RICARDO-AEA

A review of air quality station type classifications for UK compliance monitoring

Report for The Department for Environment, Food and Rural Affairs, Welsh Government, Scottish Government and the Department of the Environment for Northern Ireland

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Executive summary

Air quality stations for compliance monitoring are classified as industrial, traffic or background type according the dominant emission source. Historically a single classification has been assigned to each station. The IPR (Decision 2011/850/EU) for the Air Quality Directive has continued with these three simple station classifications but also makes it clear that each station should be classified according to the predominant emission source relevant for the sampling point for each pollutant.

This document presents a review of the station type classifications assigned to stations within the Defra and Devolved Administrations air pollution monitoring networks to reflect the new IPR methodology and to determine whether current classifications remain valid. A process for defining new station classifications and ongoing review of existing stations is outlined to provide a methodology for all organisations working on the UK air pollution monitoring networks. The area types (Rural, Suburban, Urban) have not been considered in this review, which has focussed on station type.

Monitoring data for 2012 will be reported via the current Data Exchange Module (DEM) system to the Central Data Repository[1], which is unable to accept multiple station classifications for the same station. For this reason we propose that a single classification is retained for the 2012 dataset. The classification has been assigned for each pollutant at each station in this review and an overall station classification has been assigned on the basis that a station is classified as industrial if it is industrial for any of the pollutants measured. In practice this review is largely concerned with the distinction between industrial and background types, since the classification for traffic stations is generally clear cut.

The recommended changes in station type classification for reporting of 2012 data are summarised in table E1.

Table E1: Stations for which source classification changed following the source apportionment analysis

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting
Bolsover	GB0700A	UI	UB
Grangemouth Moray	GB0997A	UB	UI
Horley	GB0916A	SB	SI
Liverpool Speke	GB0777A	UB	UI
Manchester South	GB0649A	SB	SI
Middlesbrough	GB0583A	UB	UI
Walsall Bilston Lane	GB0983A	UB	UI
Walsall Centre	GB0382A	UI	UB
Warrington	GB0958A	UB	UI

U = urban, S = suburban, B = background, I = industrial

[1] http://cdr.eionet.europa.eu/

Table of contents

1 Introduction

1.1 Background

As part of the air quality management process stations within the UK air pollution monitoring networks are classified according to the dominant emission source impacting the monitoring station location. These classifications are also useful descriptive information for understanding the nature of the physical and pollution environment surrounding the station. There are three types of station: industrial, traffic and background, which are combined with a description of the area type: urban, suburban and rural to form an overall station classification. These classifications are required for air pollution assessment under the Ambient Air Quality Directive (AQD, 2008/50/EC) and Fourth Daughter Directive (4th DD, 2004/107/EC).

Historically, the Exchange of Information Decision (EOI 97/101/EC) monitoring stations classified stations into three types according to the dominant emission source impacting on the station: traffic, industrial and background. In support of this, a number of guidelines[2] have been produced which have allowed stations to be classified. For example industrial stations have been classified as 'located such that its pollution level is influenced predominantly by emissions from nearby single industrial sources or industrial areas with many sources'. Traffic stations have been classified as 'located such that its pollution level is determined predominantly by the emissions from nearby traffic (roads, motorways, highways)'. Background stations are not influenced significantly by single sources but by an integrated contribution from all sources. The 2002 guidance also noted that a station could be classified on a per pollutant basis but in practice as the Data Exchange Module (DEM) used to report information on measurement stations could not accept such information, station classification on a per pollutant basis was never required.

The IPR (Decision 2011/850/EU) for the AQD has continued with these three simple station classifications but also makes it clear that each station should be classified according to the predominant emission source relevant for the sampling point for each pollutant[3].

This change in approach means that each station could have a number of different classifications for different pollutants. For example, if a monitoring station was located beside an industrial process emitting large quantities of lead but little or no SO_2 then the station could be classified as *industrial* for the lead emission source and background for the SO_2. It also means that a classification may change over time. Collection of detailed metadata for monitoring stations in preparation for reporting of 2011 measurement data also highlighted that the organisations responsible for monitoring particular pollutants at stations were not all in agreement on the classifications and records required reconciliation. A review into the current station classifications was therefore required to consider the implications of the new IPR approach to classification, to get agreement amongst organisations working on the UK's air pollution monitoring networks on the existing station classifications to be used in future communications and reporting and to define a process for reviewing and classifying stations.

This report provides a review of the station type classification for air quality monitoring stations within the UK national networks that are used for compliance reporting under the

[2] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32001D0752:EN:HTML
http://ec.europa.eu/environment/air/pdf/guidancetoannexes97101ec.pdf (2002)

[3] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:335:0086:0106:EN:PDF
See Section D (Information on the assessment methods) of Annex II within Decision 2011/850/EU and Data Element 5.1.5.1 within the associated guidance document.

AQD and 4th DD. Additional stations for which data are only reported as required by the EOI decision, such as for black carbon and ammonia, have not been included in this review.

The site classification report (Eaton, 2010)[4] reviewed all stations in the AURN used for compliance with the requirements of the EU Directive on ambient air quality 2008/50/EC. Any changes to the classifications listed in the 2010 report are tabulated in the results section.

1.2 Aims of this review

This document presents a review of the station type classifications assigned to stations within the Defra and Devolved Administrations air pollution monitoring networks to reflect the new IPR methodology and to determine whether current classifications remain valid. A process for defining new station classifications and ongoing review of existing stations is outlined to provide a methodology for all organisations working on the UK air pollution monitoring networks.

The purpose of this review is to:

- Review all stations in the AQD and 4th DD compliance networks and agree on a classification in accordance with the new IPR approach.
- Determine whether some stations could have more than one classification when following the new approach.
- Outline the evidence base to support the new classifications
- Define a process for classifying future stations

The area types (Rural, Suburban, Urban) have not been considered in this review, which has focussed on station type.

Monitoring data for 2012 will be reported via the current DEM system, which is unable to accept multiple station classification for the same station. For this reason we propose that a single classification is retained for the 2012 dataset. The classification has been assigned for each pollutant at each station in this review and an overall station classification has been assigned on the basis that a station is classified as industrial if it is industrial for any of the pollutants measured. In practice this review is largely concerned with the distinction between industrial and background types. The classification for traffic types is generally clear cut.

[4] http://uk-air.defra.gov.uk/reports/cat13/1011121246_Site_Classifications_Report_v2.pdf

2 Method

Following the new IPR methodology, station classifications have been reviewed on a pollutant specific basis, defined by the dominant emissions sources affecting concentrations at each station. The IPR guidance provides the following definitions[5]:

- Traffic: Located in close proximity to a single major road.
- Industrial: Located in close proximity to a single industrial source or industrial area. A wide range of industrial sources can be considered here, including
    - thermal power generation
    - district heating plants
    - refineries
    - waste incineration/treatment plants, dump sites
    - mining, including gravel, oil, natural gas
    - airports
    - ports
- Background: Any location which is neither to be classified as “traffic” or “industrial”. Located such that its pollution levels are representative of the average exposure of the general population (or vegetation and natural ecosystems) within the type of area under assessment. The pollution level should not be dominated by a single source type (e.g. traffic), unless that source type is typical within the area under assessment. The station should usually be representative of a wider area of at least several square kilometers.

The key information sources used as a basis for the review are**:**

- Source apportionment plots for annual mean concentrations generated as part of the Pollution Climate Mapping (PCM) modelling work carried out as part of the annual air quality assessment for 2011 under the AQD and 4th DD. Source apportionment information has been summarised into the following categories:
    - Regional background
    - Traffic
    - Domestic and commercial
    - Other
    - Industrial (this includes emissions from industrial point and area sources and non road mobile machinery)
    - Aircraft
    - Shipping
- Station metadata describing station locations
- Local knowledge of stations and their proximity to surrounding sources by local site operators and network managers and use of internet mapping tools, including aerial photographs
- Monitoring data and comparison with model results

Key principles which were followed included:

- Only considering primary emissions sources and not regional background contributions as relevant for station type classification.
- Stations are classified as industrial for a pollutant if the sum of the industry, aircraft and shipping contributions within the source apportionment is greater than the sum of the remaining local contributions. This is our interpretation of the requirement to

[5] http://ec.europa.eu/environment/air/quality/legislation/reporting.htm

define the predominant source. Emissions from both aircraft and non road mobile machinery will contribute at airports and emissions from both shipping and non road mobile machinery will contribute at ports. This is why these sources have been considered together in this analysis.

- Using local knowledge of stations and emission sources where the model under predicts measured concentration to determine whether this under prediction is likely to represent the impact of a local industrial source
- Reviewing classifications for metals in PM_{10} (arsenic, cadmium, lead and nickel), benzo[a]pyrene, benzene, PM_{10}, oxides of nitrogen, $PM_{2.5}$ and sulphur dioxide.
- Defining a single classification for all metals in $PM_{10.}$
- Classifying ozone based on the most common classification for other pollutants and whether measured concentrations show clear indications of local sources influencing concentrations.

