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January 20, 2012

Palmer Environmental Consulting Group Inc.
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Attention: Rick Palmer, M.Sc., RP.Bio
Principal, Senior Aquatic Biologist

**Re: Meteorological, Dustfall and Noise Data Summary Report
Casino Western Copper
RWDI Reference No. 1011858**

Dear Mr. Palmer,

This letter comprises the 2011 Meteorological, Dustfall and Noise Data Summary report for the Casino Western Copper Mine. RWDI AIR Inc. (RWDI) has summarized all meteorological and dustfall data collected at the proposed Casino Mine located 300 km northwest of Whitehorse, Yukon. Continuous meteorological measurements were collected at the camp from October 3, 2008 to October 7, 2011 and dustfall measurements were collected for one month in 2010 and two months in 2011. . In addition, noise data collected at the Freegold Road near Carmacks is presented. The noise measurement survey for the Casino Mine was conducted from August 25 to 26, 2011 over a 22-hour period.

The meteorological station consists of a 10-m, free-standing tower equipped with instrumentation, data logger, and logger enclosure. The meteorological station has instrumentation capable of measuring air temperature, wind speed and direction, rainfall, snow depth, barometric pressure and relative humidity. These measurements, together with upper air data available from Whitehorse, will provide the observations required for air quality dispersion modelling. Observations are recorded and stored by a data logger, which is powered by a battery charged with a solar panel at the station. The meteorological station was installed on October 2, 2008 and data recorded at the station are valid from October 3, 2008 at midnight. The data completeness of all meteorological observations from October 3, 2008 to December 15, 2010 is 100%. The station battery malfunctioned on December 15, 2010 and was fixed on March 30, 2011. The station tower base plate was replaced as well as the anemometer bearings and potentiometer on August 24 and August 25, 2011. Data completeness from March 30, 2011 to October 7, 2011 is also 100%. Data completeness from October 3, 2008 to October 7, 2011 is 90.4%.

Dustfall monitoring stations were installed between August 14 and August 15, 2010. Four dustfall stations were strategically placed north, east, south and west of the mine at approximately 1.5 m above ground. Dustfall measurements were collected from August 14 to September 14, 2010; May 17 to June 13, 2011; and from August 23 to September 26, 2011.

The noise measurements were collected using a Larson Davis 831 Sound Level Meter (SLM). The objective was to determine the ambient sound level for the residences along the Freegold Road near Carmacks, which will be used as the access road to the Casino Mine.

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Meteorology

Hourly temperature observations are summarized in Table 1 and Figure 1. The extreme maximum and minimum hourly air temperatures observed from October 3, 2008 to October 7, 2011 were 26.9°C in July and -39.9°C in January, respectively. The highest monthly average temperature was 12.0°C in July and the lowest monthly average was -15.9°C in January. The highest maximum daily average was 21.9°C in July; the lowest minimum daily average was -35.4°C in January.

Table 1: Hourly Air Temperature Observations at Casino Mine (October 3, 2008 to October 7, 2011)

	Air Temperature (°C)				
	Extreme Max	Max Daily Average	Monthly Average	Min Daily Average	Extreme Min
January	6.3	3.6	-15.9	-35.4	-39.9
February	9.8	4.8	-11.1	-31.3	-33.3
March	4.4	0.0	-10.6	-23.7	-25.7
April	14.2	10.3	-1.9	-12.1	-14.9
May	21.4	15.9	6.4	-3.0	-6.5
June	24.5	18.9	9.4	2.5	0.2
July	26.9	21.9	12.0	5.0	2.9
August	25.7	20.6	9.2	4.2	1.0
September	17.7	11.9	4.7	-7.0	-9.2
October	10.0	5.7	-4.1	-18.6	-23.0
November	2.9	1.0	-10.9	-24.8	-26.6
December	0.8	-2.4	-13.7	-28.8	-31.8
Annual	26.9	21.9	-1.0	-35.4	-39.9

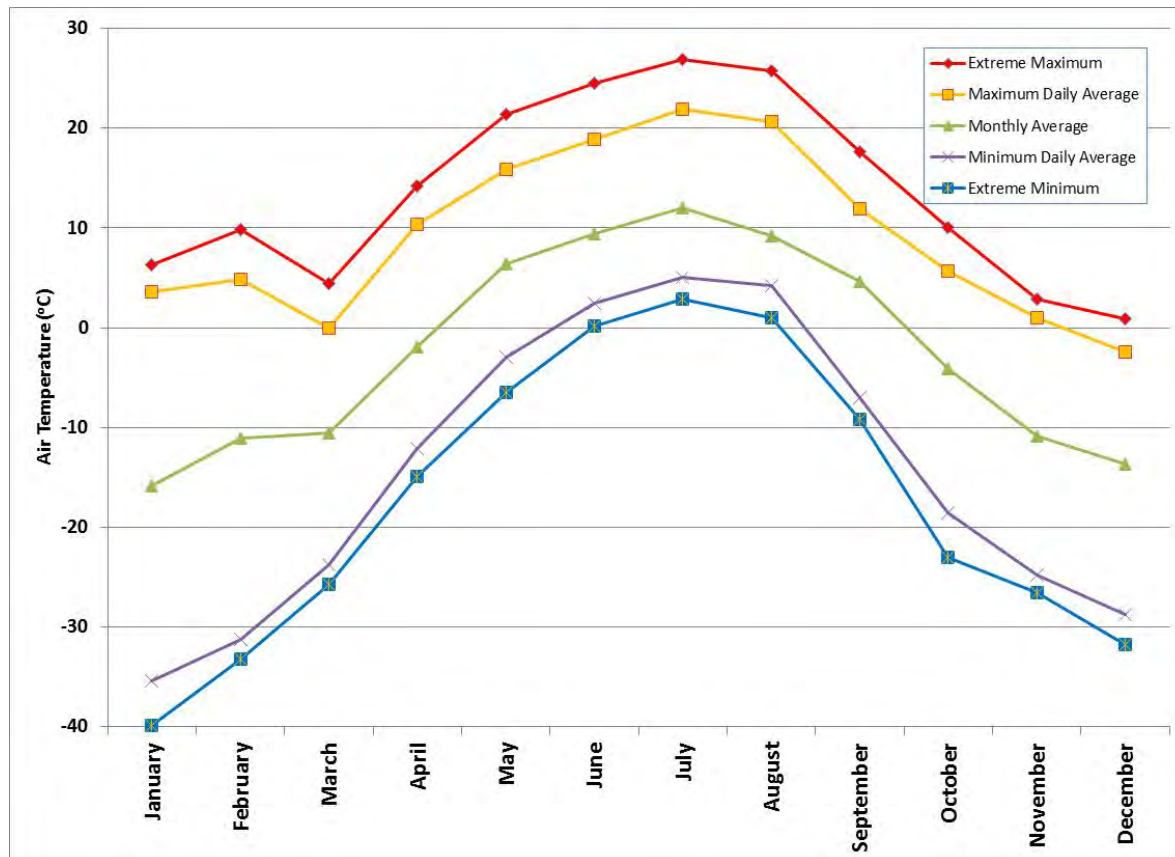


Figure 1: Air Temperature Observations at Casino Mine (October 3, 2008 to October 7, 2011)

A wind rose for the meteorological station is shown in Figure 2. A wind rose is essentially a bar chart in a polar format. The direction of the wind rose bar indicates the direction from which the wind is blowing, the colour indicates the wind speed class, and the length of the bar indicates the frequency of occurrence. Winds were observed to be predominantly from the south-southwest and southwest with a maximum recorded wind speed of 11.1 m/s, or 40.1 km/h. The frequency of calms was 7.4%.

