

## Eve O'Sullivan

---

**From:** Marian Doyle  
**Sent:** 31 January 2019 13:11  
**To:** Eve O'Sullivan  
**Subject:** P0395-03 Wyeth TA request  
**Attachments:** 18\_10250AT01\_251018.pdf

---

**From:** Shiel,Brian,ASKEATON,Nestle Nutrition [mailto:Brian.Shiel@wyethnutrition.com]  
**Sent:** 01 November 2018 14:56  
**To:** Marian Doyle <M.Doyle2@epa.ie>  
**Subject:** RE: Technical Note

Hi Marian,

Please find the Technical Note referred to below attached to this email.

Let me know if you require any additional information.

Kind regards,

Brian

---

**From:** Marian Doyle <M.Doyle2@epa.ie>  
**Sent:** 01 November 2018 09:50  
**To:** Shiel,Brian,ASKEATON,Nestle Nutrition <Brian.Shiel@wyethnutrition.com>  
**Subject:** RE: Technical Note

Good morning Brian,  
You can email the information to me directly,  
Regards,  
Marian

**Marian Doyle**  
Inspector  
Office of Environmental Sustainability

*Environmental Protection Agency  
Regional Inspectorate, McCumiskey House,  
Richview, Clonskeagh Road, Dublin 14, Ireland.*

Tel: +353 1 268 0100 | Direct: +353 1 268 0192  
Email: [marian.doyle@epa.ie](mailto:marian.doyle@epa.ie)

---

**From:** Shiel,Brian,ASKEATON,Nestle Nutrition [mailto:Brian.Shiel@wyethnutrition.com]  
**Sent:** 30 October 2018 17:14

---

## TECHNICAL NOTE

---

Project **Nestle Askeaton**

Subject **Response To RFI**

Author **Dr. Edward Porter**

Date **25/10/18**

Ref. **18/10250AT01**

Attached is a response to the Request For Additional Information from the EPA in relation to Air Dispersion Modelling of Dust emissions.

AWN Consulting were responsible for carrying out the air modelling assessment that was submitted as part of the Technical Amendment Request.

Kind regards



**Dr. Edward Porter C CHEM MRSC MIAQM**

AWN Consulting

For inspection purposes only.  
Consent of copyright owner required for any other use.

### Cork Office

Unit 5, ATS Building,  
Carrigaline Industrial Estate,  
Carrigaline, Co. Cork.  
T: +353 21 438 7400  
F: +353 21 483 4606

AWN Consulting Limited  
Registered in Ireland No. 319812  
Directors: F Callaghan, C Dilworth,  
T Donnelly, E Porter  
Associate Director: D Kelly

## EPA Request For Additional Information

***In relation to the Air Dispersion Modelling, it was requested that updated modelling be submitted to reflect the ratio of PM<sub>10</sub> / Total Dust and PM<sub>2.5</sub> / Total Dust emitted from the licenced emission points.***

### Response:

Ambient Ground Level Concentrations (GLCs) of PM<sub>10</sub> / PM<sub>2.5</sub> have been predicted below in Tables 2 – 3 for the proposed scenario based, on a conservative basis, on continuous operation of all emission points onsite and with a PM<sub>10</sub> / Total Dust ratio of 0.40. Ambient Ground Level Concentrations (GLCs) of PM<sub>10</sub> / PM<sub>2.5</sub> have also been predicted below in Tables 4 – 5 for the proposed scenario based, as a worst-case, on continuous operation of all emission points onsite and with a PM<sub>10</sub> / Total Dust ratio of 0.50.

### PM<sub>10</sub> / PM<sub>2.5</sub> Emission Monitoring Data

The ratio of PM<sub>10</sub> to Total Dust for the facility has been derived using the monitoring data obtained by Air Scientifics on the 4<sup>th</sup> October 2018. As a worst-case, PM<sub>2.5</sub> levels are assumed to be equivalent to PM<sub>10</sub> levels in the model. The results of the survey are outlined in Appendix 1 for A2-4 and A2-6 with the results and derived ratios outlined in Table 1.

