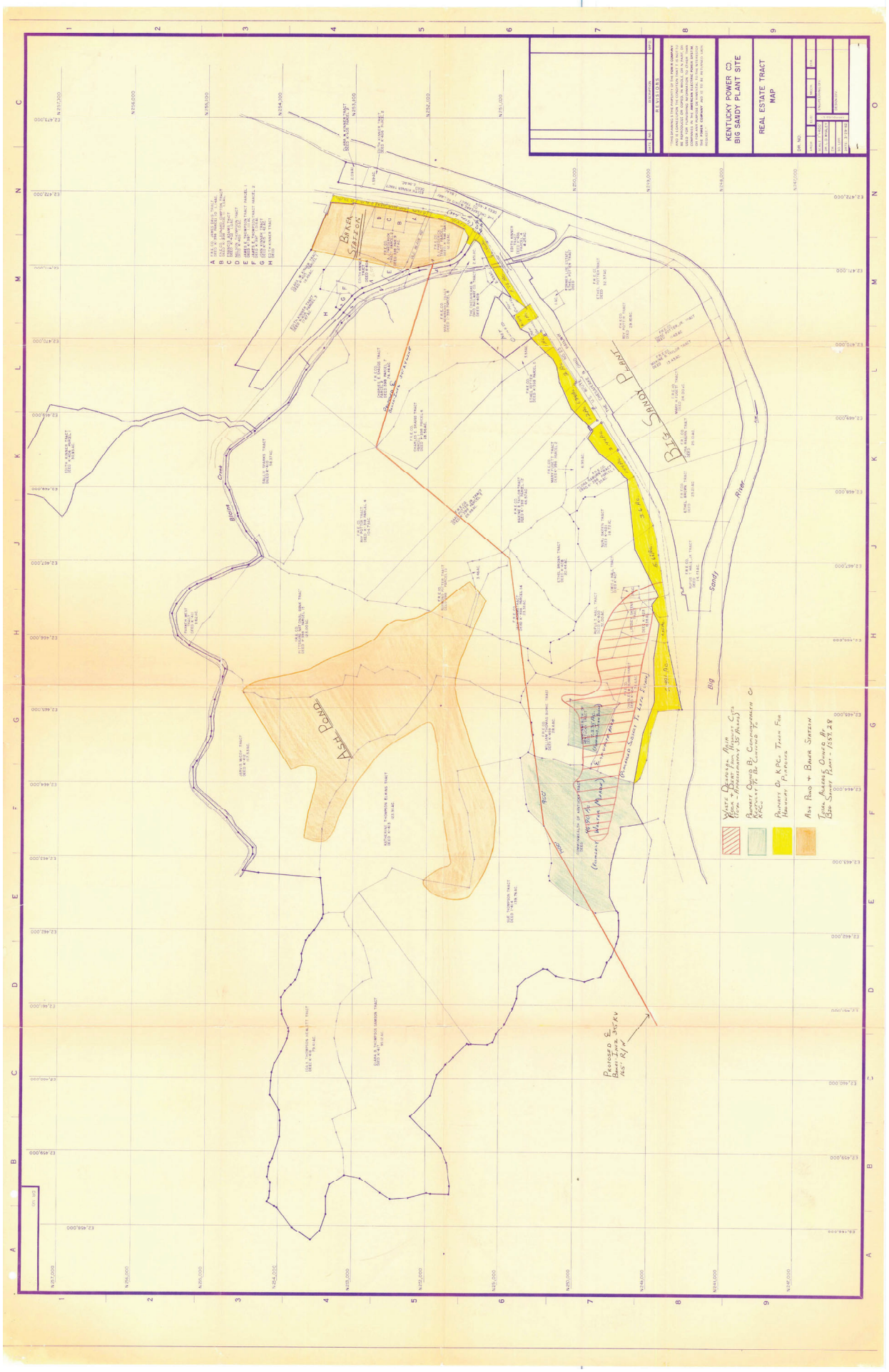
EXHIBIT MJD-2

Combined-Cycle Generation Project Site

Assessment Report

Part 4 of 4


KENTUCKY POWER CO.
BIG SANDY PLANT SITE
REAL ESTATE TRACT MAP
DR. NO.
Baker Station
Big Sandy Plant
Ash Pond
Big Sandy River
Blaine Creek
Proposed 345 KV Rockport Plant - Jefferson Station
Ash Pond + Bower Station
Property Owned By Commonwealth Of Kentucky To Be Conveyed To Ky Pwr Co
Property Of Ky Pwr Co Taken For Highway Purposes
Taken Across Ohio R. For Big Sandy Plant - 1957-58

APPENDIX B PROPERTY EVALUATION DATA

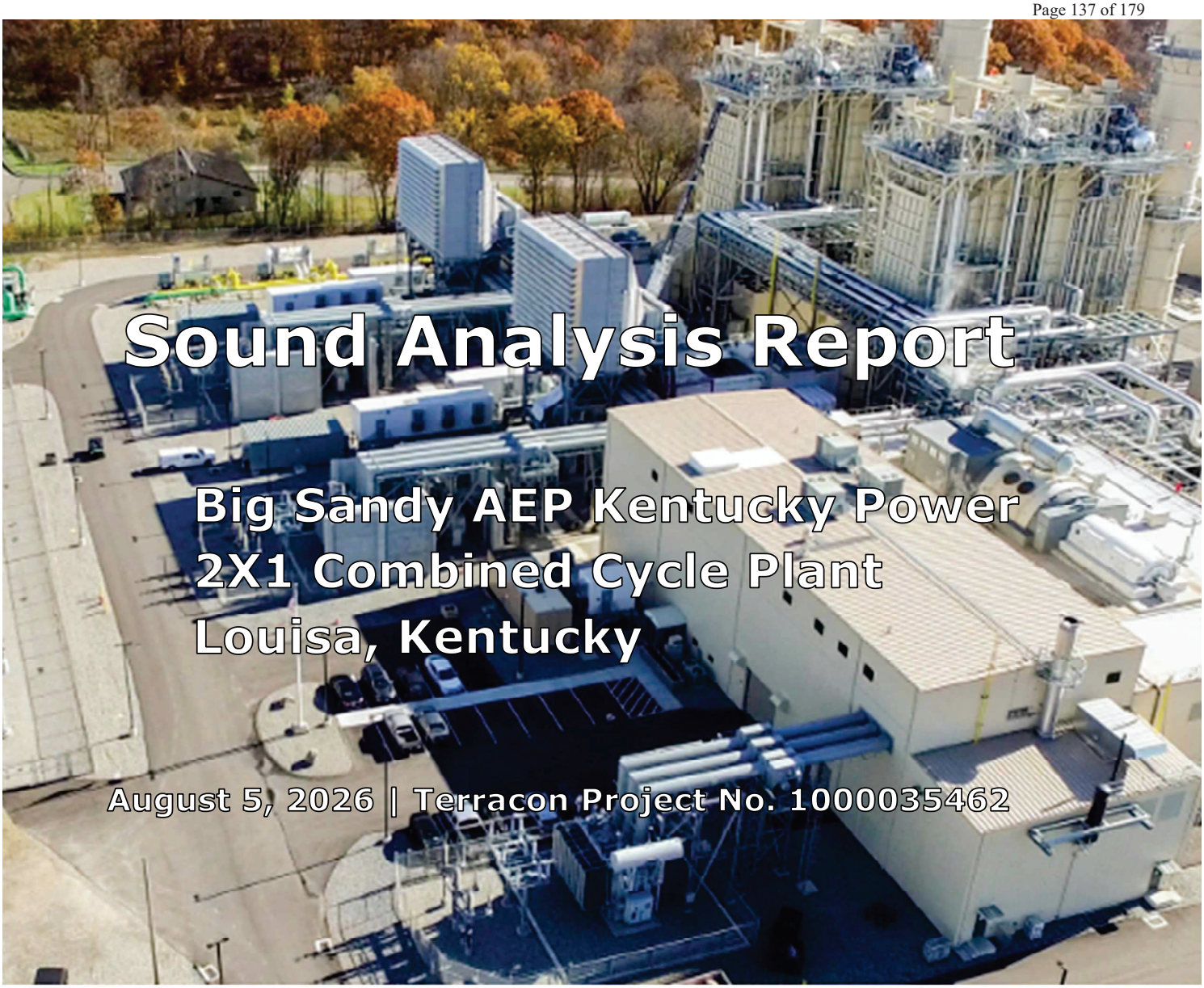
Appendix B: Surrounding Wayne County Property Value Assessments

Parcel ID	Zoning[1]	Land Value ($)	Building Value ($)	Value ($)	Parcel Size (Acres)	Distance from site (mi)
50-01-0014-000A-0000	U-600	$30,300	-	$30,300	103.45	0.08
50-01-0014-0020-0000	R-100	$600	-	$600	1.52	0.1
50-01-0014-0017-0000	R-100	$3,100	-	$3,100	2.12	0.11
50-01-0014-0016-0000	R-100	$900	-	$900	3.09	0.12
50-01-0014-0015-0000	R-100	$4,100	-	$4,100	13.18	0.14
50-01-0014-0042-0000	R-101	$20,300	$1,200	$21,500	18.49	0.16
50-01-0014-0028-0001	R-100	$3,000	-	$3,000	11	0.19
50-01-0014-0041-0000	R-100	$400	-	$400	0.31	0.19
50-01-0014-0044-0000	R-100	$62,900	-	$62,900	81.33	0.21
50-01-0014-0037-0000	R-100	$200	-	$200	5.02	0.22
50-01-0014-0009-0000	R-100	$18,800	-	$18,800	24.41	0.26
50-01-0014-0007-0000	R-100	$24,600	-	$24,600	8.87	0.3
50-01-0014-0028-0003	R-100	$50,800	-	$50,800	3.17	0.33
50-01-0014-0036-0000	F-112	$15,800	-	$15,800	3.08	0.33
50-01-0014-0046-0000	R-100	$5,800	-	$5,800	13.49	0.34
50-01-0010-0005-0006	R-100	$110,900	-	$110,900	126.83	0.34
50-01-0014-0046-0006	R-101	$16,300	$116,100	$132,400	1.42	0.37
50-01-0014-0036-0001	R-108	$4,900	$25,100	$30,000	0.82	0.38
50-01-0014-0036-0002	X-601	$700	-	$700	0.22	0.38
50-01-0014-0046-0005	R-109	$1,700	$1,000	$2,700	0.7	0.4
50-01-0014-0045-0000	F-112	$1,100	-	$1,100	10.99	0.41
50-01-0014-0028-0002	R-100	$16,800	-	$16,800	5.46	0.43
50-01-0014-0049-0000	R-100	$500	-	$500	1.66	0.43
50-01-0014-0046-0001	R-101	$29,800	$42,000	$71,800	85.74	0.44
50-01-0014-0048-0000	F-112	$4,900	-	$4,900	40.16	0.45
50-01-0014-0046-0002	R-100	$10,400	-	$10,400	3.28	0.47
50-01-0014-0046-0004	R-108	$15,500	$50,400	$65,900	1.15	0.49
50-01-0015-0025-0001	F-112	$1,700	-	$1,700	18.16	0.5
50-01-0014-0031-0000	R-101	$23,200	$27,400	$50,600	61.29	0.52
50-01-0014-0044-0001	R-100	$5,000	-	$5,000	10.94	0.52
50-01-0014-0029-0000	R-108	$33,700	-	$33,700	2.55	0.53
50-01-0015-0031-0000	R-100	$59,800	-	$59,800	222.73	0.59
50-01-0015-0024-0000	X-601	$500	-	$500	0.45	0.65
50-01-0015-0023-0000	R-100	$14,800	-	$14,800	25.03	0.65
50-01-0014-0047-0000	F-112	$10,200	-	$10,200	57.11	0.7
50-01-0015-0025-0002	R-101	$6,900	$155,000	$161,900	6.02	0.7
50-01-0015-0025-0000	R-101	$29,900	$8,200	$38,100	38	0.71
50-01-0014-0031-0007	R-101	$12,800	$89,400	$102,200	2.52	0.71
50-01-0014-0002-0000	R-100	$2,700	-	$2,700	4.38	0.73

Parcel ID	Zoning[1]	Land Value ($)	Building Value ($)	Value ($)	Parcel Size (Acres)	Distance from site (mi)
50-01-0014-0031-0006	F-112	$4,400	$6,200	$10,600	69.13	0.73
50-01-0010-000A-0000	U-600	$29,700	-	$29,700	36.2	0.75
50-01-0014-0031-0004	R-101	$15,500	$78,200	$93,700	1.36	0.76
50-01-0015-0021-0000	R-101	$17,800	$39,400	$57,200	16.54	0.77
50-01-0010-0004-0000	R-101	$20,800	$26,500	$47,300	16.74	0.8
50-01-0014-0031-0005	F-112	$700	-	$700	13.34	0.84
50-01-0010-0005-0003	R-101	$28,500	$56,800	$85,300	43.79	0.85
50-01-0015-0028-0000	R-100	$300	-	$300	1.06	0.86
50-01-0010-0009-0000	F-112	$17,200	$189,100	$206,300	37.94	0.88
50-01-0010-0007-0000	R-101	$11,000	$33,800	$44,800	2.1	0.89
50-01-0010-0033-0000	F-112	$18,300	-	$18,300	260.06	0.9
50-01-0015-0021-0002	R-101	$10,000	$31,700	$41,700	0.67	0.91
50-01-0010-0005-0002	U-700	$15,600	-	$15,600	7.26	0.91
50-01-0014-0035-0000	R-100	$21,000	-	$21,000	26.51	0.92
50-01-0015-0031-0001	R-100	$7,500	-	$7,500	25.06	0.93
50-01-0015-0030-0003	F-112	$14,200	$157,800	$172,000	52.8	0.93
50-01-0015-0027-0000	R-100	$13,700	-	$13,700	48.73	0.94
50-01-0010-0008-0000	F-112	$400	-	$400	1.77	0.94
50-01-0015-0021-0001	R-100	$300	-	$300	0.62	0.95
50-01-0019-0054-0000	R-108	$10,800	$1,400	$12,200	11.16	0.98
50-01-0010-0005-0004	R-108	$15,900	$1,500	$17,400	2.45	0.98
50-01-0014-0032-0000	R-100	$22,000	-	$22,000	78.32	1

