

## Noise Report

# KELTRACK® Trackside Transit

### Port Authority of Allegheny County

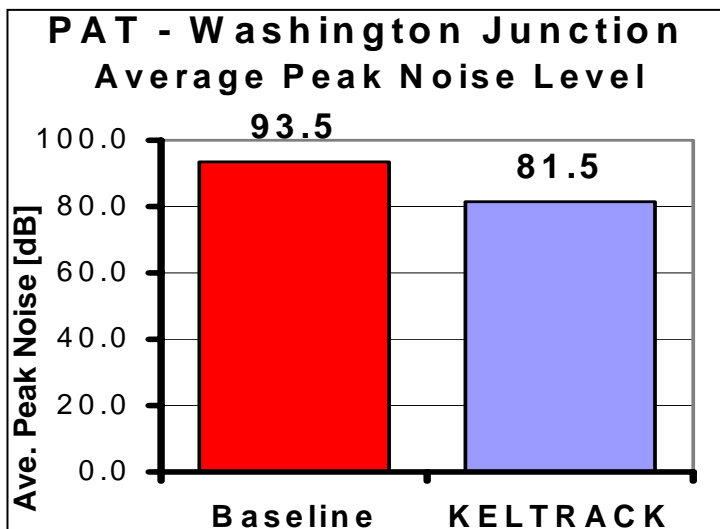
## EXECUTIVE SUMMARY

The Port Authority of Allegheny County (PAT) has experienced concern over wheel squeal noise on their rail transit system and in surrounding neighborhoods. PAT has focused on resolving the problem with the application of friction modifiers. (Ref. 1) Kelsan Technologies Corp. and Portec Rail Products, Inc. have worked cooperatively with PAT to implement and document the effectiveness of their noise control solution at the Port Authority’s latest area of concern – Washington Junction. The objective was to decrease wheel/rail interface sound generation, thereby reducing the ambient sound levels in the nearby residential neighborhoods and station platforms.

The solution consists of applying KELTRACK Trackside friction modifier, through a Portec Rail Products, Inc. PROTECTOR-IV® TOR Trackside applicator. Application of KELTRACK to the top-of-rail contact zone controls friction at an intermediate level in the wheel/rail interface. The controlled positive friction characteristics of the thin KELTRACK film greatly reduce wheel squeal noise. The trial results in this document include the sound and friction levels for baseline and KELTRACK.

**Summary Result: Sound Level Testing**

The sound reduction capabilities of the Kelsan Solution was tested on revenue service single-car trains on the inbound track at Washington Junction on PAT’s South Hills Village Line. Kelsan KELTRACK Trackside sound and friction readings with the application to the top-of-rail were compared to baseline readings with dry rail conditions. The revenue service vehicles were measured for a minimum of nine runs over the test site for both baseline and product conditions during the trial. Friction levels on both the high and low rail were measured prior to and following the application of KELTRACK Trackside to the rail/wheel contact area.



**AVERAGE PEAK NOISE:** *The KELTRACK Trackside trial resulted in an average 12-decibel decrease in rail/wheel sound generation for the trial vehicles relative to the control vehicles on the test curve under revenue service conditions.*

**\*NOTE:** *The distance from the center of the track that the*

*measurements were conducted was 15-feet, due to trackside topography. This distance is less than APTA noise measurement guidelines and may cause the peak sound levels to be higher.*

**Conclusion**

A solution of Kelsan KELTRACK Trackside is recommended to provide a consistent intermediate top of rail friction that reduces wheel/rail-generated sound and thereby decrease PAT's concern of high ambient sound levels, particularly in the higher frequency ranges.

**Note: To obtain a copy of the full report, please contact John Milobar, Vice President Sales & Marketing at 604-984-6100 or [jmilobar@kelsan.com](mailto:jmilobar@kelsan.com).**