Air Quality
Proof of Evidence
Appeal Reference: APP/N1730/A/08/2065912
Issue 8
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Steven La Pensée

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1 INTRODUCTION

1.1 Steven La Pensee – Personal Introduction

1.1.1 I have been a resident of Fleet in Wood Lane, Pondtail since 1986. I am 62, married and have two grown sons. I have recently retired after a career as a systems engineer, managing director and management consultant. I have a start up company delivering management consultancy.

1.1.2 I have undertaken to present the concerns of the residents adjacent to Pyestock relating to Air Quality as a long standing observer of the interaction between Pyestock activities and the air quality of Pondtail. While my engineering skills go some way to enable me to understand air quality issues in principle, I am in no way an expert and do not present myself as such.

1.1.3 My motivation for my involvement in SPLAT (a non-political group representing residents opposed to the proposed redevelopment of Pyestock North), is that I am deeply concerned about the absence of adequate information describing the proposed development generally and relating to Air Quality in particular. In light of the historic experience of the effect of the site on Air Quality, it is my view, for reasons given below, that the Air Quality Assessment of the proposal which has been undertaken is not sufficient to be used as the basis of a decision in favour of development.

1.2 Introduction to the Proof of Evidence

1.2.1 SPLAT is concerned that the additional air pollution caused during construction (6 years) and by site operations will have an unacceptable impact on the quality of life and the health of local residents.

1.2.2 In particular, SPLAT is unable to reconcile the results of the Air Quality Assessment with the first hand experiences of local residents, who have had the appeal site as a neighbour for more than the last 25 years.

1.2.3 Moreover, all of the Air Quality modelling which has been undertaken and provided on behalf of the Appellant, makes projections only to 2012, when the site is planned to become fully operational in 2016. It is SPLAT's view that, as a minimum, the modelling should have been based upon the fully operational site in order for its impact upon the community to be accurately assessed.

1.2.4 Further, it is SPLAT's view that there have been significant omissions in the Air Quality Assessment:-

- Queuing traffic and congestion on the M3 Motorway
- Queuing traffic on the Minley Link Road
- The model of the operational Pyestock site
- The impact of the operational site on the Pondtail conurbation

2 POLICIES THAT RELATE TO AIR QUALITY

2.1 The following Policy documents have been taken into account in the drafting of this Proof on Air Quality.

2.1 Government Policies

PPS23

2.1.1 Planning Policy Statement 23: Planning and Pollution Control", was published by the Office of the Deputy Prime Minister in 2004. Paragraph 5 of PPS23 includes a set of principles and approaches. PPS23 refines this list as follows:-

"The strategy sets out ten principles and approaches. The following are particularly relevant to the consideration of planning and pollution control:

– putting people at the centre;

– taking a long-term perspective;

– taking account of costs and benefits;

– respecting environmental limits;

– applying the precautionary principle;

– using scientific knowledge;

– following procedures which are based on transparency, access to information, effective participation by stakeholders and access to justice; and

- making the polluter pay."

2.1.2 PPS 23 goes on to say at paragraph 6 that:

"The Government is committed to using the precautionary principle, which was included in the 1992 Rio Declaration on Environment and Development. This states that, "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".

2.1.3 The above precautionary principle is peculiarly apt in the case of this appeal proposal and in the light of the experience of local residents of the effect of emissions from the site. In particular, it is a fact that Pyestock pollutes Pondtail and has done so for many years. There may, presently, be no complete scientific explanation for the extent of that historic reality. The wording of the precautionary principle suggests, however, that in light of local knowledge of pollution, coupled with the serious omissions from the Appellant's Air Quality Assessment, the precautionary principle should apply.

2.1.4 Although this will be dealt with in greater detail below, in summary the omissions referred to above include:-

- Traffic stagnation on the M3 motorway
- Traffic stagnation on the Minley Link Road

- Manoeuvreing vehicles on site, including tugs, and vehicle refrigeration units
- Absence of "stretch" of the use of the site beyond that declared (See also commentary on Statement of Common Ground section 8 this paper)
- Exclusion of two axle heavy vehicles (up to 36 Tonne plus an optional 15 Tonne trailer)

Planning Policy Statement 23: Planning and Pollution Control - Annex 1: Pollution Control, Air and Water Quality

2.1.5 Annex 1 to PPS 23 is to be read alongside PPS 23 and given equal weight. Paragraphs 1.11 to 1.13 give guidance in respect of Local Air Quality Management, setting out the obligations imposed on local authorities effectively to assess Air Quality with respect to a proposed development. They provide as follows:

"Local Air Quality Management

1.11 In addition to their pollution control responsibilities, LAs are also responsible under Part IV of the Environment Act 1995 for reviewing and assessing ambient air quality in their areas. If there is a risk that, by the relevant date, levels of particular pollutants in any part of an authority's area will be higher than the objectives prescribed by the Air Quality (England) Regulations 2000 and Amending Regulations 2002, the authority is required to designate an Air Quality Management Area (AQMA), and to draw up an action plan (integrating this within the local transport plan where transport is a primary factor) setting out the measures it intends to take in pursuit of the objectives1.