[1]**R-100**: Residential, Vacant
R-101: Residential, Single-Family
R-108: Residential, Mobile Home
R-109: Residential, Auxiliary Improvement
F-112: Active Farm
U-600: Vacant Exempt Land
U-700: Utility Vacant Land
X-601: Cemetery

APPENDIX C FULL NOISE REPORT



Sound Analysis Report

Big Sandy AEP Kentucky Power
2X1 Combined Cycle Plant
Louisa, Kentucky

August 5, 2026 | Terracon Project No. 1000035462

Prepared for:

worley
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P (717) 232-0593 | F (717) 232-1799
Terracon.com

August 5, 2026

Worley Consulting
1 Meridan Blvd, Suite 2CO2
Wyomissing, PA 19610

Attn: Jay Loughney, Senior Project Manager
P: (610) 427-3965
E: Gerald.Loughney@worley.com

Re: Sound Analysis Report
Big Sandy AEP Kentucky Power
Louisa, KY
Terracon Project No: 1000035462

Dear Mr. Loughney:

Terracon is pleased to submit the revised Sound Analysis Report for the above-mentioned project in general accordance with Proposal No. 1000029777 dated July 9, 2026. This report presents the findings of the sound analysis prepared using the client provided conceptual site plans for the proposed facility.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact Bill Kaufell (717) 237-2897 or via email at wkaufell@skellyloy.com.

Sincerely,
Terracon

Al Dunay
Senior Scientist – Acoustics

Bill Kaufell
Group Leader – Acoustics

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Table of Contents

1.0	Report Summary	1
2.0	Introduction	2
3.0	Fundamentals of Noise	2
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Figure 2	Project Layout
Figure 3	Sound Monitoring Locations
Figure 4	Sound Modeling Receptors
Figure 5	Sound Contours – Proposed Facility Only
Figure 6	Sound Contours – Existing Highway/Rail Sources

Attachments

Attachment 1 – Sound Monitoring Data
Attachment 2 – RCNM Results
Attachment 3 - Sound Emission Data

1.0 Report Summary

Topic	Overview Statement
Project Description	The project involves the construction and operation of a new natural gas-fired, combined cycle (NGCC) electric generating plant within the eastern portion of the existing Big Sandy AEP Kentucky Power facility in Louisa, Kentucky. The new NGCC consists of 2 natural gas-fired combustion turbines each with a heat recovery steam generator (HRSG) and one steam turbine in a 2 x 1 configuration. This report presents the sound study completed for the project and includes pre-construction ambient baseline sounds levels, construction noise estimates and computer modeling to predict future operational sound levels.
Existing Site Conditions	Sound level monitoring was completed simultaneously at four locations to document the existing sound levels along the property line over a 24-hour duration. The land use in the general vicinity of the project site is rural undeveloped woodland, transportation and industrial. Residential development is sparse within 1 mile of the facility. There are several rural residential properties, all located beyond ½ mile from the new facility. Ambient sound levels fluctuated based on the time of day. Sound levels were primarily influenced by vehicular noise from US 23 and train noise associated with the rail lines located on both sides of the Big Sandy River. Train noise was noted regularly during the daytime and overnight hours at all measurement locations. Train warning horn noise associated with the at-grade rail crossings at the AEP access roads along US 23 elevated sound levels significantly. Hourly average daytime sound levels fluctuated from 50-55 dB(A) while nighttime sound levels were slightly louder, ranging from 55-60 dB(A) during the overnight periods due to dominance of train noise (horn noise, locomotive/rail car activity). The ambient day-night (Ldn) sound level ranged from 60-69 dB(A). The elevated Ldn was attributed to the local transportation noise sources which dominate the background acoustical environment in the immediate area. The current activities on the AEP Kentucky Power site were insignificant and didn't contribute to the overall sound levels based on dominance of the transportation sources in the area.
Construction	Construction of the Big Sandy project will occur during typical work hours, Monday through Friday between 8:00 AM and 6:00 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. Based on the rural nature of the study area and distance to the closest sensitive receptors (+2500'), construction noise is not expected to cause an impact.
Operational Sound	Worst-case operational conditions were assessed based on the major noise-producing equipment proposed for the facility. The future operating acoustical environment for the proposed sources was simulated using the SoundPLAN v.6 software. Sound level contributions associated with the operation components of the facility ranged from 27-42 dB(A) at the closest residential receptor locations. All of the receptors analyzed are **42 dB(A) or below** and the facility will not be audible at these discrete locations based on reductions associated with sound propagation and ambient background conditions. Based the rural nature of the study area, dominance of transportation noise and sound attenuation due to distance to nearest noise sensitive receptors, the Big Sandy project is not anticipated to have an impact on surrounding ambient sound levels or sensitive receptors and **will be within recommended USEPA guidelines** outlined in Section 4.0.

2.0 Introduction

The project involves the construction and operation of a new natural gas-fired, combined cycle (NGCC) electric generating plant within the eastern portion of the existing Big Sandy AEP Kentucky Power facility in Louisa, Kentucky. The new NGCC consists of 2 natural gas-fired combustion turbines each with a heat recovery steam generator (HRSG) and one steam turbine in a 2 x 1 configuration. The proposed project is located approximately 3.5 miles north of Lousia along the Big Sandy River, adjacent to US 23 (see Figure 1). The project site is located at latitude 38.172219° and longitude -82.617392°.

The purpose of sound analysis was to provide an estimate of the background, construction, and operational noise conditions related to the facility development, including:

- Ambient background sound measurements
- Construction noise estimate
- Operational noise estimate

Project conceptual plans used for sound modeling:

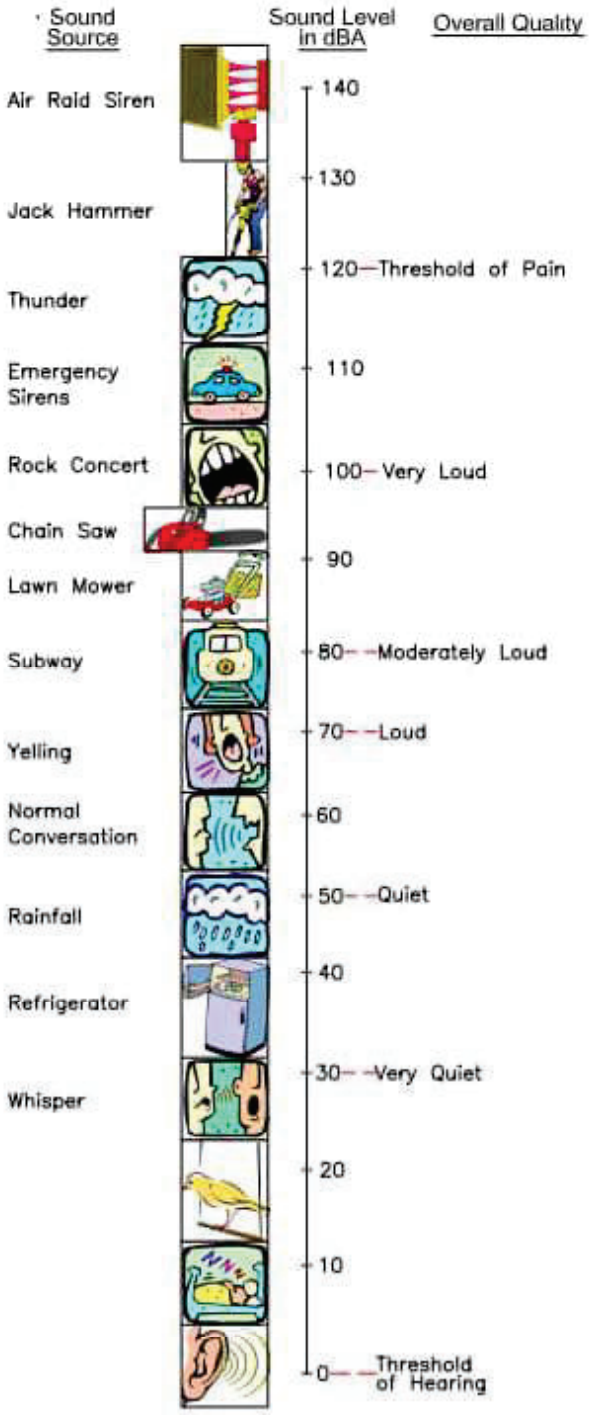
- BSP-CC-03-ME-DPP-00001 RB.DWG (Figure 2)

3.0 Fundamentals of Noise

Noise is defined as "unwanted sound." Therefore, it can be considered a psychological phenomenon and not physical. The roar of racecars adds to the excitement of spectators and hence would be considered sound. This same roar may annoy nearby neighbors, thereby becoming noise. Similarly, the roar of a waterfall at 70 dB(A) may be pleasing to the ear and perceived as sound, while sound produced by traffic or industrial activities at that same intensity could justifiably be considered noise. Factors playing a role in the perception of sound include magnitude, amplitude, duration, frequency, source, and receiver. Nevertheless, researchers have established a fair correlation between the measurement of sound, the A-weighted decibel (dB(A)), and its associated perceived human response. The graphic below outlines common noise sources with associated sound levels in dB(A).

Environmental sound levels are generally presented in terms of A-weighted decibels (dB(A)). 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 A-weighted scale, which has been in existence for over 40 years, is generally used in community and city noise ordinances and is expressed in units of dB(A) (decibels in the A-weighting).

Because sound is actually an energy level, it must be recorded on a logarithmic scale and expressed in logarithmic units called decibels (dB). Given this scale, a doubling of amplitude will result in a three-decibel increase in total level. Typically, a change in sound level between 2 and 3 dB(A) is barely perceptible, while a change of 5 dB(A) is readily noticeable by most people. A 10 dB(A) increase is usually perceived as a doubling of loudness; conversely, noise is perceived to be reduced by one-half when a sound level is reduced by 10 dB(A).



The metric frequently used when evaluating environmental sound levels is the equivalent continuous sound pressure level, or Leq. The Leq 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 Leq, another frequently used metric when considering environmental sound levels and their effect on people is the day-night average sound level, the Ldn. The Ldn 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 Ldn 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. Other acoustical statistics such as L(90) are generally considered to be representative of the background or ambient level of a noise environment. L(90) is the level exceeded for 90% of the time. For 90% of the time, the noise level is above this level.

As sound waves propagate from a source to a receiver, the sound level changes in magnitude and frequency content. Sound propagates outward spherically from a point source and decreases by 6 dB for each doubling of distance. When the propagation path is close to the ground, ground absorption affects the attenuation. Acoustically hard sites (pavement) would have minimal ground absorption while a soft site (grass) would further reduce the sound at a rate 1.5 dB per doubling of distance. Additional sound reductions occur as a result of atmospheric effects and shielding (barrier in path of source/receiver).

4.0 Regulatory Setting

The project scope includes a new electric generating facility located within Lawrence County, Kentucky. The Kentucky Revised Statute (KRS) Chapter 278.706(2)(l) mandates that an application for a new electric generating facility must include a site assessment report as detailed in KRS 278.708. This sound analysis report was completed based on the site assessment report requirement specified in KRS 278.708(3):

> *(d) Evaluation of anticipated peak and average noise levels associated with the facility's construction and operation at the property boundary*

Kentucky has promulgated a local noise regulation program as outlined in KRS 224.30-175 which states "*All local governments may develop, adopt, and maintain a comprehensive program of noise regulation. A program may include a study of the noise problems resulting from uses and activities within its jurisdiction and the development and adoption of a noise control plan.*" This law merely allows the local jurisdiction to establish noise ordinances, regulations, policies and procedures and does not provide numerical noise impact thresholds. The project is in Lawerence County, which does not have a noise ordinance that includes numerical thresholds to determine noise impacts. There are no enforceable noise limits applicable to the Big Sandy project.

In the absence of noise impact thresholds from Local/State agencies, guidance provided by the United States Environmental Protection Agency (USEPA) was used to evaluate the noise impacts associated with the project.

- EPA 550/9-73-002 (1973): *Public Health and Welfare Criteria for Noise*
- EPA 550/9-79-200 (1978): *Protective Noise Levels*

Although these USEPA documents are not legally binding, they offer useful benchmarks for evaluating potential noise impacts. The USEPA notes that the recommended sound levels include a safety buffer to enhance their protective nature. As such, these levels should not be interpreted as enforceable standards, regulations, or objectives. Instead, they represent thresholds below which it is unlikely that the sensitive land use would experience harmful effects from noise exposure. **Table 1** summarizes the recommended USEPA sound level.

