> CASESTUDY

OIL & GAS

GORDONDALE MASTER MODEL

SECTOR
Oil and Gas

ENGINEERING FIRM
Precision Engineering Inc.

SERVICE
Noise Impact Assessment

CHALLENGE

The Gordondale area is an active oil and gas zone located just west of Gordondale, Alberta. Several oil and gas companies are present in the region, operating a range of facilities including oil batteries, satellite facilities, well sites, and compressor facilities. Modifications to these facilities are constantly required, and with each facility addition or expansion, a Noise Impact Assessment (NIA) is required for compliance with Alberta Energy Regulator (AER) Directive 038: Noise Control.

Precision Engineering, representing a major oil and gas operator heavily active in the Gordondale area, contacted Patching Associates to develop a method to assess cumulative noise impacts for the region.

Directive 038 requires that all adjacent energy facilities in the study area are included as part of an NIA to properly assess cumulative noise impacts from the combined operations of the facilities. The typical procedure to obtain the noise emission data on the existing adjacent facilities is to travel to the study area and perform a field reconnaissance study. This procedure is repeated for each facility requiring a NIA.

Should the typical procedure be used, a field reconnaissance study would be needed for each facility addition or expansion in the area, resulting in significant costs to individual oil and gas operators. A different procedure was needed to lower the cost per NIA.

> "Patching Associates reacted quickly to meet our tight project timelines and provided unconventional and cost competitive solutions to mitigate our noise emission concerns."
>
> Wesley Hebert
> Director of Operations
> Precision Engineering Inc.

Solution

Patching Associates created a new procedure called the Master Model to meet ongoing noise assessment requirements for the Gordondale area. The model was based on the following characteristics.

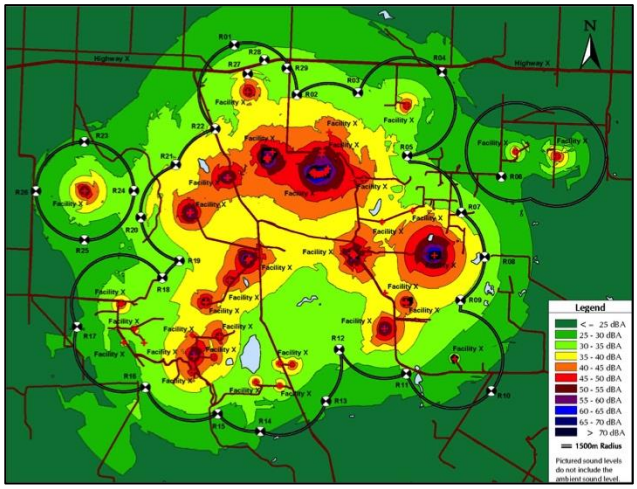
- **Overlapping study areas:** NIA study limits are set by a 1,500m radius around the subject facility. In this region, facilities tend to overlap one another. It is therefore feasible to group several NIAs into one bulk analysis if these are requested during the same timeframe.
- **Overlapping field data:** A new NIA tends to include several adjacent facilities which have already been assessed as part of previously performed NIA. If a short duration of time has passed between the two studies, the documented noise emissions have likely remained unchanged, and thus the data from the previous NIA can be used again.

At first, the field reconnaissance studies were completed to gather the one-time data on the adjacent facilities. This data was gathered into one noise model to form the Gordondale database. This database grew over time and continues to grow, until the Gordondale area limits are reached. Many facility owners have agreed to share the database, and as such, the Gordondale Master Model is used whenever a NIA is requested by one of these companies.

Result

Whenever an oil and gas operator requests an NIA for one or several facilities in the Gordondale area, Patching Associates is able to combine all of the NIAs into a single report, and the analysis is based on a single noise model. This eliminates the cost of having to perform field reconnaissance for each individual facility expansion.

If the requested NIA study area extends beyond the limits of the database, then a one-time field reconnaissance study is performed.



Master Model Benefits

- Savings on analysis costs with the ability to combine several NIA's into a single report.
- Significant savings on field work costs with the ability to reuse previous field data.
- Sharing of data among different facility owners encourages all parties to work together towards the common goal of reducing cumulative noise impacts.

Contact Us

#20, 2150 – 29th Street NE
Calgary, Alberta, Canada T1Y 7G4

info@patchingassociates.com

T 403.274.5882
T 888.465.5882

www.patchingassociates.com