David M Walton
Director/Environmental Planning Consultant
Valley Environmental Consulting
The New Inn Studios
Bridge Street
Blaydon on Tyne
Tyne & Wear NE21 4JJ

By email

Dear David

Air Quality Impact Assessment for Biomass Boiler – Stallingborough

I refer to your instruction of 12th May 2021 to update the air quality impact assessment (AQIA) for your client's biomass installation at Stallingborough. Our AQIA from December 2020 considered the impacts from the installation where the emissions were to be discharged from two stacks each terminating 24m above local ground level.[1]

I understand that the proposed design has subsequently been modified so that all emissions will be released from a single stack 24m above local ground level. The revised emission inventory for the proposed design is presented in Table 1 at the end of the text. The study area is shown in Figure 1 at the end of the text. The location of the proposed stack and commercial and industrial receptors close to the proposed stack are shown in Figure 2. The model layout is shown in Figure 3.

The AQIA for the two-stack design included a model sensitivity test for meteorological variability and surface roughess. This indicated that the worst-case short-term ground level concentrations were predicted to occur when the historical data from RAF Scampton from the year 2014 was considered.

I have updated the model sensitivity analysis for meteorological variability based on the proposed single stack configuration. This confirms that the worst-case predictions for both the annual mean and short-term are predicted to occur using RAF Scampton 2014 meteorological data. The results from the meteorological variability sensitivity test are presented in Appendix 1. The updated assessment adopts the same study area, sensitive receptors and model parameter assumptions for worst-case dispersion as presented in our previous report.

The predicted annual mean NO_2 contours are plotted in Figure 4. The equivalent contours for short-term exposure are plotted in Figure 5.

The predicted ground level concentrations (z=1.5m) for NO_2, PM_{10} and $PM_{2.5}$ are presented in Tables 2.1 – 2.3 at the end of the text along with the significance assessment in terms of the IAQM assessment framework for annual mean exposure as described in Section 2 of our previous report.

The worst-case short-term predicted exposure has been assessed using the Environment Agency's simple screening method (where process contributions <10% of

[1] Airshed 7th December 2020. Air Quality Impact Assessment for Proposed Multiple 130kW Biomass Boilers at Stallingborough North East Lincolnshire Two-stacks Design (rev04).

the environmental assessment level (EAL) are considered to be insignificant. The overall significance of the impacts at the worst-case receptor are summarised in Table 3 below.

Table 3 – Summary of Worst-case Impacts from Single Stack Configureation

Pollutant	Baseline	Process Contribution	With Installation	EAL	Significance
NO_2 1 hour 99.8%ile	30.0	13.2	43	200	Insignificant
PM_{10} 98.1%ile	31.6	1.8	33	50	Insignificant
PM_{10} 90.4%ile	31.6	1.0	33	50	Insignificant
NO_2 annual mean	15.0	1.1	16	40	Negligible
PM_{10} annual mean	15.8	0.4	16	40	Negligible
$PM_{2.5}$	8.7	0.3	9	25	Negligible

The results from this assessment indicate that the annual mean impacts from the proposed installation with a single stack are of negligible significance and that short-term impacts are insignificant.

Kind regards

Steve Fraser *BSc MPhil CEnv MIoA MCIWM*

Tables

Emission Inventory
Stallingborough Biomass
Scenario - Project Description - August 2020

	description	height above ground level (1)	internal stack diameter(1)	internal stack area	efflux velocity at stack conditions (2)	Temperature in stack (3)	pollutant	Emission factor (4)	net rated thermal (5)	pollutant emission rate (6)
		(m)	(m)	m^2	m/s	K		mg/MJ	MW	g/s
A	No. 8 Super Angus 130kW (System A)						PM_{10} (7)	21	1.040	0.022
							NO_x	75	1.040	0.078
							$PM_{2.5}$ (8)			0.015
B	No. 6 Super Angus 130kW (System B)						PM_{10} (7)	21	0.780	0.016
							NO_x	75	0.780	0.059
							$PM_{2.5}$ (8)			0.011
3	Combined release (from Flue B)	24.0	0.300	0.07	1.0	373	PM_{10} (7)			3.82E-02
							NO_x			1.37E-01
							$PM_{2.5}$ (8)			2.68E-02

Notes

1 As confirmed by client email 10th May 2021. System A has 8 x 130 kw boilers. System B has 6 x 130kW boilers. All releases are from a single stack
2 Based on pessimistic estimate
3 Based on pessimistic estimate
4 based on emission factors stated in test Report 32-0119 Strojirensky Zkusebni Ustav s.p. (Engineering Test Institute, Public Enterprise) Hudcova 56b, 62
5 Assumes eight 130kW units in System A and six 130 kW units in System B.
6 Derived from emission factors for eight units in System A and six units in System B.
7 All dust is assumed to be present as PM_{10}.
8 $PM_{2.5}$ is assumed to be 70% of equivalent PM_{10} emission