1.12 This process will have an impact on development planning and development control decisions. The planning, transport and air quality control functions of LAs should therefore work closely together in:

– carrying out the reviews and assessments of air quality, especially where new development is likely;

– considering the possible impact of new development in drawing up any air quality action plans and local air quality strategies;

– considering the results of air quality reviews and assessments in the preparation of development plans; and

– taking any development control decisions which may have a direct or indirect bearing on existing air quality or creating exposure to poor air quality.

1.13 Air quality in AQMAs will inevitably be influenced by factors beyond their and individual LA boundaries. It is therefore important that the possible impact on air quality of developments close to an AQMA is also considered. Local planning authorities (LPAs) should also note that air quality can be an important consideration, whether or not levels of air pollution in areas on which the proposed development may impact due to dispersion or cumulative load are already high enough to justify the designation of an AQMA. More details are set out in Appendix 1G. Advice has also been issued by the Department of the Environment, Food and Rural Affairs (Defra) in Part IV of the Environment Act 1995 Local Air Quality Management, Policy Guidance LAQM. PG(03) and Technical Guidance LAQM.TG(03)(seewww.defra.gov.uk/environment/aqm).”

2.1.6 It will be noted that paragraph 1.13 emphasises the importance of being watchful when an area is adjacent to an AQMA, which is of importance in this appeal because Pyestock is adjacent to the Rushmoor AQMA. In my view, given this, the appeal proposal should have been made subject to a thorough Air Quality Assessment, taking into account the years when it would be fully operational, the impact on sensitive areas that are close to both the development and the AQMA, a full consideration of all of the factors impacting upon Air Quality in result of the development (including those matters which were omitted as referred to above) and local experience of the past impacts from the site.

2.1.7 Paragraphs 5.2, 5.4 and 5.11 of Annex 1 go on to establish certain rules which should apply to the planning review of proposed developments. In summary, these are:-

Paragraph 5.2 – developments will require an Air Quality Assessment where significant change is anticipated.

Paragraph 5.4 – an Air Quality Assessment is required where proposals will lead to increased congestion and/or significantly alter traffic composition – in particular HGV parks, and developments in sensitive areas.

Paragraph 5.11 – states that modelling methods shall be pre agreed with the Local Authority and that particular data are required to be agreed – traffic data, emission data, meteorological data, and background pollution.

2.1.8 There can be no doubt that the proposed development at Pyestock would constitute a significant change, there will be increased congestion, Pyestock will be a park for HGV's, this is a sensitive area, and modelling methods were not agreed with the LA before they were done for the area affected.

2.1.9 It is anticipated that the Appellant will nonetheless argue that an Air Quality Assessment has been undertaken; SPLAT would argue, however, that it was not adequately undertaken in Pyestock or Pondtail, or for the relevant years, that the models were not pre-agreed, and that standing traffic has not been appropriately modelled as referred to above.

UK Government POSTNOTE, No. 272 November 2006 (published by the Parliamentary Office of Science and Technology concerning impact to health from air pollutants)

2.1.10 Box 3 of the above POSTNOTE contains the following quotation, under the heading "Susceptibility to Air Pollutants":

"The surface of the human lung is covered by a thin layer of fluid containing various defences to protect its cells from damage. Once levels of air pollutants overwhelm these defences, the cells become damaged triggering an inflammatory response. Inflammatory effects can spread throughout the body, although in the case of particulates, it is not clear whether this is the result of air pollutants directly entering the blood stream in the lung, local production of inflammatory factors or a combination of both. It has also been proposed that particulate pollutants can enter the nervous system through nerve endings in the nose, causing effects in the brain. Factors that affect individual susceptibility to adverse health effects include age, health status, diet and genetic background. In particular, groups such as asthmatics or those with other pre-existing diseases (such as chronic obstructive pulmonary disease) may be more susceptible to an inflammatory response at lower air pollution levels. The most severe effects occur in the most susceptible individuals, and are reflected in the daily number of deaths occurring. Children are also particularly vulnerable as the process of lung growth and development continues until adolescence, and they have incomplete metabolic systems, immature immune defences and higher breathing rates than adults."

2.1.11 The POSTNOTE also contains the following overview statement:-

"• *Recent reviews and reports have found evidence for substantial health and environmental impacts from air pollutants at lower levels than had previously been assumed.*

- *Future ambient air quality policy will aim to deliver health benefits across the population rather than concentrating on areas that breach limits*
- *Air pollution can no longer be controlled through local and national controls of emissions alone, and further international controls are required.*

- *Although existing local controls will need to be retained, a more innovative regulatory framework based on holistic integrated policy approaches may be required to deliver further improvements."*

2.1.12 I would comment as follows in light of the above.

2.1.13 The Appellant admits that the development will increase the traffic numbers by many thousands of movements a day. Their estimate is, however, believed to fall short of the likely outcome because of the lack of control over at least two classes of vehicles: the traffic model is far from sufficiently transparent for the residents and planners alike to understand the true impact of the proposal.