Table 1 – USEPA Recommended Sound Levels

Zoning Classification	Day-Night Sound Level[1] (Ldn)
Sensitive Outdoor Areas	55 dB(A)

[1]Day-night (Ldn) sound level equates to 24-hour average sound levels with 10 dB penalty applied to nighttime hours

The EPA recommends 55 dB(A) (Day-Night Sound Level (Ldn)) as an acceptable threshold for sensitive outdoor areas such as residential. The Ldn metric is a 24-hour average sound level with 10 dB penalty applied to nighttime hours (10pm – 7am). This threshold equates to a daytime (7am – 10pm) sound level of 55 dB(A) and 45 dB(A) during nighttime hours.

5.0 Existing Site Conditions

Sound level monitoring was completed simultaneously at four locations to document the existing sound levels along the property line over a 24-hour duration, starting at 11:00 AM on October 9, 2025. The measurement locations are outlined on **Figure 3**. The land use in the general vicinity of the project site is rural undeveloped woodland, transportation and industrial. Residential development is sparse within 1 mile of the facility. There are several rural residential properties, all located beyond ½ mile from the property.

The sound level measurements were conducted with four (4) Rion NL52 Sound Level Analyzers (ANSI Type 1). The sound level meters were pre and post calibrated and the biennial laboratory calibration certificates are presented in **Attachment A**. Sound levels were recorded at 1 second intervals for the duration and the measured statistics included the Leq, Lmax, Lmin, and L10, L50 and L90 percentiles. The analyzers also provided 1-minute time average intervals for the same statistics as recorded at 1-second intervals. Additional audio data (wav audio files) was recorded during the measurement period when sound levels exceeded 60 dB(A) to aid in source identification for spikes occurring during the period. Post processing of the sound level data included averaging over 5-minute, 1-hour intervals, and 24-hour Leq (average).

The site sketches for each monitoring site are found in **Attachment A** in addition to meteorological data sourced from the Tri-State Airport in Kenova WV (38.4 °N, 82.58 °W). The measurement period was predominantly clear/sunny and temperatures ranged from 50° F during the night to a high of 75° F during the day. The winds were predominantly below 10 mph for the duration.

The monitoring data has been processed into hourly averages (Leq(h) for each site, in addition to the 24-hour averages, Ldn (day-night level), daytime and nighttime averages and the background statistic L(90) (Table 1). Time-history graphs of the monitoring data are provided as described below:

Graph 1 – 24 Hour Time History - 5-minute average (Leq(5min))
Graph 2 - 24 Hour Time History - 1-hour average (Leq(1hr))

Ambient sound levels fluctuated based on the time of day. Based on review of the audio files, sound levels were primarily influenced by vehicular noise from US 23 and train noise associated with the rail lines located on both sides of the Big Sandy River. Monitoring Site 2 is located adjacent to US 23 and at an at-grade rail crossing, resulting in elevated levels from both sources. Train noise was noted regularly during the daytime and overnight hours at all measurement locations. Train warning horn noise associated with the at-grade rail crossings at the AEP access roads along US 23 elevated sound levels significantly during

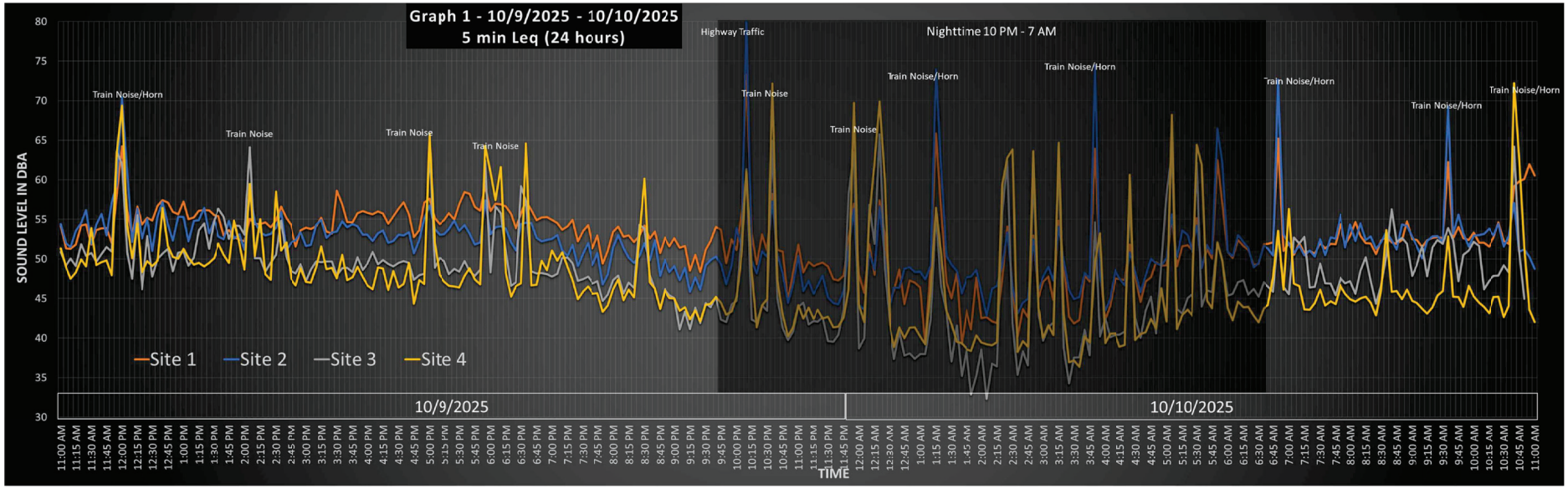
the 24-hour measurement. Hourly average daytime sound levels fluctuated from 50-55 dB(A) while nighttime sound levels were slightly louder, ranging from 55-60 dB(A) during the overnight periods due to dominance of train noise (horn noise, locomotive/rail car activity). The ambient day-night (Ldn) sound level ranged from 60-69 dB(A). The elevated Ldn was attributed to the local transportation noise sources which dominate the background acoustical environment in the immediate area. The current activities on the AEP Kentucky Power site were insignificant and didn't contribute to the overall sound levels based on dominance of the transportation sources in the area.

Table 2 –Sound Level Summary

Time Period	Sound Levels in dB(A)			
	Site 1	Site 2	Site 3	Site 4
24-Hour Leq	55	60	53	56
24-Hour L90	51	50	49	51
Day-Night (Ldn)	62	69	60	64
Daytime (7am - 10pm)	55	55	53	55
Nighttime (10pm - 7 am)	56	63	54	58

Table 3 - Hourly Average Measurement Summary

Date	Time	Sound Levels – LEQ (1-hour) in dB(A)			
		Site 1	Site 2	Site 3	Site 4
10/09/2025	11:00 AM	54	55	55	54
	12:00 PM	58	61	54	59
	1:00 PM	55	54	54	51
	2:00 PM	54	54	55	53
	3:00 PM	55	54	49	49
	4:00 PM	56	53	49	47
	5:00 PM	57	54	56	58
	6:00 PM	56	53	54	57
	7:00 PM	53	51	48	48
	8:00 PM	53	51	49	51
	9:00 PM	52	49	43	44
	10:00 PM	63	70	56	62
	11:00 PM	51	49	54	59
10/10/2025	12:00 AM	50	50	56	60
	1:00 AM	56	64	46	48
	2:00 AM	48	48	55	58
	3:00 AM	54	64	53	54
	4:00 AM	48	48	48	50
	5:00 AM	55	58	56	60
	6:00 AM	56	62	48	46
	7:00 AM	52	52	49	48
	8:00 AM	53	53	51	47
	9:00 AM	55	59	51	46
	10:00 AM	57	53	55	62


Graph 1 - 10/9/2025 - 10/10/2025
5 min Leq (24 hours)
Highway Traffic
Nighttime 10 PM - 7 AM
Train Noise/Horn
Train Noise
Train Noise
Train Noise
Train Noise
Train Noise
Train Noise/Horn
Train Noise/Horn
Train Noise/Horn
Train Noise/Horn
Train Noise/Horn
SOUND LEVEL IN DBA
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Site 4
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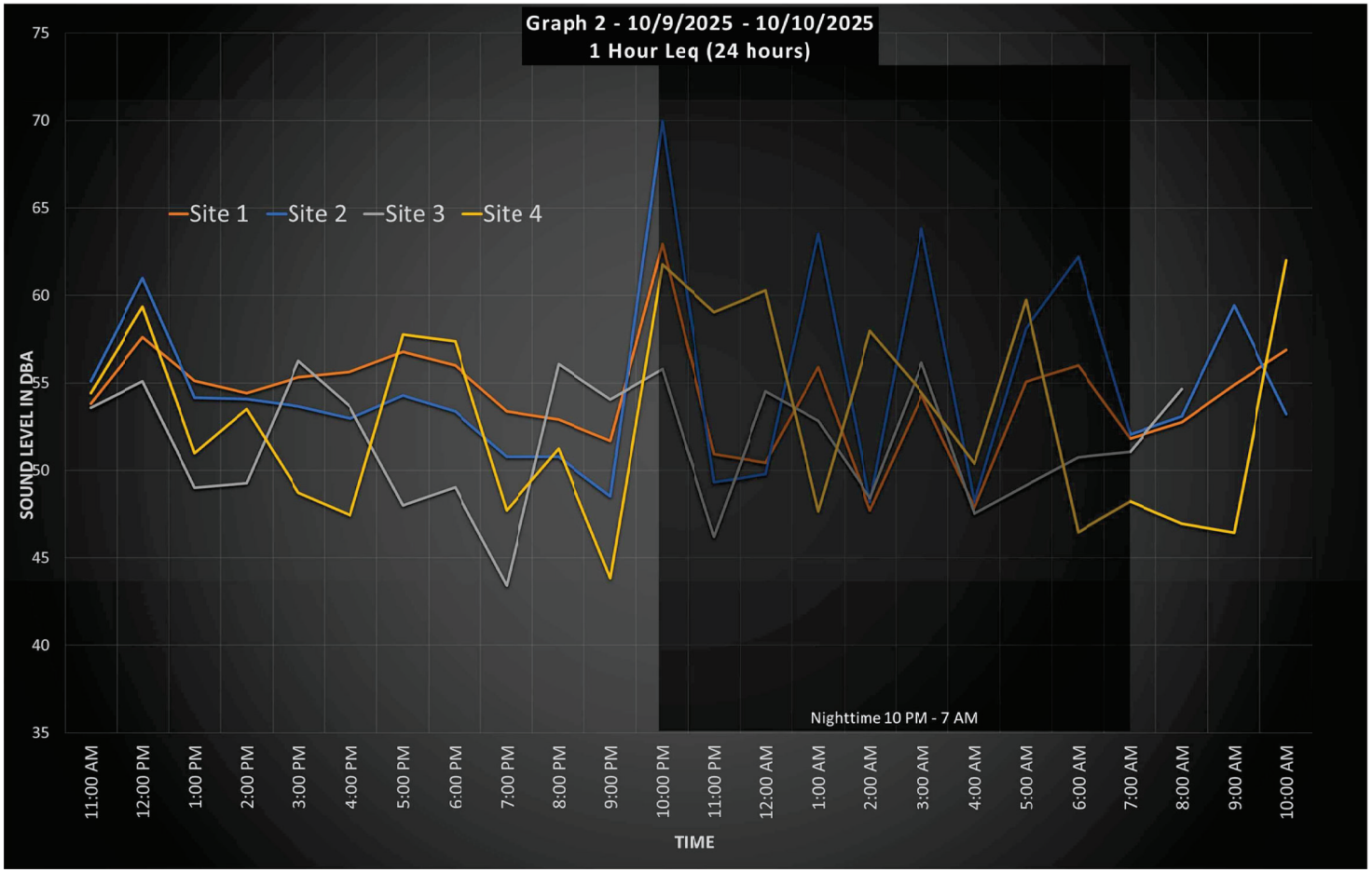
10/10/2025
TIME


Graph 2 - 10/9/2025 - 10/10/2025
1 Hour Leq (24 hours)
Site 1
Site 2
Site 3
Site 4
SOUND LEVEL IN DBA
75
70
65
60
55
50
45
40
35
Nighttime 10 PM - 7 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
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6.0 Construction Noise

Construction of the Big Sandy project will occur during typical work hours, Monday through Friday between 8:00 AM and 6:00 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) 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 4.

Table 4: Common Construction Equipment Noise Levels

Equipment Description	Usage(%)	L_{max} @ 50 feet (dB(A))
Backhoe	40	77.6
Compressor (air)	40	77.7
Concrete Mixer Truck	40	78.8
Crane	16	80.6
Dozer	40	81.7
Drill Rig Truck	20	79.1
Dump Truck	40	76.5
Excavator	40	80.7
Front End Loader	40	79.1
Generator	50	80.6
Grader	40	85.0
Jackhammer	20	88.9
Man Lift	20	74.7
Pneumatic Tools	50	85.2
Scraper	40	83.6
Welder / Torch	40	74.0

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 site preparation activities prior to the installation of the generating equipment. To predict the worst-case construction noise scenario, equipment associated with construction of the facility was modeled for varying distances. The equipment used for the RCNM construction noise calculations includes the equipment referenced in **Table 4**. Results of the RCNM construction noise calculations for varying distances of the development site are presented in **Table 5 as** both L_{eq} and L_{max} values. Data from RCNM calculations is in **Attachment 2**.

These worst-case construction noise levels would be temporary and intermittent. Based on the rural nature of the study area and distance to the closest sensitive receptors (+2500'), construction noise is not expected to cause an impact.