No	Receptor name	X(m)	Y(m)	baseline	Scheme	increase	%EAL	Significance	baseline	EAL
1	Eleanor House	521030	412656	14.5	14.5	0%	36%	Negligible	14.5	40
2	Brickpitt Farm	521166	412586	14.5	14.5	0%	36%	Negligible	14.5	40
3	Brickfield House	521248	412728	14.5	14.5	0%	36%	Negligible	14.5	40
4	Poplar Farm	521596	413012	14.5	14.5	0%	36%	Negligible	14.5	40
5	Grassmere	521291	413112	14.5	14.5	0%	36%	Negligible	14.5	40
6	Kendal Road	519225	414214	14.5	14.5	0%	36%	Negligible	14.5	40
7	Spring Street	519068	414947	14.5	14.5	0%	36%	Negligible	14.5	40
8	Chestnut Avenue	519230	414980	14.5	14.5	0%	36%	Negligible	14.5	40
9	Queens Road	519938	414844	14.5	14.5	0%	36%	Negligible	14.5	40
10	King Road Immingham	519193	415279	14.5	14.5	0%	36%	Negligible	14.5	40
11	AURN	518277	415116	14.5	14.5	0%	36%	Negligible	14.5	40
12	NTEX1-1	520829	414278	14.5	15.2	2%	38%	Negligible	14.5	40
13	NTEX1-2	520829	414278	14.5	15.2	2%	38%	Negligible	14.5	40
14	NTEX2-1	520837	414275	14.5	15.2	2%	38%	Negligible	14.5	40
15	NTEX2-2	520837	414275	14.5	15.2	2%	38%	Negligible	14.5	40
16	NTEX3-1	520850	414283	14.5	15.2	2%	38%	Negligible	14.5	40
17	NTEX3-2	520850	414283	14.5	15.2	2%	38%	Negligible	14.5	40
18	NTEX4-1	520883	414285	14.5	15.0	1%	38%	Negligible	14.5	40
19	NTEX4-2	520883	414285	14.5	15.0	1%	38%	Negligible	14.5	40
20	SLD	520884	414232	14.5	14.9	1%	37%	Negligible	14.5	40
21	Dowson	520827	414219	14.5	15.0	1%	37%	Negligible	14.5	40
22	Jacobs	520738	414173	14.5	15.0	1%	37%	Negligible	14.5	40
23	Self Store 1	520773	414287	14.5	15.6	3%	39%	Negligible	14.5	40
24	Self Store 2	520744	414284	14.5	14.9	1%	37%	Negligible	14.5	40