2.1.14 In light, moreover, of the polluting history of the site, and in the context of the above quotation, it is noteworthy that no Air Quality Assessment has been done for:-

- The site itself
- The Pondtail area
- The impact of standing traffic

Statutory Instrument 2000 No. 928 - The Air Quality (England) Regulations 2000

2.1.15 Statutory Instrument 2000 No. 928 contains a set of Air Quality targets in the following table:-

Substance	***Air quality objective levels***	***Air quality objective dates***
Benzene	16.25 micrograms per cubic metre or less, when expressed as a running annual mean	31st December 2003
1,3 -Butadiene	2.25 micrograms per cubic metre or less, when expressed as a running annual mean	31st December 2003
Carbon monoxide	11.6 milligrams per cubic metre or less, when expressed as a running 8 hour mean	31st December 2003
Lead	0.5 micrograms per cubic metre or less, when expressed as an annual mean 0.25 micrograms per cubic metre or less, when expressed as an annual mean	31st December 2004 31st December 2008
Nitrogen dioxide (Caused by NOX)	200 micrograms per cubic metre, when expressed as an hourly mean, not to be exceeded more than 18 times a year 40 micrograms per cubic metre or less, when expressed as an annual mean	31st December 2005 31st December 2005
PM_{10}	50 micrograms per cubic metre or less, when expressed as a 24 hour mean, not to be exceeded more than 35 times a year 40 micrograms per cubic metre or less, when expressed as an annual mean	31st December 2004 31st December 2004
Sulphur dioxide	125 micrograms per cubic metre or less, when expressed as a 24 hour mean, not to be exceeded more than 3 times a year 350 micrograms per cubic metre or less, when expressed as an hourly mean, not to be exceeded more than 24 times a year 266 micrograms per cubic metre or less, when expressed as a 15 minute mean, not to be exceeded more than 35 times a year	31st December 2004 31st December 2004 31st December 2005

2.1.16 Comment on this statutory instrument

The table shows that the National target for NOX is set at up to 40 micrograms per cubic metre; when expressed as an annual mean which is the form in which it is discussed in the appellant's E.S. documents. The table also sets out a number of other targets, including Sulphur Dioxide, lead, & carbon monoxide none of which have been discussed in the Air Quality modelling. Given the concentration of HGV's that are likely to frequent the site this is unacceptable.

2.2 Local Policies

Rushmoor District Council (ref. Local Air Quality Management - Detailed Assessment - Environmental Health Services - Pollution Control Team - 2007).

2.2.1 Paragraph 2.5 of the above document published by Rushmoor Council in 2007 provides as follows, relevant to this appeal:

"2.5 Discussion on the results

The 'Further Review & Assessment 2005' recommended that due to uncertainty in weather and other issues, an 8% uncertainty factor should be applied to the data before considering whether to retain or revoke the AQMA. The 8% uncertainty factor of the 40 µgm-3 objective level equates to 3.2 µgm-3. This means the objective level that Rushmoor should consider is 36.8 µgm-3 (37 µgm-3 when rounded up).

As can be seen from the contour plots in Appendix E there are five sensitive receptors that just fall on the 37 µgm-3 contour line. (It should be noted from defra's guidance that it is the buildings and not the gardens that are considered as a sensitive receptor).

Having revoked an AQMA in the past, only to find it needed to be re-instated a few years later, Rushmoor is taking a cautious approach on whether to revoke or retain the AQMA on this occasion. As a result Rushmoor sought the advice of defra's Review

& Assessment scrutineers at the University of the West of England (UWE). UWE have seen all the reports of all UK local authorities that have AQMA(s) in their respective areas so their knowledge and experience would be very useful in helping Rushmoor come to a determination on the issue of retaining or revoking the AQMA. UWE have told us that from seeing other local authorities, 37 µgm-3 should be considered as 'approaching' the objective of 40 µgm-3. In other words they consider this to be close enough to the objective for exceedences to still be possible. They went on to say, "A cautious and reasonable approach would be to retain the AQMA…"

Should the AQMA be retained the implementation of the measures in Rushmoor's Air Quality Action Plan (AQAP) will have to continue. The main measures, which would have the greatest impact on reducing NO2 levels within the AQMA, are the responsibility of the Highways Agency. In past communications with the Highways Agency relating to Rushmoor's AQMA they have told us …"that although the HA is identified as the responsible organisation for possible action in a number of fields, this AQMA does not lie high in the priority list for action by the HA. We are restricted by resources, as I am sure you will be aware, and priority has to be given to AQMAs where the levels of
pollution are calculated to exceed the EU mandatory levels…"
In determining the outcome of the AQMA, Rushmoor need to bear these comments in mind. Rushmoor can maintain dialogue with the Highways Agency in the hope that they may be able to undertake measures that will reduce the pollution levels within the AQMA. There are measures in the AQAP that have been and can be implemented but the affect on reducing the NO2 levels within AQMA will be minimal.

Due to tighter emissions legislation, improvements in vehicle and fuel technology and the reduction in the national fleet of older vehicles that produce higher emissions than newer vehicles, the level of NO2 is 'naturally' reducing. This can be seen in the pollution graph shown in Appendix B.5 where the trendline over the last six years shows, despite the unexpected increase in concentration in 2005, the NO2 levels are decreasing. It can be assumed that this trend will continue over the next few years so in time the concentration is likely to be low enough to revoke the AQMA at a future date.