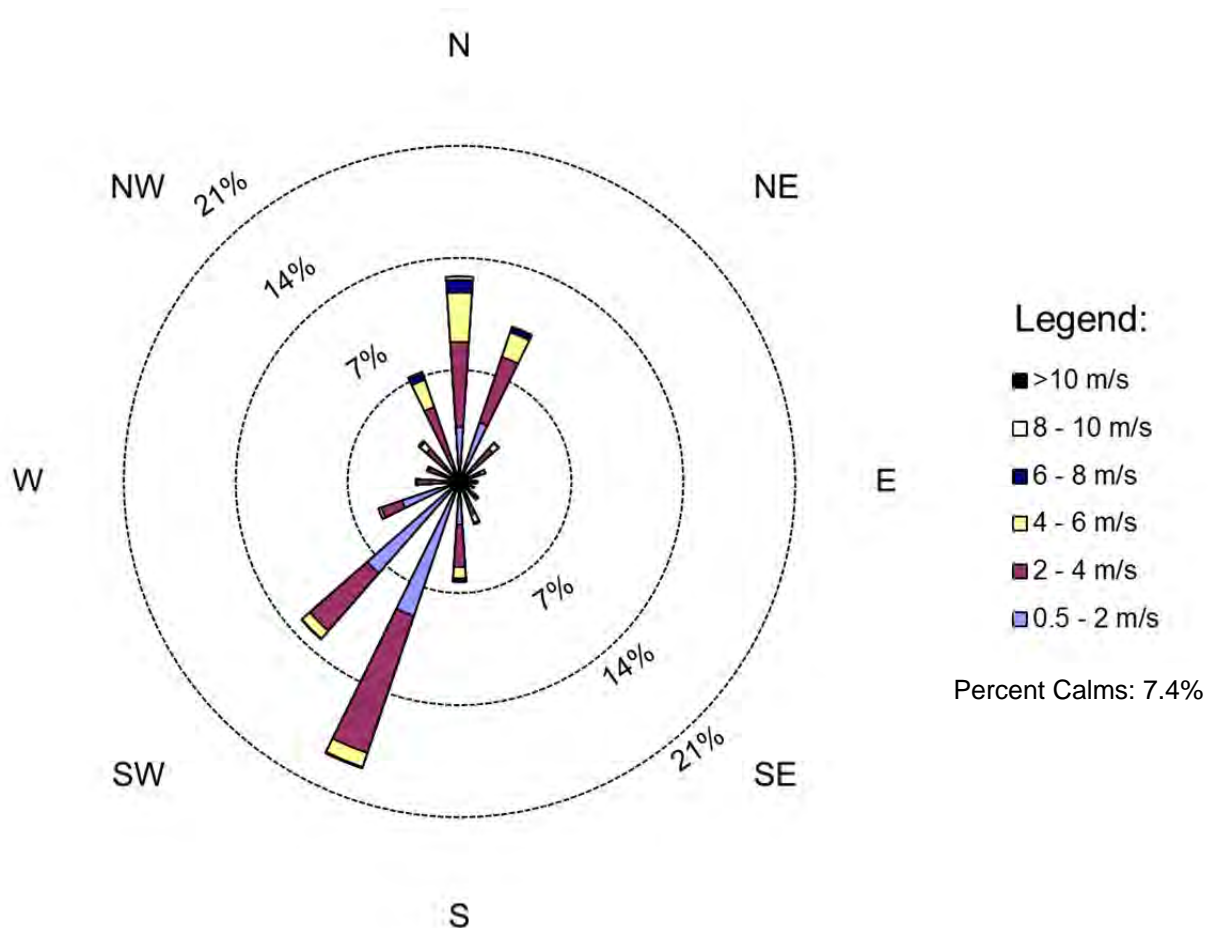


Figure 2: Wind Rose for Casino Mine for the Period October 3, 2008 to October 7, 2011

Total monthly rainfall is shown in Figure 3, with October 2008 and October 2011 excluded from the figure because data for the full month were not available. The greatest monthly rainfall of 169.6 mm was observed in June 2011. Rainfall was not observed in December 2008, November and December 2009, and December 2010 to March 2011.

