

### A57 Link Roads TR010034

9.72 Addendum to the Statement of Common Ground with High Peak Borough Council

Rule 8(1)(k)

Planning Act 2008

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## The Infrastructure Planning (Examination Procedure) Rules 2010

# A57 Link Roads Development Consent Order 202[x]

## 9.72 Addendum to the Statement of Common Ground with High Peak Borough Council

Rule Number:	Rule 8(1)(k)
Planning Inspectorate Scheme Reference	TR010034
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#### 1. Purpose of the document

1.1.1. This document provides an update on the ongoing dialogue with High Peak Borough Council in relation to Air Quality matters. The document has been produced in response to the Issue Specific Hearing 3 held on the 5<sup>th</sup> of April 2022 in lieu of a full update to the Statement of Common Ground with High Peak Borough Council (REP2-018).



#### 1.2. Addendum to the Statement of Common Ground with High Peak Borough Council

HPBC Item	National Highways Position	HPBC Position	Status
Construction dust monitoring			
Item 8.37  HPBC [REP4-011] requested further clarification on whether construction dust monitoring will be carried out at high-risk sites.	National Highways is committed to updating the EMP (First iteration) at the detailed design stage. The EMP (Second iteration) submitted at this stage will include further detail on the construction monitoring. The local authorities will be consulted on the EMP (Second iteration) as required through requirement 4 of DCO with the parameters used to identify whether monitoring would be required agreed with both the local authority's and appointed Principal Contractor.  This approach including timescales for consultation has been discussed and agreed with High Peak Borough Council (HPBC) (virtual meeting held 4th March 2022).	Agreed	Closed
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HPBC Item	National Highways Position	HPBC Position	Status
Item 8.38  HPBC [REP4-011] asked for the A57 Brookfield qualifying features used in the NO2 compliance assessment to be labelled on ES Figure 5.4 [APP-080].	Given the number of qualifying features and public access receptors included in the compliance assessment it was not possible to practically label the qualifying features in ES Figure 5.4 (APP-080) however, an extract of ES Figure 5.4 zoomed in on the A57 Brookfield area with receptor ID labels for qualifying features and public access receptors adjacent to the A57 Brookfield is provided below this table.	Agreed  Deadline 8 update (HPBC)  It is noted that this response was supplied at deadline 7 by NH.  Clarification of receptors did highlight that there were some relevant receptors in the Brookfield area that had not been included in general AQ assessment but had been included in the compliance assessment (see final row)	Closed
Adjustment of Background Cond	entrations Data used in Air Quality Asses	<u>sment</u>	
Item 8.39  HPBC raised concerns about the lack of adjustment to the background concentrations used in the air quality assessment.  HPBC [REP4-011] suggest they are concerned about over representation of beneficial effects.	The HPBC query relates to the verification and adjustment of the Department for Environment, Food and Rural Affairs (Defra) mapped background concentrations. National Highways provided a response to question 8.39 in REP3-018. As stated in REP3-018, where the Defra background maps underpredict background monitoring data this could lead to a need to apply a higher adjustment factor in the air quality model verification. The higher the adjustment	Agreed	Closed



HPBC Item	National Highways Position	HPBC Position	Status
	factor applied, the more conservative the results of the assessment given that the adjustment is applied to both the modelled total concentration with and without the Scheme, which has the effect of increasing the change in concentration. Where concentrations are expected to decrease with the Scheme this could lead to some over representation of the benefits in the results, however, given the balance of benefits and disbenefits this is not considered to impact the overall conclusions on significance of effect, which is stated in the ES as not having a significant adverse effect on air quality due to the Scheme. National Highway's response to question 8.43 in REP3-018 provides an explanation of the DMRB LA 105 terminology regarding significance as applied to beneficial effects.		
	The approach to the background concentrations used in the air quality assessment has been further discussed with HPBC (virtual meeting held 4 March 2022). Comparisons of Defra mapped background concentrations and monitoring data for background sites is		



