



Thermal Oxidizer Unit Noise

Wieland Acoustics was retained by an environmental company to help them with a project in Orange County. By the time the company contacted us, they had more on their minds than just noise.

The Nature of the Problem

Our client had been retained to environmentally remediate an auto lube facility by disposing of gases left in the wells beneath the property. To accomplish this goal, our client planned to use a thermal oxidizer unit. Using a blower, the thermal oxidizer unit vacuums gases out from underground and burns them off, rendering the property “clean” and gas-free.

It sounds straightforward enough. However, a secondary problem had arisen because the facility in need of remediation was directly adjacent to a residential neighborhood. And even though the owner of the property had been Court-ordered to render the premises gas-free by a specific date, the City authorities were prohibiting our client from using the oxidizer unit. City officials wanted to be certain that the unit would comply with the local noise standards, and they would not permit its ongoing use until such time as a noise assessment study could be undertaken to demonstrate compliance.

The Rain, the Rock, and the Hard-Place

These competing interests left our client between the rock of the Court’s order and the hard-place of the City requirements. But they also had another setback. Mother Nature was not playing by the rules. In addition to the short time-frame in which our clients needed to accomplish a successful noise demonstration and clean out the gas, spring storms kept rolling through the Southland. And it’s impossible to use sound level meters in the rain. Measurement appointments were set up and cancelled because of the bad weather. Time was running short.

The Demonstration

After repeated attempts, it all came down to a last ditch effort late in the evening of the day before the deadline. It was a case of do it now, do it right, or don’t do it at all! We got lucky; the rain held off for a few hours. The oxidizer unit had been set up in the parking lot of the facility adjacent to the property line. It was surrounded by a tall chain link fence with plastic sheeting covering the inside to form an enclosure. A technician got the equipment ready to run and positioned himself inside the enclosure.

After obtaining permission from residents of the adjacent homes, we set up sound level meters in their yards abutting the facility. First we obtained an ambient measurement. Then, using two-way radios, we asked the technician to run the equipment.

The Result

While the unit emitted a high pitched whine that was clearly audible over the ambient at the residential locations, the actual levels measured did not exceed the City's standards. Our client later explained that the whine may have been a result of the low air flow/high vacuum level at which the unit was operating.

In any case, the test was completed, a report was quickly prepared and we were able to provide our client with a favorable finding in the nick of time for his deadline, bringing a satisfactory conclusion to the project.

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