2.2.2 I would comment as follows in the light of the above.

2.2.3 The M3 between J4 and J4A has a throughput of circa 110,000 Annual Average Daily Traffic (AADT). The Highways Agency already regards the Junction to be running at capacity and the Air Quality at some of the points of observation are less than 10% under the national maximum. We are being asked to accept, however, that trends in vehicle engine performance will out-perform the growth of generation of traffic where Air Quality has already been stressed. This is a risk we should not be asked to take, especially in view of the prevailing confusion over the input traffic numbers that have been used for the modelling and the lack of consideration of standing traffic.

2.2.4 Further, Pyestock is adjacent to this "marginal" AQMA. Even using the traffic flow projections offered by the Appellant, there is a serious threat that the national Air Quality maxima will be repeatedly breached in the area of M3 J4 to J4A. This is not acceptable.

2.2.5 It is noted that in the Statement of Common Ground on Air Quality, it is stated that it is not believed that these maxima will be breached. It is not clear, however, how this conclusion was reached, not least because it remains unclear how the traffic modelling was done. Moreover, and since the March 08 traffic

survey was taken as the base traffic load, SPLAT is concerned that this is an unsafe foundation for the relevant analysis, having been undertaken over the 2008 Easter holiday period. Further, and even though growth in HGV movement was modelled, it remains the case that it is not known how congestion was handled during that exercise. In any event, it is to be noted that Rushmoor feel the need to retain their AQMA, such is the perilous Air Quality in the locality.

2.3 National Society for Clean Air Policies

National Society for Clean Air, Development Control: Planning for Air Quality, revised October 2006

2.3.1 Paragraph 5.4 of the above document, in a section entitled "The Need for an Air Quality Assessment" includes the following summary statements:

"5.4 Some professional judgement will be required but the following cases are typical where the need for an air quality assessment should be considered:

- *Proposals that will result in increased congestion, a change in either traffic volumes (for example 5% AADT or peak) or a change in vehicle speed (±10 kph), or both, on a road with greater than 10,000veh per day;*
- *Proposals that would significantly alter the traffic composition in an area (e.g. bus stations, HGV parks, increased delivery traffic);*
- *Proposals that include new car parking (>300 spaces) or coach or lorry parks;*
- *Developments located in, or which may affect, sensitive areas (e.g. ecological sites) or areas of poor air quality (including AQMAs), where either direct emissions to air occur, or where any of the preceding criteria are met."*

2.3.2 This advice could have been written for Pyestock. It specifically addresses the importance of accurate assessment where new concentrations of parking and maneuvering of trucks are concerned as well as situations where congestion and existing high vehicle through puts are involved. This work has not been done for the site or Pondtail.

3 LOCAL SETTING

3.1 Reference to the Ordnance Survey Map – Guildford and Farnborough – Explorer map 145 – 2007 illustrates the topographical layout of the area around Pyestock. A copy of the map is included in Annex A (SPLAT 6/3), in which the contours have been highlighted for ease of use and interpretation.

3.1 History of pollution of Pyestock on Pondtail

3.1.1 Pondtail has an history of Air Quality pollution from the site, at least since the early 1990's, resulting from use of the Jet Engine test bed(s) owned by Sigma and QinetiQ. The test beds are presently used about twice a month and not at night.

3.1.2 Air Quality in Pondtail deteriorates when the Sigma test bed use coincides with certain meteorological conditions. It is believed that this might coincide with temperature inversion but not exclusively, but it certainly coincides with low wind speed and to some extent clear conditions. It is insensitive to the time of day.

3.1.3 Air pollution is also believed to be in part due to the topography of Pondtail with respect to the Pyestock site which is discussed later.

3.1.4 While the Test bed is presently a bad neighbour, it is only a bad neighbour infrequently. The proposed development, however, can be expected to pollute Pondtail every time the weather conditions are unfavourable. It will be a bad neighbour regularly, including at week ends.

3.1.5 There is no evidence, however, that the Appellant has considered the impact of the site, either during construction or operation, upon Pondtail's Air Quality. SPLAT believes that this is a serious omission, especially since their concerns in this regard have been made known throughout the time that the proposal has been in discussion.

3.1.6 In short, it is probable that each time there are calm weather conditions or the wind is from the North East Pondtail will be polluted. The proposals do not contain an assessment of this threat.

3.2 Topography of Pyestock in relation to Pondtail

3.2.1 Examination of the local Ordnance Survey maps reveals that Pyestock sits on a hill that forms the Eastern Boundary of a shallow blind valley which it overlooks. The Basingstoke canal forms the Southern boundary, the Fleet Pond the North Western one and Pondtail the South Western one.

3.2.2 The 80m contour almost runs around the site and the site increases to a high spot of about 85m. The 80m contour is close the altitude of the canal and this is constant across the area. There is a stream running from the canal (to control its height) into Fleet pond along the Bottom of the valley from about 80m to 70m at the pond. The 75m contour runs across Guildford Road and Wood Lane half to two thirds the way towards Kings Road. The Appellant's Annex to the addendum to the ES confirms this assessment.

Residents are very much aware that air tends to pool in the shallow valley especially in low wind.

3.2.3 In order to confirm that pollution from the site onto Pondtail is a special feature of the area, the Rushmoor environmental officer was phoned in order to determine if other areas adjacent to Pyestock experience cross-pollution. He confirmed that there is no history of air contamination from the site of the areas of Rushmoor. This

serves to confirm that the topography influences the behaviour of the airflow in such a way that Pondtail would be under incremental threat to air pollution in the event of the development going ahead.