all units = NO2 ug/m3
NO2 = NOx *0.70

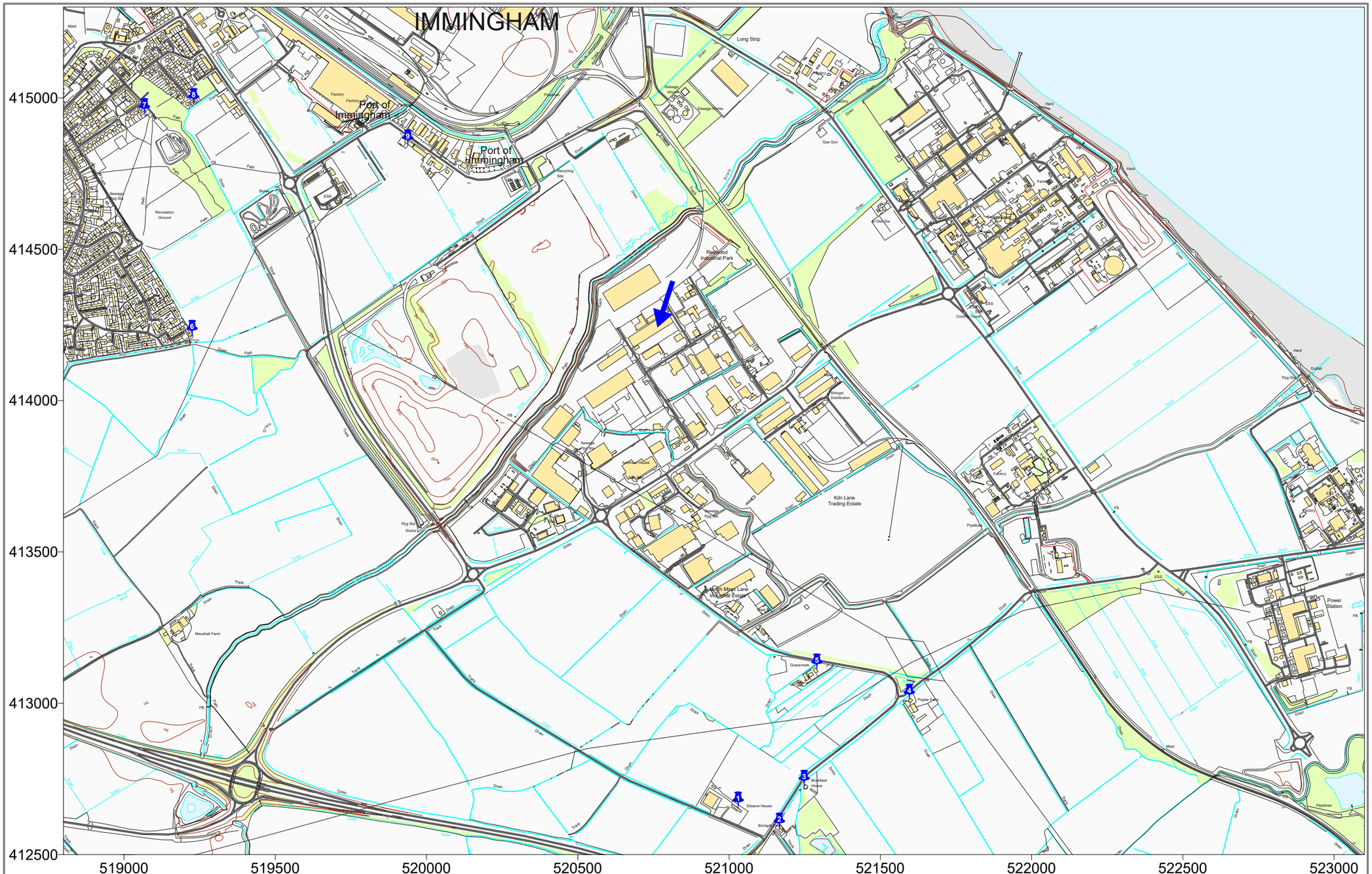
No	Receptor name	X(m)	Y(m)	baseline	Scheme	increase	%EAL	Significance	baseline	EAL
1	Eleanor House	521030	412656	13.0	13.0	0%	33%	Negligible	13.0	40
2	Brickpitt Farm	521166	412586	13.0	13.0	0%	33%	Negligible	13.0	40
3	Brickfield House	521248	412728	13.0	13.0	0%	33%	Negligible	13.0	40
4	Poplar Farm	521596	413012	13.0	13.0	0%	33%	Negligible	13.0	40
5	Grassmere	521291	413112	13.0	13.0	0%	33%	Negligible	13.0	40
6	Kendal Road	519225	414214	13.0	13.0	0%	33%	Negligible	13.0	40
7	Spring Street	519068	414947	13.0	13.0	0%	33%	Negligible	13.0	40
8	Chestnut Avenue	519230	414980	13.0	13.0	0%	33%	Negligible	13.0	40
9	Queens Road	519938	414844	13.0	13.0	0%	33%	Negligible	13.0	40
10	King Road Immingham	519193	415279	13.0	13.0	0%	33%	Negligible	13.0	40
11	AURN	518277	415116	13.0	13.0	0%	33%	Negligible	13.0	40
12	NTEX1-1	520829	414278	13.0	13.3	1%	33%	Negligible	13.0	40
13	NTEX1-2	520829	414278	13.0	13.3	1%	33%	Negligible	13.0	40
14	NTEX2-1	520837	414275	13.0	13.3	1%	33%	Negligible	13.0	40
15	NTEX2-2	520837	414275	13.0	13.3	1%	33%	Negligible	13.0	40
16	NTEX3-1	520850	414283	13.0	13.3	1%	33%	Negligible	13.0	40
17	NTEX3-2	520850	414283	13.0	13.3	1%	33%	Negligible	13.0	40
18	NTEX4-1	520883	414285	13.0	13.2	1%	33%	Negligible	13.0	40
19	NTEX4-2	520883	414285	13.0	13.2	1%	33%	Negligible	13.0	40
20	SLD	520884	414232	13.0	13.2	0%	33%	Negligible	13.0	40
21	Dowson	520827	414219	13.0	13.2	0%	33%	Negligible	13.0	40
22	Jacobs	520738	414173	13.0	13.2	0%	33%	Negligible	13.0	40
23	Self Store 1	520773	414287	13.0	13.4	1%	34%	Negligible	13.0	40
24	Self Store 2	520744	414284	13.0	13.1	0%	33%	Negligible	13.0	40