3 Results

3.1 Introduction

Table 1 lists the stations in the UK compliance monitoring network that were operational during part or all of 2012 that were classified as industrial for 2011 reporting.

Table 1: Stations classified as industrial within Defra monitoring networks in 2011

EoI code	Station name
GB0421A	Billingham
GB0700A	Bolsover
GB0735A	Grangemouth
GB0837A	London Harlington
GB1010A	Lynemouth 2
GB1015A	Pontardawe Brecon Road
GB1016A	Pontardawe Tawe Terrace
GB0906A	Port Talbot Margam
GB0940A	Royston
GB0877A	Runcorn Weston Point
GB0660A	Salford Eccles
GB1004A	Scunthorpe Low Santon
GB0841A	Scunthorpe Town
GB0942A	South Hiendley
GB0382A	Walsall Centre

3.2 Review of source apportionment

Source apportionment data from the PCM modelling was reviewed to determine the dominant sources at each station. The source apportionment plots are presented below within Figures 1 to 10. Each contributing source is modelled separately using a modelling method appropriate for the scale and contribution made by the source. Alongside each predicted concentration (presented as the sum of all the contributing sources) each figure has the pollutant concentration measured at the station in 2011. The stations are ranked by measured annual mean concentration in 2011.

The following section identifies the stations for each pollutant for which industry is the dominant source. Stations that were classified as industrial in 2011 for which this classification is not supported by the source apportionment and local information are also identified. Traffic stations have not been included for NO_x, PM_{10}, $PM_{2.5}$ and benzene because traffic is clearly the dominant source at these stations. Traffic stations have been included in the plots for the other pollutants.

3.3 NO_x

Source apportionment for NO_x is shown in Figure 1.

- Port Talbot Margam and Salford Eccles were previously classified as industrial but this classification is not supported by the source apportionment for NO_x.
- Grangemouth, London Harlington and Scunthorpe Town were previously classified as industrial and this is confirmed by the source apportionment for NO_x. Grangemouth is not shown on the plot but the model under predicts the measured concentration and local information confirms the industrial source. At London Harlington the local source is Heathrow Airport.
- Grangemouth Moray, Horley, Liverpool Speke, Manchester South and Warrington were previously classified as background but the source apportionment for NO_x indicates that these stations can be classified as industrial. At Horley and Manchester South the local sources are airports.
- The model predicts a relatively large contribution from shipping at Aberdeen but there are considerable uncertainties in assigning shipping emissions in port areas and for this reason the station has been classified as background.

3.4 SO_2

Source apportionment for SO_2 is shown in Figure 2.

- The source apportionment indicates that industry is the largest source of SO_2 at most of the monitoring stations. This is partly a reflection of the modelling method for SO_2, which means that the contribution from large point sources to the regional background has been included in the 'industry' total, rather than the regional background and the fact that there are few other sources contributing to regional background SO_2. Thus stations have been identified as industrial only where there is a clear large contribution from local industrial sources.
- Grangemouth, Port Talbot Margam, Salford Eccles and Scunthorpe Town were previously classified as industrial and this is confirmed by the source apportionment for SO_2. The measured concentration is over predicted by the model at Scunthorpe Town but the industrial location is confirmed by local information. Note that SO_2 monitoring at Salford Eccles ended on 31/12/2012.
- Liverpool Speke was previously classified as background but the source apportionment for SO_2 indicates that this station can be classified as industrial.
- The model overpredicts the measured concentration at Hull Freetown and local information indicates that this location is not dominated by industry. The model also over predicts the measured concentration at Southampton Centre and in this instance the high modelled concentration is associated with the uncertainties in assigning shipping emissions in port areas.
- The dominant source at Belfast Centre is domestic and commercial. The IPR guidance is clear that domestic emissions are not considered as industrial and this station is therefore classified as background.

3.5 PM_{10}

Source apportionment for PM_{10} is shown in Figure 3.

- Grangemouth, London Harlington, Port Talbot Margam, Scunthorpe Town were previously classified as industrial and this is confirmed by the source apportionment for PM_{10}. The measured concentration is under predicted by the model at Port Talbot Margam but the industrial location is confirmed by local information.

- Liverpool Speke and Warrington were previously classified as background but the source apportionment for PM_{10} indicates that these stations can be classified as industrial.
- Salford Eccles was previously classified as industrial but this classification is not supported by the source apportionment for PM_{10}.

3.6 $PM_{2.5}$

Source apportionment for $PM_{2.5}$ is shown in Figure 4.

- Grangemouth, London Harlington and Port Talbot Margam were previously classified as industrial and this is confirmed by the source apportionment for $PM_{2.5}$. The measured concentration is under predicted by the model at Port Talbot Margam but not to as large an extent as for $PM_{2.5.}$.
- Liverpool Speke and Warrington were previously classified as background but the source apportionment for $PM_{2.5}$ indicates that these stations can be classified as industrial.
- Salford Eccles was previously classified as industrial but this classification is not supported by the source apportionment for $PM_{2.5}$.

3.7 Benzene

Source apportionment for benzene is shown in Figure 5.

- Grangemouth was previously classified as industrial and this is confirmed by the source apportionment for benzene.
- Liverpool Speke and Middlesbrough were previously classified as background but the source apportionment for benzene indicates that these stations can be classified as industrial. The measured concentrations are under predicted by the model at both these stations and the industrial location is conformed by local information.
- The model over predicts the measured concentration at Southampton Centre. The high modelled concentration is associated with the uncertainties in assigning shipping emissions in port areas.

3.8 B[a]P

Source apportionment for benzo[a]pyrene is shown in Figure 6.

- Lynemouth 2, Port Talbot Margam, Royston, Scunthorpe Low Santon, Scunthorpe Town, and South Hiendley were previously classified as industrial and this is confirmed by the source apportionment for B[a]P. The aluminium smelter close to Lynemouth 2 closed during 2012 so the classification for this station will need to be reviewed again for 2013.
- Middlesbrough was classified as background for 2011 reporting but the source apportionment for B[a]P indicates that this station can be classified as industrial.
- Bolsover and Salford Eccles were previously classified as industrial but this classification is not supported by the source apportionment for B[a]P. The coke works close to Bolsover closed in 2004.

3.9 Heavy metals

Source apportionment for heavy metals is shown in Figure 7 to 10.

- The modelled contribution to ambient re-suspension associated with wind blown dusts and with vehicles has been included in the regional background for the source apportionment plots for the heavy metals.
- The source apportionment for As identifies the following stations as influenced by predominantly industrial emissions: Port Talbot Margam, Scunthorpe Low Santon, and Scunthorpe Town.
- The source apportionment for Cd identifies the following stations as influenced by predominantly industrial emissions: Port Talbot Margam, Scunthorpe Low Santon, and Scunthorpe Town.
- The source apportionment for Ni identifies the following station as influenced by predominantly industrial emissions: Scunthorpe Low Santon. The measured concentrations are underestimated by the PCM model at Pontardawe Tawe Terrace, Pontardawe Brecon Road and Sheffield Brinsworth. Local information and local modelling studies have identified industry as the predominant source at Pontardawe Tawe Terrace and Pontardawe Brecon Road. Local information has identified industry as the predominant source at Sheffield Brinsworth.
- The source apportionment for Pb identifies the following stations as influenced by predominantly industrial emissions: Port Talbot Margam, Runcorn Weston Point, Scunthorpe Low Santon, and Scunthorpe Town.
- Thus the previous classification of industrial is confirmed by this analysis for Port Talbot Margam, Pontardawe Tawe Terrace, Pontardawe Brecon Road, Runcorn Weston Point, Scunthorpe Low Santon, and Scunthorpe Town and Sheffield Brinsworth.
- Walsall Centre was previously classified as industrial but the source apportionment for the heavy metals does not confirm this and local information indicated that the copper works closed in 1999.
- Walsall Bilston Lane was previously classified as background but the source apportionment for Cd indicates that this station can be classified as industrial.

3.10 O_3

- O_3 is not directly emitted into the atmosphere and therefore does not have any local sources. All stations have been classified as background type for O_3 apart from traffic stations at which the local traffic sources have a strong influence on measured concentrations, which is in this instance a reduction in concentrations relative to background locations.

4 Conclusions

4.1 Station types within the compliance monitoring network

Table A1 in Annex 1 lists which station type has been assigned to each pollutant measured at each station in the Defra and Devolved Administrations compliance monitoring network as a result of this review. This includes all monitoring stations that were in operation in 2012. At most stations, the station type is the same for each pollutant. But, based on the source apportionment analysis, there is a small number of stations for which the dominant emission source is different for the different pollutants.

As discussed above we propose that a single classification is retained for the 2012 dataset. The classification has been assigned for each pollutant at each station in this review and an overall station classification has been assigned on the basis that a station is classified as industrial if it is industrial for any of the pollutants measured.

Those stations for which the recommended source classification changed are shown in Table 2. Yellow shading has been used within Table A1 to highlight proposed changes to the overall station classification for 2012 reporting.