Monitoring Scenario	Total Dust	PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>10</sub> / Total Dust Ratio	PM <sub>2.5</sub> / Total Dust Ratio
A2-4 Run 1	18.6	4.9	0.4	0.26	0.02
A2-4 Run 2	24.5	3.6	0.5	0.15	0.02
A2-6 Run 1	26.8	9.26	0.4	0.35	0.01
A2-6 Run 2	30.5	9.1	12.3	0.30	0.40
<b>Average</b>	<b>25.1</b>	<b>6.7</b>	<b>3.4</b>	<b>0.27</b>	<b>0.14</b>

**Table 1** PM<sub>10</sub> And PM<sub>2.5</sub> Ratios Derived From Air Scientific Monitoring On A2-4 & A2-6 (Date 04/1018)

As shown in Table 1, the average PM<sub>10</sub> / Total Dust ratio is 0.27 whilst the average PM<sub>2.5</sub> / Total Dust ratio is 0.14. In order to ensure a conservative approach, the modelling has been undertaken using a PM<sub>10</sub> / Total Dust ratio of 0.40 with the same ratio (0.40) also applied to the PM<sub>2.5</sub> / Total Dust ratio in Tables 2 and 3.

An even more conservative approach is adopted in Tables 4 & 5 with a PM<sub>10</sub> / Total Dust ratio of 0.50 being used with the same ratio (0.50) also applied to the PM<sub>2.5</sub> / Total Dust ratio.

### **PM<sub>10</sub> / Total Dust Ratio Of 0.40**

The results, based on a PM<sub>10</sub> / Total Dust ratio of 0.40, indicate that the ambient ground level concentration is below the relevant air quality standard for PM<sub>10</sub> / PM<sub>2.5</sub>. Emissions from the facility lead to an ambient PM<sub>10</sub> concentration (including background) which is 52% of the maximum ambient 24-hour limit value at the worst-case receptor (see Table 2). In relation to the annual mean concentration, ambient

PM<sub>10</sub> concentration (including background) is at most 36% of the annual mean limit values at the worst-case receptor whilst the annual ambient PM<sub>2.5</sub> concentration (including background) is at most 46% of the annual mean limit values at the worst-case receptor (Tables 2 and 3).

Pollutant / Scenario / Maximum Receptor	Background (µg/m <sup>3</sup> )	Averaging Period <sup>Note 2</sup>	Process Contribution (µg/m <sup>3</sup> )	Predicted Environmental Concentration (µg/Nm <sup>3</sup> )	Standard (µg/Nm <sup>3</sup> ) <sup>Note 1</sup>
PM <sub>10</sub> / 2012	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	15.9	24.9	50
PM <sub>10</sub> / 2012	9.2	Annual mean	5.4	14.4	40
PM <sub>10</sub> / 2013	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	17.0	26.0	50
PM <sub>10</sub> / 2013	9.2	Annual mean	5.1	14.1	40
PM <sub>10</sub> / 2014	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	14.6	23.6	50
PM <sub>10</sub> / 2014	9.2	Annual mean	5.2	14.2	40
PM <sub>10</sub> / 2015	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	15.5	24.5	50
PM <sub>10</sub> / 2015	9.2	Annual mean	5.3	14.3	40
PM <sub>10</sub> / 2016	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	14.0	23.0	50
PM <sub>10</sub> / 2016	9.2	Annual mean	4.9	13.9	40

Note 1 Air Quality Standards 2011 (from EU Directive 2008/50/EC)

Note 2 Short-term Environmental Concentrations calculated according to UK DEFRA guidance<sup>(1)</sup> based on the maximum background 24-hr mean (as a 90<sup>th</sup>ile) of 18.0 µg/m<sup>3</sup> (based on Kilkitt)

**Table 2** Dispersion Model Results – PM<sub>10</sub> (PM<sub>10</sub> / Total Dust Ratio = 0.5)

Pollutant / Scenario	Annual Mean Background (µg/m <sup>3</sup> )	Averaging Period	Process Contribution (µg/m <sup>3</sup> )	Predicted Environmental Concentration (µg/Nm <sup>3</sup> )	Standard (µg/Nm <sup>3</sup> ) <sup>Note 1</sup>
PM <sub>2.5</sub> / 2012	6.0	Annual mean	5.4	11.4	25
PM <sub>2.5</sub> / 2013	6.0	Annual mean	5.1	11.1	25
PM <sub>2.5</sub> / 2014	6.0	Annual mean	5.2	11.2	25
PM <sub>2.5</sub> / 2015	6.0	Annual mean	5.3	11.3	25
PM <sub>2.5</sub> / 2016	6.0	Annual mean	4.9	10.9	25