HPBC Item	National Highways Position	HPBC Position	Status
	presented in ES Appendix 5.3 (APP-157). This indicates the absolute difference in between mapped and monitored concentrations is small, the majority of comparisons of mapped concentrations are within 10% of monitored concentrations and there was also no systematic bias in the comparison. On this basis HPBC agreed that the approach applied in the air quality assessment as presented in the ES was appropriate (virtual meeting held 4 <sup>th</sup> March 2022).		
Application of Road Gradient Effe	ects within the Air Quality Assessment		
Item 7.2  HPBC [REP4-011] highlighted that DEFRA guidance (DEFRA LAQM TAG16 paragraph 7.449) suggests identification of all roads with a gradient of more than 2.5% for the modelling of gradient effects which HPBC suggest that all roads above 2.5% gradient	Road gradients across the study area vary widely with a large number of locations with gradients of more than 2.5%. Gradient undulations along individual stretches of road mean that to account for smaller gradients (between 2.5% and 6%) consistently across the model, multiple traffic model links would need to be split into gradient specific sections. Given the size of the study area and nature of the model, there was a	HPBC concede that given the size of the project the application of gradients across the study area, although desirable for a more accurate model, would be onerous. Gradients were applied at three locations, where the gradient appeared to be obviously greater than 6% (one location in HPBC) to improve the model performance. Given AQMA's	Closed



HPBC Item	National Highways Position	HPBC Position	Status
should be considered in the air quality assessment	need to be proportionate in the approach to model set up. Therefore, when the gradient effect was introduced whilst improving the model as part of the model verification process there was a focus on A-roads within air quality management areas (AQMAs), locations where model verification was below acceptable performance, and locations with more considerable gradients (6% or greater). Although Defra Local Air Quality Management Technical Guidance (LAQM.TG16) provides relevant guidance on air quality modelling methodology, it's primary focus is on assisting local authorities with review and assessment of air quality for local air quality management and is therefore more applicable to much smaller model study areas focused on specific locations with known poor air quality where a more detailed approach to the inclusion of gradient effects may be appropriate. National Highway's DMRB LA 105 is designed for larger scale modelling exercises as required for strategic highways projects and does not require	were not really included in the assessment it is not clear how this factored into this decision.  The sensitivity tests were conducted to determine if by not applying a gradient to the modelled results, which was generally the case (bar 3 locations), this affected predicted model outcomes. Sensitivity tests were thus conducted at 2 receptors in Tintwistle that had previous been predicted to have the highest modelled NO2 levels but had previously been modelled with no gradient (not 6%), to see if the application of the gradient caused a significant increase in predicted emissions.  The presented results indicated that application of a 2.5% & 6% gradient increased predicted emissions by 3.1 & 6.5% respectively.  Consequently HPBC agrees that further consideration / alteration of this model input, within the stated	



HPBC Item	National Highways Position	HPBC Position	Status
	the inclusion of gradient effects in model set up. The selection of a criteria of 6% was used as this is the maximum gradient for which the Defra Emission Factor Toolkit (EFT v10.1) will calculate a gradient effect on vehicle emissions.  As stated above, road gradients across the study area vary widely with a large number of locations with gradients of more than 2.5%. It is not considered to be practical to identify all individual sections of road with a gradient over 2.5%. For those link sections modelled with gradient effects the impact on emissions have been accounted for in the calculation. Gradient effects, where relevant, have been included in the model, for those locations which are at risk of exceeding Air Quality Strategy objectives and therefore the inclusion of wider gradient effects across the study area is considered unlikely to impact the overall conclusions or Scheme assessment of significant of effects.  The inclusion of gradient effects in the modelling presented in the ES has been	sought regarding how a gradient	



HPBC Item	National Highways Position	HPBC Position	Status
	undertaken based on the following methodology:	take into account the 6% gradient at these locations	
	<ul> <li>For each link and directional flow (uphill/downhill) in each traffic model periods (IP, AM, PM and OP) the DEFRA Emission Factor Toolkit (EFT) v10.1 was used to calculate the link emission rate both with and without the applied gradient effect.</li> <li>The EFTv10.1 emission rate was calculated based on the hourly period modelled traffic data (AADT, %HDV and average speed) and applied percentage gradient.</li> <li>The ratio of the EFTv10.1 emission rates with and without the gradient effect was calculated and applied to the equivalent link emission rate (without gradient effect) calculated using the DMRB LA105 speed band emission factors.</li> <li>The uplifted DMRB LA105 speed band emission rates where then used to build the hourly link emission profiles used within the air quality dispersion modelling.</li> <li>The approach to modelling gradient has been further discussed with HPBC (virtual</li> </ul>	The explanation presented by NH in the meetings (reproduced here) is deemed acceptable.  As noted previously, HPBC concede that given the size of the project, the application of gradients across the study area, although desirable for a more accurate model, would be onerous, particularly given that DMRB speed band emission factors were used, which do not readily lend themselves to the application of gradient effects.  While we do accept the approach taken in light of further explanation of the methodology adopted, it is considered that this approach and methodology could have been more obvious in the submitted ES.	