Table 2: Stations for which source classification changed following the source apportionment analysis

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting
Bolsover	GB0700A	UI	UB
Grangemouth Moray	GB0997A	UB	UI
Horley	GB0916A	SB	SI
Liverpool Speke	GB0777A	UB	UI
Manchester South	GB0649A	SB	SI
Middlesbrough	GB0583A	UB	UI
Walsall Bilston Lane	GB0983A	UB	UI
Walsall Centre	GB0382A	UI	UB
Warrington	GB0958A	UB	UI

U = urban, S = suburban, B = background, I = industrial

4.2 Changes since 2010 Site Classification report

The site classification report (Eaton, 2010)[6] reviewed all stations in the AURN used for compliance with the requirements of the EU Directive on ambient air quality 2008/50/EC. Any changes to the station types based on the source apportionment analysis, for stations operating in both 2010 and 2012, are shown in Table 3 (which is a subset of the information presented in Table 2).

[6] http://uk-air.defra.gov.uk/reports/cat13/1011121246_Site_Classifications_Report_v2.pdf

Table 3. Changes since 2010 Site Classification report

Station	Changes in station types
Grangemouth Moray	Was background now industrial
Horley	Was background now industrial
Liverpool Speke	Was background now industrial
Manchester South	Was background now industrial
Middlesbrough	Was background now industrial
Warrington	Was background now industrial

4.3 Classifying station types in the future

Review

The source apportionment technique used to identify the dominant source for each pollutant at each station confirmed that the previously assigned station type was generally correct. The source apportionment technique provides a best estimate of the magnitude of different sources impacting a station's location and inherently contains many assumptions as to the nature of the emission, meteorology and transport of the pollutant following release from source.

We would recommend that the source apportionment plots are checked every year as part of the routine modelling process to ensure that gross changes to the sources impacting each station (such as closure or establishment of major industrial plant) are noted. We recommend that a systematic review similar that presented here be carried out once every five years alongside a review of the assessment regime.

A single station classification has been adopted for the reporting of air quality monitoring data for 2012. This current review provides the evidence to support the assignment of this classification and has been based on an assessment of the source apportionment for each pollutant. This review therefore also provides the evidence that would be required if classifications for individual pollutants are to be reported at some time in the future.

New stations

We recommend that the following procedure be adopted for new stations:

- identify a new station;
- review against directive macro and micro scale siting criteria to ensure that the new station meets the requirements;
- review local sources and site environment when establishing station
- collect station metadata;
- liaise with Defra's modelling contractors to get most recently available modelled source appointment data; and
- agree classification between modelling team and network managers.