Table 5: Estimated Construction Noise Levels in dB(A)

Equipment	1,000'		2,000'	
	Lmax	Leq	Lmax	Leq
Backhoe	52	48	44	40
Compressor (air)	52	48	44	40
Concrete Mixer Truck	53	49	45	41
Crane	55	47	47	39
Dozer	56	52	48	44
Drill Rig Truck	53	46	45	38
Dump Truck	50	47	43	39
Excavator	55	51	47	43
Front End Loader	53	49	45	41
Generator	55	52	47	44
Grader	59	55	51	47
Jackhammer	63	56	55	48
Man Lift	49	42	41	34
Pneumatic Tools	59	56	51	48
Scraper	58	54	50	46
Welder / Torch	48	44	40	36
Total	63	63	55	56

7.0 Operational Noise

Operational conditions were assessed based on the major noise-producing equipment proposed within the facility. The sound emissions associated with the equipment was provided by Worley (**Attachment 3). Table 6** summarizes the major noise sources and corresponding A-weighted sound power level included in the model for each source. Modeling was completed using the 1/3 octave band sound power levels provided outlined in **Attachment 3**. The modeling is a conservative estimate of the decibel levels that would be generated by the proposed plant equipment only (i.e., this does not take into account existing ambient noise levels, existing plant noise sources, etc.). The modeling assumes that all the equipment summarized in **Table 6** would operate simultaneously and continuously over a 24-hour period.

During commissioning and intermittent operations such as start-up, shutdown, and upset conditions (e.g., emergency steam release), environmental noise emissions from the facility may exceed the sound pressure levels experienced during normal operation. Noise levels may be elevated during the steam blow commissioning phase; however, this will be a short-term effect (lasting only 7 to 21 days) and therefore will not generate noise that could permanently impact nearby sensitive receivers. The temporary effects of the steam blow were not included in the operational noise model analysis.

Noise Modeling Methodology
The future operating acoustical environment for the proposed sources was simulated using the SoundPLAN v.6.0 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 5-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 and ground cover. Sound level projections were calculated for the closest sensitive receptor locations (22 receptors) within approximately 1-mile radius of the project boundaries. In addition, sound contour modeling was compiled to graphically display the future acoustical environment, compliance with IPCB noise thresholds and illustrate the influence of the facility on the ambient sound conditions at adjoining sensitive properties (residential).

Table 6 – Equipment Sound Emissions

Equipment Description	Sound Power Level (A-weighted)
INLET SYSTEM WITH 8 ft SILENCER	
Inlet Ducting (including Filter House)	99
Inlet Filter Face (no acoustic hood)	102
GAS TURBINE PACKAGE	
Accessory Module	103
Inlet Plenum	104
Turbine Compartment	107
Exhaust Diffuser	94
Load Compartment	103
Generator (H35)	105
Turbine Compartment Vent Fans	104
Exhaust Stack Top	122
Cooling Water Module	107
Wet Compression Skid	93
HRSG/ MISC EQUIPMENT	
HRSG Inlet Transition Duct Radiated	106
HRSG Wall Radiated	98
HRSG Exhaust Stack Wall Radiated	84
HRSG Exhaust Stack Exit – w/o Directivity	114
HRSG Duct Burner Gas Piping	105
SCR Ammonia Skid	101
GT Fuel Gas Systems	96
Unenclosed Lube Oil Package	104
Steam Turbine – Total – partly weather enclosed / insulated	111
Condenser during Base Load	113
Generator for Steam Turbine	118
Enclosed Lube Oil Package – Steam Turbine	98
Steam Turbine Control Oil Supply Skid	109
Boiler Feed Water Pumps	116
Main GSU Transformer	108
Auxiliary Transformer	93
Circulating Water Pump	104
Service Water Pump Skid	98
Cooling Tower Fans	110
Demin Water Forwarding Pump	101
Raw Water Forwarding Pump	95
Cooling Water Heat Exchangers and Pump Skid	109

Noise Modeling Results

The operational noise was conservatively assumed to occur continuously 24 hours per day for the assessment of noise impacts. The closest sensitive receptor modeling locations are outlined in **Figure 4**. The worst-case operational sound level projections for each of the sensitive receptors outlined on **Figure 4** are found in **Table 7** – Sound Modeling Results. Sound level contributions associated with the facility ranged from 27-42 dB(A) at the closest residential receptor locations. All of the receptors analyzed are **42 dB(A) or below** and the facility **will be within recommended USEPA guidelines** outlined in Section 4.0. and will be inaudible at these discrete locations based on reductions associated with sound propagation and ambient background conditions.

Sound contours have been included to illustrate the sound dispersion for the facilities maximum worst-case operating condition (**Figure 5**). This figure only represents "Facility Only" conditions and only includes the noise sources for each combustion unit as outlined in **Table 6**. Based on the dominance of transportation noise noted in the ambient measurement data associated with US 23 and the rail activity on either side of the Big Sandy River, an existing conditions sound model was developed using current US 23 traffic data and estimated existing rail activity **(Figure 6).** The sound dispersion outlined on this figure represents existing conditions based only on the transportation sources in the study area and illustrates the dominance of rail and highway traffic in the study area.

Based on the rural nature of the study area, dominance of transportation noise and sound attenuation due to distance to nearest noise sensitive receptors, the Big Sandy project is not anticipated to have an impact on surrounding ambient sound levels or sensitive receptors and **will be within recommended USEPA guidelines** outlined in Section 4.0.

Table 7: Sound Modeling Results in dB(A) at closest Residences

Receiver Number	Ambient Background	Limit Day dB(A)	Limit Night dB(A)	Sound Level dB(A)
1	45-55	55	45	40
2	45-55	55	45	42
3	45-55	55	45	40
4	45-55	55	45	35
5	45-55	55	45	36
6	45-55	55	45	40
7	45-55	55	45	35
8	45-55	55	45	29
9	45-55	55	45	27
10	45-55	55	45	27
11	45-55	55	45	28
12	45-55	55	45	32
13	45-55	55	45	37
14	45-55	55	45	41
15	45-55	55	45	42
16	45-55	55	45	40
17	45-55	55	45	33
18	45-55	55	45	41
19	45-55	55	45	37
20	45-55	55	45	28
21	45-55	55	45	35
22	45-55	55	45	35

Figures

Figure 1 Project Location Map
Figure 2 Project Layout
Figure 3 Sound Monitoring Locations
Figure 4 Sound Modeling Receptors
Figure 5 Sound Contours – Proposed Facility Only
Figure 6 Sound Contours – Existing Highway/Rail Sources



Project No.	JN257308
Scale:	AS SHOWN
Client:	Worley Consulting
Date:	10/24/2025

449 Eisenhower Blvd, Suite 300
Harrisburg, PA 17110

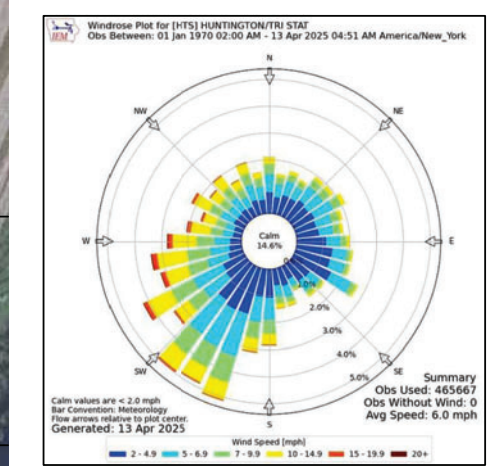
Project Location Map

Big Sandy AEP Kentucky Power
23000 US-23
Louisa, KY 41230

Figure
1

GENERAL NOTES

1. POTENTIAL FUTURE EQUIPMENT SHOWN IN GREEN.
2. TOP OF MAJOR EQUIPMENT FOUNDATIONS SHALL BE EL 569'. FLOOD PLANE ELEVATION IS 567'. PLANT BASE ELEVATION IS 568'.



REFERENCE DRAWINGS

BSP-CC-03-ME-DPP-00002 - ENLARGED PLAN



PRELIMINARY - NOT FOR CONSTRUCTION

SCALE: 1"=200'
200 0 200 400 600

PROFESSIONAL ENGINEER'S SEAL
STATE OF KENTUCKY ★ JOHN NICOLAS 35288 ★ LICENSED PROFESSIONAL ENGINEER
ORIGINALLY PREPARED, OR UNDER THE RESPONSIBLE DIRECTION OF
PE: JOHN NICOLAS STATE: KY
LIC. NO.: 35288 DATE: 08-06-26

worley
WORLEY PROJECT No.
418008-00703
"This drawing is prepared solely for the use of the contractual customer of Worley and Worley assumes no liability to any other party for any representations contained in this drawing."

REV	DATE	REVISION DESCRIPTION	DRAWN	DRFT CHK	DESIGNED	ENG CHK	APPROVED	PRJ MGR
C	08-06-26	ISSUED FOR CPCN FILING	MP	MSC	MP	AH	AH	JL
B	07-21-26	ISSUED FOR REVIEW	MP	MSC	MP	SD	SD	JL
A	07-17-26	ISSUED FOR REVIEW	MP	MP	MP	AH	AH	JL

■ SEE WORLEY REVISION BLOCK

DATE	NO.	DESCRIPTION	APPD.
		REVISIONS	

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KENTUCKY POWER COMPANY
BIG SANDY PLANT
BIG SANDY KENTUCKY
GENERAL ARRANGEMENT
BS34 BIG SANDY U3A/U3B CCGT U3S STG 2 X1 (GE 7FA.05) PLOT PLAN

UNIT: 3 DRAWING NUMBER: **BSP-CC-03-ME-DPP-00001** REV: C
SCALE: 1" = 200'
MECHANICAL ENGINEERING
DR: CH: SUP: ENG: DATE: APPROVED BY
DOCUMENT PREPARED BY WORLEY
AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215

PLOT DATE: 6-Aug-2026 PLOT TIME: 3:17:15 PM BY: Moe,Parsapour

DRAWING NUMBER: **3 - BSP-CC-03-ME-DPP-00001**

CROSS REFS:



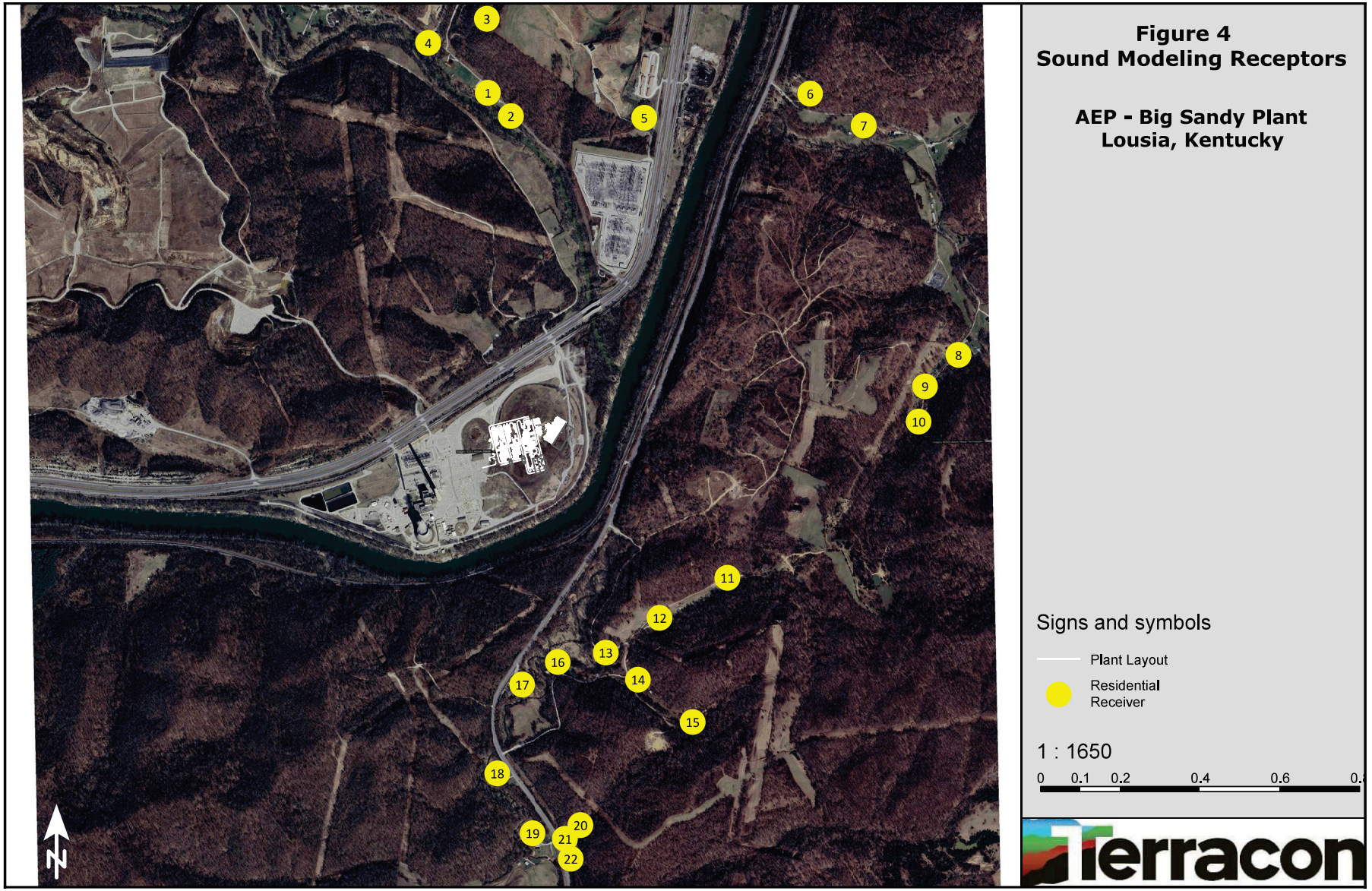
Project No.	JN257308
Scale:	AS SHOWN
Client:	Worley Consulting
Date:	10/24/25