HPBC Item	National Highways Position	HPBC Position	Status
	meetings held 4 <sup>th</sup> March 2022, 18 <sup>th</sup> March 2022 and 8 <sup>th</sup> April 2022). Atkins on behalf of National Highway's subsequently carried out a model sensitivity test to consider the impact of applying a gradient of less than 6% further. Following discussion of the results of the sensitivity test (virtual meeting held 18 <sup>th</sup> March 2022) and further discussion of how the gradient was reflected in the air quality dispersion modelling (virtual meeting held 8 <sup>th</sup> April 2022) HPBC agreed that the approach applied in the air quality assessment as presented in the ES was appropriate.		
Verification Zoning used in Air Q	uality Assessment		
Item 7.2 HPBC [REP4-011] requested clarification on the localised model zones used in the air quality assessment.	The approach to the model verification zoning used in the air quality assessment has been further discussed and agreed with HPBC (virtual meeting held 4 <sup>th</sup> March 2022).	Agreed	Closed
The use of multiple monitoring su	urveys in model verification		
<u>Item 7.2</u>	Air quality monitoring surveys are not always able to be undertaken in the	The applicant undertook sensitivity tests to look at model	Closed



HPBC Item	National Highways Position	HPBC Position	Status
HPBC [REP4-011] requested further information on the methodology used for monitoring data annualization and a comparison of results from the different surveys within the study area.	period directly comparable to the base traffic model year. Therefore, annualisation is used to maximise the data available for model verification. This approach has been used on a number of other National Highways schemes. Defra LAQM TG16 Box 7.9 (final paragraph) provides a method for estimating an annual mean concentration in a year previous to a short term monitoring survey which has been adopted in the assessment to annualise survey data to the traffic model base year.  Analysis of the data from each survey showed that although there is some variation in monitored results between the HPBC and the National Highways Scheme specific survey (TPU survey), these are largely within a normal range of variance as shown by the variance between the triplicate tubes from National Highways TPU survey. In addition, 2018 data for National Highways Scheme specific survey MMLR sites in same location as HPBC sites also show little variation.	validation using the different survey data in isolation. Generally speaking the ES applied correction factors compared reasonably well (in terms of correction factors & RSME) for the generated A57 & A628 zones using the other data sets (including HP only) and application of these different correction factors would not significantly affect interpretation.  The Dinting zone is less clear, as the data set (used) is much smaller (4 sites) and therefore, only one alternative HP (and MMLR) data set can be looked at (in isolation). If the single tubes are used (not appropriate) the correction factor would be much higher. Inclusion of the HP tube (swapping out of a corresponding TPU tube) increases the correction factor slightly, but the results / interpretation remain consistent with the ES. That is that one exceedance at R319	



HPBC Item	National Highways Position	HPBC Position	Status
	National Highways TPU annualised measured 2018 annual mean data and 2019 measured data backcast to 2018 are also within the normal range of variance between co-located tubes. Notably the National Highways TPU 2019 measured data backcast to 2018 concentrations were higher than National Highways TPU 2018 measured concentrations at tubes located at Dinting Vale Junction.  The approach to the annualisation of monitoring surveys used in the air quality assessment has been discussed and agreed with HPBC (virtual meeting held 4th March 2022). However, HPBC had remaining concerns regarding the use of the different surveys in verification. Atkins on behalf of National Highway's subsequently carried out verification sensitivity tests to consider the impact of undertaking the verification and adjustment of HPBC zones using data from each of the individual surveys to calculate adjustment factors for each survey dataset. Following discussion of the results of the sensitivity test (virtual	exists but is not due (only compounded) by the scheme. It is accepted therefore, that based on the zoning adopted, the correction factor used in the ES is the most applicable correction factor available. However, it should be noted, that should there be a requirement to undertake a further AQ assessment of the dinting vale AQMA, it would be expected that this zone would be expanded / adjusted, to include appropriate available data sets within the AQMA to improve the confidence in this adjustment factor.	