Figure 1: Source apportionment plot for NO_x in 2011

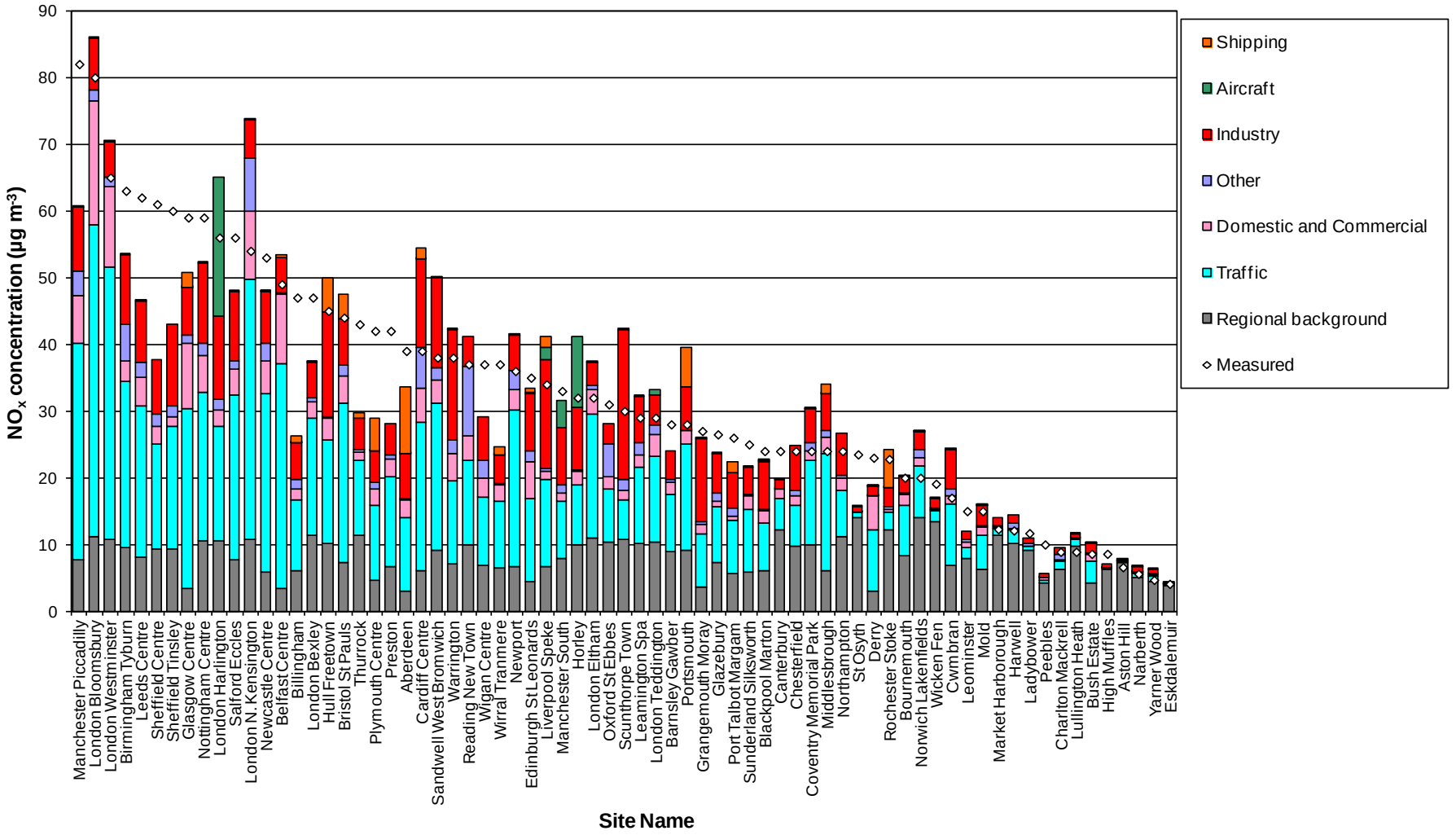


Figure 2: Source apportionment plot for SO_2

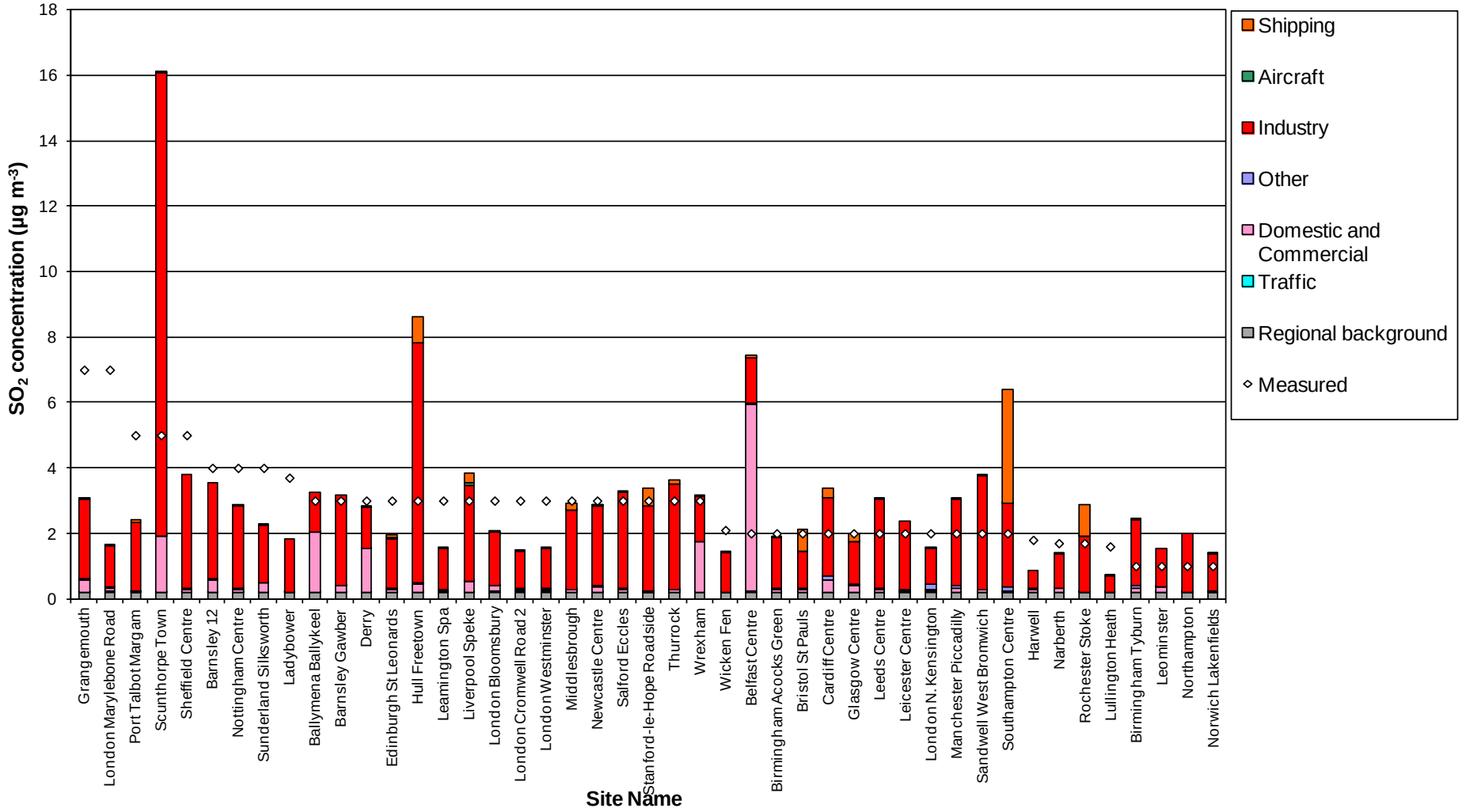


Figure 3: Source apportionment plot for PM_{10}

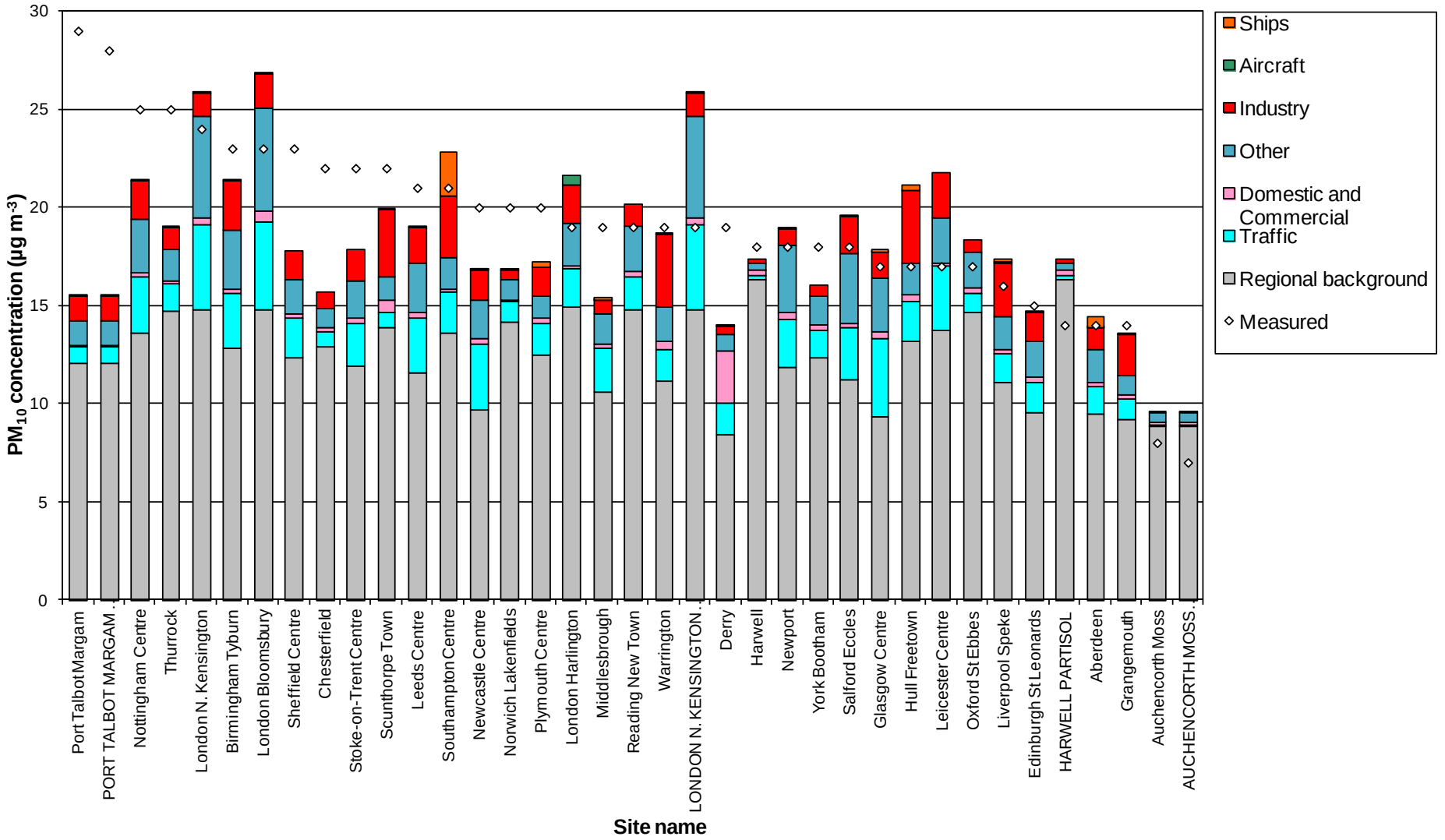


Figure 4: Source apportionment plot for $PM_{2.5}$

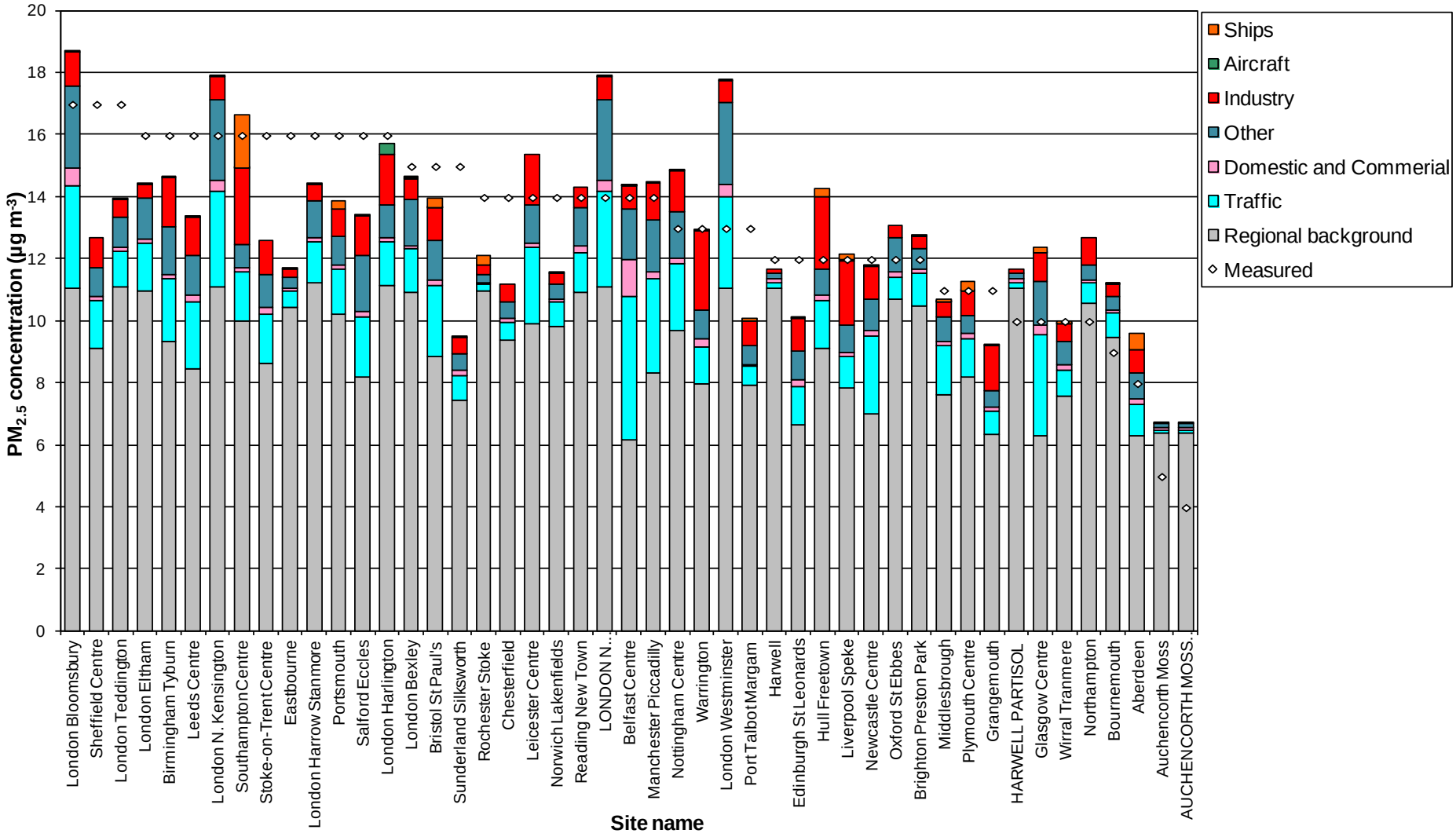


Figure 5: Source apportionment plot for benzene

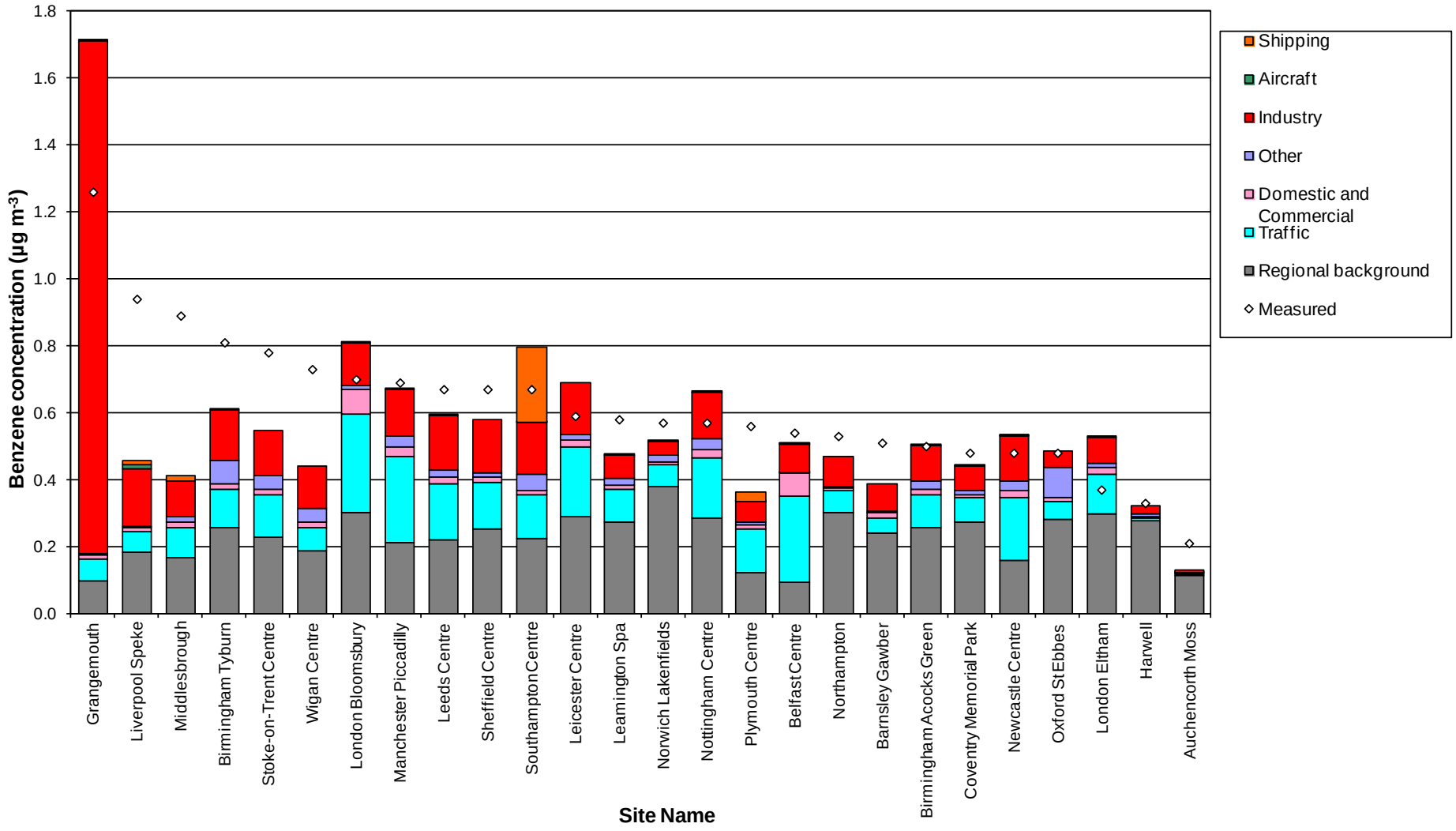


Figure 6: Source apportionment plot for B[a]P

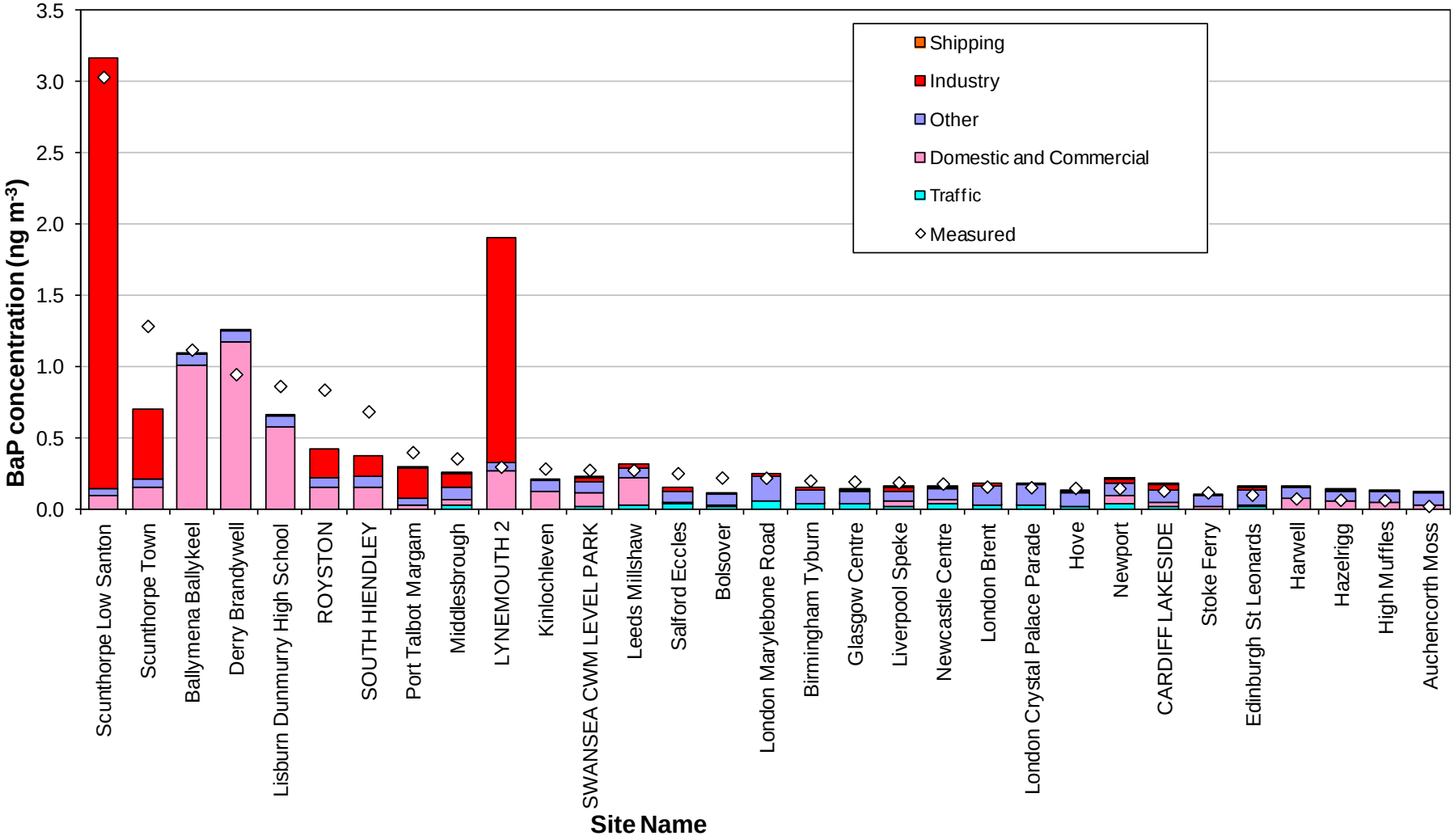


Figure 7: Source apportionment plot for arsenic

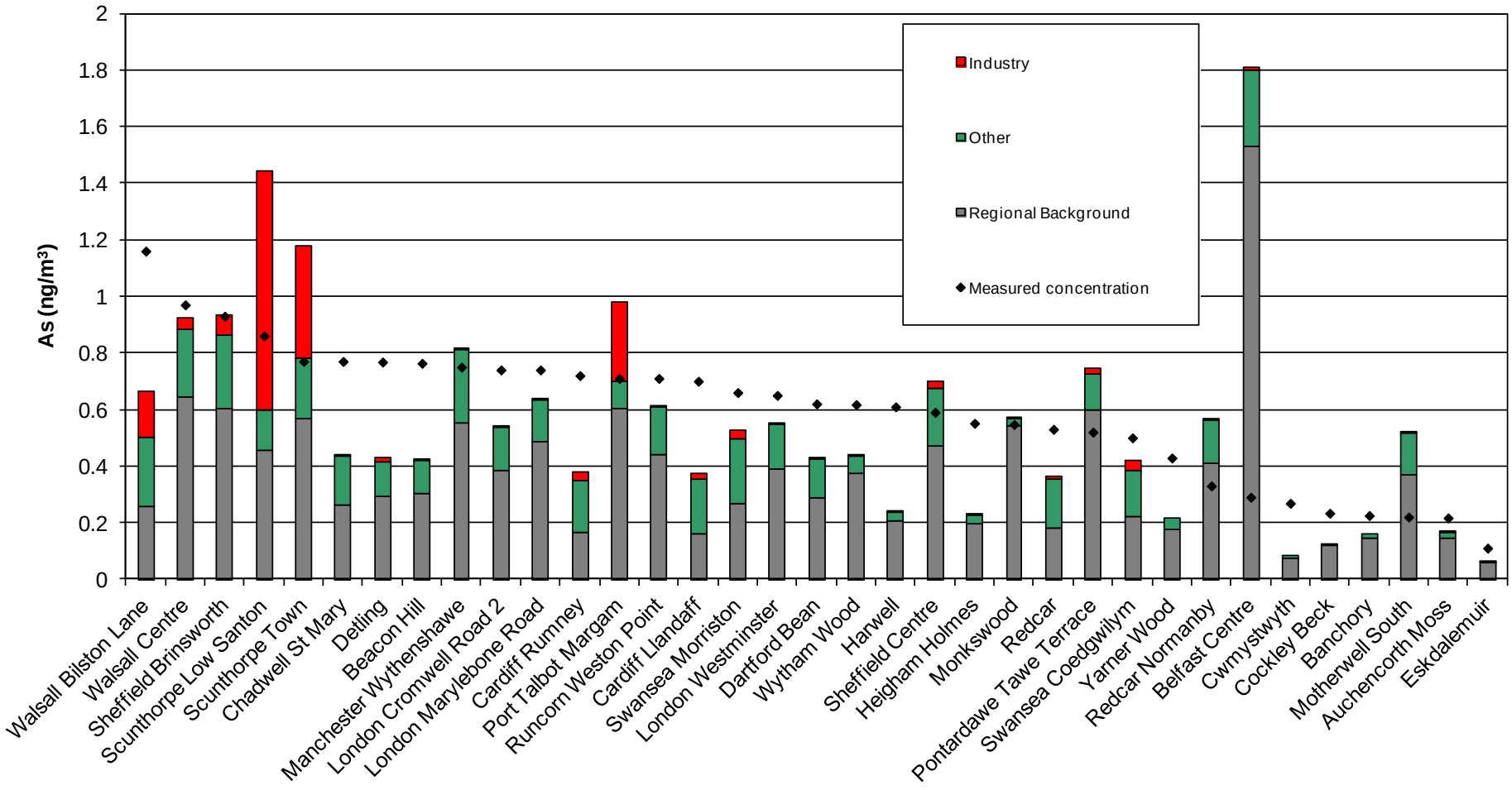


Figure 8: Source apportionment plot for cadmium

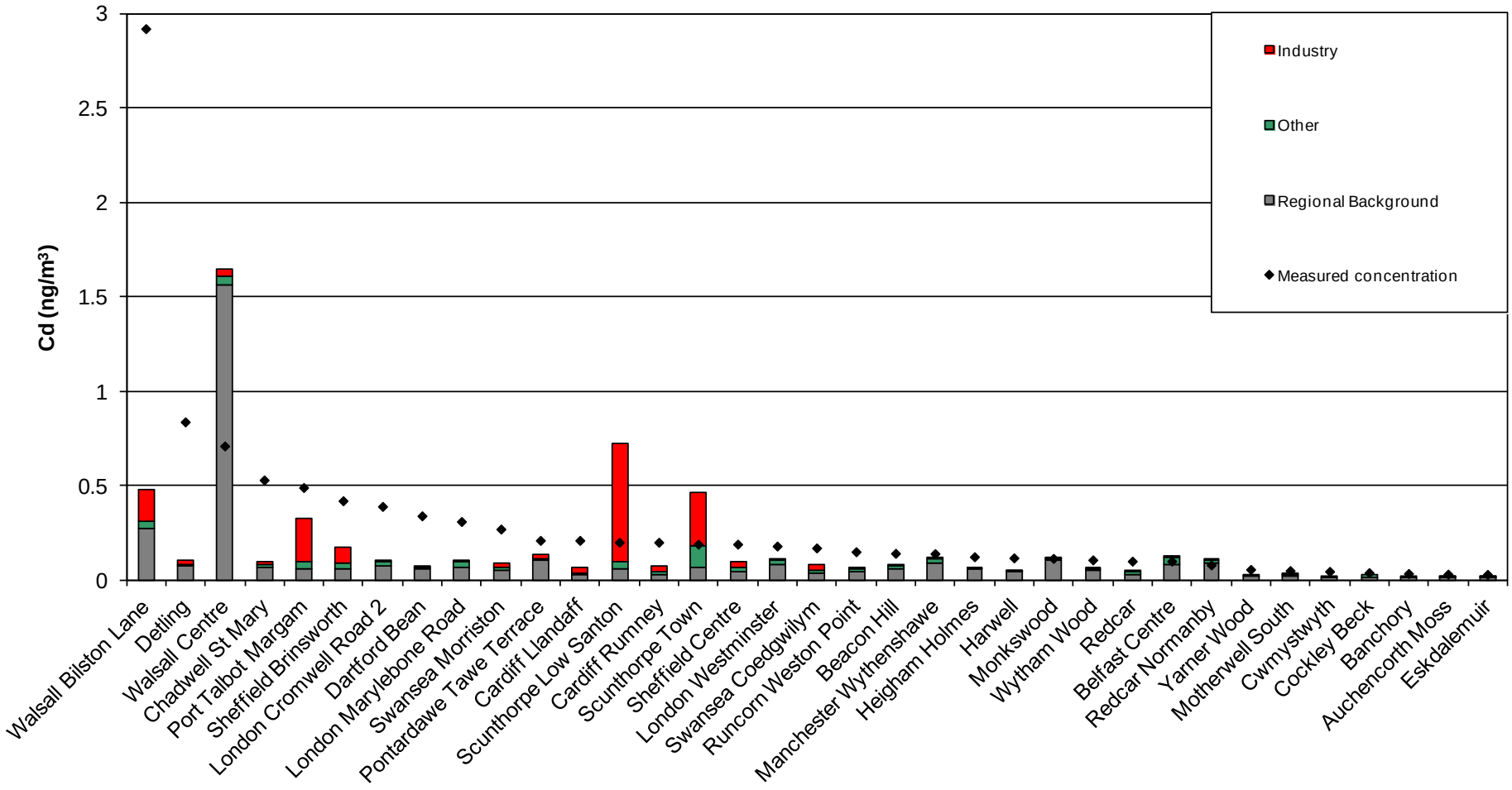


Figure 9: Source apportionment plot for nickel