449 Eisenhower Blvd, Suite 300
Harrisburg, PA 37406

Monitoring Site Locations

Big Sandy AEP Kentucky Power
23000 US-23
Louisa, KY 41230

Figure
3


3
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22
N
Figure 4
Sound Modeling Receptors
AEP - Big Sandy Plant
Lousia, Kentucky
Signs and symbols
Plant Layout
Residential Receiver
1 : 1650
0 0.1 0.2 0.4 0.6
Terracon

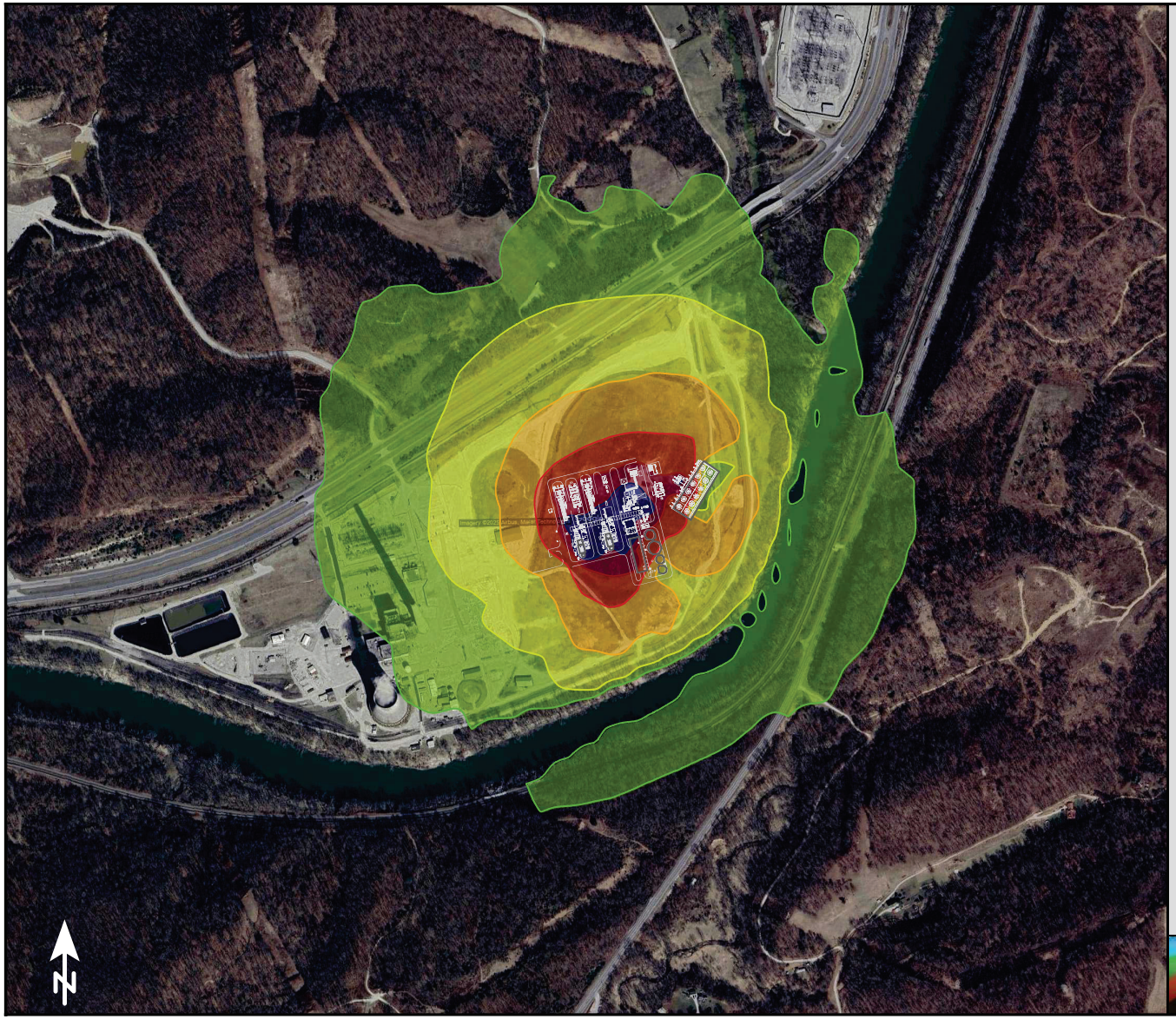


Figure 5
Sound Contours

AEP - Big Sandy Plant
Lousia, Kentucky

Note: The sound contouring represents the proposed noise emissions associated with the CC 2x1 equipment only and does not include existing noise sources associated with existing plant operations or local transportation facilities.

Signs and symbols

Plant Layout

Levels in dB(A)

	< 55
	55 - 60
	60 - 65
	65 - 70
	70 - 75
	75 - 80
	>= 80

1 : 850

0 200 400 800 1200 1600 feet

Terracon

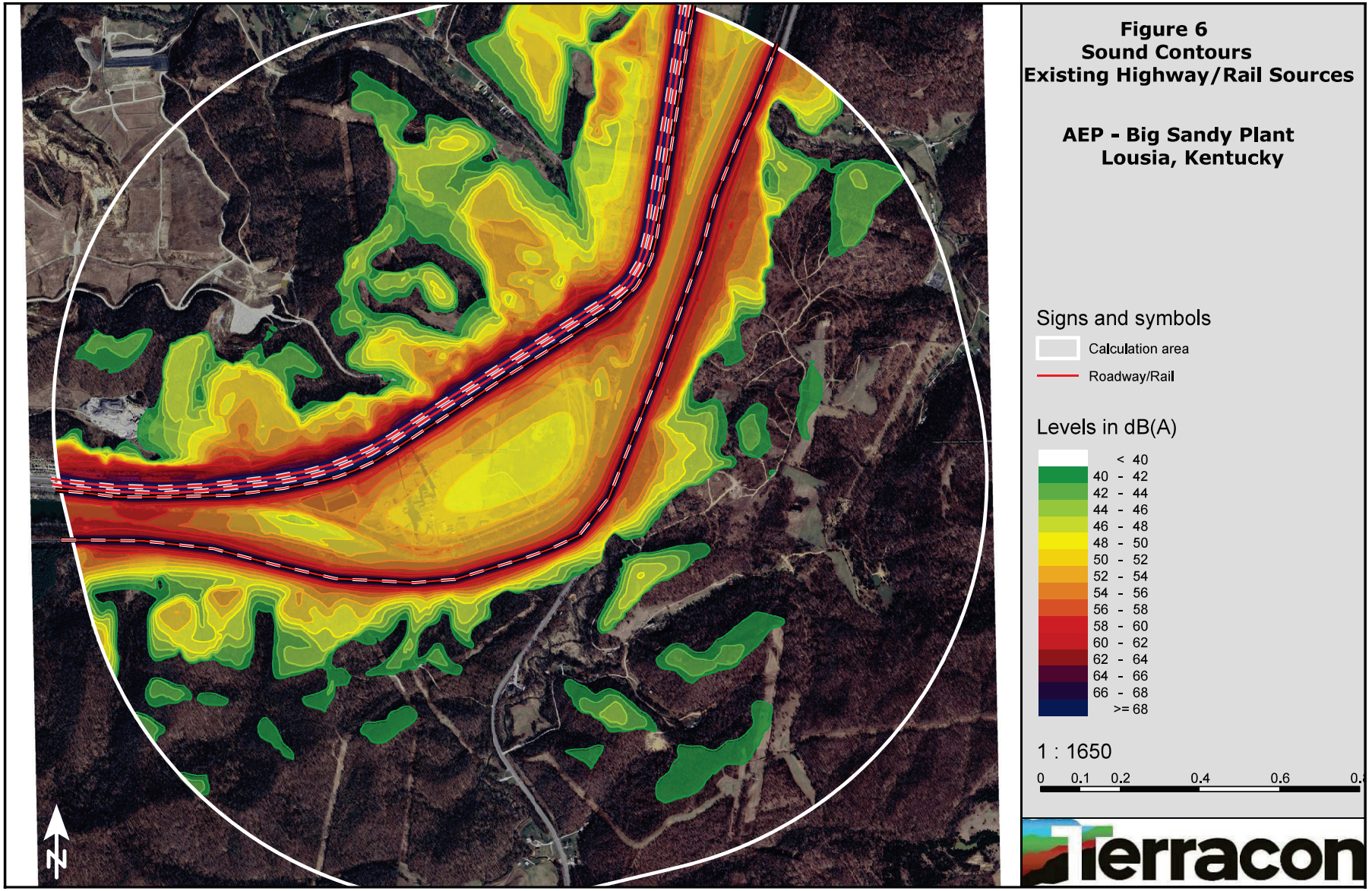


Figure 6
Sound Contours
Existing Highway/Rail Sources
AEP - Big Sandy Plant
Lousia, Kentucky
Signs and symbols
Calculation area
Roadway/Rail
Levels in dB(A)
< 40
40 - 42
42 - 44
44 - 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
58 - 60
60 - 62
62 - 64
64 - 66
66 - 68
>= 68
1 : 1650
0 0.1 0.2 0.4 0.6
N
Terracon

Attachments

Attachment 1 – Sound Monitoring Data
Attachment 2 – RCNM Results
Attachment 3 - Sound Emission Data

Attachment 1 – Sound Monitoring Data



Project No.	JN257308
Scale:	AS SHOWN
Client:	Worley Consulting
Date:	10/24/25

449 Eisenhower Blvd, Suite 300
Harrisburg, PA 37406

Monitoring Site Locations

Big Sandy AEP Kentucky Power
23000 US-23
Louisa, KY 41230

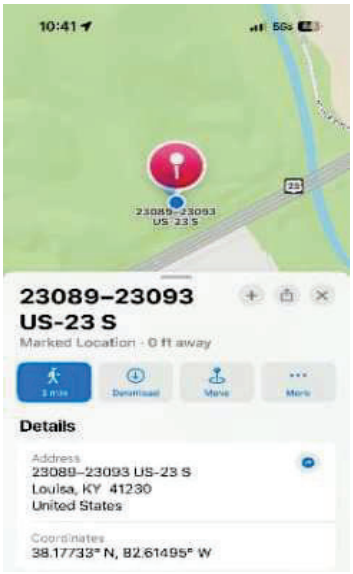
Figure
3

Big Sandy AEP KY Power Noise Monitoring Site Sketch
24 Hour Ambient Noise Measurement

Site # 1

Description:

MONITORING INFORMATION



Date:	10/9/2025
Start Time:	11:00 AM
Date:	10/10/2025
End Time:	11:00 AM
Meter ID:	Rion 6 Serial #520983
Response Rate:	slow

Thursday 10/09/25		Friday 10/10/25	
Time	Leq(h) in dBA	Time	Leq(h) in dBA
11:00 AM	53.8	12:00 AM	50.4
12:00 PM	57.6	1:00 AM	55.9
1:00 PM	55.1	2:00 AM	47.7
2:00 PM	54.4	3:00 AM	54.3
3:00 PM	55.3	4:00 AM	47.9
4:00 PM	55.6	5:00 AM	55.1
5:00 PM	56.8	6:00 AM	56.0
6:00 PM	56.0	7:00 AM	51.8
7:00 PM	53.4	8:00 AM	52.8
8:00 PM	52.9	9:00 AM	54.9
9:00 PM	51.7	10:00 AM	56.9
10:00 PM	62.9		
11:00 PM	50.9		

24-hour Sound Level Leq(24h) (dBA)	55
24 hour Sound Level L90 (dBA)	51
Day -Night Level (Ldn)	62
Day Sound Level (7 AM - 10 PM) Leq (dBA)	55
Night Sound Level (10 PM - 7 AM) Leq (dBA)	56

SITE SKETCH:

North Arrow

Site Specifics

Pavement Type:	Grade:	Site Surface:	Employee:
NA	NA	soft	Mbelcher

Atmospheric Conditions : See attachment for historical met data from Louisa KY County Airport

Looking south toward Big Sandy River



Looking west toward site

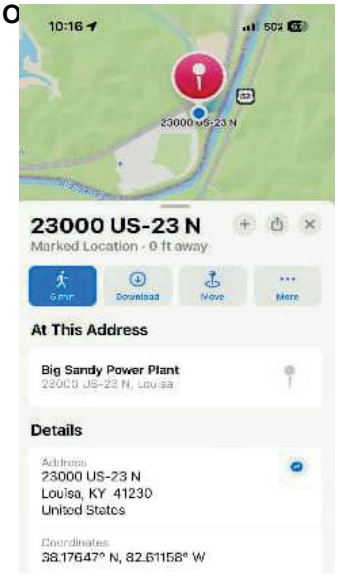


Big Sandy AEP KY Power Noise Monitoring Site Sketch
24 Hour Ambient Noise Measurement

Site # 2

Description:

MO



Date:	10/9/2025
Start Time:	11:00 AM
Date:	10/10/2025
End Time:	11:00 AM
Meter ID:	Rion 5 Serial #520984
Response Rate:	slow