HPBC Item	National Highways Position	HPBC Position	Status
	meeting held 18 <sup>th</sup> March 2022), HPBC agreed that the approach applied in the air quality assessment as presented in the ES was appropriate.		
	It was confirmed (virtual meeting held 8 <sup>th</sup> April 2022) that no further sensitivity testing of verification was needed.		
Speed Band Emission Rates use	d in Air Quality Assessment		
	Speed bands applied within the air quality model within HPBC have been discussed with HPBC (virtual meeting held 18th March 2022).  Additional speed band data was provided via email to HPBC on 1st April 2022.  Further discussion on this matter will be undertaken between HPBC, Derbyshire County Council (DCC) and the Applicant's representative for transport networks and traffic.	Agreed discussions ongoing There is currently a lack of understanding from HPBC regarding the application of the speed bands to the different roads (light congestion, heavy congestion, free flow) and the effects this may have on modelled emissions. Results shared by HE indicate that generally, traffic is considered to be lightly congested and that that only minimal changes from DM allocated speed band are expected as a result of the scheme (D/S). Deadline 8 update (HPBC)	Open Discussion ongoing with the Applicant's representative for transport networks and traffic. The outcome of further discussion will be provided in a topic specific SoCG for transport networks and traffic.



HPBC Item	National Highways Position	HPBC Position	Status
		Meeting with Traffic Consultants yet to take place	
Routing of traffic in Glossop from	the A57 onto Shaw Lane and Dinting Ro	oad.	
Item 8.41 HPBC [REP4-011] has questioned the rationale for showing vehicles	The traffic modelling used for the assessment of the Scheme provides the best indication of how future traffic	Agreed discussions ongoing As noted HPBC still do not fully	Open Discussion ongoing with the Applicant's

HPBC [REP4-011] has questioned the rationale for showing vehicles diverting to Shaw Lane and Dinting Road from A57 Glossop High Street and whether this undermines the assessment of receptors on the A57. HPBC have also questioned whether a change to the expected routing could potentially affect flows through the Glossop Air Quality Management Area.

The traffic modelling used for the assessment of the Scheme provides the best indication of how future traffic demand will use the road network in response to changes in the operation of the modelled road network due to the Scheme compared to without it, whilst accounting for forecast traffic growth and other committed future modifications to the road network.

For the routing of traffic across the modelled road network to substantially alter from that forecast by the traffic modelling, physical measures or schemes would need to be introduced onto the road network, such as changes in speed limits, traffic calming measures, additional traffic signals, etc., that would cause drivers to choose alternative competing routes. Any such proposed modifications to the road network would be subject to an impact assessment prior

Agreed discussions ongoing
As noted HPBC still do not fully appreciate the criteria /logic in the Transport model that causes traffic to divert from the more direct A57 route through Glossop and use Dinting Road / Shaw lane. One would expect perhaps the traffic to divert from routes (speed bands) that are classed as "heavily congested" to routes perceived to be less congested "e.g lightly congested or free flowing" but this is not obvious in the initial speed band data provided by HE.

It is not yet agreed that for the forecast model to change significantly this would require these roads to become less desirable, as it is not yet clear to

Discussion ongoing with the Applicant's representative for transport networks and traffic.

The outcome of further discussion will be provided in a topic specific SoCG for transport networks and traffic.



HPBC Item	National Highways Position	HPBC Position	Status
	to their implementation that would need to consider the diversionary impact of the scheme on traffic and the consequential environmental effects. No such schemes for Dinting Road and Shaw Lane are proposed.  Consequently, the forecast traffic flows across the modelled road network are considered to represent a reasonable and appropriate worst-case scenario of the traffic impacts of the Scheme through Glossop.  If traffic was somehow prevented or discouraged from using Dinting Road and Shaw Lane, then additional traffic modelling would need to be undertaken to understand the likely traffic redistribution effects across the road network, which would not necessarily mean that traffic flows on any one alternative route, such as the A57 through Glossop (including Glossop AQMA), would increase. This is because there are likely to be wider, knock-on, traffic redistribution effects.	us that they the likely preferred route, for the reasons raised previously on numerous occasions. The crucial question is the forecast model representing likely traffic movements (I would also note traffic numbers here). To that end and as noted above, it would be desirable to not include a sensitivity tests on traffic flow should Shaw lane / Dinting Lane not be used to the extent predicted.  Deadline 8 update (HPBC)  Meeting with Traffic Consultants yet to take place	