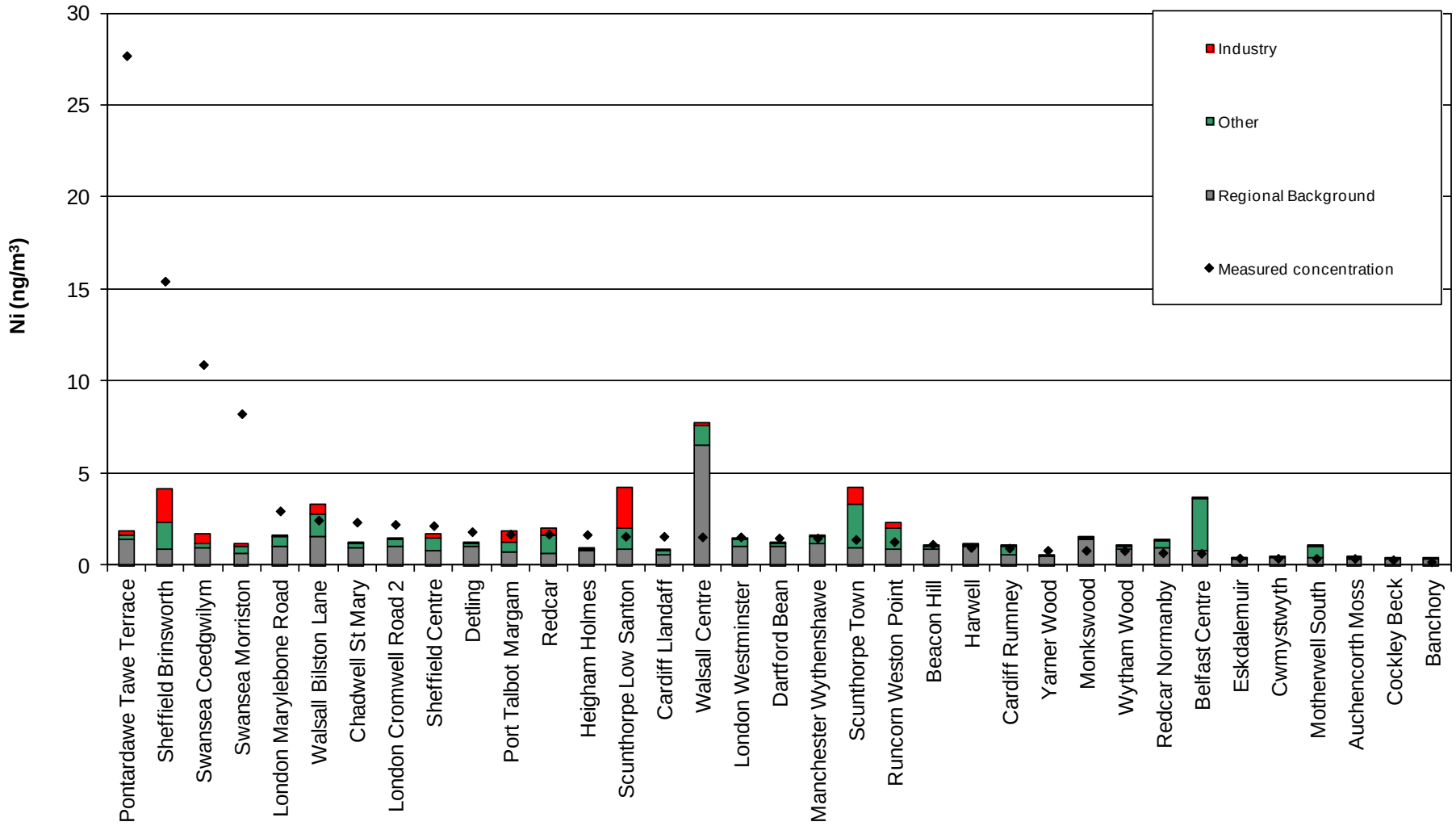
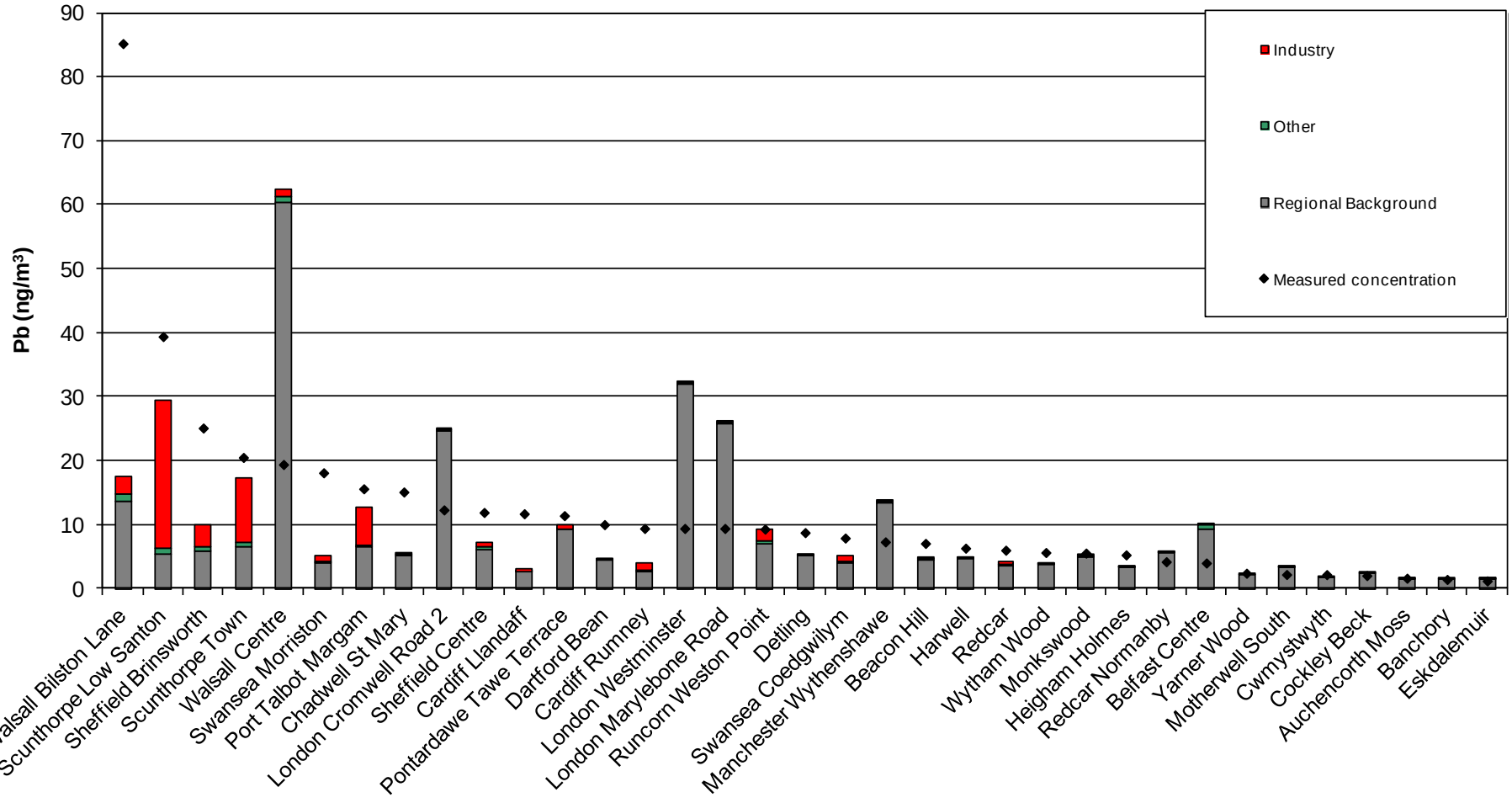


Figure 10: Source apportionment plot for lead



Appendix 1 - Station types within the UK compliance monitoring network after review

Table A1: Station types within the UK compliance monitoring network after review. Stations shown were all operating at some point in 2012. Changes are highlighted in yellow and in bold type.

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Aberdeen	GB0729A	UB	UB				B	B	B		B
Aberdeen Union Street Roadside	GB0923A	UT	UT					T			
Armagh Roadside	GB0996A	UT	UT				T	T			
Aston Hill	GB0031R	RB	RB					B			B
Auchencorth Moss	GB0048R	RB	RB	B	B	B	B		B		B
Ballymena Ballykeel	GB0934A	UB	UB		B					B	
Banchory	GB0091R	RB	RB	B							
