

## NOISE COMPLAINT INVESTIGATION



### SECTOR

Oil and Gas

### FOCUS AREA

Noise Complaint Investigation

### SERVICE

Noise Impact Assessment  
Comprehensive Sound Survey

### ► CHALLENGE

In 2015, a leading oil and gas operator retained Patching Associates to perform a Noise Complaint Investigation at a residence that expressed concerns regarding facility noise. Along with a Noise Impact Assessment (NIA), this investigation consisted of conducting a Comprehensive Sound Survey (CSS), which served to quantify the facility noise levels received at the concerned residence, and determine compliance with Alberta Energy Regulator (AER) Directive 038: Noise Control.

In order to comply with the requirements of Directive 038, the noise survey was to be conducted under conditions representative of the noise concern. As such, the environmental conditions and facility operating conditions during the survey period must closely match the conditions under which the noise concerns were identified. Prior to the start of the survey, the resident filled out a Noise Complaint Investigation Form to determine the desired representative conditions. Additionally, Directive 038 requests that at least three hours of downwind be captured during at least one of the nighttime periods of the survey.

Along with the client facility, another adjacent noise-emitting facility operates in the area. As such, both facilities had to be operating under representative conditions for the survey to be valid.

Patching Associates effectively mitigated client risk by demonstrating facility compliance with Directive 038 through a Comprehensive Sound Survey and analysis to address a noise complaint.

## ➤ SOLUTION

A sound monitor was installed at the residence yard, and placed between the residence and towards the two operating facilities. The survey took place over several days to ensure representative environmental conditions were captured. Sound recording was used to identify measured noise types, and any measured non-facility noise was excluded from the analysis.

Patching Associates obtained confirmation from each facility that the facility was operating normally at the time of the survey. A sound monitor was installed at each facility fence line, on the side facing towards the residence, which served to confirm the facility noise emissions throughout the survey. Each facility monitor was installed close enough to its respective facility noise sources to avoid cross-contamination from the other facility noise emissions.

To determine the validity of the environmental conditions, a weather monitor was used to measure the wind speed, wind direction and amount of precipitation during the survey period. The weather monitor was installed at a location between the residence and the facilities where it was fully exposed to the environmental effects.

## ➤ RESULT

A minimum of three hours of downwind was not captured during any nighttime periods, however the wind conditions were determined to be part of the prevailing conditions for that period of the year, and therefore the survey environmental conditions were considered representative.

For both facilities, the measured fence line noise levels were steady, with the exception of one night period for the client facility. After the exclusion of the measured non-facility noise levels, the remaining measured facility noise levels at the residence during the valid periods became the comprehensive sound levels. The resulting comprehensive sound levels indicated that the facilities were in compliance with AER Directive 038 for the survey period.



## DIRECTIVE 038 REQUIREMENTS

- The noise survey must be conducted under environmental conditions representative of the noise concern as outlined by the resident.
- The facility operating conditions during the survey period are to closely match the conditions when the noise causes concerns.
- At least three hours of downwind are to be captured during at least one of the nighttime periods of the survey.
- Non facility noise should be excluded to achieve an accurate measurement.

### CONTACT US

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