Thursday 10/09/25		Friday 10/10/25	
Time	Leq(h) in dBA	Time	Leq(h) in dBA
11:00 AM	55.1	12:00 AM	49.8
12:00 PM	61.0	1:00 AM	63.5
1:00 PM	54.2	2:00 AM	48.2
2:00 PM	54.1	3:00 AM	63.8
3:00 PM	53.7	4:00 AM	48.2
4:00 PM	53.0	5:00 AM	58.1
5:00 PM	54.3	6:00 AM	62.2
6:00 PM	53.4	7:00 AM	52.1
7:00 PM	50.8	8:00 AM	53.1
8:00 PM	50.8	9:00 AM	59.4
9:00 PM	48.5	10:00 AM	53.2
10:00 PM	70.0		
11:00 PM	49.3		

24-hour Sound Level Leq(24h) (dBA)	60
24 hour Sound Level L90 (dBA)	50
Day -Night Level (Ldn)	69
Day Sound Level (7 AM - 10 PM) Leq (dBA)	55
Night Sound Level (10 PM - 7 AM) Leq (dBA)	63

SITE SKETCH:

North Arrow

Site Specifics

Pavement Type:	Grade:	Site Surface:	Employee:
NA	NA	soft	Mbelcher

Atmospheric Conditions : See attachment for historical met data from Louisa KY County Airport

Looking southest toward Big Sandy River



Looking west toward site



Big Sandy AEP KY Power Noise Monitoring Site Sketch
24 Hour Ambient Noise Measurement

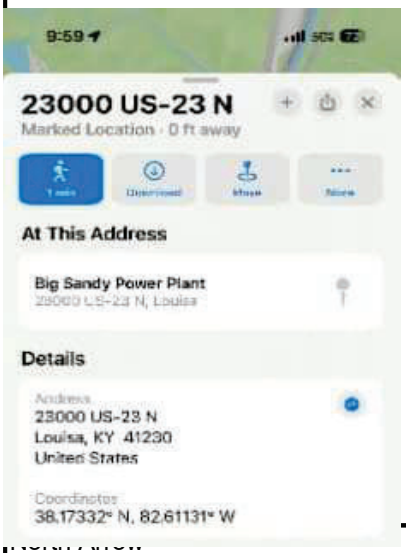
Site # 3

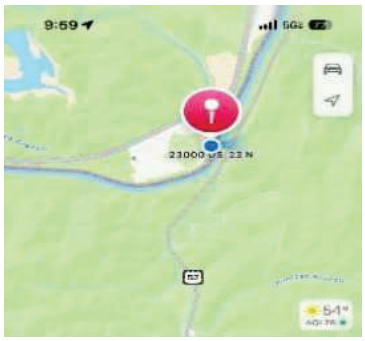
Description:

MONITORING INFORMATION

Date:	10/9/2025
Start Time:	11:00 AM
Date:	10/10/2025
End Time:	11:00 AM
Meter ID:	Rion 4 SN 1010837
Response Rate:	slow

Thursday 10/09/25		Friday 10/10/25	
Time	Leq(h) in dBA	Time	Leq(h) in dBA
11:00 AM	54.7	12:00 AM	55.8
12:00 PM	53.9	1:00 AM	46.2
1:00 PM	53.6	2:00 AM	54.5
2:00 PM	55.1	3:00 AM	52.8
3:00 PM	49.0	4:00 AM	48.4
4:00 PM	49.3	5:00 AM	56.2
5:00 PM	56.3	6:00 AM	47.5
6:00 PM	53.6	7:00 AM	49.1
7:00 PM	48.0	8:00 AM	50.7
8:00 PM	49.0	9:00 AM	51.1
9:00 PM	43.4	10:00 AM	54.6
10:00 PM	56.1		
11:00 PM	54.1		





24-hour Sound Level Leq(24h) (dBA)	53
24 hour Sound Level L90 (dBA)	49
Day -Night Level (Ldn)	60
Day Sound Level (7 AM - 10 PM) Leq (dBA)	53
Night Sound Level (10 PM - 7 AM) Leq (dBA)	54

Site Specifics

Pavement Type:	Grade:	Site Surface:	Employee:
NA	NA	soft	Mbelcher

Atmospheric Conditions : See attachment for historical met data from Louisa KY County Airport

looking east towards Big Sandy River.



looking west across site.



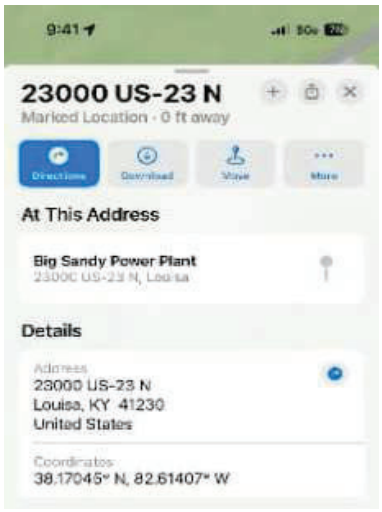
Big Sandy AEP KY Power Noise Monitoring Site Sketch
24 Hour Ambient Noise Measurement

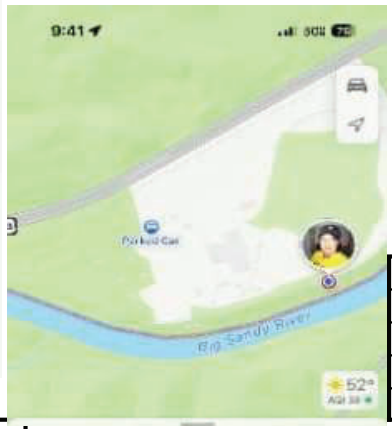
Site # 4

Description:

MONITORING INFORMATION

Date:	10/9/2025
Start Time:	11:00 AM
Date:	10/10/2025
End Time:	11:00 AM
Meter ID:	Rion 3 SN 1010801
Response Rate:	slow





	Thursday 10/09/25		Friday 10/10/25	
	Time	Leq(h) in dBA	Time	Leq(h) in dBA
	11:00 AM	54.4	12:00 AM	60.3
	12:00 PM	59.4	1:00 AM	47.7
	1:00 PM	51.0	2:00 AM	58.0
	2:00 PM	53.5	3:00 AM	54.4
	3:00 PM	48.7	4:00 AM	50.4
	4:00 PM	47.4	5:00 AM	59.7
	5:00 PM	57.8	6:00 AM	46.4
	6:00 PM	57.4	7:00 AM	48.2
	7:00 PM	47.7	8:00 AM	46.9
	8:00 PM	51.3	9:00 AM	46.4
	9:00 PM	43.8	10:00 AM	62.0
	10:00 PM	61.8		
	11:00 PM	59.0		

24-hour Sound Level Leq(24h) (dBA)	56
24 hour Sound Level L90 (dBA)	51
Day -Night Level (Ldn)	64
Day Sound Level (7 AM - 10 PM) Leq (dBA)	55
Night Sound Level (10 PM - 7 AM) Leq (dBA)	58

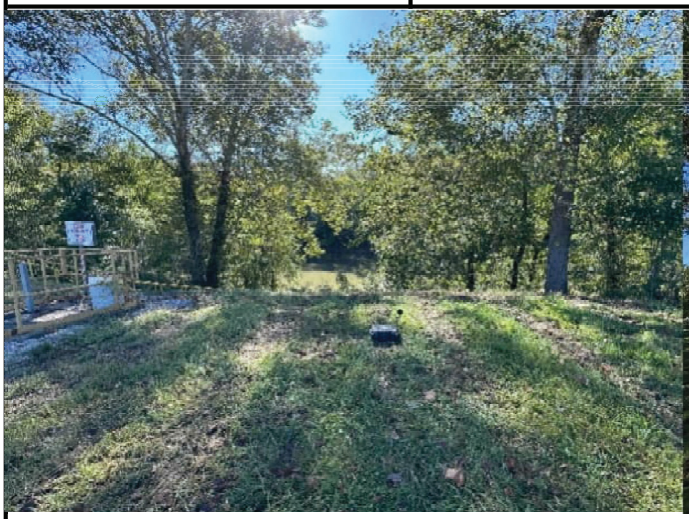
SITE SKETCH:

North Arrow

Site Specifics

Pavement Type:	Grade:	Site Surface:	Employee:
NA	NA	soft	Mbelcher

Atmospheric Conditions : See attachment for historical met data from Louisa KY County Airport





Noise Analysis
Big Sandy U3-U4 SCGT Project | AEP - Kentucky
Photos Captured: October 9, 2025 | Terracon Project No. JN257308

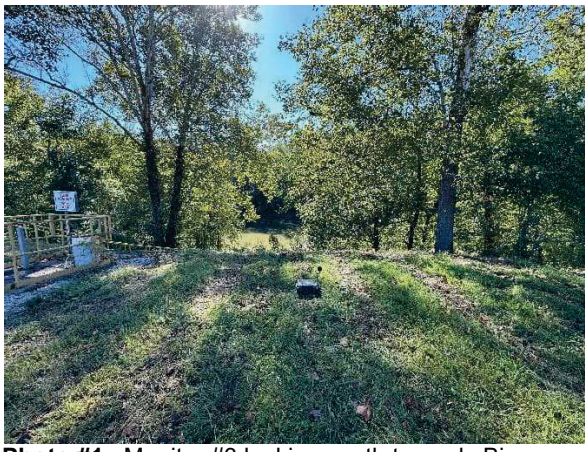


Photo #1 Monitor #3 looking south towards Big Sandy River.



Photo #2 Monitor #3 looking west towards site.

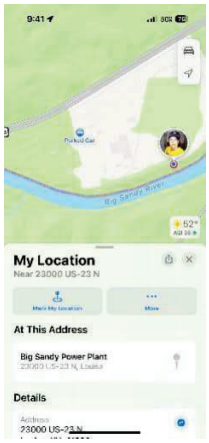


Photo #3 Location of Monitor #3.

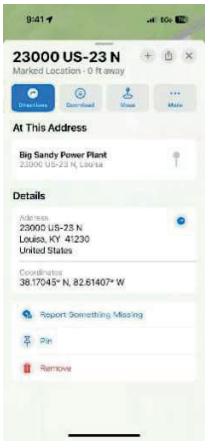


Photo #4 Location coordinates of Monitor #3.

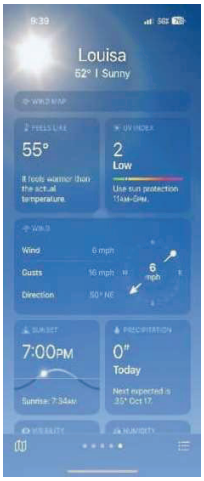


Photo #5 Site conditions at Monitor #3.



Photo #6 Monitor #4 looking southeast towards Big Sandy River.

Noise Analysis
Big Sandy U3-U4 SCGT Project | AEP - Kentucky
Photos Captured: October 9, 2025 | Terracon Project No. JN257308



Photo #7 Monitor #4 looking west across site.

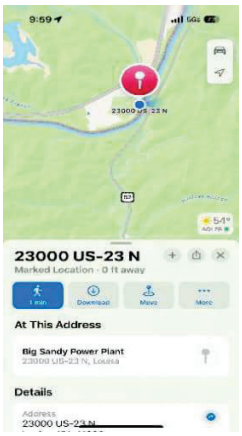


Photo #8 Location of Monitor #4.

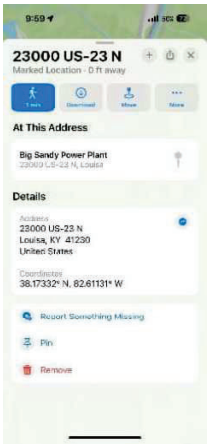


Photo #9 Location coordinates of Monitor #4.

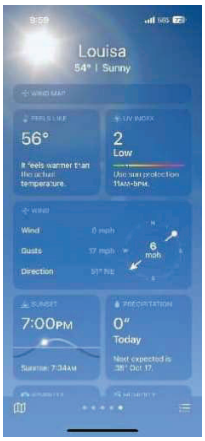


Photo #10 Site conditions at Monitor #4.

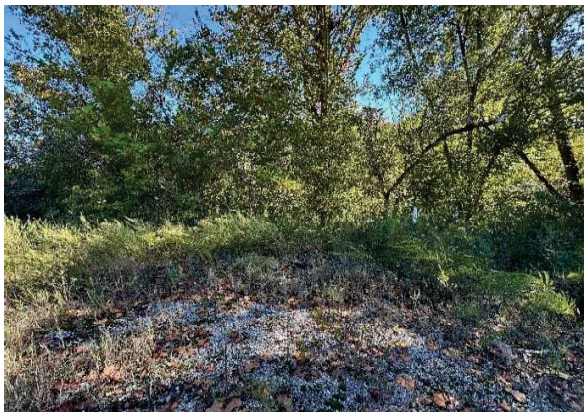


Photo #11 Monitor #5 looking east towards Big Sandy River.



Photo #12 Monitor #5 looking west across site.

Noise Analysis
Big Sandy U3-U4 SCGT Project | AEP - Kentucky
Photos Captured: October 9, 2025 | Terracon Project No. JN257308

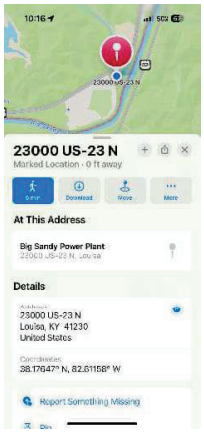


Photo #13 Location and coordinates of Monitor #5.



Photo #14 Monitor #6 looking north.