HPBC Item	National Highways Position	HPBC Position	Status
	Consequently, National Highways do not consider it necessary or appropriate to undertake a sensitivity test.		
	This issue has been further discussed with HPBC (virtual meetings held 4 <sup>th</sup> March 2022 and 18 <sup>th</sup> March 2022). HPBC reiterated their concern that a rerouting of traffic may trigger the need for further assessment of the Glossop AQMA and requested that a sensitivity test be carried out on the traffic modelling to understand the impact of preventing traffic using the Dinting Road and Shaw Lane diversion route.  Further discussion on this matter will be undertaken between HPBC, Derbyshire County Council (DCC) and the Applicant's representative for transport networks and traffic.		
Inclusion of HPBC AQM	IAs in the air quality study area		
Item 8.40	The traffic scoping criteria for changes in traffic flow requiring a quantitative air	Deadline 8 update (HPBC)	Closed



HPBC Item	National Highways Position	HPBC Position	Status
HPBC [REP4-011] suggested that a variation of the screening threshold would be appropriate for links within the Air Quality Management Areas.	quality assessment as set out in the DMRB LA 105 are as follows:  • Road alignment will change by 5 m or more; or • Daily traffic flows (two way) will change by 1,000 annual average daily traffic (AADT) or more; or • Heavy Duty Vehicle (HDV) flows (two way) will change by 200 AADT or more; or • A change in speed band (for one way or two way traffic and in any time period (morning peak, interpeak, evening peak, off peak)).  The DMRB LA 105 provides thresholds applicable and suitable for the assessment of National Highways schemes which, as strategic interventions, impact traffic flows over a much wider area than residential and mixed used developments. This is also reflected in the difference in the nature and scale of the traffic models used for the assessment of highways schemes.  The DMRB LA 105 traffic scoping criteria provides traffic change criteria as absolute values which if exceeded	HPBC's key concern remains that impact of the scheme on the designated AQMAs, should have been included on a precautionary basis; HPBC agreed that the appropriate scoping criteria for National Highway' road schemes had been used (following DMRB LA 105) in the Air Quality assessment However, as noted, there remains concerns over the accuracy of the traffic data that used to drive the scoping criteria Notably, the changes in traffic numbers and/ or changes in speed bands.	There remains disagreement on the issue.



HPBC Item	National Highways Position	HPBC Position	Status
	require quantitative assessment, which for large projects with receptors within 50m of roads triggering the traffic scoping criteria must follow a detailed assessment approach using air dispersion modelling (as has been used in the Scheme air quality assessment). National Highways believes that the DMRB LA 105 traffic scoping criteria provides a robust and appropriate threshold for the assessment of significant effects on road links within AQMAs.  This issue has been further discussed with HPBC (virtual meetings held 4th March 2022, 18th March 2022 and 8th April 2022), however, HPBC's key concern remains that AQMAs should have been included in the Scheme air quality assessment on a precautionary basis. HPBC agreed that the appropriate scoping criteria for National Highway' road schemes had been used (following DMRB LA 105). Although HPBC appreciate that DMRB has been followed they believe the AQMAs should have been assessed regardless of whether the traffic scoping criteria were triggered.		



HPBC Item	National Highways Position	HPBC Position	Status	
The impact of construction vehicle movements at sensitive receptors in HPBC				
Item 8.35 HPBC [REP4-011 requested information on the level of construction traffic and duration for the eastern end of the link road where it connects at Woolley Bridge due to air quality receptors being within 200m.	National Highways response to item 8.35 regarding both construction vehicle movements and construction traffic management is provided in Comments on Local Impact Report submitted by Derbyshire County Council and High Peak Borough Council (REP3-018).  There are not anticipated to be any construction vehicle movements on the public highways in HPBC. When travelling off site, construction traffic is expected to travel west from the Scheme extent on public highways towards  Manchester. Most construction vehicle movements on site are expected to follow the trace of the scheme alignment with a maximum of 89 daily 2-way HDV on-site movements. Assuming the worst case, that all these vehicles travel to the far eastern edge of the trace alignment, where the link road connects with the existing A57 and the closest location to properties in HPBC, the number of daily	Agreed	Closed	