3.3 Prevailing airflow from Pyestock to Pondtail

3.3.1 The Appellant has, in the environmental statement of application 07/03197/MAJOR, provided wind speed histories (wind roses) for London Heathrow (years 2006 to 2001 inclusive) and presents them as typical of the Fleet area. Given that Farnborough Air Field has a met station we have to ask "why was the data used from London Heathrow some 35 miles away?" Sadly, however, SPLAT's resources do not stretch to being able to purchase our own wind history and the LHR data are damning enough.

3.3.2 In particular, the data infers that low speed wind conditions occur for circa 45% of a typical year. Low wind speed is known to include the conditions when Pondtail is a victim of air pollution from Pyestock and 45% represents a very significant proportion of the year.

3.3.3 Moreover, the wind roses only cover about 87% of the year. It is understood that the missing data are most likely to concern those times when the wind speed is so low it is not recordable. Were this to be the case, it would increase the 45% estimate (of wind speed being lower that 2m/s) to 53%.

3.3.4 Furthermore, wind speed is above 2m/s blowing from the NE for a further 10% of the year. Pondtail could, therefore, expect to experience air pollution from the site for over 60% of a typical year in the event of development going ahead.

3.4 Examples of Pondtail experiencing air pollution from Pyestock

3.4.1 Records have not been kept of all the times, over the years, when pollution has occurred. Diary notes have, however, been collected

during this year and complaints have been made to the local authority.

3.4.2 The first indicator of test bed use is when the noise reverberates around the Pondtail area in a pulsing, echoing roar. This is characterised also as having a changing amplitude depending upon where, in the area, one is located.

3.4.3 Often the noise is quickly followed by the smell typical of aero fuel. When the environmental officer was called out on one such occasion, he confirmed that the smell was unacceptable (see note below).

3.4.4 A sample of recorded pollution this year is also set out below.

Friday 11th Jan 2008 – Test bed ran all day from about 0830. Loud pulsing roar. Air was clear and bright. Wind speed low. Air quality deterioration was recorded in Guildford Road, and Wood Lane and the surrounding Roads. Smell was of kerosene.

Friday 18th Jan 2008 - Test bed ran all day from about 0830. Loud pulsing roar. Air was clear and bright. Wind speed low. Air quality deterioration was recorded in Guildford Road, and Wood Lane and the surrounding Roads. HDC environmental officer attended and agreed that the level of pollution was unacceptable. Smell was of kerosene.

Saturday 15th March 2008 – Test bed ran most of the day. Continuous loud pulsing roar. Low cloud cover. No recorded air pollution.

Tues 18th March and 19th March 2008 - Test bed running all day both days. Loud pulsing roar. Overcast sky. No reported air pollution.

Tues 6th May 2008 – Test bed running all day light breeze clear day. Smell of aero fuel.

Thursday 25th September 2008- Test bed ran all day from about 0830. Air was clear and bright. Wind speed low. Air quality deterioration was recorded in Guildford Road, and Wood Lane and

the surrounding Roads. Smell was acrid and was of badly burnt diesel.

Friday 26th September 2008 - Test bed ran from about 0830 to mid morning. Loud pulsing roar. Air was clear and bright. Wind speed low. Air quality deterioration was recorded in Guildford Road, and Wood Lane and the surrounding Roads. Smell was of badly burnt diesel.

3.5 Mechanisms for Air Flow between the Sites.

3.5.1 There are two known mechanisms for forced air flow from the site to Pondtail:-

Thermal inversion – This phenomenon is known to be prevalent in the area and is suspected of having given rise to pollution coincident with the engine test bed activity of Sigma who are resident on site.

Katabatic flow – This is the establishment of convection currents flowing from an elevated source into a valley. The site occupies a ridge above Pondtail. However katabatic flow is interrupted by tree cover.

3.6 Tree cover between Pyestock and Pondtail

3.6.1 Traditional methods of Air Quality Assessment will judge that the tree cover between Pondtail and Pyestock will act as a barrier to the air borne transportation of pollutants from the site to Pondtail. SPLAT suspects that this is the reason why the Appellant has not reported any analysis of the Pondtail air quality issue.

3.6.2 However, in the instant case this cannot be taken for granted for two reasons:-

1. It denies the empirical evidence of the locality.

2. It denies the fact that not only is the tree cover not protected, it belongs to the MoD, and that there is a prevailing policy to return the land to heath land.

3.6.3 It is noted in particular so far as (2) above is concerned, that in Annex B3 of the ES addendum August 2008 provided by the Appellant, a letter from HMG Defense Estates is reproduced from which the following can be derived:-

- Trees between Pyestock and Pondtail will be thinned. Thinning is not defined so we have no control over the future of the tree cover.
- It confirms by implication that the trees are indeed not protected.
- It confirms that there is a policy to return the area to heath land.
- It serves to suggest that protection for the trees is very vague if at all.

4 DESCRIPTION OF PROPOSAL WITH RESPECT TO AIR QUALITY

4.1 The Modelling

4.1.1 The Appellant has modelled the air quality impact of the development, in accordance with a standard approach and using the AAQuIRE Modelling Software, which is based upon on existing and well-accepted and validated dispersion models.