Photo #15 Monitor #6 looking south towards U.S Highway 23.

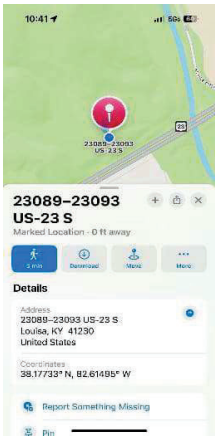


Photo #16 Location and coordinates of Monitor #6.

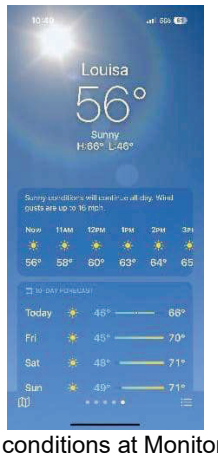


Photo #17 Site conditions at Monitor #6.

Attachment 2 – RCNM Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/23/2025
Case Description: 5555

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
1000'	Industrial	55.0	55.0	55.0

Equipment	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	1000.0	0.0
Compressor (air)	No	40		77.7	1000.0	0.0
Concrete Mixer Truck	No	40		78.8	1000.0	0.0
Crane	No	16		80.6	1000.0	0.0
Dozer	No	40		81.7	1000.0	0.0
Drill Rig Truck	No	20		79.1	1000.0	0.0
Dump Truck	No	40		76.5	1000.0	0.0
Excavator	No	40		80.7	1000.0	0.0
Front End Loader	No	40		79.1	1000.0	0.0
Generator	No	50		80.6	1000.0	0.0
Grader	No	40	85.0		1000.0	0.0
Jackhammer	Yes	20		88.9	1000.0	0.0
Man Lift	No	20		74.7	1000.0	0.0
Pneumatic Tools	No	50		85.2	1000.0	0.0
Scraper	No	40		83.6	1000.0	0.0
Welder / Torch	No	40		74.0	1000.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Backhoe	51.5	47.6	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	51.6	47.7	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	52.8	48.8	N/A	N/A	N/A	N/A	N/A	N/A
Crane	54.5	46.6	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	55.6	51.7	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig Truck	53.1	46.1	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	50.4	46.5	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	54.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	53.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A
Generator	54.6	51.6	N/A	N/A	N/A	N/A	N/A	N/A
Grader	59.0	55.0	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer	62.9	55.9	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	48.7	41.7	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	59.2	56.1	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	57.6	53.6	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	48.0	44.0	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.9	63.4	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
2500'	Residential	55.0	55.0	55.0

Equipment

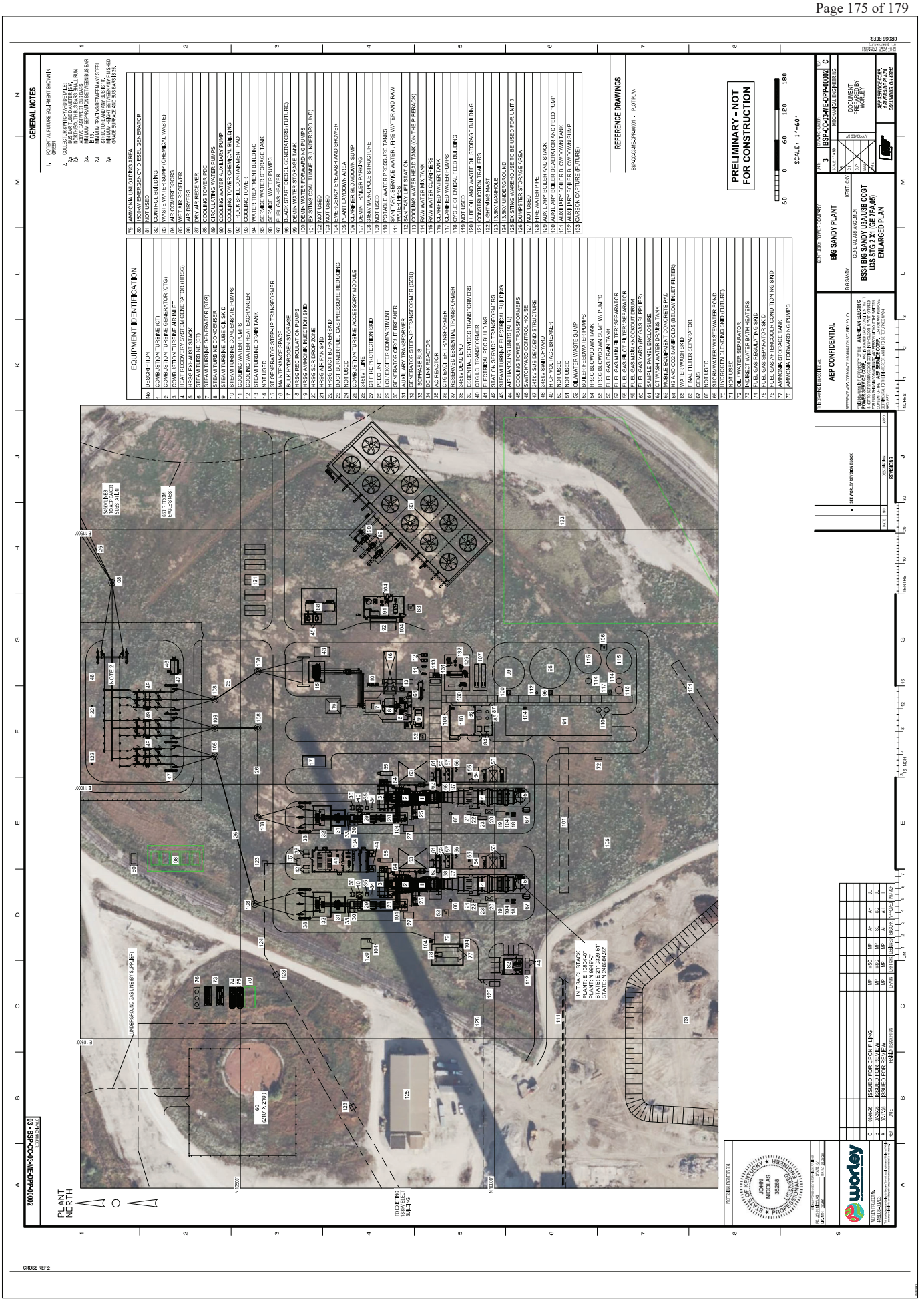
	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	2500.0	0.0
Compressor (air)	No	40		77.7	2500.0	0.0
Concrete Mixer Truck	No	40		78.8	2500.0	0.0
Crane	No	16		80.6	2500.0	0.0
Dozer	No	40		81.7	2500.0	0.0
Drill Rig Truck	No	20		79.1	2500.0	0.0
Dump Truck	No	40		76.5	2500.0	0.0
Excavator	No	40		80.7	2500.0	0.0
Front End Loader	No	40		79.1	2500.0	0.0
Generator	No	50		80.6	2500.0	0.0
Grader	No	40	85.0		2500.0	0.0
Jackhammer	Yes	20		88.9	2500.0	0.0
Man Lift	No	20		74.7	2500.0	0.0
Pneumatic Tools	No	50		85.2	2500.0	0.0
Scraper	No	40		83.6	2500.0	0.0
Welder / Torch	No	40		74.0	2500.0	0.0

Results

Noise Limit Exceedance (dBA)	Noise Limits (dBA)

Equipment	Calculated (dBA)				Day		Evening	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
	Day		Evening		Night			
	Lmax	Leq	Lmax	Leq	Lmax	Leq		
	Night							
Backhoe	43.6	39.6	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	43.7	39.7	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	44.8	40.8	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.6	38.6	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	47.7	43.7	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig Truck	45.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	42.5	38.5	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	46.7	42.8	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.1	41.2	N/A	N/A	N/A	N/A	N/A	N/A
Generator	46.7	43.6	N/A	N/A	N/A	N/A	N/A	N/A
Grader	51.0	47.0	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer	54.9	47.9	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	40.7	33.7	N/A	N/A	N/A	N/A	N/A	N/A
Pneumatic Tools	51.2	48.2	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	49.6	45.6	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	40.0	36.0	N/A	N/A	N/A	N/A	N/A	N/A
Total	54.9	55.5	N/A	N/A	N/A	N/A	N/A	N/A

Attachment 3 –Sound Emission Data


GENERAL NOTES
1. POTENTIAL FUTURE EQUIPMENT SHOWN IN GREEN.
2. COLLECTOR SWITCHYARD DETAILS.
2.1. ALL CIRCUIT BREAKERS IN THE NORTH/SOUTH BUS BARS SHALL RUN ABOVE EAST/WEST BUS BARS.
2.2. ALL CIRCUIT BREAKERS IN THE EAST/WEST BUS BAR IS NOT.
2.3. THE MAIN SPAN CROSSING BETWEEN ANY STEEL STRUCTURE AND ANY BUS IS TO BE CONSTRUCTED OF ALUMINUM CONDUCTOR STEEL REINFORCED (ACSR) AND BUS BARS BE OF ALUMINUM TUBE (AT).
79 AMMONIA UNLOADING AREA
80 1500KW EMERGENCY DIESEL GENERATOR
81 NOT USED
82 CONTROL BUILDING
83 WASTE WATER TREATMENT (CHEMICAL WASTE)
84 AIR COMPRESSORS
85 WET AIR RECEIVER
87 DRY AIR RECEIVER
88 AIR DRYERS
89 COOLING TOWER PDC
90 CIRCULATING WATER PUMPS
91 COOLING WATER AUXILIARY PUMP
92 TRUCK SPILL CONTAINMENT BUILDING
93 TRUCK SPILL CONTAINMENT PAD
94 COOLING TOWER
95 WATER TREATMENT BUILDING
96 SERVICE WATER STORAGE TANK
97 SERVICE WATER PUMPS
98 FUEL GAS HEATER
99 BLACK START DIESEL GENERATORS (FUTURE)
100 DEMINERALIZED WATER TANK
101 DEMIN WATER FORWARDING PUMPS
102 EXISTING COAL TUNNELS (UNDERGROUND)
103 NOT USED
104 NOT USED
105 EMERGENCY EYEWASH AND SHOWER
106 PLANT LAYDOWN AREA
107 CLARIFIER BLOWDOWN SUMP
108 DEMIN WATER FORWARDING PUMPS
109 NOT USED
110 POTABLE WATER PRESSURE TANKS
111 SANITARY SERVICE WATER, FIRE WATER AND RAW WATER PIPES
112 RAW WATER METERING STATION
113 COOLING WATER HEAD TANK (ON THE PIPERACK)
114 RAW WATER MIX TANK
115 RAW WATER CLARIFIERS
116 CLARIFIED WATER TANK
117 CLARIFIED WATER PUMPS
118 CYCLE CHEMICAL FEED BUILDING
119 NOPE OIL AND WASTE OIL STORAGE BUILDING
121 CONSTRUCTION TRAILERS
122 LIGHTNING MAST
123 13.8KV MANHOLE
124 13.8KV UNDERGROUND
125 EXISTING WAREHOUSE TO BE USED FOR UNIT 3
126 DUMPSTER STORAGE AREA
127 FIRE WATER LOOP
128 AUXILIARY BOILER AND STACK
129 AUXILIARY BOILER DEAERATOR AND FEED PUMP
130 AUXILIARY BOILER BLOWDOWN TANK
131 AUXILIARY BOILER BLOWDOWN SUMP
132 AUXILIARY BOILER BLOWDOWN SUMP
133 CARBON CAPTURE (FUTURE)
EQUIPMENT IDENTIFICATION
No. DESCRIPTION
1 COMBUSTION TURBINE (CT)
2 COMBUSTION TURBINE GENERATOR (CTG)
3 COMBUSTION TURBINE AIR INLET
4 HEAT RECOVERY STEAM GENERATOR (HRSG)
5 HRSG EXHAUST STACK
6 STEAM TURBINE (ST)
7 STEAM TURBINE GENERATOR (STG)
8 STEAM TURBINE CONDENSER
9 STEAM TURBINE LUBE OIL SKID
10 STEAM TURBINE CONDENSATE PUMPS
11 COOLING WATER PUMPS
12 STEAM TURBINE GENERATOR AIR COOLER
13 STEAM TURBINE DRAIN TANK
14 NOT USED
15 ST GENERATOR STEP-UP TRANSFORMER
16 MAINTENANCE SPACE
17 BULK HYDROGEN STORAGE
18 HRSG RECIRCULATION PUMPS
19 HRSG AMMONIA INJECTION SKID
20 HRSG SCR CATALYST
21 HRSG UPS FAN SKID
22 HRSG DUCT BURNER SKID
23 DUCT BURNER FUEL GAS PRESSURE REDUCING
24 NOT USED
25 COMBUSTION TURBINE ACCESSORY MODULE
26 345KV TUNE
27 CT FIRE PROTECTION SKID
28 MCC / CONTROL COMPARTMENT
29 GENERATOR CIRCUIT BREAKER
30 AUXILIARY TRANSFORMER
31 GENERATOR STEP-UP TRANSFORMER (GSU)
32 3ΦPHASE BUS
33 DC LINK REACTOR
34 AC REACTOR
35 RESERVE ESSENTIAL TRANSFORMER
36 345KV DEAD END
37 ESSENTIAL SERVICES TRANSFORMERS
38 CTG LCI TRANSFORMER
39 ELECTRICAL PDC BUILDING
40 STATION SERVICE TRANSFORMERS
41 STEAM TURBINE ELECTRICAL BUILDING
42 CONDENSATE STORAGE TANK
43 COOLING TOWER TRANSFORMERS
44 SWITCHYARD CONTROL HOUSE
45 345KV SUB DEADEND STRUCTURE
46 345KV SWITCHYARD
47 HIGH VOLTAGE BREAKER
48 NOT USED
49 OILY WASTE SUMP
50 OILY WATER SEPARATOR PUMPS
51 NOT USED
52 OIL / WATER SEPARATOR
53 NOT USED
54 HRSG BLOWDOWN TANK
55 HRSG BLOWDOWN SUMP W/ PUMPS
56 FUEL GAS DRUM TANK
57 FUEL GAS MAIN FILTER SEPARATOR
58 FUEL GAS SLOT FILTER SEPARATOR
59 FUEL GAS MAIN KNOCKOUT DRUM
60 FUEL GAS SLOT KNOCKOUT DRUM
61 SAMPLE PANEL ENCLOSURE
62 CT WASH WATER DRAINS TANK
63 MOBILE EQUIPMENT CONCRETE PAD
64 N2 AND CO2 MANIFOLDS (BELOW INLET FILTER)
65 WATER WASH SKID
66 FINAL FILTER SEPARATOR
67 CEMS
68 NOT USED
69 HOT WATER WASTEWATER POND
70 HYDROGEN BLENDING SKID (FUTURE)
71 NOT USED
72 OIL / WATER SEPARATOR
73 INDIRECT WATER BATH HEATERS
74 FUEL GAS REGULATING SKID
75 FUEL GAS SEPARATOR SKID
76 FUEL GAS AFTERCOOLER CONDITIONING SKID
77 HRSG SCR CATALYST RACK
78 AMMONIA FORWARDING PUMPS
REFERENCE DRAWINGS
BSP-CC-04-ME-DPP-00001 - PLOT PLAN
PRELIMINARY - NOT FOR CONSTRUCTION
SCALE: 1"=60'
60 0 60 120 180
AEP CONFIDENTIAL
BIG SANDY PLANT
KENTUCKY POWER COMPANY
BIG SANDY
GENERAL ARRANGEMENT
KENTUCKY
BS34 BIG SANDY U3A/U3B CCGT
USS STG 2 X1 (GE 7FA.05)
ENLARGED PLAN
BSP-CC-04-ME-DPP-00002
C
MECHANICAL ENGINEERING
DOCUMENT PREPARED BY WORLEY
AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OHIO 43215
SEE WORLEY REVIEW BLOCK
REVISIONS
ISSUED FOR OPEN FILING
ISSUED FOR REVIEW
ISSUED FOR REVIEW
PLANT NORTH
UNDERGROUND GAS LINE BY SUPPLIER
UNIT 3A CL STACK
PLANT N 664947.457
PLANT N 664947
STATE: E 2111029.451
STATE: N 248864.252
TO EXISTING 13.8kV ELECT BUILDING
JOHN NICOLAS 35288
STATE OF KENTUCKY
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER CERTIFICATION
PROFESSIONAL ENGINEER SEAL
worley
CROSS REFS:

