34500 Volts

ONAF2

Test Performed according to IEEE C57.12.90

	2. Ambient + Transformer		5. Corrected Masurements	
POS	1/3 Height	2/3 Height	1/3 Height	2/3 Height
1	75.0	76.0	73.7	75.0
2	74.9	75.8	73.6	74.8
3	75.0	76.1	73.7	75.1
4	76.1	77.4	75.1	76.8
5	77.4	78.4	76.8	78.0
6	78.1	79.0	77.5	78.6
7	77.9	77.9	77.3	77.3
8	77.4	77.6	76.8	77.0
9	76.9	77.1	76.1	76.3
10	76.1	77.5	75.1	76.9
11	77.5	78.2	76.9	77.6
12	78.0	77.9	77.4	77.3
13	77.9	79.0	77.3	78.6
14	78.2	77.4	77.6	76.8
15	76.4	78.2	75.6	77.6
16	76.9	78.9	76.1	78.5
17	77.5	76.9	76.9	76.1
18	76.1	77.0	75.1	76.2
19	76.0	76.1	75.0	75.1
20	75.9	75.8	74.9	74.8
21	77.4	76.1	76.8	75.1
22	76.1	76.9	75.1	76.1
23	75.4	77.4	74.4	76.8
24	75.9	73.9	74.9	72.3
25	76.1	75.8	75.1	74.8
26	75.9	76.1	74.9	75.1
27	74.9	76.9	73.6	76.1
28	77.0	77.0	76.2	76.2
29	76.1	76.1	75.1	75.1

1. Before:		3. After:	
POS	Amb	POS	Amb
A	69.0	A	68.9
B	68.4	B	68.6
C	68.8	C	69.2
D	69.1	D	68.9

4. Avg. Ambient
69

6. Avg. Amb + Trans
77

Height (H): 3.63 m

Length (Lm): 29.9 m

Surface (S): 135.7 m^2

Guaranteed: **79** dB

Notes:
Test Performed at NO LOAD condition

Avg. Sound Pressure Level (Lp): **76** dB(A)

Sound Power Level (Lw): **97** dB(A)

Results: Accepted

Test Engineer

Design Engineer

FRONT VIEW

BACK VIEW

TECHNICAL CHARACTERISTICS HEM

REFERENCE		FS3510M
OUTPUT	AC Output Power (kVA/kW) @50°C [1]	3510
	AC Output Power (kVA/kW) @40°C [1]	3630
	Operating Grid Voltage (VAC)	34.5kV ±10%
	Operating Grid Frequency (Hz)	60Hz
	Current Harmonic Distortion (THDi)	< 3% per IEEE519
	Power Factor (cosine phi) [3]	0.5 leading … 0.5 lagging adjustable / Reactive Power injection at night
INPUT	MPPt @full power (VDC)	934V-1310V
	Maximum DC voltage	1500V
	Number of PV inputs [2]	Up to 36
	Number of Freemaq DC/DC inputs [4]	Up to 6
	Max. DC continuous current (A) [4]	3970
	Max. DC short circuit current (A) [4]	6000
EFFICIENCY & AUXILIARY SUPPLY	Efficiency (Max) (η)	97.80% including MV transformer
	CEC (η)	97.51% including MV transformer
	Max. Power Consumption (KVA)	20
CABINET	Dimensions [WxDxH] (ft)	21.7 x 7 x 7
	Dimensions [WxDxH] (m)	6.6 x 2.2 x 2.2
	Weight (lb)	30865
	Weight (kg)	14000
	Type of ventilation	Forced air cooling
ENVIRONMENT	Degree of protection	NEMA 3R
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating
	Relative Humidity	4% to 100% non condensing
	Max. Altitude (above sea level) [5]	2000m
	Noise level [6]	< 79 dBA
CONTROL INTERFACE	Communication protocol	Modbus TCP
	Plant Controller Communication	Optional
	Keyed ON/OFF switch	Standard
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device
	General AC Protection	MV Switchgear (configurable)
	General DC Protection	Fuses
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2
CERTIFICATIONS	Safety	UL 1741, CSA 22.2 No.107.1-16
	Compliance	NEC 2017
	Utility interconnect	IEEE 1547.1-2005 / UL 1741 SA-Feb. 2018

[1] Values at 1.00•Vac nom and cos Φ= 1. Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: $Q(kVAr)=\sqrt{(S(kVA)^2-P(kW)^2)}$.
[4] Consult Power Electronics for Freemaq DC/DC connection configurations.
[5] Consult Power Electronics for altitudes above 1000m.
[6] Readings taken 1 meter from the back of the unit.