

## Sli Na Manach Monitoring Data Summary – June 2<sup>nd</sup> to June 15<sup>th</sup> 2017



As part of the investigation into complaints of dust deposition, predominantly in the areas of the Sli Na Manach and Ard Aulin estates in Mungret (Limerick), the EPA installed an Osiris<sup>1</sup> particulate monitor at a residence in the Sli Na Manach estate. Monitoring at this location commenced at approximately 17:00 on April 26<sup>th</sup> 2017. Data from this equipment has been downloaded periodically and a number of summary reports have been produced, available at:

- <http://www.epa.ie/enforcement/licenseinfo/irishcementlimited/>

This current report presents the data from June 2<sup>nd</sup> to June 15<sup>th</sup>, and is the last report for this location as the monitoring equipment has now been removed. Limerick City and County Council has commenced monitoring air quality in the Mungret area, and this data is proposed to be made publicly available via the council website, hence there is no longer a need to maintain the monitoring location at Sli Na Manach.

The Osiris analyser provides results for the following particulate fractions:

- Total suspended particulates (TSP);
- PM<sub>10</sub> (particles with a diameter of 10 microns or less);
- PM<sub>2.5</sub> (particles with a diameter of 2.5 microns or less);
- PM<sub>1</sub> (particles with a diameter of 1 micron or less).

Statutory air quality limits are specified for both PM<sub>10</sub> and PM<sub>2.5</sub>, for the purposes of the protection of human health, as follows:

- PM<sub>10</sub> – 24 hour average limit of 50 µg/m<sup>3</sup>;
- PM<sub>10</sub> – annual average limit of 40 µg/m<sup>3</sup>;
- PM<sub>2.5</sub> – 24 hour average limit of 25 µg/m<sup>3</sup>.

The Osiris analyser is set up to take a reading every fifteen minutes. The table below aggregates the short-term values to generate a daily average for comparison with the statutory limit values. Figure 1 below also present a plot of the 15-minute results over the measurement period.

Analysis of the data in Table 1 indicates that the measured PM<sub>10</sub> and PM<sub>2.5</sub> results are within the statutory limit values. The highest daily average PM<sub>10</sub> and PM<sub>2.5</sub> results are approximately 41 % and 37 %, respectively, of the relevant statutory limit values. These results are considered to be indicative of good air quality and do not indicate that local sources are adversely impacting on air quality.

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<sup>1</sup> <http://www.turnkey-instruments.com/environment.php?id=8>

Review of the data in Figure 1 does not indicate that there were any significant episodes of elevated particulates, though there are variations in the measured levels of particulates over the course of the monitoring period, which would be expected and are typical of normal variations in particulate levels. There were occasional isolated peak readings of very short duration.

Figure 2 provides information on the wind directions (measured at Shannon Airport) over the monitoring period. This indicates that there were periods where winds were coming towards Sli Na Manach from the direction of the Irish Cement facility, however the particulate levels remained well within the air quality limit value during these periods.

Table 1: Daily average values for particulate fractions

<b>Date</b>	<b>Total Particles (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>PM<sub>10</sub> particles (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>PM<sub>2.5</sub> particles (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>PM<sub>1</sub> particles (<math>\mu\text{g}/\text{m}^3</math>)</b>
01/06/2017	7.03	5.50	2.85	0.54
02/06/2017	14.56	9.56	3.54	0.65
03/06/2017	10.71	8.27	3.75	0.63
04/06/2017	10.46	8.25	4.00	0.72
05/06/2017	9.16	6.46	1.86	0.32
06/06/2017	13.22	9.91	3.69	0.61
07/06/2017	8.58	6.60	2.81	0.49
08/06/2017	7.99	5.31	2.33	0.45
09/06/2017	12.27	9.27	4.52	0.84
10/06/2017	13.51	11.37	6.88	1.31
11/06/2017	15.54	13.30	7.12	1.36
12/06/2017	13.45	11.29	5.37	0.97
13/06/2017	9.63	7.52	4.21	0.71
14/06/2017	14.52	12.33	7.12	1.15
15/06/2017	19.70	16.51	9.21	1.64
<b>Statutory Limit</b>	-	<b>40</b>	<b>25</b>	-

