



## **Kiwetinokh Energy Corp.**

### **Black Bear Combined-Cycle Power Plant and Substation**

**July 12, 2024**

**Alberta Utilities Commission**

Decision 28964-D01-2024

Kiwetinokh Energy Corp.

Black Bear Combined-Cycle Power Plant and Substation

Proceeding 28964

Applications 28964-A001 and 28964-A002

July 12, 2024

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## **1 Decision summary**

1. In this decision, the Alberta Utilities Commission approves applications from Kiwetinokh Energy Corp. to construct and operate a 460-megawatt combined-cycle power plant and associated Benito 1074S Substation near Swan Hills, Alberta.

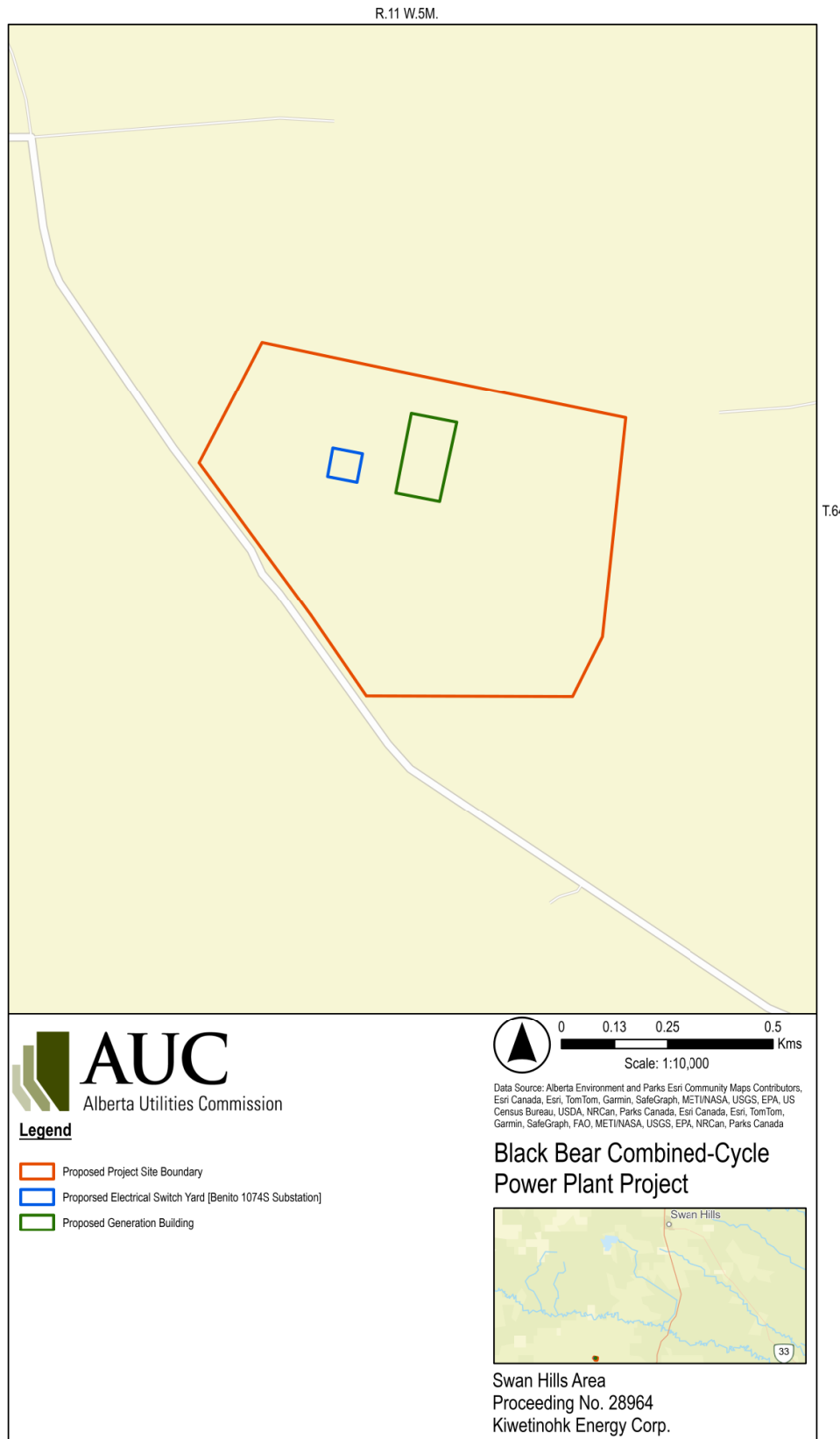
## **2 Introduction**

### **2.1 Application details**

2. On April 8, 2024, Kiwetinokh Energy Corp. (KEC) filed applications to construct and operate a thermal power plant that would generate up to 460 megawatts (MW) of power, and a substation, designated as the Benito 1074S Substation (collectively referred to as the Black Bear Power Project, or the project). The facility will ultimately include a carbon capture and storage system intended to use deep well sequestration of carbon dioxide byproducts.

3. The power plant, substation and associated soil stockpile would be sited on 46 acres of undeveloped Crown land located in the southeast and southwest quarters of Section 15, Township 64, Range 11, west of the Fifth Meridian, approximately 24 kilometres southwest of Swan Hills, Alberta, as shown on the map in Figure 1.

Figure 1. Proposed Black Bear Power Project location



4. KEC stated that the power plant would consist of one Siemens STG6-9000HL natural gas-fired combustion turbine, one heat recovery steam generator, one Siemens SST-5000 steam turbine, one carbon capture package and one carbon dioxide compression and dehydration package. The Benito 1074S Substation would consist of one 240/22-kilovolt step-up transformer, one 240-kilovolt circuit breaker, and associated equipment.

5. The applications included:

- A participant involvement program (PIP) that included personal consultation with stakeholders within 800 metres of the project boundary, and notification to stakeholders within 2,000 metres of the project boundary. As part of its PIP, KEC consulted with 14 Indigenous communities potentially impacted by this project.
- An environmental evaluation prepared by McCallum Environmental Ltd., which summarized the environmental assessments that had been conducted in the area, and identified and evaluated the effects the project may have on valued ecosystem components.
