

P-15210 Bridge, 116 Highway, Québec



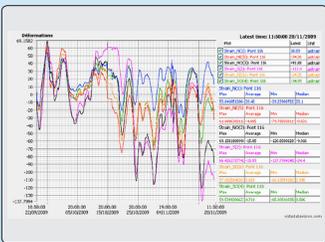
• P-15210 Bridge view



• Vibrating wire strain gage installation



• Datalogger setup and RDMS configuration



• Screen shot showing three months of deformation data



• Lifting support at Pile #2 for bearing device repair

During the rehabilitation of the P-15210 Bridge, which straddles Highway 116, north of Highway 30 in Québec, Construction Concrete Ltd. retained GKM Consultants to monitor, in real-time, the concrete deck lifting operations.

For monitoring purposes, Geokon Model 4000B Vibrating Wire Strain Gages were installed at the upper portion of the pier and bottom portion of the box girder element. The strain gages were connected to a Micro-1000 data acquisition system to measure the strains before, during and after each phase of the rehabilitation operation.

Using GKM Remote Data Management Software (RDMS), the results were compiled and plotted, for review and assessment, in near real-time, by the contractor and the engineering supervisor.

To evaluate the strain variation due to thermal effect (without traffic) the bridge was monitored for several days, and, depending on the location of the sensors, the results revealed a deformation between $100 \mu\epsilon$ and $150 \mu\epsilon$ over a 10°C temperature range. Furthermore, only $10 \mu\epsilon$ were recorded at abutment for a 5mm deck hosting allowing complete unload and repair of bearing devices.

GKM Consultants and his partners are proud to have collaborated in the success of our customer and in the improvement of the public transport of Quebec.