4.1.2 They claim, accordingly, adherence to the following guiding principle: "… proper record keeping ensuring repeatability of results."

4.1.3 They claim, further, that they have adhered to 5 stage approach to using the model. The following is quoted from their Air Quality Detail Plan:

"The first step in operating AAQuIRE is to prepare the input data. The following data are needed for

- *the year and pollutant to be modelled:*
- *meteorological data expressed as occurrence frequencies for specified combinations of*
- *wind speed, direction, stability and boundary layer height;*
- *road system layout and associated traffic data within and immediately surrounding the*
- *study area;*
- *industrial stack locations and parameters; and*
- *a grid of model prediction locations (receptors).*

The second stage is the generation of the model input files required for the study.

The third stage is executing the models.

The fourth stage is the statistical processing of the raw dispersion results to produce results in the relevant averaging period. Traffic sources and industrial sources can be combined at this stage provided the same receptor grid has been used for both. Background concentrations should also be incorporated at this stage.

The final stage is presentation of results."

4.1.4 There is no information in the public domain to demonstrate that this prescribed rigour has been followed. It is not possible to determine the scope of the modelling, where it has taken place, nor its relationship with reality. It is in consideration of the demonstrated lack of rigour that has been used for traffic assessment that we cannot take this issue on trust.

4.1.5 The areas modelled were:-

1. M3 J4 to J4A
2. M3 junction, Minley Link Road, Summit Avenue and the site access.

4.1.6 Adjustment has been made for vehicle speeds and for statistical characteristics of engine condition. Meteorological data were taken from London Heathrow, as above. Traffic statistics were taken from historical data, and traffic modelling runs from 2007 to 2012

4.1.7 An odour trial was conducted at locations only on the site. None were conducted in the local housing areas.

4.2 A Failure to Correlate the Models and to Verify Input Data

4.2.1 SPLAT has found that it is traditionally outside the terms of reference of an Air Quality modeler to verify either the validity of the traffic intensity input or the assumptions associated with the nature of traffic movement. The traffic inputs used for the models are at best obscure. For instance, the vehicle mix is not known. This includes the input from the March 2008 survey described in the ES addendum.

4.3 The Assumptions are not Related to Fact

4.3.1 It is clear that there is a well established methodology for assessing the prediction of the Air Quality impact of developments. In this instance this has been set out above. SPLAT is aware that STATS reviewed this modelling for HART DC; a separate assessment has been done for HART during this autumn and SPLAT has had two independent experts review the modelling. It is conceded that each has found the modelling method to be robust; not its application.

4.3.2 However, the models do not reflect the local knowledge of how the existing operation pollutes Pondtail and has done for over 25 years.

It can only be concluded, therefore, that the boundary conditions used for the model are, in this particular instance, wrong.

4.3.3 Scientific models are by definition simplified versions of the real world. They are selected as a compromise between precision and ease of use. A key foundation of scientific research is to learn from the combination of hypothesis and experimentation. The hypothesis is normally in the form of a model and the experiment is used to demonstrate the accuracy of the model.

4.3.4 SPLAT's empirical evidence from current use of the site shows that the Air Quality models that are in use are inaccurate for the conditions peculiar to Pondtail. This has not been kept a secret over the 2 years leading up to this appeal.

4.4 The Time Span of the Air Quality Model

4.4.1 The appellant plans to bring the operation to full commercial capacity for 2016. However the addendum to the ES only projects the air quality modelling out to 2012.

4.5 Summary of Traffic Input Issues

4.5.1 There are many examples of the failure of the Appellant to make clear the traffic inputs to the modelling of Air Quality where they have a material impact on the Air Quality Assessment, as follows:-

1.Since the Appellant has proposed to limit HGV access to the site to 800 HGV's a day, it is presumed that this figure has influenced the input traffic data to the air quality model. However, 800 HGV's a day is an unrealistically low projection.

2 The DVLA web site shows that their definition of an HGV is any vehicle above 3.5 Tonne. However, the Appellant describes an HGV as any vehicle with more than two axles and two axle "Heavies" are not included in the proposed 800 HGV daily movement limit.

Movements of these vehicles will not, therefore, be controlled. According to Mercedes Benz commercial two axle trucks can be procured as large as:-

- Standard manufacture is up to 26,000kg
- Stretch up to 35,000kg

It is wholly unrealistic to exclude two axle vehicles up to 3.5 Tonne. In section 4.24 of the E.S. addendum the appellant admits that an HGV emits pollutants 8 times that of a car and this should include 36 Tonne two axle trucks.

3.The office space proposed would normally accommodate some 900 people at 10sq m per head. The Appellant projects just 250.

4.Research of similar sites has shown that the total number of employees for a site of this size would be nearer, 400 compared to the 1,800 projected.

5.The Appellant plans to bring the Pyestock operation to full commercial capacity for 2016. However, the addendum to the ES only projects the traffic intensity out to 2012. The essential difference is that the compound traffic growth from 2007 to 2012 is 1.036 (claimed to be 1.009 per year). These growth parameters are not justified in the text. However compound growth to 2016 would be 1.074. (Paragraph 4.9, page 40 of ES Addendum). This infers that, in 2016, the traffic flow on Minley link will grow from 27705 AADT to 31740AADT even if the increase in traffic due to the development were to be restricted to 800 HGV and 1188 domestic vehicles as they claim.