- An air quality assessment prepared by Horizon Compliance Group Inc., confirming that the project would be in compliance with the *Alberta Ambient Air Quality Objectives and Guidelines* for ground-level concentrations of pollutants.

6. The applicant anticipates construction to commence in the second quarter of 2026, with operations commencing in the fourth quarter of 2028.

7. In response to the Commission's enhanced interim information requirements established in Bulletin 2024-08: *AUC consultation on Rule 007 and enhanced interim information requirements* KEC included the following information:

- The power plant is situated on undeveloped Crown land that not been cultivated for agriculture. Therefore, the agricultural land assessment portion does not apply.
- The project complies with Big Lakes County Land Use Bylaw 03-2017, and a development permit is only required for components not subject to AUC approval. Engagement with the County is discussed in the PIP section, and other municipal land use aspects are resolved.
- No impacted viewsapes were identified during consultation or during the environmental assessment therefore no mitigation or further assessment is required.

8. The Commission issued a notice of applications to stakeholders in the area and Indigenous communities. No submissions in response to the notice were received.

### **3 Discussion and findings**

9. In assessing the applications, the Commission must consider whether construction or operation of the proposed project is in the public interest, having regard to the social, economic and environmental effects of the project.

10. The existence of applicable regulatory standards and guidelines, including those from municipal, provincial and federal authorities, and a proponent's adherence to these standards, are important elements in deciding if the potential adverse impacts are acceptable. The Commission has previously stated that the public interest will be largely met if an application complies with existing regulatory standards, and the project's public benefits outweigh its negative impacts.<sup>1</sup>

11. The Commission has reviewed the applications and has determined that the information requirements specified in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines* have been met. The Commission also finds that the PIP complies with the requirements of Rule 007 and that there are no known concerns with the project.