all units = PM10 ug/m3

No	Receptor name	X(m)	Y(m)	baseline	Scheme	increase	%EAL	Significance	baseline	EAL
1	Eleanor House	521030	412656	7.6	7.6	0%	30%	Negligible	7.6	25
2	Brickpitt Farm	521166	412586	7.6	7.6	0%	30%	Negligible	7.6	25
3	Brickfield House	521248	412728	7.6	7.6	0%	30%	Negligible	7.6	25
4	Poplar Farm	521596	413012	7.6	7.6	0%	30%	Negligible	7.6	25
5	Grassmere	521291	413112	7.6	7.6	0%	30%	Negligible	7.6	25
6	Kendal Road	519225	414214	7.6	7.6	0%	30%	Negligible	7.6	25
7	Spring Street	519068	414947	7.6	7.6	0%	30%	Negligible	7.6	25
8	Chestnut Avenue	519230	414980	7.6	7.6	0%	30%	Negligible	7.6	25
9	Queens Road	519938	414844	7.6	7.6	0%	30%	Negligible	7.6	25
10	King Road Immingham	519193	415279	7.6	7.6	0%	30%	Negligible	7.6	25
11	AURN	518277	415116	7.6	7.6	0%	30%	Negligible	7.6	25
12	NTEX1-1	520829	414278	7.6	7.8	1%	31%	Negligible	7.6	25
13	NTEX1-2	520829	414278	7.6	7.8	1%	31%	Negligible	7.6	25
14	NTEX2-1	520837	414275	7.6	7.8	1%	31%	Negligible	7.6	25
15	NTEX2-2	520837	414275	7.6	7.8	1%	31%	Negligible	7.6	25
16	NTEX3-1	520850	414283	7.6	7.8	1%	31%	Negligible	7.6	25
17	NTEX3-2	520850	414283	7.6	7.8	1%	31%	Negligible	7.6	25
18	NTEX4-1	520883	414285	7.6	7.8	1%	31%	Negligible	7.6	25
19	NTEX4-2	520883	414285	7.6	7.8	1%	31%	Negligible	7.6	25
20	SLD	520884	414232	7.6	7.7	0%	31%	Negligible	7.6	25
21	Dowson	520827	414219	7.6	7.7	1%	31%	Negligible	7.6	25
22	Jacobs	520738	414173	7.6	7.7	1%	31%	Negligible	7.6	25
23	Self Store 1	520773	414287	7.6	7.9	1%	32%	Negligible	7.6	25
24	Self Store 2	520744	414284	7.6	7.7	0%	31%	Negligible	7.6	25

all units = PM2.5 ug/m3

Figures



Study Area

residential receptor included in dispersion model

indicative location of installation

Figure 1

The Airshed

AS 0739 Stallingborough Biomass AQIA 25 August 2021: Crown copyright Ordnance Survey 0100031673

Commercial and Industrial Receptors

commercial and industrial receptor included in dispersion model

point source included in dispersion model

Figure 2

The Airshed

AS 0739 Stallingborough Biomass AQIA 25 August 2021 : Crown copyright Ordnance Survey 0100031673