Barnsley 12	GB0600A	UB closed 17/07/2012	UB							B	
Barnsley Gawber	GB0681A	UB	UB			B		B		B	B
Bath Roadside	GB0647A	UT	UT			T		T			
Beacon Hill	GB0855A	RB	RB	B							
Belfast Centre	GB0567A	UB	UB	B		B	B	B	B	B	B
Billingham	GB0421A	UI	UI					I			
Birmingham Acocks Green	GB1013A	UB	UB					B	B	B	B
Birmingham Tyburn	GB0851A	UB	UB		B		B	B	B	B	B
Birmingham Tyburn Roadside	GB0960A	UT	UT			T	T	T	T		T
Blackburn Darwen Roadside	GB0961A	UT	UT					T			

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Blackpool Marton	GB0882A	UB	UB					B	B		B
Bolsover	**GB0700A**	**UI**	**UB**		**B**						
Bottesford	GB0032R	RB	RB								B
Bournemouth	GB0741A	UB	UB					B	B		B
Brighton Preston Park	GB0860A	UB	UB					B	B		B
Bristol St Paul's	GB0884A	UB	UB				B	B	B	B	B
Bush Estate	GB0033R	RB	RB					B			B
Cambridge Roadside	GB0726A	UT	UT			T		T			
Camden Kerbside	GB0636A	UT	UT			T	T	T	T		
Canterbury	GB0737A	UB	UB					B			B
Cardiff Centre	GB0580A	UB	UB				B	B	B	B	B
Cardiff Lakeside	GB0869A	UB non-compliant station	n/a		B						
Cardiff Llandaff	GB0369A	UT	UT	T							
Cardiff Rumney	GB0984A	UB	UB	B							
Carlisle Roadside	GB0925A	UT	UT			T	T	T	T		
Chadwell St Mary	GB0985A	UB	UB	B							
Charlton Mackrell	GB0957A	RB	RB					B			B
Chatham Roadside	GB1007A	UT	UT			T	T	T	T		
Chepstow A48	GB0921A	UT	UT				T	T	T		
Chesterfield	GB0929A	UB	UB				B	B	B		
Chesterfield Roadside	GB0928A	UT	UT			T	T	T	T		
Cockley Beck	GB0853A	RB	RB	B							
Coventry Memorial Park	GB0739A	UB	UB			B		B	B		B
Cwmbran	GB0744A	UB	UB					B			B
Cwmystwyth	GB0854A	RB	RB	B							