6.The same ES addendum states (Paragraph 4.8, page 40) that a new traffic survey was conducted during March 2008. It has now been established that the survey was conducted at 10 junctions listed below. Of those, two were surveyed for the period 11th March 2008 to 20th March 2008 from 07 00 to 18 45. The remainder were single day surveys on the 18th or 19th March also from 0700 to 18 45. All counts were done using CCTV cameras. It is to be noted

that the Easter four day week-end was from 21st March to 24th March inclusive. It is known that a significant proportion of the working population take holidays in the period 17th March to 28 March. This survey must be discounted.

March 2008 Traffic Survey

Junction	Location	Survey date(s)	Times
	A 327	**11 to 20 March 2008**	0700 to 1845
	Ively Road	**11 to 20 March 2008**	0700 to 1845
1	**Minley Rd /Minley Link Rd / M4 Junction 4A (Eastbound)**	**18 March 2008**	0700 to 1845
2	**Minley Link Rd / M4 Junction 4A (Westbound)**	**18 March 2008**	0700 to 1845
3	**Minley Link Rd / Summit Avenue**	**19 March 2008**	0700 to 1845
4	**Summit Avenue / Ively Rd**	**19 March 2008**	0700 to 1845
5	**Summit Avenue / Ively Rd (Nokia)**	**18 March 2008**	0700 to 1845
6	**Kennels Lane / Ively Rd.**	**18 March 2008**	0700 to 1845
7	**(A323) Norris Hill Rd / Ively Rd / Fleet Rd**	**18 March 2008**	0700 to 1845
8	**Aldershot Road/Fleet Rd**	**9 Sept 2008**	

5 OMISSIONS FROM THE AIR QUALITY ASSESSMENT

5.1 The Fully Operational Site

5.1.1 The proposal to restrict the use of the site to 800 HGV's a day is not only unacceptable in any event, it is clearly an understatement for the eventual capacity of a site. It is proposed to have a total of 150 loading bays. This implies that each bay will only service 5 HGV's a day. For example, a site owned by Tesco which is just two thirds the size operates 1500 HGV's per day. The traffic analysis also excludes all two axle heavy vehicles, as referred to above. We note also with interest that the "Statement of Common Ground –

Air Quality" says that traffic modelling has been stretched to 2400 HGV's a day and concludes that there would be no material impact. However, there is no justification for the statement or any analytical material to demonstrate that this is a rational conclusion. In light of the unrepresentative approach to traffic modelling and its impact on air quality discussed elsewhere this cannot be taken as read.

5.2 Traffic Stagnation

5.2.1 Although traffic slowing for roundabouts and obstacles has been included, standing traffic due to congestion appears to have been omitted. This means the Air Quality modelling is unrepresentative. The issues that should have been addressed include:-

- Stationary traffic scenarios on the Minley Link Road and the adjacent M3 motorway.
- The Air Quality impact due to the 24/7 operation of the site upon the residents of St Johns and Southwood has not been assessed in the context of adjacent queuing.

5.2.2 I comment on these aspects below, and in the context of rudimentary queuing theory which predicts that traffic flow and traffic intensity is a highly non-linear relationship. This is to say, as intensity approaches the maximum, congestion becomes significantly more frequent.

5.2.3 So far as the M3 is concerned, written evidence by the Highways Agency during the QEB appeal proceedings in Autumn 2007 stated that J4A of the M3 was operating at capacity. With the anticipated growth in use of the M3 in this area the National air quality limit will be breached much more frequently.

5.2.4 So far as Minley Link Road is concerned, the Appellant's Air Quality modelling also excludes congestion due to traffic accidents on the motorway, local roads or due to operational disruption on the Pyestock site.

5.2.5 Finally, the Appellant has proposed (in annex B4 of the ES addendum) a complete redesign of the junction joining the Nokia railway bridge to the Minley link road. However, the new junction will only have the capacity of two HGV's before all three lanes are blocked. This aspect of the Appellant's proposal will, therefore, do nothing to relieve congestion and in most circumstances will serve to exacerbate it and associated pollution of the neighbouring conurbations. Were the site to operate at capacity and we were to consider linear distribution of movements per day there would be a movement every 15 to 20 seconds. A traffic light sequence is usually 2 to 3 minutes so there would be a truck queue during red light of 3 to 6 HGV's almost permanently.

5.3 Pyestock "On Site" Activity

5.3.1 The Appellant has not published an analysis assessing the impact on Air Quality resulting from the operation of the site upon the surrounding urban areas. Given its geographical location in relation to Pondtail, and the history of pollution by Pyestock upon Pondtail's Air Quality, this is unacceptable. In particular, significant numbers of vehicles, HGV, Light Goods Vehicles and auxiliary machines can be expected to operate on the site concurrently. The resulting Air Pollution has not been covered by the modelling.

5.3.2 Taking the declared daily number of HGV's and spreading them evenly over the 24 hour period, about 20 HGV's will be on site concurrently plus an uncontrolled number of two axle Heavy vehicles. If their operation was to be concentrated in the early hours of the morning (say 8 hours), there would be at least 50 on site at one time. After all there are 150 operational bays.