12. Having considered the record of this proceeding, and for the reasons outlined in this decision, the Commission finds that approval of the project would be in the public interest after considering its social, economic, environmental and other effects.

13. In the discussion below, the Commission specifically addresses issues of significance that were considered for these applications, including:

- Whether compliance with existing regulatory approvals satisfies environmental requirements under Rule 007.
- The noise impacts of the proposed development on the surrounding area.
- Whether KEC has met its reclamation and security obligations for the project.

### 3.1 Compliance with environmental requirements of Rule 007

14. Development of a thermal power plant within Crown land requires both *Public Lands Act* and *Environmental Protection and Enhancement Act* approval in addition to approval by the AUC. The provincial authorities overseeing these statutes consider environmental impacts during their respective project reviews and in some cases review the same documents that have been submitted to the AUC.

15. KEC has obtained two *Public Lands Act* dispositions for the project, which included one for a power station and substation (Department Miscellaneous Lease (DML) 230030)<sup>2</sup> and another for the soil stockpile (DML230058).<sup>3</sup> The Commission expects that KEC will comply with the terms of the respective disposition Landscape Analysis Tool reports that identify the Master Schedule of Standards and Conditions that are applicable.

16. KEC also stated that it obtained an *Environmental Protection and Enhancement Act* draft industrial approval in March 2024 that included the vegetation section of the environmental evaluation.<sup>4</sup> KEC has indicated that it will provide the industrial approval to the Commission

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<sup>1</sup> Alberta Energy and Utilities Board Decision 2001-111: EPCOR Generation Inc. and EPCOR Power Development Corporation - 490-MW Coal-Fired Power Plant, Application 2001173, December 21, 2001, paragraph 22.

<sup>2</sup> Exhibit 28964-X0046, Attachment A – DML230030 Disposition 2023-10-05.

<sup>3</sup> Exhibit 28964-X0023, 024-05-03 Blackbear Thermal IR 1\_FINAL, PDF page 4.

<sup>4</sup> Exhibit 28964-X0023, 2024-05-03 Blackbear Thermal IR 1\_FINAL, PDF page 7.

when received, including any conditions that are imposed by Alberta Environment and Protected Areas (AEPA).<sup>5</sup>

17. The Commission is satisfied that upon receipt of required provincial approvals under the *Public Lands Act* and the *Environmental Protection and Enhancement Act*, KEC will have met its environmental obligations under Rule 007. The Commission's approval is therefore subject to the following condition:

- a. Kiwetinokh Energy Corp. shall file Alberta Environment and Protected Areas' final *Environmental Protection and Enhancement Act* industrial application approval with the Commission by October 12, 2024.

18. KEC informed the Commission that given that the project's capacity (460 MW) exceeds the threshold defined under the federal *Physical Activities Regulations*, it submitted a draft Initial Project Description to the Impact Assessment Agency of Canada (IAAC) on February 9, 2024, for a determination of whether a federal environmental assessment is required.<sup>6</sup> Therefore, the Commission's approval is subject to the following condition:

- b. Kiwetinokh Energy Corp. shall file the outcome of any project review by the Impact Assessment Agency of Canada with the Commission by January 31, 2025.

### **3.2 What is the noise impact of the proposed development on the surrounding area?**

19. KEC retained RWDI to assess noise impacts from the project in accordance with Rule 012: *Noise Control* and submitted a noise impact assessment (NIA) with the application. KEC subsequently detailed the mitigation measures it would implement to achieve compliance with Rule 012 and provided additional modelling results in response to an information request by the Commission.<sup>7</sup>

20. The NIA considered a study area within a joint 1.5-kilometre (km) boundary from the project and the nearby adjacent facilities. The NIA modelled sound levels at 1.5-km boundary receptors where the greatest predicted sound levels were expected, given that there are no residences within 1.5 km of the project. As well, no party identified any continuous and persistent ceremonial and/or cultural sites that are significant to an Indigenous group within 1.5 km.<sup>8</sup> As such, the Commission finds it was appropriate for the NIA to assess project compliance with Rule 012 at 1.5 km from the project boundary.

