Woodyard Sounds in the Community

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INTRODUCTION

The pulp and paper mill is composed of several major components spread over a large area. One of these components is the North Woodyard that is located north of the parking lot used by the employees and covers an area of about three blocks by two blocks. To the east of the yard are a railway right of way and another major industrial site that has east of it a major highway. To the north is a street that has commercial and manufacturing sites on either side of it. On the west side is a residential area where the critical sound receptors are located. The closest residences are about 130 metres from the property line. Also adjacent to the yard on the west side is the Municipal water filtration plant and the Bus Transit garage. In between the west residential area and the company property are another railway right of way and a natural gas line right of way.

The North Woodyard has been in operation for many years. The major operations are:

1. Log-handling yard
2. Woodroom (debarking and chipping plant)
3. Chip-handling yard
4. Screenroom (chip-blowing and screening system)

The community around the mill is familiar with the mill sound levels and there are no known complaints from the area. The sound levels at the critical receptor locations are in excess of those given in the publications of the Ontario Ministry of the Environment. The mill North Woodyard sounds that can be heard at the east end of the streets prior to the modifications made in September and October of 2001 were:

1. Pay loaders
2. Chip blower
3. Chip line

In addition, there is a significant noise contribution from the buses at the Transit garage, the nearby water purification plant, a plant to the north, plant noise from those portions of the mill to the south of yard, road traffic on the surrounding streets and railway traffic.

RESULTS

In the fall of 2001 the mill decided that it would improve the quality of its chip stock by installing a new chip handling system. This initiated the requirement of obtaining a certificate of approval from the Ontario Ministry of the Environment. Initially it was proposed that the new system would not make any more noise at the receptor locations. This was not acceptable to the ministry as the sound levels at any of the three time periods was in excess of the guidelines of 45 dBA (23:00 to 07:00), 47 dBA (18:00 to 23:00) and 50 dBA (07:00 to 18:00).

A predictive model was developed was developed based on the sound levels of the existing equipment and the new equipment. It was very obvious that the ministry guidelines could not be met without carrying some mitigation steps. The first step was building of a five-metre high earth berm around the west side of the property joining up with an existing three-metre high earth berm on the north side.

Twenty-four hour measurements showed that the yard was not in compliance. The berm was effective in reducing the paylift yard noise at the northern receptor, however, the sounds from the silencers on the blowers was excessive. The next step was to construct a Durisol wall around the silencers.

Twenty-four hour measurements showed that the northern receptor was for all practical purposes in compliance when there was a gentle west breeze. The southern receptor because the berm was not wrapped around was not in compliance. The next step was to complete the construction of the berm along the south side up to the office.

The measurements in the spring of this year appear to indicate that the sound level at each receptor is no longer affected by the sounds from the yard. However, it appears that since this project has started the background sound levels have increased and the ministry guidelines are still being exceeded. A time period is now being looked for when the background sound levels can be re-measured while the yard and the mill are down.

PLACE

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