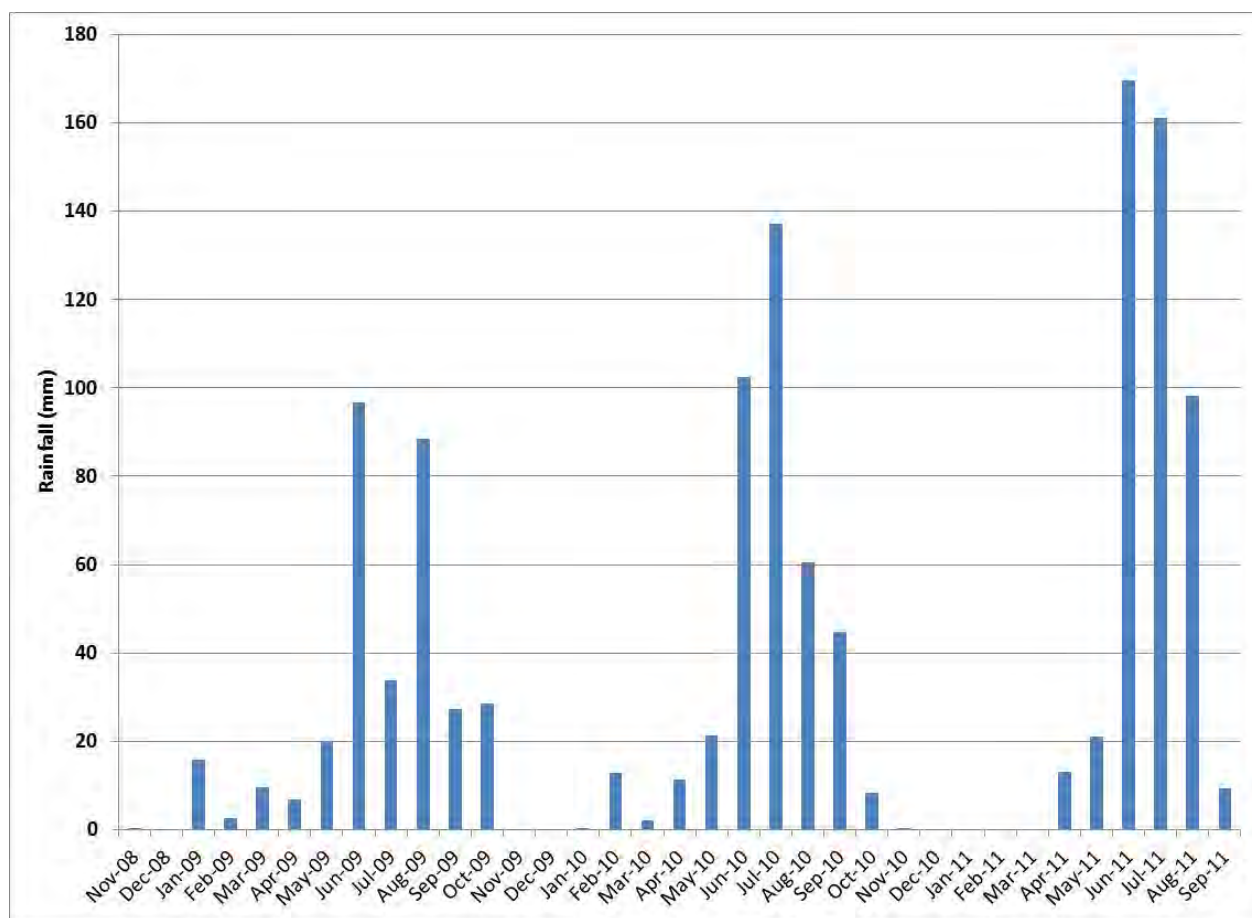


Figure 3: Monthly Rainfall at Casino Mine for November 2008 to September 2011

Average monthly snow depth at the meteorological station is presented in Figure 4. Snow depth measurements were zero during the summer when temperatures were typically above 0°C and precipitation is in the form of rain. Snow was observed to begin accumulating in October and November, and melted by June. A greater average snow depth was observed in the winter of 2008 to 2009 than 2009 to 2010. Due to the station battery malfunction; data were not collected from December 15, 2010 to March 30, 2011 and, hence, the gap in the data presented in Figure 4.

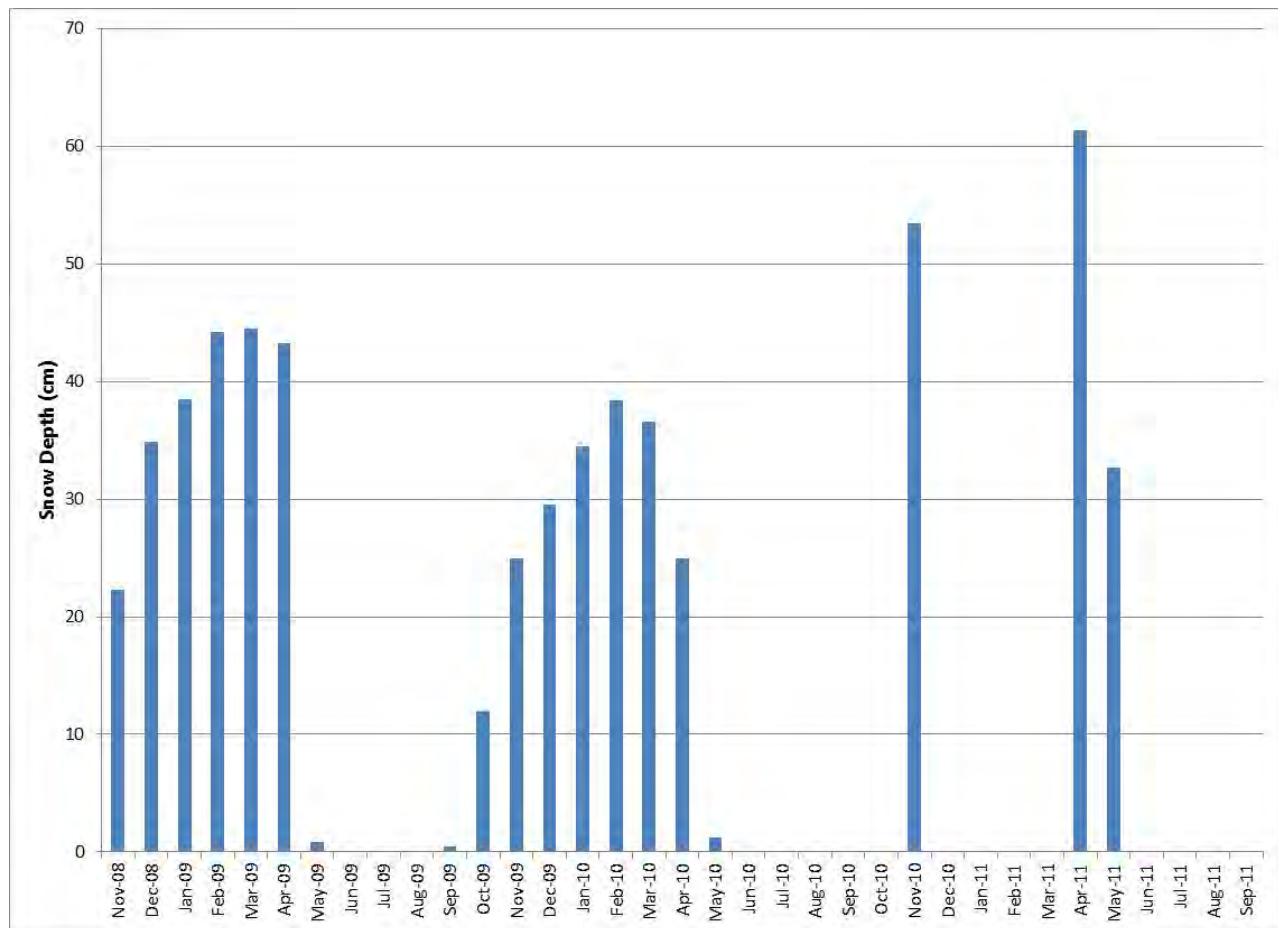


Figure 4: Average Monthly Snow Depth at Casino Mine for November 2008 to September 2011

Barometric pressure measurements are shown in Figure 5. The station pressure was adjusted to sea level pressure based on the station elevation of 1,203 m above sea level. Pressure measurements ranged from 92.4 kPa to 103.8 kPa between October 3, 2008 and October 7, 2011. The lower pressure limit observed at the station is not representative of the region, which suggests the sensor may not be functioning properly and should be fixed or replaced.

