

Requirements for the Ambient Air Quality Monitoring Plan – Roaster Complex Deconstruction

During the deconstruction of the roaster complex, two air quality monitoring programs will be executed: a real time monitoring plan; and an environmental effects monitoring plan. Monitoring is to commence a minimum of 24 hours before deconstruction work begins, and shall continue until PWGSC representative has confirmed completion of final site grading and restoration. The minimum monitoring program particulars are outlined below; however, the specific details will be provided closer to the start of the program, once a contractor is in place, a detailed schedule for work completion has been obtained, and climate conditions under which monitoring will be required are clear. The contractor's reviewed and accepted Deconstruction Plan will also outline the specific mitigative methods that will be implemented to control dust.

The detailed air quality monitoring plan will include QA/QC methods, instrument selection operation and maintenance requirements, proper instrument positioning, and sample collection methodology, following standard accepted methods, such as those outlined in the following reference documents:

- Ontario MOE 2008. Operations Manual for Air Quality Monitoring in Ontario
- Environment Canada 2004. National Air Pollution Surveillance Network Quality Assurance and Quality Control Guidelines
- U.S. EPA 1999. U.S. Code of Federal Regulations, Title 40, Part 58, Appendix D (Network Design Criteria for Ambient Air Quality Monitoring) and Appendix E (Probe and Monitoring Path Siting Criteria), and Part 53 (Ambient Air Monitoring Reference and Equivalent Methods).

The real-time monitoring plan will address at minimum, the following requirements:

1. Four air monitoring instruments at the project work area perimeter surrounding deconstruction work, placed at appropriate locations to:
 - i. Account for typical wind directions and dust source areas, including source areas outside of project work area. Baseline air quality monitoring information is available as a supporting document.
 - ii. Capture potential dust emissions from deconstruction work.
 - iii. Identify potential upwind dust contributions to air quality.
2. Real-time monitoring from portable, continual recording instruments on stable tripods at predetermined approximate locations, with exact positioning selected at start of each day based on prevailing wind direction(s), wind speeds, type of work activity, and location of deconstruction work being completed. Instrument selection, and potential shelter requirements, will consider the climate under which the monitoring will need to take place, and each location will use the same methodology to allow for direct comparison of data.

3. Real-time monitoring instruments are to measure particulate matter of 10 micrometres or less (PM_{10}), recording fifteen (15) minute average concentrations on a continuous basis throughout the work day.
4. Real-time monitoring instruments are to incorporate an alert system set to go off at specific action levels outlined in Table 1 below.
5. Responses/actions to be taken in the event that an action level is reached are outlined in Table 1 below.
6. Action levels below may be modified, as required, based on PM_{10} and arsenic concentrations from environmental effects monitoring, and upwind monitoring data during deconstruction work.

The environmental effects air monitoring will include, at minimum, the following:

1. Collection of ambient air samples from a position adjacent to the public or environmental receptor that is closest to the deconstruction work area. In the event of frequent exceedances of action levels during real time monitoring, air samples may also be collected adjacent to the real time monitoring position with highest PM_{10} readings.
2. Samples are to be collected over a 24 hour period, with one sample collected every three (3) days. Sampling frequency may be extended to 6-day periods if there are no action level exceedances.
3. Samples are to be collected and analyzed for the mass concentration of total suspended particulate matter (TSP), PM_{10} , and arsenic, according to same methodology used during baseline sampling.

Table 1 - Summary of Action Levels for Dust Monitoring

Parameter	Action Level	Monitoring Location	Averaging Period	Action Required if Level Exceeded
Dust Plumes at Project Work Area*	Visible dust emissions	At Project Work Area	Not Applicable	If visible dust emissions are observed at Project Work Area, the PWGSC Representative may conduct fugitive dust monitoring. Results will be communicated to the Contractor, with implementation of mitigative measures as outlined below if required. Mitigative measures may include such actions as wetting down structures, changing deconstruction methodology, and/or whatever other measures the contractor may propose in the Deconstruction Plan.
PM ₁₀	180 µg/m ³	at downwind location of Project Work Area	15 Minutes	Deconstruction work continues. Contractor to investigate potential source of dust emissions and report results to PWGSC Representative. Visible dust plumes on-site shall be an early indicator that immediate corrective measures are warranted. Contractor to initiate appropriate measures as required to correct operations and protect air quality to have particulate concentrations below the action levels.
PM ₁₀	125 µg/m ³	at downwind location of Project Work Area	1 - Hour	Current Deconstruction Work stops. Deconstruction Work may be shifted to another activity. Work resumes at previously halted Deconstruction Work activity when reason(s) for the dust emissions are identified and corrective procedures are implemented
PM ₁₀	85 µg/m ³	at downwind location of Project Work Area	4 - Hours	All Deconstruction Work stops. The Contractor and PWGSC Representative will review corrective action(s) taken to date and identify additional measures to reduce air emissions. Construction practices and procedures will be examined to assess potential modifications. Work does not resume until a strategy satisfactory to the PWGSC Representative is formulated and implemented.

* Project Work Area defined as area immediately surrounding Roaster Complex where the deconstruction contractor's work is confined.