Note 1 Air Quality Standards 2011 (from EU Directive 2008/50/EC)

**Table 3** Dispersion Model Results – PM<sub>2.5</sub> (PM<sub>10</sub> / Total Dust Ratio = 0.5)

<sup>1</sup> EPA (2010) Air Dispersion Modelling From Industrial Installations Guidance Note

### PM<sub>10</sub> / Total Dust Ratio Of 0.50

The results, based on a PM<sub>10</sub> / Total Dust ratio of 0.50, indicate that the ambient ground level concentration is below the relevant air quality standard for PM<sub>10</sub> / PM<sub>2.5</sub>. Emissions from the facility lead to an ambient PM<sub>10</sub> concentration (including background) which is 61% of the maximum ambient 24-hour limit value at the worst-case receptor (see Table 4). In relation to the annual mean concentration, ambient PM<sub>10</sub> concentration (including background) is at most 40% of the annual mean limit values at the worst-case receptor whilst the annual ambient PM<sub>2.5</sub> concentration (including background) is at most 51% of the annual mean limit values at the worst-case receptor (Tables 4 and 5).

Pollutant / Scenario / Maximum Receptor	Background (µg/m <sup>3</sup> )	Averaging Period <sup>Note 2</sup>	Process Contribution (µg/m <sup>3</sup> )	Predicted Environmental Concentration (µg/Nm <sup>3</sup> )	Standard (µg/Nm <sup>3</sup> ) Note 1
PM <sub>10</sub> / 2012	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	19.9	28.9	50
PM <sub>10</sub> / 2012	9.2	Annual mean	6.8	15.8	40
PM <sub>10</sub> / 2013	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	21.3	30.3	50
PM <sub>10</sub> / 2013	9.2	Annual mean	6.4	15.4	40
PM <sub>10</sub> / 2014	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	18.3	27.3	50
PM <sub>10</sub> / 2014	9.2	Annual mean	6.5	15.5	40
PM <sub>10</sub> / 2015	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	19.4	28.4	50
PM <sub>10</sub> / 2015	9.2	Annual mean	6.6	15.6	40
PM <sub>10</sub> / 2016	18.0	Maximum 24-hr mean (as a 90 <sup>th</sup> ile)	17.5	26.5	50
PM <sub>10</sub> / 2016	9.2	Annual mean	6.1	15.1	40

Note 1 Air Quality Standards 2011 (from EU Directive 2008/50/EC)

Note 2 Short-term Environmental Concentrations calculated according to UK DEFRA guidance<sup>(2)</sup> based on the maximum background 24-hr mean (as a 90<sup>th</sup>ile) of 18.0 µg/m<sup>3</sup> (based on Kilkitt)

**Table 4** Dispersion Model Results – PM<sub>10</sub> (PM<sub>10</sub> / Total Dust Ratio = 0.5)

<sup>2</sup> EPA (2010) Air Dispersion Modelling From Industrial Installations Guidance Note

Pollutant / Scenario	Annual Mean Background ( $\mu\text{g}/\text{m}^3$ )	Averaging Period	Process Contribution ( $\mu\text{g}/\text{m}^3$ )	Predicted Environmental Concentration ( $\mu\text{g}/\text{Nm}^3$ )	Standard ( $\mu\text{g}/\text{Nm}^3$ ) <sup>Note 1</sup>
<b>PM<sub>2.5</sub> / 2012</b>	6.0	Annual mean	6.8	12.8	25
<b>PM<sub>2.5</sub> / 2013</b>	6.0	Annual mean	6.4	12.4	25
<b>PM<sub>2.5</sub> / 2014</b>	6.0	Annual mean	6.5	12.5	25
<b>PM<sub>2.5</sub> / 2015</b>	6.0	Annual mean	6.6	12.6	25
<b>PM<sub>2.5</sub> / 2016</b>	6.0	Annual mean	6.1	12.1	25