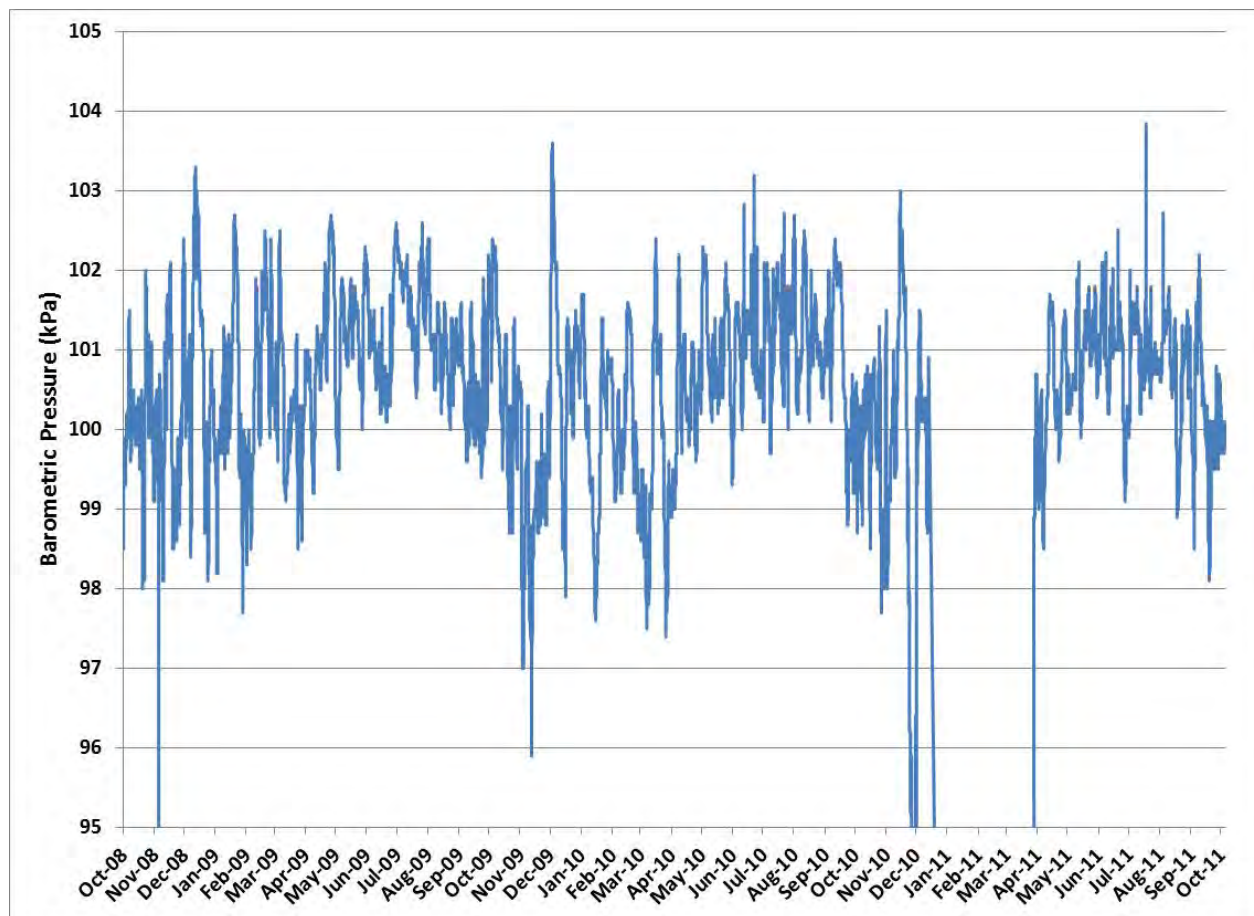


Figure 5: Barometric Pressure Measured at Casino Mine Meteorological Station for October 3, 2008 to October 7, 2011 (Corrected for Sea Level)

Daily average relative humidity measurements at the meteorological station are presented in Figure 6. Relative humidity ranged from 13.5% to 99.9% during the period of October 3, 2008 to October 7, 2011.

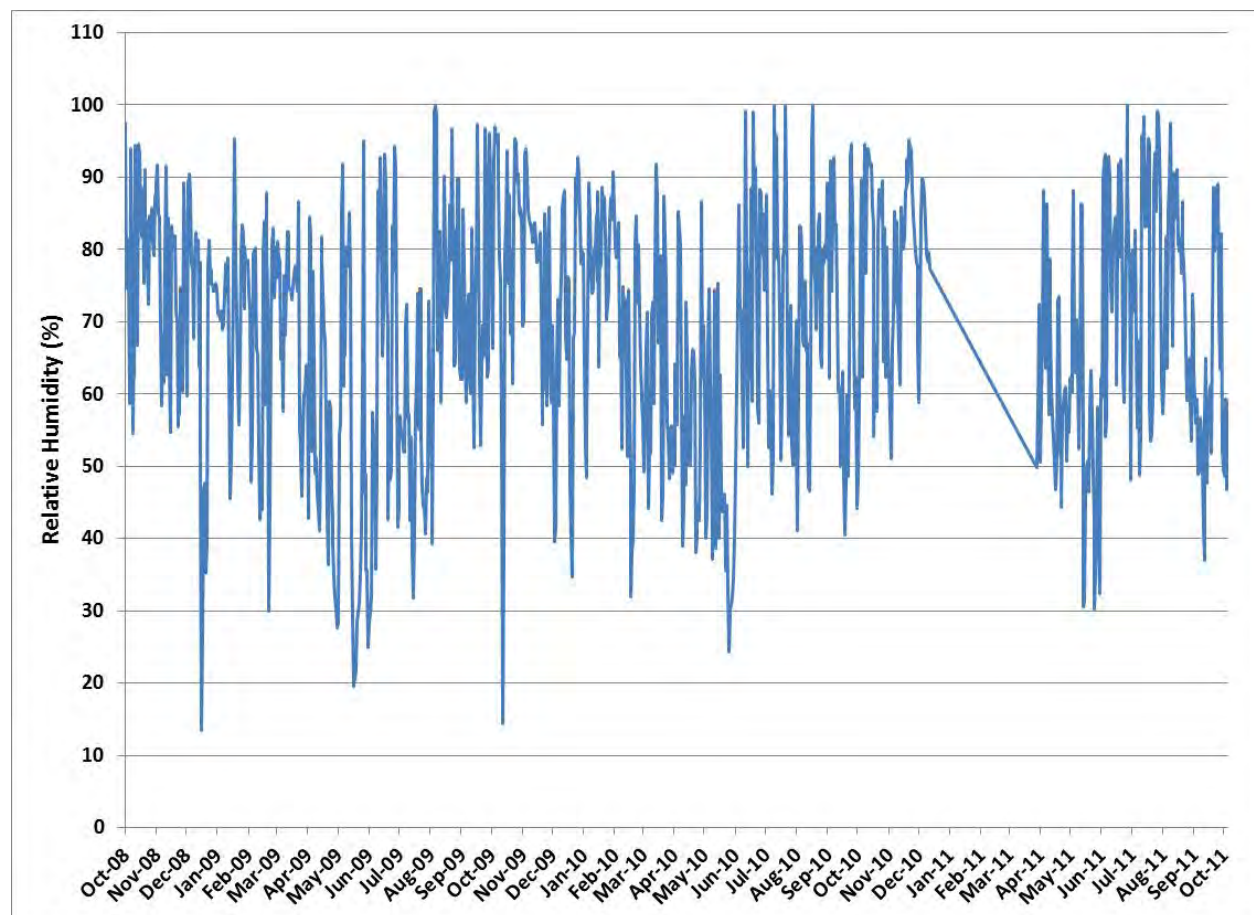


Figure 6: Relative Humidity at Casino Mine Meteorological Station (October 3, 2008 to October 7, 2011)

Dustfall

Dustfall collection canisters were installed at the Casino Mine at the locations shown in Figure 7. The dustfall measurements taken from August 14 or 15 to September 14, 2010 were analyzed for fixed, combustible and total dustfall as well as metals. Measurements taken from May 17 to June 13, 2011 were analyzed for fixed dustfall, and the dustfall measurements taken from August 23 to September 27, 2011 were analyzed for fixed dustfall, combustible dustfall, and total dustfall.

Results of dustfall analyses for 2010 and 2011 are presented in Table 2. Combustible and total dustfall at D3 Tailings from August 14 or 15 to September 14, 2010 were 0.16 and 0.22 mg/dm²/day, respectively. Total dustfall at all other locations and fixed dustfall at all locations were less than the detection limit of 0.11 mg/dm²/day.

Fixed dustfall measured at the D1 Camp from May 17 to June 13, 2011 was 0.13 mg/dm²/day, and all other locations were below the detection limit of 0.10 mg/dm²/day. The canister at D1 Camp was tipped over; hence dustfall measurement was not for this location from August 23 to September 27, 2011. Fixed

dustfall observed from August 23 to September 27 was just above the detection limit by $0.01 \text{ mg/dm}^2/\text{day}$ at D2 Pit, while fixed dustfall at D3 Tailings and D4 Dam were below the detection limit. Combustible dustfall measurements were 0.28 and $0.27 \text{ mg/dm}^2/\text{day}$ at D2 Pit and D3 Tailings, respectively. Total dustfall at D2 Pit and D3 Tailings were 0.39 and $0.32 \text{ mg/dm}^2/\text{day}$, respectively. Combustible and total dustfall measured at D4 Dam were below the detection limit.