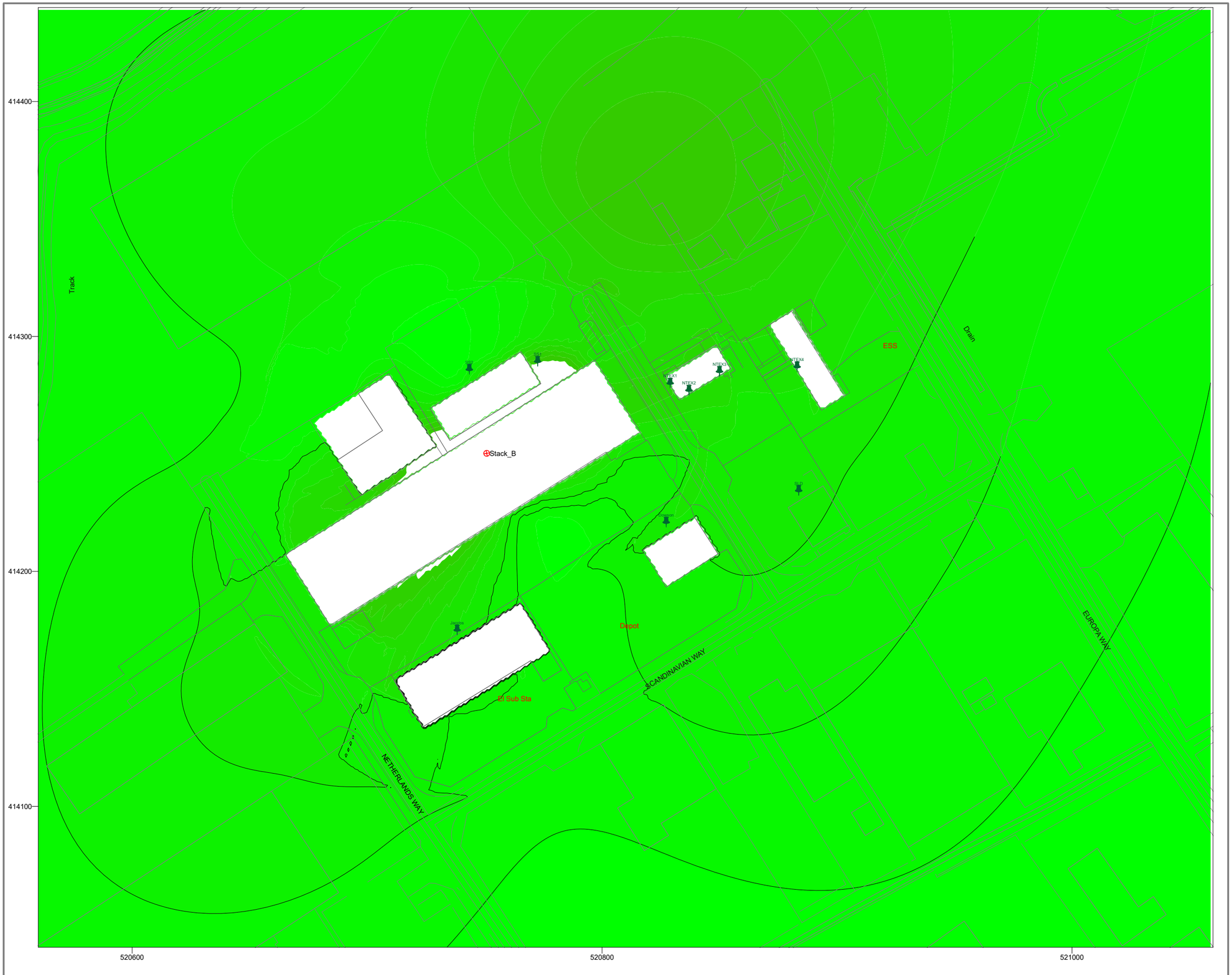
Model Layout

building included in dispersion model

point source included in dispersion model

Figure 3

The Airshed



annual mean NO_2

Emission Scenario 3
Prediction model ADMS 5.2
EA Chemistry $NO_2 = NO_x * 0.7$
model runs rev03
Scenario 3.apl
Met = RAF Scampton 2014
Surface roughness 1.0m
Building Effects on
Terrain effects off
Prediction Grid 1m
Receptor Height 1.5m
Averaging period 1 hour

EAL = 40 ug/m³
Units ug/m³ 1 hour
annual mean

no background
process contribution only

- 4
- 3
- 2
- 1
- 0.9
- 0.8
- 0.7
- 0.6
- 0.5
- 0.4
- 0.3
- 0.2
- 0.1

Figure 4

The Airshed

AS 0739 Stallingborough Biomass AQIA 25 August 2021 : Crown copyright Ordnance Survey 0100031673

short-term NO_2

Emission Scenario 3
Prediction model ADMS 5.2
EA Chemistry $NO_2 = NO_x * 0.35$
model runs rev03
Scenario 3.apl
Met = RAF Scampton 2014
Surface roughness 1.0m
Building Effects on
Terrain effects off
Prediction Grid 1m
Receptor Height 1.5m
Averaging period 1 hour

EAL = 200 ug/m³
Units ug/m³ 1 hour
99.8%ile annual
no background
process contribution only

25
20
15
10
5

Figure 5

The Airshed

Appendix 1 – Updated Sensitivity Test for Meteorological Variability

Receptor name	X(m)	Y(m)	Z(m)	LTConc | ug/m3 | NOx | <All sources> | - | 1hr	P 99.80 | ug/m3 | NOx | <All sources> | - | 1hr	LTConc | ug/m3 | PM10 | <All sources> | - | 24hrs	P 98.08 | ug/m3 | PM10 | <All sources> | - | 24hrs	P 90.41 | ug/m3 | PM10 | <All sources> | - | 24hrs	LTConc | ug/m3 | PM10 | <All sources> | - | 1hr	LTConc | ug/m3 | PM2.5 | <All sources> | - | 1hr
R01 Eleanor House	521030	412656	1.5	0.01	0.83	0.00	0.03	0.01	0.00	0.00
R02 Brickpitt Farm	521166	412586	1.5	0.01	0.80	0.00	0.03	0.01	0.00	0.00
R03 Brickfield House	521248	412728	1.5	0.01	0.98	0.00	0.04	0.01	0.00	0.00
R04 Poplar Farm	521596	413012	1.5	0.02	1.32	0.01	0.06	0.02	0.01	0.00
R05 Grassmere	521291	413112	1.5	0.02	1.38	0.01	0.06	0.02	0.01	0.00
R06 Kendal Road	519225	414214	1.5	0.03	1.18	0.01	0.06	0.03	0.01	0.01
R07 Spring Street	519068	414947	1.5	0.02	1.01	0.01	0.06	0.02	0.01	0.00
R08 Chestnut Avenue	519230	414980	1.5	0.02	1.09	0.01	0.06	0.03	0.01	0.00
R09 Queens Road	519938	414844	1.5	0.05	1.87	0.02	0.12	0.06	0.02	0.01
DT23-25	519193	415279	2	0.02	1.00	0.01	0.05	0.03	0.01	0.00
AURN	518277	415116	2	0.01	0.76	0.00	0.04	0.01	0.00	0.00
NTEX1-1	520829	414278	1.5	1.02	18.32	0.28	1.30	0.77	0.28	0.20
NTEX1-2	520829	414278	4	1.06	18.32	0.30	1.30	0.81	0.30	0.21
NTEX2-1	520837	414275	1.5	0.98	18.85	0.27	1.28	0.76	0.27	0.19
NTEX2-2	520837	414275	4	1.02	18.85	0.28	1.28	0.78	0.28	0.20
NTEX3-1	520850	414283	1.5	0.98	18.27	0.27	1.20	0.75	0.27	0.19
NTEX3-2	520850	414283	4	1.01	18.27	0.28	1.22	0.77	0.28	0.20
NTEX4-1	520883	414285	1.5	0.75	15.62	0.21	1.14	0.71	0.21	0.15
NTEX4-2	520883	414285	4	0.76	15.55	0.21	1.14	0.73	0.21	0.15
SLD	520884	414232	1.5	0.60	11.67	0.17	1.07	0.63	0.17	0.12
Dowson	520827	414219	1.5	0.69	42.25	0.20	1.78	0.62	0.19	0.14
Jacobs	520738	414173	1.5	0.71	18.90	0.20	1.15	0.63	0.20	0.14
Self Store 1	520773	414287	1.5	1.56	23.53	0.43	1.65	0.97	0.44	0.31
Self Store 2	520744	414284	1.5	0.51	21.47	0.14	0.96	0.45	0.14	0.10
Max				1.56	42.25	0.43	1.78	0.97	0.44	0.31