Note 1

Air Quality Standards 2011 (from EU Directive 2008/50/EC)

**Table 5** Dispersion Model Results – PM<sub>2.5</sub> (PM<sub>10</sub> / Total Dust Ratio = 0.5)

### Summary

The assessment has confirmed that PM<sub>10</sub> / PM<sub>2.5</sub> emissions from the facility will be in compliance with the ambient air quality standards at all times. The approach to the assessment was conservative and based on the following assumptions as a worst-case:

- Worst-case ratios for the PM<sub>10</sub> / Total Dust ratio of 0.40 and 0.50 were applied to the assessment.
- Similarly, worst-case ratios for the PM<sub>2.5</sub> / Total Dust ratio of 0.40 and 0.50 were applied to the assessment.
- All emission points were assumed to be in operation for 24 hours per days, 365 days per year.
- All emission points were assumed to be operating at their maximum volume flow for the full year.
- All emission points were assumed to be emitting at their maximum licenced Total Dust emission concentration for the full year.

**Appendix 1 – Summary of Air Scientific Air Monitoring Report (Survey Date 04/10/18)**

Document No: WYNUTL10041018  
 Visit No: 18  
 Year: 2018  
 Office: Limerick

Licence Number:P0395-03  
 Licence Holder:Wyeth Nutritionals  
 Facility Location: Askeaton, Co. Limerick  
 Version No: 1

**1.4 Summary of Results**

**Emission Point Number: A2-4 Run 1**

Parameter	Method	Units	Result	MU +/-	Limit	O <sub>2</sub> Ref. (%)	Moisture Ref.(%)	Compliant	Blanks	Date	Time on	Time off	Accreditation	
													Sampling	Analysis
PM <sub>10</sub>	EN 23210	mg.m <sup>-3</sup>	4.9	0.64	-	-	-	-	-	04/10/2018	11:22	11:52	No	No
PM <sub>2.5</sub>	EN 23210	mg.m <sup>-3</sup>	0.4	0.05	-	-	-	-	-	04/10/2018	11:22	11:52	No	No
Total Dust Collected	-	mg.m <sup>-3</sup>	18.6	-	-	-	-	-	-	04/10/2018	11:22	11:52	No	No

Note 1: All results are normalised to standard temperature and pressure (0°C and 101.3kPa)  
 Note 2: All results are reported in the format as defined by the EPA in guidance note AG2:2017.

**Emission Point Number: A2-4 Run 2**

Parameter	Method	Units	Result	MU +/-	Limit	O <sub>2</sub> Ref. (%)	Moisture Ref.(%)	Compliant	Blanks	Date	Time on	Time off	Accreditation	
													Sampling	Analysis
PM <sub>10</sub>	EN 23210	mg.m <sup>-3</sup>	3.6	0.59	-	-	-	-	-	04/10/2018	12:18	11:52	No	No
PM <sub>2.5</sub>	EN 23210	mg.m <sup>-3</sup>	0.5	0.09	-	-	-	-	-	04/10/2018	12:18	11:52	No	No
Total Dust Collected	-	mg.m <sup>-3</sup>	24.5	-	-	-	-	-	-	04/10/2018	12:18	11:52	No	No

Note 1: All results are normalised to standard temperature and pressure (0°C and 101.3kPa)  
 Note 2: All results are reported in the format as defined by the EPA in guidance note AG2:2017.

Document No: WYNUTL10041018  
 Visit No: 18  
 Year: 2018  
 Office: Limerick

Licence Number: P0395-03  
 Licence Holder: Wyeth Nutritionals  
 Facility Location: Askeaton, Co. Limerick  
 Version No: 1

**Emission Point Number: A2-6 Run 1**

Parameter	Method	Units	Result	MU +/-	Limit	O <sub>2</sub> Ref. (%)	Moisture Ref. (%)	Compliant	Blanks	Date	Time on	Time off	Accreditation	
													Sampling	Analysis
PM <sub>10</sub>	EN 23210	mg.m <sup>-3</sup>	9.26	0.76	-	-	-	-	-	04/10/2018	13:41	14:11	No	No
PM <sub>2.5</sub>	EN 23210	mg.m <sup>-3</sup>	0.4	0.04	-	-	-	-	-	04/10/2018	13:41	14:11	No	No
Total Dust Collected	-	mg.m <sup>-3</sup>	26.8	-	-	-	-	-	-	04/10/2018	13:41	14:11	No	No

Note 1: All results are normalised to standard temperature and pressure (0°C and 101.3kPa)  
 Note 2: All results are reported in the format as defined by the EPA in guidance note AG2:2017.