Dustfall measured from August 14/15 to September 14, 2011 were generally less than the dustfall measured from August 23 to September 26, 2011 at D2 Pit and D3 Tailings. Dustfall measurements at all locations were an order of magnitude less than the British Columbia criteria of $2.9 \text{ mg/dm}^2/\text{day}$ for non-residential areas.

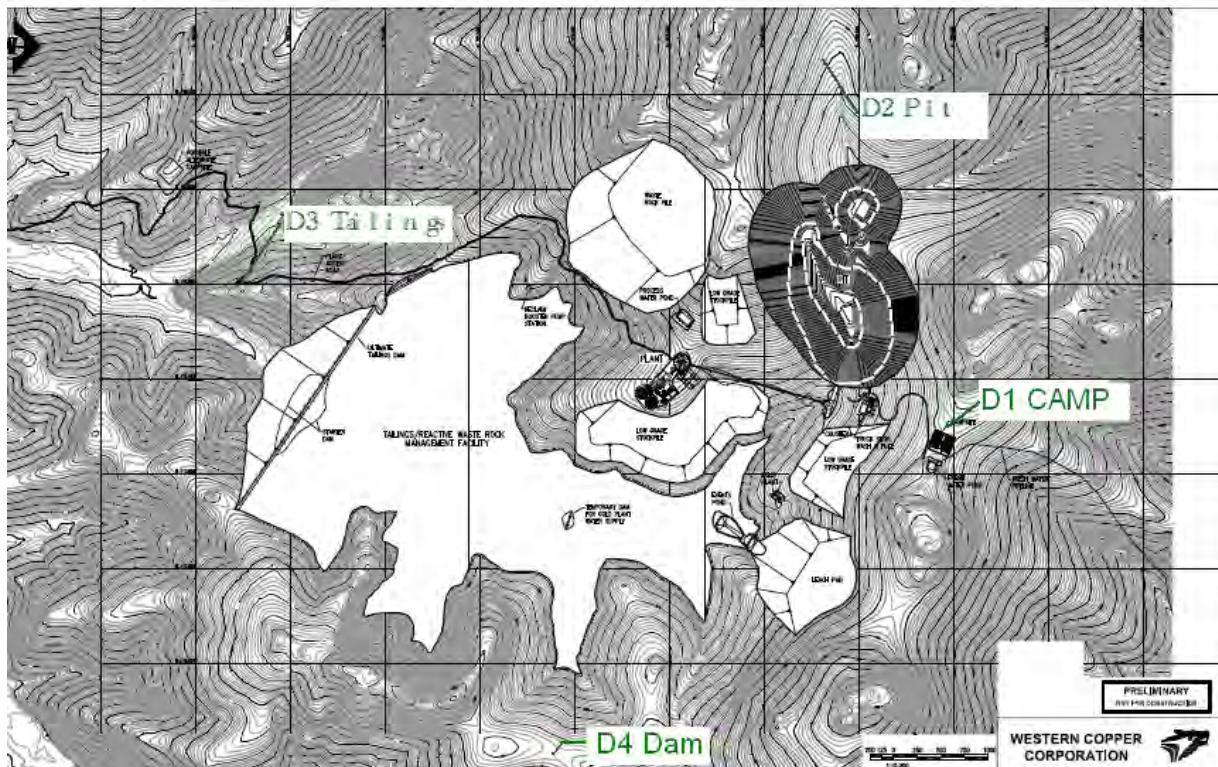


Figure 7: Dustfall Collection Canister Locations at the Casino Mine

Table 2: Dustfall Analysis Results

Sample ID	D1 Camp (NORTH)	D2 Pit (WEST)	D3 Tailings (SOUTH)	D4 Dam (EAST)	BLANK
Particulates (mg/dm²/day)					
August 14/15 to September 14, 2010					
Fixed Dustfall	<0.11	<0.11	<0.11	<0.11	<0.11
Combustible Dustfall	<0.11	<0.11	0.16	<0.11	<0.11
Total Dustfall	<0.11	<0.11	0.22	<0.11	<0.11
May 17 to June 13, 2011					
Fixed Dustfall	0.13	<0.10	<0.10	<0.10	<0.10
August 23 to September 26, 2011					
Fixed Dustfall	No Sample	0.11	<0.10	<0.10	<0.10
Combustible Dustfall	No Sample	0.28	0.27	<0.10	<0.10
Total Dustfall	No Sample	0.39	0.32	<0.10	<0.10

Most of the metal concentrations of the dustfall samples collected in 2010 were below the detection limits, as shown in Table 3. Metal concentrations that were above detection limits in all dustfall locations included aluminum, barium, calcium, copper, lead, magnesium, manganese, strontium, and zinc. Chromium and sodium were only detected at the D4 Dam dustfall site and nickel was detected at all locations except the D3 Tailings dustfall site. A metals analysis was not performed in 2011.

Table 3: Dustfall Analysis Results for 2010

Sample ID	D1 Camp (NORTH)	D2 Pit (WEST)	D3 Tailings (SOUTH)	D4 Dam (EAST)	BLANK
Metals					
Aluminum (Al)-Total	0.000411	0.000314	0.000457	0.000540	0.000054
Antimony (Sb)-Total	<0.0000030	<0.0000038	<0.0000043	<0.0000042	<0.0000028
Arsenic (As)-Total	<0.0000030	<0.0000038	<0.0000043	<0.0000042	<0.0000028
Barium (Ba)-Total	0.0000363	0.0000258	0.0000576	0.0000417	<0.0000014
Beryllium (Be)-Total	<0.000015	<0.000019	<0.000022	<0.000021	<0.000014
Bismuth (Bi)-Total	<0.000015	<0.000019	<0.000022	<0.000021	<0.000014
Boron (B)-Total	<0.00030	<0.00038	<0.00043	<0.00042	<0.00028
Cadmium (Cd)-Total	<0.0000015	<0.0000019	<0.0000022	<0.0000021	<0.0000014
Calcium (Ca)-Total	0.00100	0.00155	0.00228	0.00167	<0.00055
Chromium (Cr)-Total	<0.000015	<0.000019	<0.000022	0.000031	<0.000014
Cobalt (Co)-Total	<0.0000030	<0.0000038	<0.0000043	<0.0000042	<0.0000028
Copper (Cu)-Total	0.0000585	0.0000397	0.0000531	0.0000450	0.0000590
Lead (Pb)-Total	0.0000029	0.0000058	0.0000156	0.0000080	<0.0000014
Lithium (Li)-Total	<0.00015	<0.00019	<0.00022	<0.00021	<0.00014
Magnesium (Mg)-Total	0.00028	0.00040	0.00119	0.00044	<0.00014
Manganese (Mn)-Total	0.0000410	0.0000451	0.000113	0.0000587	<0.0000014
Molybdenum (Mo)-Total	<0.0000015	<0.0000019	<0.0000022	<0.0000021	<0.0000014
Nickel (Ni)-Total	0.000036	0.000031	<0.000022	0.000346	<0.000014
Potassium (K)-Total	<0.0015	<0.0019	0.0126	<0.0021	<0.0014
Selenium (Se)-Total	<0.000030	<0.000038	<0.000043	<0.000042	<0.000028
Silver (Ag)-Total	<0.00000030	<0.00000038	<0.00000043	<0.00000042	<0.00000028
Sodium (Na)-Total	<0.0015	<0.0019	<0.0022	0.0026	<0.0014
Strontium (Sr)-Total	0.0000039	0.0000050	0.0000094	0.0000049	<0.0000028
Thallium (Tl)-Total	<0.0000030	<0.0000038	<0.0000043	<0.0000042	<0.0000028
Tin (Sn)-Total	<0.0000030	<0.0000038	<0.0000043	<0.0000042	<0.0000028
Uranium (U)-Total	<0.00000030	<0.00000038	<0.00000043	<0.00000042	<0.00000028
Vanadium (V)-Total	<0.000030	<0.000038	<0.000043	<0.000042	<0.000028
Zinc (Zn)-Total	0.000071	0.000060	0.000124	0.000182	<0.000028