met data variability
RAF Scampton 2014
surface roughness 1.0m
single stack 24m above local ground level

Receptor name	X(m)	Y(m)	Z(m)	LTConc | ug/m3 | NOx | <All sources> | - | 1hr	P 99.80 | ug/m3 | NOx | <All sources> | - | 1hr	LTConc | ug/m3 | PM10 | <All sources> | - | 24hrs	P 98.08 | ug/m3 | PM10 | <All sources> | - | 24hrs	P 90.41 | ug/m3 | PM10 | <All sources> | - | 24hrs	LTConc | ug/m3 | PM10 | <All sources> | - | 1hr	LTConc | ug/m3 | PM2.5 | <All sources> | - | 1hr
R01 Eleanor House	521030	412656	1.5	0.01	1.00	0.00	0.05	0.01	0.00	0.00
R02 Brickpitt Farm	521166	412586	1.5	0.01	0.97	0.00	0.04	0.01	0.00	0.00
R03 Brickfield House	521248	412728	1.5	0.01	1.03	0.00	0.04	0.01	0.00	0.00
R04 Poplar Farm	521596	413012	1.5	0.02	1.12	0.01	0.06	0.02	0.01	0.00
R05 Grassmere	521291	413112	1.5	0.02	1.26	0.01	0.06	0.02	0.01	0.00
R06 Kendal Road	519225	414214	1.5	0.02	1.07	0.01	0.06	0.02	0.01	0.00
R07 Spring Street	519068	414947	1.5	0.02	0.97	0.01	0.05	0.02	0.01	0.00
R08 Chestnut Avenue	519230	414980	1.5	0.02	1.03	0.01	0.06	0.03	0.01	0.00
R09 Queens Road	519938	414844	1.5	0.05	1.88	0.01	0.13	0.05	0.01	0.01
DT23-25	519193	415279	2	0.02	0.96	0.01	0.06	0.02	0.01	0.00
AURN	518277	415116	2	0.01	0.74	0.00	0.04	0.01	0.00	0.00
NTEX1-1	520829	414278	1.5	1.12	18.90	0.31	1.28	0.89	0.31	0.22
NTEX1-2	520829	414278	4	1.17	18.90	0.33	1.30	0.93	0.33	0.23
NTEX2-1	520837	414275	1.5	1.08	18.30	0.30	1.21	0.87	0.30	0.21
NTEX2-2	520837	414275	4	1.13	18.30	0.31	1.26	0.89	0.31	0.22
NTEX3-1	520850	414283	1.5	1.12	17.60	0.31	1.19	0.89	0.31	0.22
NTEX3-2	520850	414283	4	1.17	17.60	0.32	1.23	0.93	0.33	0.23
NTEX4-1	520883	414285	1.5	0.99	13.90	0.27	1.18	0.82	0.28	0.19
NTEX4-2	520883	414285	4	1.00	13.90	0.28	1.18	0.83	0.28	0.20
SLD	520884	414232	1.5	0.78	11.90	0.22	1.20	0.73	0.22	0.15
Dowson	520827	414219	1.5	0.69	38.60	0.19	1.76	0.64	0.19	0.14
Jacobs	520738	414173	1.5	0.62	19.10	0.18	1.24	0.53	0.17	0.12
Self Store 1	520773	414287	1.5	1.45	22.60	0.40	1.47	0.93	0.40	0.28
Self Store 2	520744	414284	1.5	0.44	20.20	0.13	1.09	0.37	0.12	0.09
Max				1.45	38.60	0.40	1.76	0.93	0.40	0.28

met data variability
RAF Scampton 2015
surface roughness 1.0m
single stack 24m above local ground level