21. With respect to noise mitigation, the Commission understands that KEC will implement mitigation measures to the HRSG stack to achieve a total reduction of 20 dB in noise emissions. The modelling results indicated that at the most affected receptors along 1.5 km of the project boundary (BR1 and BR2), the nighttime cumulative sound level would be 40.3 dBA (A-weighted decibels), which is slightly over but compliant to the nighttime permissible sound level of

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<sup>5</sup> Exhibit 28964-X0045.01\_2024-06-05 Blackbear Thermal IR 2\_FINAL, PDF page 2.

<sup>6</sup> Exhibit 28964-X0001, 2024-04-08 Blackbear Thermal Power Plant Application\_FINAL – signed, PDF page 16.

<sup>7</sup> Exhibit 28964-X0023, 2024-05-03 Blackbear Thermal IR #1\_FINAL, PDF pages 1 and 2.

<sup>8</sup> The Commission issued a revised version of Rule 012: Noise Control with an effective date of September 30, 2024. The revised Rule 012 clarifies that the Commission may consider noise compliance at continuous and persistent ceremonial and/or cultural sites that are significant to an Indigenous group and within 1.5 km of a project boundary.



40 dBA.<sup>9</sup> The NIA then concluded that noise from the project would comply with Rule 012 at the identified 1.5 km boundary receptors.

22. The Commission finds that the NIA meets the requirements of Rule 012 and accepts the conclusion in the NIA that noise from the project, with the successful implementation of noise mitigation measures, will comply with Rule 012. The Commission finds that the proposed mitigation measures are necessary for the project to meet the requirements of Rule 012. The Commission requires KEC to implement the mitigation measures during project construction, verify the effectiveness of the mitigation measures through on-site near-field measurements, and confirm project compliance at the most affected 1.5 km boundary receptors through a post-construction comprehensive sound level survey. Therefore, the Commission imposes the following conditions of approval:

- c. During project construction, Kiwetinokh Energy Corp. shall implement noise mitigation measures to the heat recovery steam generator stack, as described in exhibits 28964-X0013 and 28964-X0023, or comparable measures, to achieve compliance of the project with Rule 012: *Noise Control*. Within one month of the project commencing operations, KEC shall submit a letter to the Commission detailing the configuration and material of the mitigation measures that KEC has implemented.
- d. Kiwetinokh Energy Corp. shall conduct a post-construction near-field sound level survey at the project. The near-field survey shall characterize sound emissions from the heat recovery steam generator stack and evaluate the effectiveness of the noise mitigation measures implemented to this stack. Within one year of the project commencing operations, Kiwetinokh Energy Corp. shall file a report with the Commission summarizing measurements and results of the post-construction near-field sound level survey.
- e. Kiwetinokh Energy Corp. shall conduct a post-construction comprehensive sound level survey, including an evaluation of low frequency noise, at the most affected receptors along the 1.5 km boundary, BR1 and BR2. The post-construction comprehensive sound level survey must be conducted with all generating units operating simultaneously at full capacity and in accordance with Rule 012: *Noise Control*. Within one year of the project commencing operations, Kiwetinokh Energy Corp. shall file a report with the Commission presenting measurements and summarizing results of the post-construction comprehensive sound level survey.

