

From: "Rod MacDonald" <rod@noise-solutions.com>
To: "Jennifer Higgins" <higgins@tamsconsultants.com>
Date: 7/9/01 10:51PM
Subject: RE: Excavator Noise Suppression Equipment

Jennifer:

Yes it is possible to provide realistic noise mitigation on these excavators. It will take some work to insure that the noise level is reduced to 60 dBA at 100', however it is possible. As per our conversation today, and pending a site visit to examine the equipment, I can tell you that I expect that the primary noise sources that will need to be addressed are the engine exhaust, the engine casing and hydraulic pumps, and the engine air intake.

Noise Solutions Inc. manufactures super quiet mufflers that will totally suppress the engine exhaust noise. The engine casing and the hydraulic pumps will require an acoustical enclosure c/w appropriate acoustical ventilation to insure that we maintain proper operating temperatures of the engine and the hydraulics. Other noise sources that are much more difficult to deal with, or perhaps that you care not to address will be the water noise as the bucket comes up out of the river and the dumping of the materials onto the barge.

Noise Solutions Inc. has provided noise mitigation on draglines. The size of the dragline is much bigger than the backhoe, however they are electric and the primary noise source was fans and motor noise. As per our discussion, we manufacture large industrial mufflers for engines. The largest engine to date was 2250 HP. The exhaust was virtually silent and the back pressure was less than a conventional muffler. Our primary business is industrial noise suppression of large gas plants containing large gas compressors. Many of these compressors have 1400 HP engines. One of them is operating within 275 meters of a resident and the noise level had to be reduced to 40dBA or less at the residence.

If you are interested, we can compile pictures and send them for your review, however there are quite a few on our web site at www.noise-solutions.com

In a situation like this, I suggest that I meet with you and your team to review the equipment and to discuss the necessary actions.

Regards

Rod MacDonald
President
Noise Solutions Inc.

-----Original Message-----

From: Jennifer Higgins [mailto:higgins@tamsconsultants.com]
Sent: Monday, July 09, 2001 9:32 AM
To: rod@noise-solutions.com
Subject: Excavator Noise Suppression Equipment

Rod,

I am sending additional information following our phone conversation earlier today. To provide some project background information, the dredging project is located on the Hudson River in New York State (north of Albany, NY). The project proposes dredging along 40 river miles. There are multiple shoreline residents situated along both river banks throughout the entire project area. The surrounding area is typically agricultural until you reach the southern project limit at Albany, NY where it then becomes industrial. For your interest, additional project information is available on the internet at: www.epa.gov/hudson/

Dredging operation will consist of mechanical dredging equipment equipped with the following excavator models: CAT 375 and CAT 345. Dredging will be conducted during both day and night-time hours. The proposed equipment is similar to construction equipment used to make excavations on land, dig ditches, grade parking lots and such..Typically, on land, this equipment resembles a backhoe. For this project, we are putting the excavator on a barge and using an enclosed bucket instead of a backhoe to excavate sediments.

CAT 375: This excavator has a 420 HP rating and noise level of 79 dBA at a distance of 50 ft from the excavator.

CAT 345: This excavator has a 321 HP rating and a noise level of 74 dBA at a distance of 50 ft from the excavator.

After reviewing area USGS maps and through field visits, it is known that residents will be located, in a worst-case scenario, a distance of 100 ft from the operating equipment.

Our goal we would like to achieve is to be able to suppress the equipment noise levels to 60 dBA at the receptor.

I have attached a JPEG image that shows the CAT 375 excavator (setupsilt.jpeg). I have also attached some other site equipment dredging projects. Although this equipment is not the particular model we are anticipating, it is similar in idea. I realize this picture is not very clear but I think it might give an idea of the type of work I am speaking of.

I have equipment spec sheets for the CAT equipment. Please let me know if you would like a copy of these.

I appreciate any information you can provide on realistic noise mitigation that could be implemented at this site and methodologies available to reduce the noise to community acceptable levels or a level you feel would be achievable.

Thanks for your help.

Jennifer Higgins
Environmental Engineer
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