HPBC Item	National Highways Position	HPBC Position	Status
	DMRB LA 105 traffic scoping criteria requiring further assessment.		
	The approach to the assessment of construction vehicle emissions has been further discussed and agreed with HPBC (virtual meeting held 4 <sup>th</sup> March 2022).		
The impact of construction traffi	c management at sensitive receptors in H	PBC	
Item 8.36 HPBC [REP4-011] requested further information on the impact of an increase of traffic during construction would impact congestion in HPBC.	With respect to construction traffic management, construction phase 2 and 3 (both of 6-month duration) are expected to have the largest impact on traffic on the local highway network. The maximum AADT change on any road within HPBC as a result of traffic management measures across either phase is expected to be 144 AADT on A57 Woolley Lane and 20 HDV on the A628 Manchester Road. The traffic change does not therefore meet the DMRB LA 105 traffic scoping criteria requiring further assessment.	Agreed	Closed
	The temporary traffic management measures will generally be short term, with the arrangements, timing and phasing being designed to minimise traffic congestion and delay far as		



HPBC Item	National Highways Position	HPBC Position	Status
	reasonably practicable. Inevitably, however, some of the temporary traffic management arrangements are likely to cause some additional short term traffic congestion and delay within the immediate vicinity of the Scheme, but this is not anticipated to be sufficient to result in any material change in traffic flows or congestion on roads within HPBC.		
	The approach to the assessment of the impact of construction traffic management has been further discussed and agreed with HPBC (virtual meeting held 4 <sup>th</sup> March 2022).		
Human health receptors A57 Bro	<u>okfield</u>		
ISH 3 Item 5 Air Quality Question j Within the response to question j, HPBC raised a concern regarding the magnitude of change reported in the compliance risk assessment at qualifying feature receptors adjacent to the A57 Brookfield.	Following further discussion and clarification with HPBC (virtual meeting held 8 <sup>th</sup> April 2022) it has been agreed that a sensitivity test will be undertaken to identify the air quality impact at relevant qualifying feature receptors located adjacent to the A57 Brookfield under the DMRB LA 105 human health assessment methodology.	Deadline 8 update (HPBC)  Further to Item 8.38;  Identification of the receptors (figure 5.4) used in the compliance risk assessment (using LAQM "conservative" forecast") indicated that "large" change at some of the receptors along Brookfield.	Open



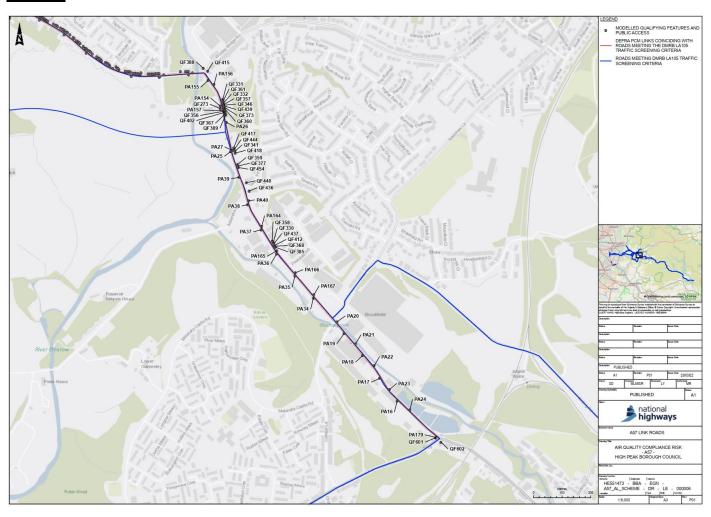
HPBC Item	National Highways Position	HPBC Position	Status
		However, it also highlighted that some of these were human health receptors that had not been included as receptors in the (less conservative) primary human health AQ assessment (DMRB LA 105). Therefore, HPBC have requested that these receptors are also assessed in accordance with the DMRB LA 105	

# **Appendices**



# Appendix A. Extract of Air Quality compliance figure

<u>Figure 5.4 (Extract) - Air Quality Compliance Risk – A57 – High Peak Borough</u> Council



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