### 3.3 Reclamation security and asset retirement obligations.

23. KEC indicated that, in accordance with Section 22(1) of the *Public Lands Act Administration Regulation*, Forestry and Parks requires a minimum security deposit of \$1,000/hectare. Given that the applications cover 18.54 hectares, a security deposit of \$18,450 was required to be held in trust for the Department Miscellaneous Lease (DML 230030). This requirement is distinct from reclamation security obligations considered by the AUC. Under AUC Rule 007, the Commission is to consider evidence provided by the applicant to ensure

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<sup>9</sup> Rule 012 stated that “Predicted and measured sound levels are required to be presented to one decimal precision. However, predicted cumulative sound levels or measured comprehensive sound levels may be rounded to the nearest whole number before a comparison to the applicable permissible sound level is made.” Rule 012, *Noise Control*, PDF page 17.

sufficient funds are available at the project end of life to cover the cost of decommissioning and reclamation of the project.

24. KEC also indicated that, subject to AEPA approval of the project, it would consider setting aside up to an additional \$4 million in security, adjusted for inflation, during the last 10 years of project life to ensure there were sufficient funds to complete the conceptual reclamation plan as defined in its *Environmental Protection and Enhancement Act* application. KEC explained the basis for the possible \$4 million in additional security as follows:

Black and Veatch was retained to give a class V estimate (-50%/+100%) of reclamation cost for the Black Bear project, which was \$31MM USD (~40MM CAD). The estimate is based on hundreds of similar combined cycle projects previously built by Black and Veatch. KEC expects that the salvage value of the turbines will exceed this amount as further detailed below.

It should be noted that there are currently no commercial installations of combined cycle power plants with CO<sub>2</sub> capture worldwide and as such the estimate of reclamation cost for the CO<sub>2</sub> capture is a high level only. KEC's reclamation cost estimate will be revised once the final equipment is selected and detailed design is completed. At that time, KEC will provide a detailed reclamation cost report developed by a qualified 3rd party. Although KEC expects the salvage value to exceed the decommissioning and reclamation costs, KEC intends to put 10% of the estimated total costs aside to ensure no shortfall. This percentage can be adjusted as the design matures.<sup>10</sup>

25. KEC also indicated that at the end of the project's life, it intended to sell both the gas and steam turbines for 20 per cent of their initial value, which was an estimate based on current market value of similar used turbines when compared to their initial costs.

26. KEC provided a conceptual reclamation plan and a Class V preliminary reclamation cost estimate, prepared by Black and Veatch Inc. KEC submitted that once project design and detailed engineering are finalized, a comprehensive decommissioning plan and revised reclamation cost estimate would be prepared by an independent third-party consultant.

27. KEC confirmed that the reclamation security amount would be re-assessed every five years and that it was prepared to provide additional reclamation security funds to the AEPA-deemed reclamation security amount to ensure adequate funds are set aside for end-of-life obligations. KEC added that it would maintain the flexibility of the security form, but it would be in the form of a letter of credit from a chartered Canadian bank, cash, or bond from a licensed credit investment grade insurance company.

28. The Commission expects approval holders to fully reclaim projects and to bear the costs of doing so. Based on the information on the record of this specific proceeding, the Commission accepts that KEC's approach to reclamation includes sufficient information about the nature, type and timing of security proposed and satisfies the Commission that approval of the applications is in the public interest. Among the factors that support this finding are KEC's approach to reassess the amount every five years and to provide additional reclamation security if required.

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<sup>10</sup> Exhibit 28964-X045.01, 2024-06-05 Blackbear Thermal IR #2\_FINAL, PDF page 3.

29. The Commission notes that on February 28, 2024, the Ministry of Affordability and Utilities publicly provided a letter to the Commission<sup>11</sup> addressing anticipated policy changes to reclamation security, among others:

Government of Alberta will develop and implement the necessary policy and legislative tools to ensure developers are responsible for reclamation costs via bond or security, with appropriate security amounts and timing to be determined by Environment and Protected Areas in consultation with Affordability and Utilities. The reclamation costs will be provided directly to the Government of Alberta or could be negotiated with landowners as long as sufficient evidence is provided to the AUC. The new requirements will apply [to] all approvals issued on or after March 1, 2024.