**Emission Point Number: A2-6 Run 2**

Parameter	Method	Units	Result	MU +/-	Limit	O <sub>2</sub> Ref. (%)	Moisture Ref. (%)	Compliant	Blanks	Date	Time on	Time off	Accreditation	
													Sampling	Analysis
PM <sub>10</sub>	EN 23210	mg.m <sup>-3</sup>	9.1	0.55	-	-	-	-	-	04/10/2018	14:30	15:00	No	No
PM <sub>2.5</sub>	EN 23210	mg.m <sup>-3</sup>	12.3	0.74	-	-	-	-	-	04/10/2018	14:30	15:00	No	No
Total Dust Collected	-	mg.m <sup>-3</sup>	30.5	-	-	-	-	-	-	04/10/2018	14:30	15:00	No	No

Note 1: All results are normalised to standard temperature and pressure (0°C and 101.3kPa)  
 Note 2: All results are reported in the format as defined by the EPA in guidance note AG2:2017.



To: Marian Doyle <M.Doyle2@epa.ie>

Subject: Technical Note

Hi Marian,

Ed Porter has sent me Technical Note reflecting the ratio of PM10/Total Dust and PM2.5/Total Dust emitted from the licenced emission points in relation to the ADM submitted as part of our application for a Technical Amendment of our licence. Should I submit the technical note to you via the 'Eden' system or send it to you directly?

Regards,

Brian

Brian Shiel,  
Safety, Health & Environment Lead,  
Wyeth Nutritionals Ireland Ltd.  
Askeaton,  
Co. Limerick,  
Ireland.  
Tel: +353 (0)61 601 307  
Mob: +353 (0)87 130 4522  
e-mail: [brian.shiel@wyethnutrition.com](mailto:brian.shiel@wyethnutrition.com)

==== PLEASE NOTE ===== This email is for the intended recipient only and is confidential. If this email has been misdirected, please let the sender know and delete it. Any disclosure, copying, distribution is prohibited. Although we take great care to protect our network from computer viruses, we accept no responsibility for mail-borne viruses and recommend that you scan the email and its attachments. If you do find any virus please let us know so that we may take appropriate action. For the legal protection of our business any email sent or received by us may be monitored or intercepted. For details of the registered offices of the companies using this email gateway please see <http://www.nestle.co.uk/aboutus/locations> =====

This email is for the intended recipient only and is confidential. If this email has been misdirected, please let the sender know and delete it. Any disclosure, copying, distribution is prohibited. Although we take great care to protect our network from computer viruses, we accept no responsibility for mail-borne viruses and recommend that you scan the email and its attachments. If you do find any virus please let us know so that we may take appropriate action. For the legal protection of our business any email sent or received by us may be monitored or intercepted. For details of the registered offices of the companies using this email gateway please see <http://www.nestle.co.uk/aboutus/locations>

---

This email has been scanned by the Symantec Email Security.cloud service.  
For more information please visit <http://www.symanteccloud.com>

---

This email is for the intended recipient only and is confidential. If this email has been misdirected, please let the sender know and delete it. Any disclosure, copying, distribution is prohibited. Although we take great care to protect our network from computer viruses, we accept no responsibility for mail-borne viruses and recommend that you scan the email and its attachments. If you do find any virus please let us know so that we may take appropriate action. For the legal protection of our business any email sent or received by us may be monitored or intercepted. For details of the registered offices of the companies using this email gateway please see <http://www.nestle.co.uk/aboutus/locations>

---

This email has been scanned by the Symantec Email Security.cloud service.