Review of Other Meteorological and Particulate Matter Stations

A review was conducted of other available meteorological data. The nearest climate station to the mine was Casino Creek, located approximately two kilometers from the mine. The station was operated by Environment Canada from August 1969 to January 1995 and collected daily average meteorological data. The next nearest station was Stewart River, located approximately 90 km from the mine. It collected daily average data from 1976 to 1993. Hourly average data are needed as input for dispersion modeling; therefore daily average data from Casino Creek and Stewart River are not suitable. The nearest stations with hourly average meteorological data are in Dawson and Burwash; both stations are located over 150 km from the mine. Only the Burwash AWO airport station contains continuous hourly wind speed and wind direction data in addition to pressure and air temperature data. Data from Dawson or Burwash are likely not representative of the meteorology at the proposed mine site due to their relative distance. The Whitehorse upper air station collects the most representative upper air data for the evaluating potential effects of the Casino Mine.

There is one air quality station in Yukon Territories located in Whitehorse, 380 km southeast of the mine, which measures $PM_{2.5}$. There are no stations in the vicinity of the mine that measure PM_{10} .

Noise

Methods

As the Yukon Territory does not have its own noise guidelines or regulation, the noise survey was done in accordance with the British Columbia Oil and Gas Commission's (BC OGC) published document, entitled "British Columbia Noise Control Best Practices Guideline" dated March 2009.

Environmental noise levels typically vary with time. To account for the time varying nature of environmental noise, a single number descriptor – an 'average' sound level - known as Energy Equivalent Sound Level or L_{EQ} is used. According to BC OGC guidelines, new facilities should meet a Permissible Sound Level (PSL) of 40 dBA L_{EQ} (nighttime) at the nearest dwelling (noise receptor), or at 1.5 km from the facility fence line, whichever is the lesser distance. The daytime noise level (L_{DAY}) is the L_{EQ} measured between the hours of 07:00 and 22:00. The nighttime noise level (L_{NIGHT}) is the L_{EQ} measured between the hours of 22:00 and 07:00.

Baseline Measurement Results

Figure 8 shows the location of the noise receptor (NR1). The sound level meter was placed 30m from the road, which is similar to the distance from the closest residence to the road.

Hourly L_{EQ} values ranged from 30.3 dBA to 43.4 dBA, and are shown in Table 4. The major noise sources are the pass-by trucks and natural sounds such as wind generated noise or wildlife. The pass-by trucks are considered part of the ambient sound levels as they are not related to the Casino Mine Project Operation. Daytime and nighttime average sound levels were also calculated and shown in Table 5. L_{DAY} and L_{NIGHT} sound levels were 40.3 dBA and 33.9 dBA respectively.

Audio recordings made during the noise survey were analyzed to identify events that are not considered part of the normal ambient sound levels in the area, such as low-flying aircraft or field crew activity near the meter. The BC OGC noise guideline states that these events must be excluded from the overall calculations. The excluded events for the measurement survey are described in Table 6.

Table 4: NR1 Hourly Noise Measurement Data, August 25 to August 26, 2011

Time Period (hh:mm)	Sound Level Averaging Duration (hh:mm)	A-Weighted (dBA) Equivalent Sound Level (L_{EQ})	A-Weighted (dBA) Statistical $L_{90}^{(a)}$	Day/Night
13:00 - 14:00	1:00	41.8	40.3	D
14:00 - 15:00	1:00	39.0	37.6	D
15:00 - 16:00	1:00	42.8	40.8	D
16:00 - 17:00	1:00	43.4	40.5	D
17:00 - 18:00	0:55	42.4	37.0	D
18:00 - 19:00	1:00	40.0	35.3	D
19:00 - 20:00	1:00	37.5	34.2	D
20:00 - 21:00	1:00	40.8	35.3	D
21:00 - 22:00	1:00	40.3	33.4	D
22:00 - 23:00	0:55	37.6	28.9	N
23:00 - 0:00	1:00	33.4	28.4	N
0:00 - 1:00	1:00	35.8	30.5	N
1:00 - 2:00	1:00	30.3	28.8	N
2:00 - 3:00	0:55	32.2	30.0	N
3:00 - 4:00	1:00	32.4	29.9	N
4:00 - 5:00	1:00	31.5	30.3	N
5:00 - 6:00	1:00	34.6	32.9	N
6:00 - 7:00	1:00	33.2	27.3	N
7:00 - 8:00	1:00	35.3	29.6	D
8:00 - 9:00	1:00	36.9	27.5	D
9:00 - 10:00	1:00	34.4	23.6	D
10:00 - 11:00	0:50	36.1	26.6	D

Notes: a) The hourly L_{90} is calculated using arithmetic average from 5-minute L_{90}

Table 5: Daytime and Nighttime Equivalent Sound Levels and Statistical L_{90}

Summary Statistics		
	A-Weighted L_{EQ} (dBA)	A-Weighted $L_{90}^{(a)}$
Lday	40.3	34.2
Lnight	33.9	29.7

Notes: a) The hourly L_{90} is calculated using arithmetic average from 5-minute L_{90}