30. The intention above may be limited to renewable power plants, but this will not be certain until the policy changes are published. The Commission understands that KEC may be responsible for complying with the intended reclamation security regime referenced above, once enacted, given the Government of Alberta's stated intention and that the applications have been approved after March 1, 2024.

#### 4 Conclusion

31. The Commission accepts that the project presents low risks to wildlife and wildlife habitat. The Commission agrees that KEC's proposed mitigation measures are adequate to reduce the potential environmental impacts to wildlife and wildlife habitat to an acceptable level.

32. The Commission accepts that, with the implementation of mitigation measures, the noise levels from the project will be compliant with the permissible sound level at the boundary receptors identified in the NIA. Overall, the Commission accepts that the NIA generally meets the requirements of Rule 012. However, further information surrounding the specific noise mitigations used is required to ensure compliance with Rule 012.

33. For the reasons outlined above and subject to all of the conditions that form part of this decision as set out above, the Commission finds that KEC has satisfied the requirements of Rule 007 and Rule 012 and that, in accordance with Section 17 of the *Alberta Utilities Commission Act*, approval of the project is in the public interest having regard to the social, economic, and other effects of the project, including its effect on the environment.

#### 5 Decision

34. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 28964-A001 and grants to Kiwetinokh Energy Corp. the approval set out in Appendix 1 – Power Plant Approval 28964-D02-2024, to construct and operate the Black Bear Combined-Cycle Power Plant.

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<sup>11</sup> Letter re Policy Guidance to the Alberta Utilities Commission (28 February 2024) from Nathan Neudorf, Minister Affordability and Utilities.

35. Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 28964-A002 and grants Kiwetinokh Energy Corp. the permit and licence set out in Appendix 2 – Permit and Licence 28964-D03-2024, to construct and operate the Benito 1074S Substation.

Dated on July 12, 2024.

**Alberta Utilities Commission**

*(original signed by)*

Matthew Oliver, CD  
Commission Member

## Appendix A – Summary of Commission conditions of approval

This section is intended to provide a summary of all conditions of approval specified in the decision for the convenience of readers. Conditions that require subsequent filings with the Commission will be tracked as directions in the AUC's eFiling System. In the event of any difference between the directions and conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

The following are conditions of Decision 28964-D01-2024 that require subsequent filings with the Commission and will be included as conditions of Power Plant Approval 28964-D02-2024:

- Kiwetinokh Energy Corp. shall file Alberta Environment and Protected Areas' final *Environmental Protection and Enhancement Act* industrial application approval with the Commission by October 12, 2024.
- Kiwetinokh Energy Corp. shall file the outcome of any project review by the Impact Assessment Agency of Canada with the Commission by January 31, 2025.
- During project construction, Kiwetinokh Energy Corp. shall implement noise mitigation measures to the heat recovery steam generator stack, as described in exhibits 28964-X0013 and 28964-X0023, or comparable measures, to achieve compliance of the project with Rule 012: *Noise Control*. Within one month of the project commencing operations, KEC shall submit a letter to the Commission detailing the configuration and material of the mitigation measures that KEC has implemented.
- Kiwetinokh Energy Corp. shall conduct a post-construction near-field sound level survey at the project. The near-field survey shall characterize sound emissions from the heat recovery steam generator stack and evaluate the effectiveness of the noise mitigation measures implemented to this stack. Within one year of the project commencing operations, Kiwetinokh Energy Corp. shall file a report with the Commission summarizing measurements and results of the post-construction near-field sound level survey.
- Kiwetinokh Energy Corp. shall conduct a post-construction comprehensive sound level survey, including an evaluation of low frequency noise, at the most affected receptors along 1.5 km of the project boundary, BR1 and BR2. The post-construction comprehensive sound level survey must be conducted with all generating units operating simultaneously at full capacity and in accordance with Rule 012: *Noise Control*. Within one year of the project commencing operations, Kiwetinokh Energy Corp. shall file a report with the Commission presenting measurements and summarizing results of the post-construction comprehensive sound level survey.