



PO BOX 1500  
YELLOWKNIFE NT X1A 2R3

October 6, 2021

## Distribution List

A summary of the Giant Mine Remediation Project ambient air quality monitoring program for the week ending October 2, 2021 is as follows:

### Site Perimeter Stations

- No 15-minute average particulate matter less than 10 microns in diameter (PM<sub>10</sub>) concentrations above the established Risk Based Action Level (RBAL) of 159 µg/m<sup>3</sup> were measured at the site perimeter monitoring stations during the week. PM<sub>10</sub> concentrations measured at the site perimeter monitoring locations during the week were typical of seasonal background concentrations.
- A total of fifty-five (55) 15-minute average total suspended particulate (TSP) concentrations above the established RBAL of 333 µg/m<sup>3</sup> were measured at site perimeter monitoring stations on September 27, 28, 29, 30, and October 1, 2021. Heavy fog was observed on these days and was the likely cause of the measured TSP concentrations above the RBAL. No site activities that may have contributed to the reported concentrations measured above the RBAL were observed by or reported to SLR personnel.
  - One (1) 15-minute average TSP concentration of 441 µg/m<sup>3</sup> was measured at 05:15 MST on September 27, 2021 at site perimeter Station H-NW Pond. The wind speed at this time was 2.2 m/s and from the north-northeast placing Yellowknife downwind from Giant Mine.
  - Nine (9) 15-minute average TSP concentrations ranging from 373 µg/m<sup>3</sup> to 703 µg/m<sup>3</sup> were measured during 2 periods, the first at 11:45 and 12:00 MST and second from 22:45 to 24:00 on September 28, 2021 at site perimeter Stations A-North, C-Northwest, E-A1C1, and G-West. The average wind speed during the morning period was 6.5 m/s and from the southeast, placing Yellowknife upwind from Giant Mine in the evening the winds were predominately calm.
  - Twenty-three (23) 15-minute average TSP concentrations ranging from 346 µg/m<sup>3</sup> to 2,959 µg/m<sup>3</sup> were measured during 2 periods, the first at 00:15 MST and second from 06:45 to 11:15 on September 29, 2021 at site perimeter Stations A-North, C-Northwest, E-A1C1, G-West, H-NW Pond, and I-South Pond. During these times winds were predominately calm
  - Eleven (11) 15-minute average TSP concentrations ranging from 347 µg/m<sup>3</sup> to 793 µg/m<sup>3</sup> were measured from 06:00 to 09:45 on September 30, 2021



at site perimeter Stations A-North, C-Northwest, E-A1C1, and H-NW Pond. The average wind speed during these time periods was 2.8 m/s with winds predominately from the east-southeast, placing Yellowknife crosswind from Giant Mine.

- Eleven (11) 15-minute average TSP concentrations ranging from 385 µg/m<sup>3</sup> to 964 µg/m<sup>3</sup> were measured from 02:00 to 06:45 on October 1, 2021 at site perimeter Stations A-North, C-Northwest, E-A1C1, and H-NW Pond. The average wind speed during these time periods was 1.9 m/s with winds predominantly from the south-southwest and southwest, placing Yellowknife upwind from Giant Mine.
- Laboratory results for integrated TSP, PM<sub>10</sub>, and trace metals (including arsenic) analyses from samples collected September 13, 2021 at the site perimeter monitoring stations were less than the analytical detection limit and/or below the referenced standard. Laboratory analyses of integrated 24-hour arsenic, PM<sub>10</sub>, and TSP filter samples collected at the site perimeter stations after September 13, 2021 are pending.

#### Community Station Monitoring Network

- No continuous PM<sub>2.5</sub> or PM<sub>10</sub> 24-hour average concentrations above the referenced standards for each were measured at any of the community stations during the week. PM<sub>2.5</sub> and PM<sub>10</sub> concentrations during the week were typically representative of seasonal background concentrations.
- Laboratory analyses of community station filters collected after September 13, 2021 are pending.
- There were no NO<sub>2</sub> concentrations measured at the Niven Lake community station above the NWT Ambient Air Quality 24-hour standard of 106 parts per billion (ppb) or the one-hour standard of 213 ppb during the week. Table 1 summarizes the maximum hourly concentration each day and the corresponding 24-hour average concentration measured at the Niven Lake community station.

**Niven Lake Community Station NO<sub>2</sub> Concentrations**

<b>Date</b>	<b>Maximum One-hour Average (ppb)</b>	<b>24-hour Average (ppb)</b>
September 26, 2021	0.5	0.0
September 27, 2021	1.1	0.0
September 28, 2021	0.7	0.0
September 29, 2021	3.0	0.6
September 30, 2021	4.5	0.0
October 01, 2021	2.2	0.2
October 02, 2021	0.4	0.0

## General Operation

- Integrated sampling for TSP, PM<sub>10</sub>, and trace metals was conducted on September 28 and October 1, 2021. The next regularly scheduled sampling date is October 4, 2021.
- Data completeness for the reporting period was 99.83% for continuous TSP and 100% for continuous PM<sub>10</sub> concentrations measured at the site perimeter monitoring stations.
- The AAQM program operated as specified during the week ending October 2, 2021, with the following exceptions:
  - Three hours of NO<sub>2</sub> data at the NVN station were invalid during system calibration on September 26, 2021.
  - One hour of PM<sub>2.5</sub> data at NVN were invalidated during the reporting period due to a reported concentration of less than -3 µg/m<sup>3</sup>.

Sincerely,



Natalie Plato  
Deputy Director  
Giant Mine Remediation Project

c.c.: Distribution List