Receptor name	X(m)	Y(m)	Z(m)	LTConc | ug/m3 | NOx | <All sources> | - | 1hr	P 99.80 | ug/m3 | NOx | <All sources> | - | 1hr	LTConc | ug/m3 | PM10 | <All sources> | - | 24hrs	P 98.08 | ug/m3 | PM10 | <All sources> | - | 24hrs	P 90.41 | ug/m3 | PM10 | <All sources> | - | 24hrs	LTConc | ug/m3 | PM10 | <All sources> | - | 1hr	LTConc | ug/m3 | PM2.5 | <All sources> | - | 1hr
R01 Eleanor House	521030	412656	1.5	0.02	0.97	0.00	0.04	0.02	0.00	0.00
R02 Brickpitt Farm	521166	412586	1.5	0.02	0.96	0.00	0.04	0.02	0.00	0.00
R03 Brickfield House	521248	412728	1.5	0.02	1.00	0.01	0.04	0.02	0.01	0.00
R04 Poplar Farm	521596	413012	1.5	0.02	1.16	0.01	0.05	0.03	0.01	0.00
R05 Grassmere	521291	413112	1.5	0.03	1.22	0.01	0.06	0.03	0.01	0.01
R06 Kendal Road	519225	414214	1.5	0.02	1.07	0.01	0.06	0.02	0.01	0.00
R07 Spring Street	519068	414947	1.5	0.02	0.95	0.01	0.05	0.02	0.01	0.00
R08 Chestnut Avenue	519230	414980	1.5	0.02	1.05	0.01	0.06	0.03	0.01	0.00
R09 Queens Road	519938	414844	1.5	0.05	1.91	0.02	0.13	0.06	0.01	0.01
DT23-25	519193	415279	2	0.03	1.03	0.01	0.07	0.03	0.01	0.00
AURN	518277	415116	2	0.01	0.77	0.00	0.03	0.02	0.00	0.00
NTEX1-1	520829	414278	1.5	1.03	18.40	0.29	1.24	0.82	0.29	0.20
NTEX1-2	520829	414278	4	1.08	18.50	0.30	1.26	0.85	0.30	0.21
NTEX2-1	520837	414275	1.5	0.99	18.90	0.28	1.17	0.80	0.28	0.19
NTEX2-2	520837	414275	4	1.03	18.90	0.29	1.21	0.82	0.29	0.20
NTEX3-1	520850	414283	1.5	1.01	17.60	0.28	1.20	0.79	0.28	0.20
NTEX3-2	520850	414283	4	1.05	17.50	0.29	1.23	0.82	0.29	0.21
NTEX4-1	520883	414285	1.5	0.84	14.20	0.23	1.18	0.77	0.24	0.17
NTEX4-2	520883	414285	4	0.86	15.20	0.24	1.19	0.76	0.24	0.17
SLD	520884	414232	1.5	0.68	12.30	0.19	1.07	0.66	0.19	0.13
Dowson	520827	414219	1.5	0.70	41.70	0.20	1.70	0.58	0.20	0.14
Jacobs	520738	414173	1.5	0.72	18.50	0.20	1.18	0.63	0.20	0.14
Self Store 1	520773	414287	1.5	1.49	22.80	0.41	1.73	1.06	0.41	0.29
Self Store 2	520744	414284	1.5	0.52	18.90	0.15	1.04	0.49	0.15	0.10
Max				1.49	41.70	0.41	1.73	1.06	0.41	0.29

met data variability
RAF Scampton 2016
surface roughness 1.0m
single stack 24m above local ground level

Receptor name	X(m)	Y(m)	Z(m)	LTConc | ug/m3 | NOx | <All sources> |-| 1hr	P 99.80 | ug/m3 | NOx | <All sources> |-| 1hr	LTConc | ug/m3 | PM10 | <All sources> |-| 24hrs	P 98.08 | ug/m3 | PM10 | <All sources> |-| 24hrs	P 90.41 | ug/m3 | PM10 | <All sources> |-| 24hrs	LTConc | ug/m3 | PM10 | <All sources> |-| 1hr	LTConc | ug/m3 | PM2.5 | <All sources> |-| 1hr
R01 Eleanor House	521030	412656	1.5	0.01	0.60	0.00	0.03	0.01	0.00	0.00
R02 Brickpitt Farm	521166	412586	1.5	0.01	0.73	0.00	0.03	0.01	0.00	0.00
R03 Brickfield House	521248	412728	1.5	0.01	0.74	0.00	0.03	0.01	0.00	0.00
R04 Poplar Farm	521596	413012	1.5	0.02	1.09	0.01	0.06	0.02	0.01	0.00
R05 Grassmere	521291	413112	1.5	0.02	1.04	0.01	0.05	0.02	0.01	0.00
R06 Kendal Road	519225	414214	1.5	0.01	1.07	0.00	0.06	0.01	0.00	0.00
R07 Spring Street	519068	414947	1.5	0.02	0.91	0.00	0.05	0.02	0.00	0.00
R08 Chestnut Avenue	519230	414980	1.5	0.02	0.98	0.01	0.05	0.02	0.01	0.00
R09 Queens Road	519938	414844	1.5	0.05	1.89	0.02	0.11	0.06	0.01	0.01
DT23-25	519193	415279	2	0.02	0.98	0.01	0.06	0.02	0.01	0.00
AURN	518277	415116	2	0.01	0.68	0.00	0.03	0.01	0.00	0.00
NTEX1-1	520829	414278	1.5	1.30	17.50	0.36	1.46	0.97	0.36	0.26
NTEX1-2	520829	414278	4	1.37	17.50	0.38	1.49	0.98	0.38	0.27
NTEX2-1	520837	414275	1.5	1.28	16.90	0.36	1.45	0.97	0.36	0.25
NTEX2-2	520837	414275	4	1.34	16.90	0.37	1.47	1.00	0.37	0.26
NTEX3-1	520850	414283	1.5	1.32	16.40	0.37	1.38	0.94	0.37	0.26
NTEX3-2	520850	414283	4	1.38	16.40	0.38	1.46	0.98	0.38	0.27
NTEX4-1	520883	414285	1.5	1.22	15.80	0.34	1.31	0.96	0.34	0.24
NTEX4-2	520883	414285	4	1.23	15.70	0.34	1.31	0.97	0.34	0.24
SLD	520884	414232	1.5	0.95	12.90	0.26	1.26	0.83	0.26	0.19
Dowson	520827	414219	1.5	0.78	38.00	0.22	1.88	0.64	0.22	0.15
Jacobs	520738	414173	1.5	0.48	17.20	0.14	1.01	0.39	0.13	0.09
Self Store 1	520773	414287	1.5	1.20	20.10	0.33	1.25	0.88	0.34	0.24
Self Store 2	520744	414284	1.5	0.38	18.30	0.11	0.84	0.32	0.11	0.07
Max				1.38	38.00	0.38	1.88	1.00	0.38	0.27