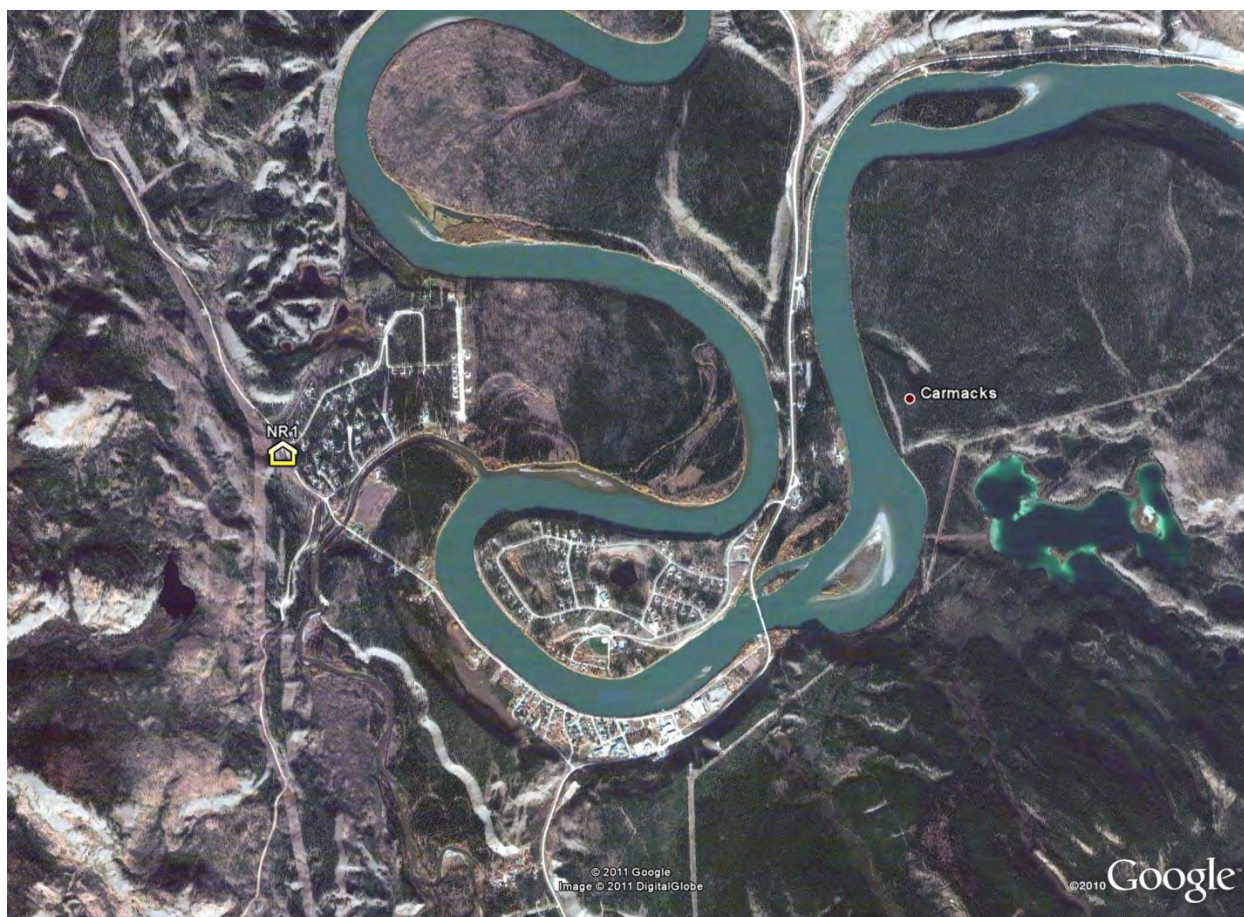


Figure 8: Location of Noise Monitoring Station for the Casino Mine Project

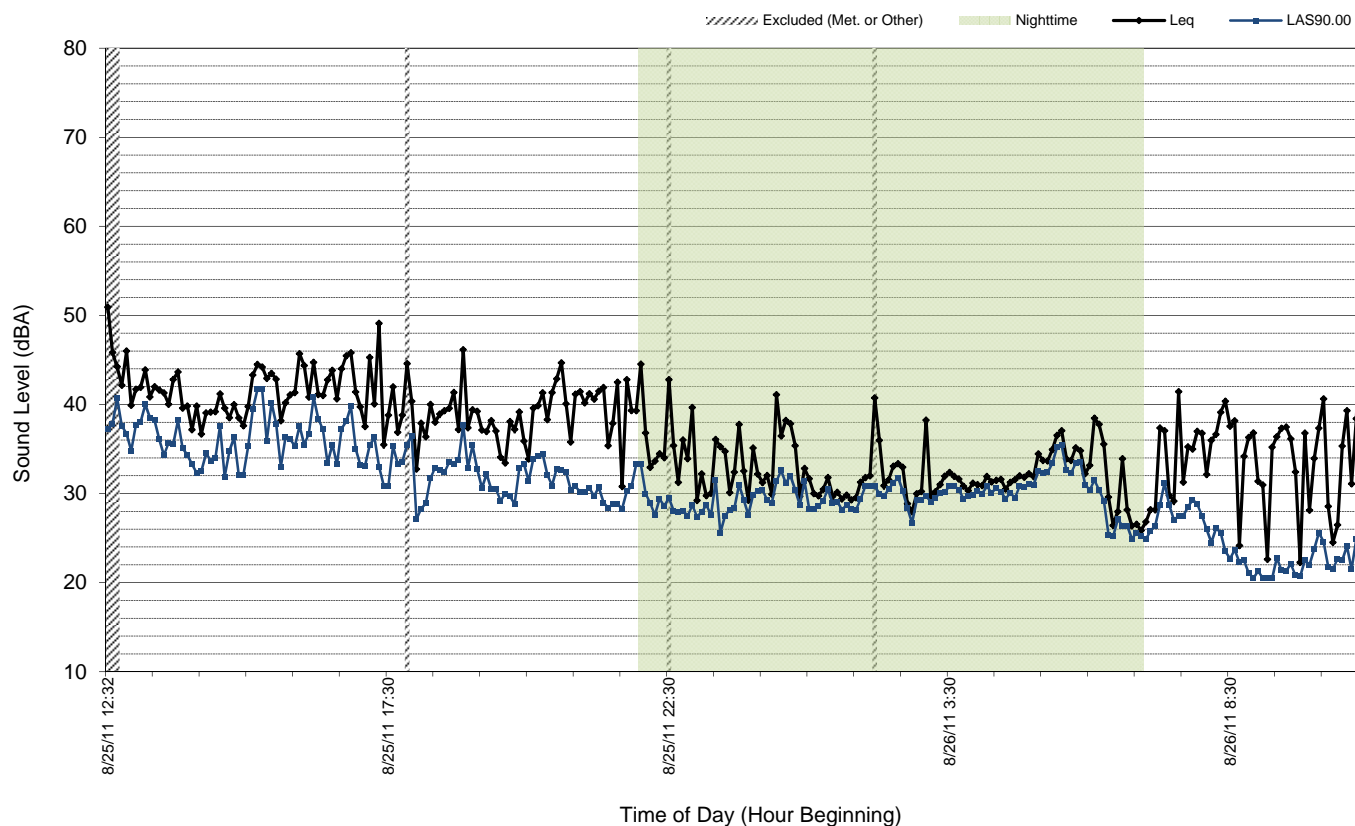


Figure 9: Equivalent Sound Level, L_{eq} and L_{90} data for Casino Mine (August 25 and August 26, 2011)

Table 6: Noise Measurement Exclusion Descriptions

Date/Time	L_{EQ}	Description
8/25/11 12:32	50.9	Technician Activity
8/25/11 12:35	45.8	Technician Activity
8/25/11 12:40	44.2	Hammering
8/25/11 17:50	44.6	Aircraft
8/25/11 22:30	42.8	Dog Barking
8/26/11 2:10	40.7	Gunshot
8/26/11 10:50	51.8	Technician Activity

Meteorological Data for the Noise Assessment

Hourly temperature and relative humidity measurements measured at the meteorological station during the noise survey are presented in Figure 10. Temperature ranged from 4.1°C to 13.3°C, and relative humidity ranged from 61.2% to 81% which are acceptable ranges for conducting noise measurements.