2x1 Combined Cycle Plant

Expected Octave Band Sound Power Level (L_P) for Major Pieces of Project Equipment

Rev 2, 22 July2026

Sound Source	Type[1]	Sound Power Level (L_P) by Octave Band Frequency dBL									Broadband Level
		31.5	63	125	250	500	1k	2k	4k	8k	dBA
HRSG Inlet Transition Duct Radiated	L_W	120	125	109	105	101	99	99	95	74	106
HRSG Wall Radiated	L_W	115	119	102	98	93	89	86	82	61	98
HRSG Exhaust Stack Wall Radiated	L_W	110	106	92	83	78	77	61	53	27	84
HRSG Exhaust Stack Exit – w/o Directivity	L_W	120	116	115	113	114	108	90	89	68	114
HRSG Duct Burner Gas Piping	L_W	102	108	110	102	92	95	99	100	97	105
SCR Ammonia Skid	L_W	96	103	99	96	97	97	95	92	87	101
GT Fuel Gas Systems	L_W	104	100	89	81	80	86	88	91	89	96
Unenclosed Lube Oil Package	L_W	96	100	98	105	102	97	97	92	83	104
Steam Turbine – Total – partly weather enclosed / insulated[2]	L_W	112	114	115	111	109	103	103	102	89	111
Condenser during Base Load	L_W	118	117	116	112	111	106	106	102	95	113
Generator for Steam Turbine	L_W	117	123	120	112	113	109	113	111	108	118
Enclosed Lube Oil Package – Steam Turbine[2]	L_W	94	94	100	95	97	92	89	85	80	98
Steam Turbine Control Oil Supply Skid	L_W	110	109	103	105	104	105	100	99	96	109
Boiler Feed Water Pumps ~~In-Building~~	L_W	104	110	108	102	103	112	110	106	96	116
Main GSU Transformer	L_W	106	106	110	110	110	94	89	82	77	108
Auxiliary Transformer	L_W	87	87	91	88	94	86	76	71	65	93
Circulating Water Pump	L_W	102	102	99	97	98	102	93	90	81	104
Service Water Pump Skid	L_W	74	81	82	89	94	91	89	91	88	98
Cooling Tower – Total	L_W	70	74	81	86	101	103	103	105	101	110
Demin Water Forwarding Pump	L_W	88	82	82	85	92	95	96	92	84	101
Raw Water Forwarding Pump	L_W	71	78	79	86	91	88	86	88	85	95
Cooling Water Heat Exchangers and Pump Skid	L_W	117	112	113	109	107	99	93	101	103	109

[1] "L_W" is the sound power level in dBL, and dBA broadband, (re: 1 pW). "$L_{i(c)}$" is the calculated average interior sound pressure in dBL, and dBA broadband, (re: 20μPa), within a building or enclosure, based on the sound power levels of noise sources located within that building or structure. Data presented may contain project proprietary information and should be considered privileged and confidential to the client and is not intended for use for any other purposes.

Big Sandy Sound Study Equipment Elevations above Grade

Rev 2, 22 July2026

Item	Equipment	Height Above Grade
1	HRSG Inlet Transition Duct Radiated	8-23 ft
2	HRSG Wall Radiated	8-87ft
3	HRSG Exhaust Stack Wall Radiated	8-87ft
4	HRSG Exhaust Stack Exit – w/o Directivity	198ft
5	HRSG Duct Burner Gas Piping	5-70Ft
6	SCR Ammonia Skid	8-84 ft
7	GT Fuel Gas Systems	10ft
8	Unenclosed Lube Oil Package	14Ft
9	Steam Turbine – Total – partly weather enclosed / insulated[2]	45ft
10	Condenser during Base Load	21ft
11	Generator for Steam Turbine	45ft
12	Enclosed Lube Oil Package – Steam Turbine[2]	10ft
13	Steam Turbine Control Oil Supply Skid	10ft
14	Boiler Feed Water Pumps ~~In Building~~	11ft
15	Main GSU Transformer	14Ft
16	Auxiliary Transformer	11ft
17	Circulating Water Pump	3ft
18	Service Water Pump Skid	3ft
19	Cooling Tower Fans	Fan deck height: 48 ft Fan Stack Exit height: 60 ft
20	Demin Water Forwarding Pump	3ft
21	Raw Water Forwarding Pump	3ft
22	Cooling Water Heat Exchangers and Pump Skid	10ft

GE VERNOVA

Consumers Energy / 7F05 — Project Name / Frame Size

1689902 — GE IPS #

Estimate of Sound Power Levels at Base Load, dB (Ref. 1 picowatt).
Please note the sound power levels are being provided only for use in modeling the noise of the plant.
They are not guaranteed. The values are per unit.

	OCTAVE BAND CENTER FREQUENCIES (HZ)									
	31.5	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**A-wt**
INLET SYSTEM WITH 8 ft SILENCER										
Inlet Ducting (including Filter House)	104	98	100	102	96	81	95	82	57	**99**
Inlet Filter Face (no acoustic hood)	111	103	99	90	87	86	91	99	93	**102**
GAS TURBINE PACKAGE										
Accessory Module	101	103	99	98	97	96	96	97	88	**103**
Inlet Plenum	98	96	95	90	94	99	100	96	86	**104**
Turbine Compartment	104	101	99	93	95	95	99	104	92	**107**
Exhaust Diffuser (Note 1)	105	112	96	92	86	84	85	88	75	**94**
Load Compartment	92	98	97	92	92	98	98	93	83	**103**
Generator (H35)	98	101	107	94	98	99	100	95	84	**105**
Turbine Compartment Vent Fans	102	102	110	101	98	95	94	98	95	**104**
(Optional) GAS TURBINE EXHAUST STACK										
Exhaust Stack Top (Note 2)	132	125	119	117	119	119	112	110	90	**122**
(Optional) HOT SCR										
SCR (Inlet, Body and Breakout) (Note 3)	-	-	-	-	-	-	-	-	-	**108**
Stack Exit (with 90 deg. directivity) (Note 3)	-	-	-	-	-	-	-	-	-	**112**
Tempering Air Fans and Ducting (Note 3)	-	-	-	-	-	-	-	-	-	**103**
Tempering Air Inlet (Note 3)	-	-	-	-	-	-	-	-	-	**105**

NOTES

1 - These sound power levels include the effects of acoustical barrier walls.
2 - These sound power levels do not include the effect of directivity at the top of the stack.
3 - Hot SCR octave band sound power levels are vendor specific.

Document Revision Table

Revision Description	*Revision Level*	*Revision Date*	*Approved*
Initial Issue	-	5-Mar-2025	R. Loud

The values provided are estimates and not guaranteed. They are provided for use in determining the overall noise of the plant.

NLR
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Sound Source	Type[1]	Sound Power Level (LP) by Octave Band Frequency dBL									Broadband Level	Height
		31.5	63	125	250	500	1k	2k	4k	8k	dBA	
HRSG Inlet Transition Duct Radiated	LW	120	125	109	105	101	99	99	95	74	106	8-23 ft
HRSG Wall Radiated	LW	115	119	102	98	93	89	86	82	61	98	8-87ft
HRSG Exhaust Stack Wall Radiated	LW	110	106	92	83	78	77	61	53	27	84	8-87ft
HRSG Exhaust Stack Exit – w/o Directivity	LW	120	116	115	113	114	108	90	89	68	114	198ft
Directivty Adjustment		-3	-4	-6	-8	-10	-13	-16	-18	-20		
		117	112	109	105	104	95	74	71	48		
HRSG Duct Burner Gas Piping	LW	102	108	110	102	92	95	99	100	97	105	5-70Ft
SCR Ammonia Skid	LW	96	103	99	96	97	97	95	92	87	101	8-84 ft
GT Fuel Gas Systems	LW	104	100	89	81	80	86	88	91	89	96	10ft
Unenclosed Lube Oil Package	LW	96	100	98	105	102	97	97	92	83	104	14Ft
Steam Turbine – Total – partly weather enclosed / insulated[2]	LW	112	114	115	111	109	103	103	102	89	111	45ft
Condenser during Base Load	LW	118	117	116	112	111	106	106	102	95	113	21ft
Generator for Steam Turbine	LW	117	123	120	112	113	109	113	111	108	118	45ft
Enclosed Lube Oil Package – Steam Turbine[2]	LW	94	94	100	95	97	92	89	85	80	98	10ft
Steam Turbine Control Oil Supply Skid	LW	110	109	103	105	104	105	100	99	96	109	10ft
Boiler Feed Water Pumps	LW	104	110	108	102	103	112	110	106	96	116	11ft
Main GSU Transformer	LW	106	106	110	110	110	94	89	82	77	108	14Ft
Auxiliary Transformer	LW	87	87	91	88	94	86	76	71	65	93	11ft
Circulating Water Pump	LW	102	102	99	97	98	102	93	90	81	104	3ft
Service Water Pump Skid	LW	74	81	82	89	94	91	89	91	88	98	3ft
Cooling Tower Fans	LW	70	74	81	86	101	103	103	105	101	110	Deck 48'/Stack 60'
Demin Water Forwarding Pump	LW	88	82	82	85	92	95	96	92	84	101	3ft
Raw Water Forwarding Pump	LW	71	78	79	86	91	88	86	88	85	95	3ft
Cooling Water Heat Exchangers and Pump Skid	LW	117	112	113	109	107	99	93	101	103	109	10ft

1 "LW" is the sound power level in dBL, and dBA broadband, (re: 1 pW). "Li(c)" is the calculated average interior sound pressure in dBL, and dBA broadband, (re: 20 µPa), within a building or enclosure, based on the sound power levels of noise sources located within that building or structure. Data presented may contain project proprietary information and should be considered privileged and confidential to the client and is not intended for use for any other purposes.

VERIFICATION

The undersigned, Michael J. Dilley, being duly sworn, deposes and says he is the Vice President Appalachian Power Company and Kentucky Power Company Projects for American Electric Power Service Corporation that he has personal knowledge of the matters set forth in the foregoing testimony and the information contained therein is true and correct to the best of his information, knowledge, and belief after reasonable inquiry.

Michael J. Dilley

Commonwealth of Kentucky)
)
County of Boyd)

Case No. 2026-00324

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Michael J. Dilley, on November 10, 2026

Notary Public

MARILYN MICHELLE CALDWELL
Notary Public
Commonwealth of Kentucky
Commission Number KYNP71841
My Commission Expires May 5, 2027

My Commission Expires May 5, 2027

Notary ID Number KYNP71841