met data variability
RAF Scampton 2017
surface roughness 1.0m
single stack 24m above local ground level

Receptor name	X(m)	Y(m)	Z(m)	LTConc | ug/m3 | NOx | <All sources> | - | 1hr	P 99.80 | ug/m3 | NOx | <All sources> | - | 1hr	LTConc | ug/m3 | PM10 | <All sources> | - | 24hrs	P 98.08 | ug/m3 | PM10 | <All sources> | - | 24hrs	P 90.41 | ug/m3 | PM10 | <All sources> | - | 24hrs	LTConc | ug/m3 | PM10 | <All sources> | - | 1hr	LTConc | ug/m3 | PM2.5 | <All sources> | - | 1hr
R01 Eleanor House	521030	412656	1.5	0.02	1.04	0.00	0.04	0.02	0.00	0.00
R02 Brickpitt Farm	521166	412586	1.5	0.01	0.95	0.00	0.03	0.02	0.00	0.00
R03 Brickfield House	521248	412728	1.5	0.02	1.07	0.00	0.04	0.02	0.00	0.00
R04 Poplar Farm	521596	413012	1.5	0.02	1.17	0.01	0.05	0.03	0.01	0.00
R05 Grassmere	521291	413112	1.5	0.02	1.34	0.01	0.06	0.02	0.01	0.00
R06 Kendal Road	519225	414214	1.5	0.02	1.05	0.01	0.06	0.02	0.01	0.00
R07 Spring Street	519068	414947	1.5	0.02	1.01	0.01	0.05	0.03	0.01	0.00
R08 Chestnut Avenue	519230	414980	1.5	0.03	1.03	0.01	0.06	0.03	0.01	0.01
R09 Queens Road	519938	414844	1.5	0.07	1.94	0.02	0.17	0.08	0.02	0.01
DT23-25	519193	415279	2	0.03	1.02	0.01	0.07	0.04	0.01	0.01
AURN	518277	415116	2	0.01	0.82	0.00	0.03	0.02	0.00	0.00
NTEX1-1	520829	414278	1.5	1.15	19.80	0.32	1.37	0.91	0.32	0.23
NTEX1-2	520829	414278	4	1.20	19.30	0.34	1.38	0.95	0.34	0.24
NTEX2-1	520837	414275	1.5	1.05	17.50	0.29	1.30	0.85	0.29	0.21
NTEX2-2	520837	414275	4	1.09	17.50	0.31	1.35	0.87	0.30	0.21
NTEX3-1	520850	414283	1.5	1.10	17.70	0.31	1.27	0.88	0.31	0.22
NTEX3-2	520850	414283	4	1.14	17.50	0.32	1.32	0.91	0.32	0.22
NTEX4-1	520883	414285	1.5	0.83	15.10	0.23	1.26	0.76	0.23	0.16
NTEX4-2	520883	414285	4	0.84	14.80	0.23	1.29	0.76	0.24	0.17
SLD	520884	414232	1.5	0.61	12.20	0.17	1.19	0.61	0.17	0.12
Dowson	520827	414219	1.5	0.64	36.40	0.18	1.82	0.59	0.18	0.13
Jacobs	520738	414173	1.5	0.75	19.90	0.21	1.42	0.77	0.21	0.15
Self Store 1	520773	414287	1.5	1.46	21.70	0.40	1.65	1.05	0.41	0.29
Self Store 2	520744	414284	1.5	0.53	22.50	0.15	0.91	0.54	0.15	0.10
Max				1.46	36.40	0.40	1.82	1.05	0.41	0.29

met data variability
RAF Scampton 2018
surface roughness 1.0m
single stack 24m above local ground level