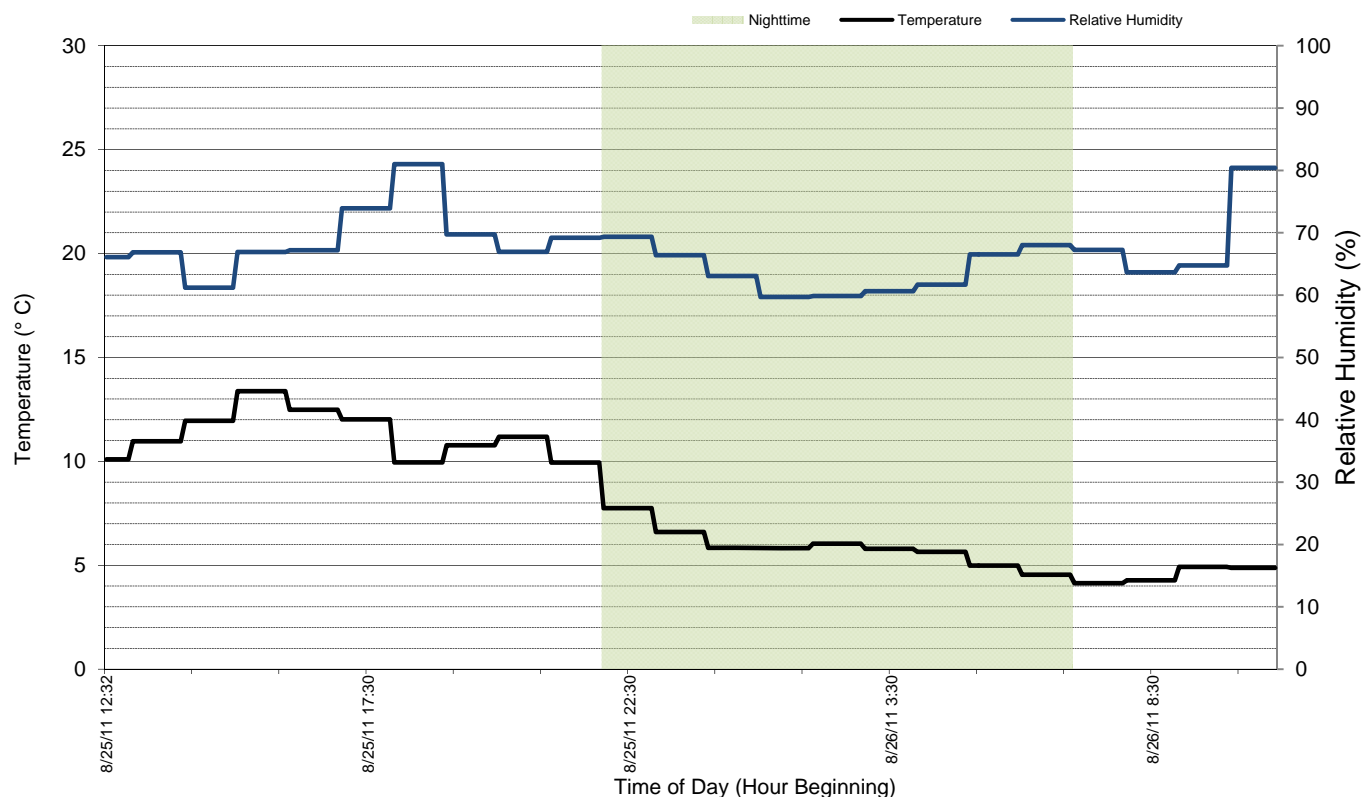


Figure 10: Hourly Temperature and Relative Humidity at Casino Mine Meteorological Station (August 25 and August 26, 2011)

Hourly wind speed and wind direction measurements from the meteorological station during the noise survey are presented in Figure 11. Wind speed ranged from 0.7m/s to 3.9 m/s, and wind direction ranged from 60.9° to 359.8°. The wind speeds were within the acceptable range for noise measurements.

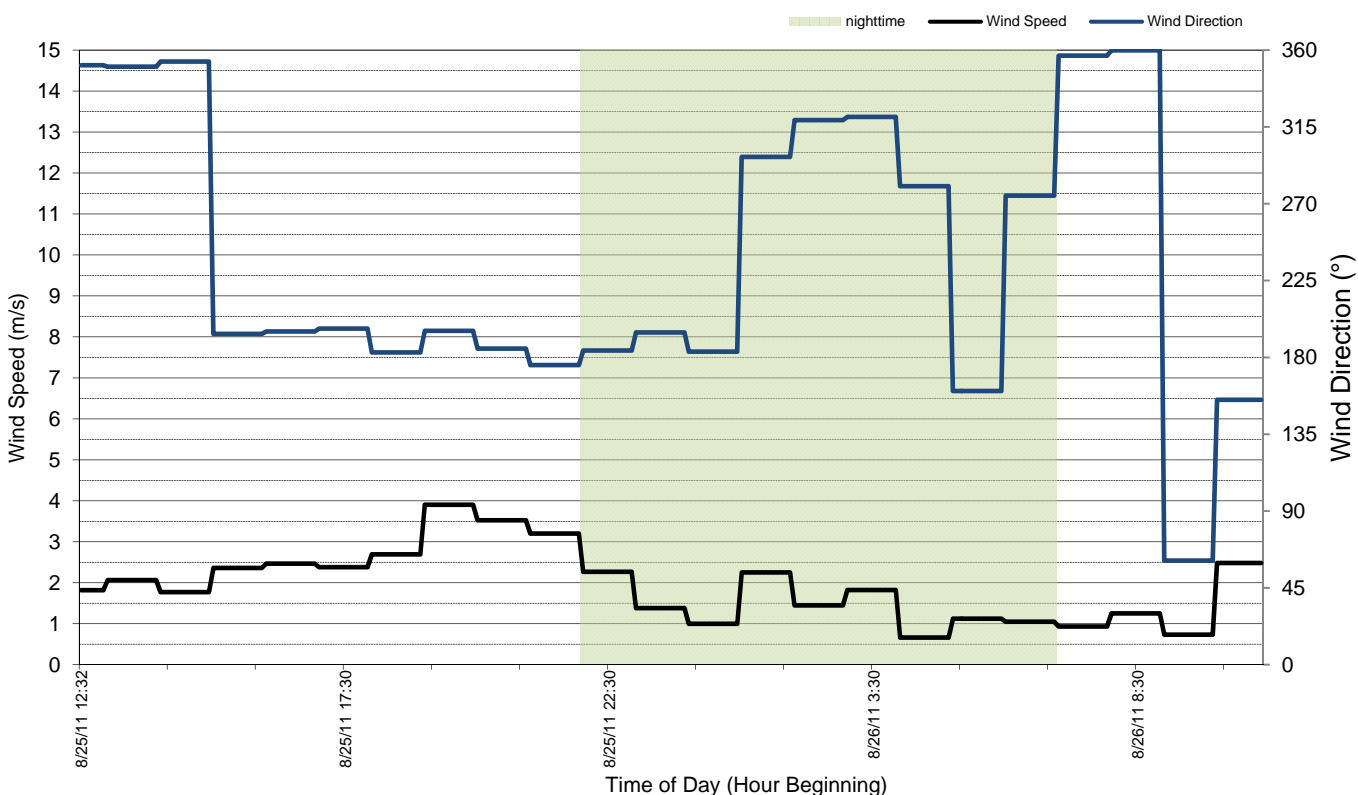


Figure 11: Hourly Wind Speed and Wind Direction at Casino Mine Meteorological Station (August 25 and August 26, 2011)



Rick Palmer
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RWDI#1011858
January 20, 2012

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We trust that this letter meets your information requirements. If you have any questions or require further information, please contact the undersigned at (604) 730-5688 ext. 2490.

Yours very truly,

RWDI AIR Inc.