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Dartford Bean	GB0986A	UB	UB	B							
Derry	GB0673A	UB	UB				B	B	B	B	B
Derry Brandywell	GB0944A	UB	UB		B						
Detling	GB0886A	RB	RB	B							
Dumbarton Roadside	GB1008A	UT	UT					T			
Dumfries	GB0740A	UT	UT					T			
Eastbourne	GB1005A	UB	UB				B	B	B		
Edinburgh St Leonards	GB0839A	UB	UB		B		B	B	B	B	B
Eskdalemuir	GB0002R	RB	RB	B				B			B
Exeter Roadside	GB0640A	UT	UT					T			T
Fort William	GB0885A	SB	SB					B			B
Glasgow Centre	GB0641A	UB closed 18/08/2012	UB		B		B	B	B	B	B
Glasgow Kerbside	GB0657A	UT	UT			T	T	T	T		
Glazebury	GB0034R	RB	RB					B			B
Grangemouth	GB0735A	UI	UI			I	I	I	I	I	
Grangemouth Moray	**GB0997A**	**UB**	**UI**					**I**			
Great Dun Fell	GB0035R	RB	RB								B
Haringey Roadside	GB0637A	UT	UT			T	T	T	T		
Harwell	GB0036R	RB	RB	B	B	B	B	B	B	B	B
Hazelrigg	GB0702A	RB	RB		B						
Heigham Holmes	GB0017R	RB	RB	B							
High Muffles	GB0014R	RB	RB		B			B			B
Honiton	GB1017A	UB	UB					B			
Horley	**GB0916A**	**SB**	**SI**					**I**			
Hove	GB0850A	UB	UB		B						

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Hull Freetown	GB0776A	UB	UB				B	B	B	B	B
Inverness	GB0742A	UT	UT				T	T	T		
Kinlochleven	GB0705A	UB	UB		B						
Ladybower	GB0037R	RB	RB					B		B	B
Leamington Spa	GB0643A	UB	UB			B	B	B	B	B	B
Leamington Spa Rugby Road	GB1018A	UT	UT				T	T	T		
Leeds Centre	GB0584A	UB	UB			B	B	B	B	B	B
Leeds Headingley Kerbside	GB0926A	UT	UT				T	T	T		
Leeds Millshaw	GB0867A	UB	UB		B						
Leicester Centre	GB0597A	UB non-compliant station	UB			B	B	B	B	B	B
Leominster	GB0861A	SB	SB					B		B	B
Lerwick	GB0881A	RB	RB								B
Lincoln Canwick Rd.	GB1014A	UT	UT					T			
Lisburn Dunmurry High School	GB0706A	SB	SB		B						
Liverpool Queen's Drive Roadside	GB0922A	UT	UT					T			
Liverpool Speke	**GB0777A**	**UB**	**UI**		**B**	**I**	**I**	**I**	**I**	**I**	**B**
London Bexley	GB0608A	SB	SB					B	B	B	
London Bloomsbury	GB0566A	UB	UB			B	B	B	B	B	B
London Brent	GB0849A	UB	UB		B						
London Cromwell Road 2	GB0695A	UT non-compliant station closed 03/10/2012	UT	T				T		T	
London Crystal Palace	GB0847A	UT	UT		T						

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Parade											
London Eltham	GB0586A	SB	SB			B		B	B		B
London Haringey	GB0638A	UB closed 09/11/2012	UB					B			B
London Haringey Priory Park South	GB_HG4	UB started 26/10/2012	UB					B			B
London Harlington	GB0837A	UI	UI				I	I	I		B
London Harrow Stanmore	GB0959A	UB	UB						B		
London Hillingdon	GB0642A	UB	UB					B			B
London Marylebone Road	GB0682A	UT	UT	T	T	T	T	T	T	T	T
London N. Kensington	GB0620A	UB	UB				B	B	B	B	B
London Teddington	GB0644A	UB	UB					B	B		B
London Westminster	GB0743A	UB	UB	B				B	B	B	B
Lough Navar	GB0006R	RB	RB				B				B
Lullington Heath	GB0038R	RB	RB					B		B	B
Lynemouth 2	GB1010A	SI	SI		I						
Manchester Piccadilly	GB0613A	UB	UB			B		B	B	B	B
Manchester South	**GB0649A**	**SB**	**SI**					**I**			**B**
Manchester Wythenshawe	GB0370A	UT	UT	T							
Market Harborough	GB0838A	RB	RB					B			B
Middlesbrough	**GB0583A**	**UB**	**UI**		**I**	**I**	**B**	**B**	**B**	**B**	**B**
Mold	GB0999A	SB	SB					B			B
Monkswood	GB0856A	RB	RB	B							
Motherwell South	GB1003A	UB	UB	B							
Narberth	GB0043R	RB	RB				B	B		B	B
Newcastle Centre	GB0568A	UB	UB		B	B	B	B	B	B	B

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
Newcastle Cradlewell Roadside	GB0927A	UT	UT					T			
Newport	GB0962A	UB	UB		B		B	B	B		
Northampton	GB0738A	UB closed 09/07/2012	UB					B	B	B	B
Northampton Kingsthorpe	GB1019A	UB started 05/07/2012	UB					B	B	B	B
Norwich Lakenfields	GB0995A	UB	UB			B	B	B	B	B	B
Nottingham Centre	GB0646A	UB	UB			B	B	B	B	B	B
Oxford Centre Roadside	GB0633A	UT	UT			T		T			
Oxford St Ebbes	GB0920A	UB	UB			B	B	B	B		
Peebles	GB0998A	UB	UB					B			B
Plymouth Centre	GB0687A	UB	UB				B	B	B		B
Pontardawe Brecon Road	GB1015A	SI	SI	I							
Pontardawe Tawe Terrace	GB1016A	UI	UI	I							
Port Talbot Margam	GB0906A	UI	UI	I	I		I	B	I	I	B
Portsmouth	GB0733A	UB	UB				B	B	B		B
Preston	GB0731A	UB	UB					B	B		B
Reading New Town	GB0840A	UB	UB				B	B	B		B
Redcar Dormanstown	GB1021A	SB started 25/01/2012	SB	B							
Redcar Normanby	GB0980A	UB	UB	B							
Rochester Stoke	GB0617A	RB	RB				B	B	B	B	B
Royston	GB0940A	UI	UI		I						
Runcorn Weston Point	GB0877A	UI	UI	I							
Salford Eccles	GB0660A	UI	UI (Note that SO_2 closed		B		B	B	B	I	B

Station name	EOI code	Classification for 2011 reporting	Classification for 2012 reporting	Metals	B[a]P	Benzene	PM_{10}	NO_x as NO_2 and NO_2	$PM_{2.5}$	SO_2	O_3
			31/12/2012, will be UB for 2013								
Sandy Roadside	GB0954A	UT	UT				T	T	T		
Scunthorpe Low Santon	GB1004A	UI	UI	I	I						
Scunthorpe Town	GB0841A	UI	UI	I	I		I	I		I	
Sheffield Brinsworth	GB0792A	UI non-compliant station	UI	I							
Sheffield Centre	GB0615A	UB	UB	B		B	B	B	B	B	B
Sheffield Tinsley	GB0538A	UB	UB					B			
Sibton	GB0039R	RB	RB								B
South Hiendley	GB0942A	UI	UI		I						
Southampton Centre	GB0598A	UB	UB			B	B	B	B	B	B
Southend-on-Sea	GB0728A	UB	UB					B	B		B
Southwark A2 Old Kent Road	GB1012A	UT	UT				T	T			
St Osyth	GB0754A	RB	RB					B			B
Stanford-le-Hope Roadside	GB0924A	UT	UT				T	T	T	T	
Stockton-on-Tees Eaglescliffe	GB0956A	UT	UT			T	T	T	T		
Stoke Ferry	GB0004R	RB	RB		B						
Stoke-on-Trent Centre	GB0658A	UB	UB			B	B	B	B		B
Storrington Roadside	GB1006A	UT	UT				T	T	T		
Sunderland Silksworth	GB0863A	UB	UB					B	B	B	B
Strath Vaich	GB0015R	RB	RB								B
Swansea Coedgwilym	GB0981A	UB	UB	B							
Swansea Cwm Level Park	GB0943A	UB	UB		B						
Swansea Morriston	GB0979A	UT	UT	T							

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Swansea Roadside	GB0896A	UT	UT				T	T	T		
Thurrock	GB0645A	UB	UB				B	B		B	B
Tower Hamlets Roadside	GB0624A	UT	UT					T			
Walsall Bilston Lane	**GB0983A**	**UB**	**UI**	**I**							
Walsall Centre	**GB0382A**	**UI**	**UB**	**B**							
Walsall Woodlands	GB1020A	UB	UB					B			B
Warrington	**GB0958A**	**UB**	**UI**				**I**	**I**	**I**		
Weybourne	GB0745A	RB	RB								B
Wicken Fen	GB0045R	RB	RB					B		B	B
Wigan Centre	GB0864A	UB	UB					B	B		B
Wirral Tranmere	GB0730A	UB	UB					B	B		B
Wrexham	GB0755A	UT	UT				T	T	T	T	
Wytham Wood	GB0858A	RB	RB	B							
Yarner Wood	GB0013R	RB	RB	B				B			B
York Bootham	GB0918A	UB	UB				B		B		
York Fishergate	GB0919A	UT	UT			T	T	T	T		

U = urban, S = suburban, R = Rural

B = background, I = industrial, T = traffic

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