Figure 1: Plot of 15-minute values for period the period from 02/06/2017 to 15/06/2017

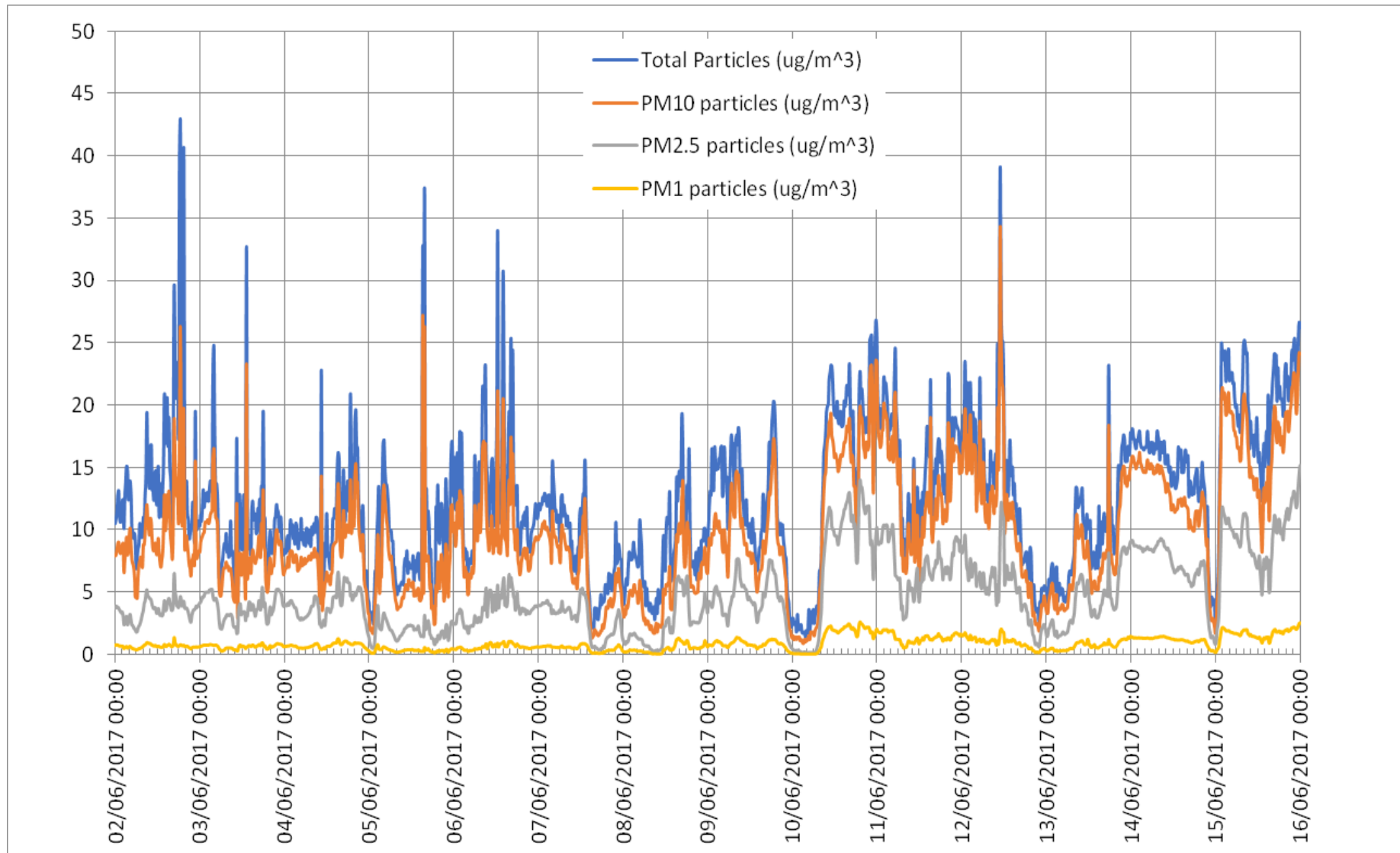


Figure 2: Hourly Wind Direction (Shannon Airport). The wind directions which would be expected to transport pollutants from the Irish Cement Plant to the Sli Na Manach Estate are between approximately 270 and 330 degrees (highlighted by the green box)