5.3.3 In addition the site is likely to be supported by ancillary vehicles such as tugs and fork lift trucks. HGV's, when on site, are free to have refrigeration plant running and will be required to manoeuvre

in confined spaces. None of these likely aspects of the proposed operation have been addressed in the Environmental Statement.

5.3.4 No Air Quality estimates have been provided considering the potential expansion of activity at the site, or other local developments being planned. This should have been undertaken, including additional development on land owned by the Appellant immediately adjacent to the site and the more efficient and hence more intensive operation of the proposed facility.

5.4 The Aspects that the Appellant has not Modelled

5.4.1 The Appellant has not, accordingly, addressed several aspects of Air Quality impact that will relate to the development. In summary these are:

1. Correlation of the models with local experience.
2. There is no model of the on-site operations.
3. While it is stated that adjustment has been made for vehicle speeds there is no evidence that standing traffic due to congestion has been considered.
4. The vehicle mix that was used in the input to the model is not stated. Indeed, even the March 2008 statistics that have been presented do not include the vehicle mix. We are unable to determine how the base load of HGV's and LGV's before the impact of the development has been assessed.
5. The odour trial did not include the local urban areas; it was only done on site.
6. There was no modelling for Pondtail.
7. The use of standard dispersion models throughout the area is flawed. There has been an underlying assumption that the tree cover between the site and Pondtail will disperse the air pollution sufficiently.

8. The traffic model and hence the Air Quality model does not cover the period of time right up to full operation in 2016. It stops short at 2012.
9. The year on year traffic growth parameters are not justified.
10 The March 2008 traffic survey was conducted during the Easter holidays.
11. The impact of site operations on surrounding housing areas has not been modelled.

6 ADDITIONAL HARM/THE KEY ISSUES

6.1 AQMA Issues

6.1.1 In Statutory Instrument 2000 No. 928 - The Air Quality (England) Regulations 2000, it states that the national maximum for concentrations of NOX is 40µg/m3 when expressed as an annual average.

6.1.2 The Appellant's chart in table 15 of the Air Quality addendum shows that NOX levels will exceed 50µg/m3 in a number of locations in the SSSI's. We believe that many HGV's have been omitted from the estimate not least the discounting of two axle heavies. It is not credible to cut short the modelled period by 4 years as the Appellant has done.

6.2 Air Quality Policy – Objectives

6.2.1 The drive behind government policy concerning Air Quality is to improve it. Adding an uncontrolled number of HGV's to already congested roads is not the way to fulfill this objective.

6.3 Odour Assessment

6.3.1 In the Appellant's attachment their ES statement "Air Quality detail plan 2 App 6 -9", they map out the locations where odour

assessments were taken. These do not include areas where bad odour migration from the site has been reported over many years.

6.4 Health

6.4.1 Both the UK Government and the European Commission acknowledge that air pollution is injurious to health as set out above.

6.4.2 NOX is known to be bad for health and, when it is exposed to sun light, it migrates into low altitude ozone which is also known to be a respiratory irritant.

6.4.3 Rushmoor has set a local threshold of 37µg/m3 beyond which they feel obliged to retain their AQMA. Given the omissions in the traffic analysis, Rushmoor's current concern about Air Quality in their area, and the unacceptable concentration of NOX in the SSSI's, it is dangerous to assume that the results set out in the ES Addendum truly reflect the likely pollution for the area when they have been projected out to 2016.

6.4.4 The Appellant argues that, on the one hand, the development will have little impact upon the NOX levels (levels which in places breach or are close to breaching national standards), but, on the other, admits that HGV's are 8 times more polluting than a car. That said, the traffic analysis does not allow us to delineate between domestic vehicles, Light Goods and Heavy Goods Vehicles.

7 COMMENTARY ON STATEMENT OF COMMON GROUND – AIR QUALITY

7.1 All of the following issues in the Statement of Common Ground have been answered in the affirmative. SPLAT refutes each of the following for the stated reasons:-

2.2 – Appropriate methodology? - The chosen methodology does not correlate with local experience of living with the site.

3.1 – Relevant pollutants? – The only pollutants considered are PM10, PM25 and NOX. There is no evidence that CO, Hydrocarbons, and CO2 have been considered.

3.2 – Modelling appropriate? – The modelling does not correlate with local experience.

3.3 – Appropriate scenarios? – Taking 2011 as the opening year is wrong it should be 2016.

3.4 – Appropriate meteorological data set? – Taking LHR when the Farnborough met station is nearby is obtuse.

3.7 – All emissions from all sources considered? – There is no understanding of the make-up of the base traffic load; two axle heavies are omitted from the analysis, so the traffic survey was flawed.

3.8 – All traffic data appropriate? – The March 2008 survey was held over the Easter holiday period. It is non representative. Their claim that the model has been stretched to 4800 HGV movements/day needs justification. This would be a movement every 20 seconds - 24 hours a day. This would not be a congestion free scenario especially if operational "bunching" was to be included in the model. Also if the 2400 HGV's were to be evenly distributed through the 24 hours then there would be 100 HGV's on site in any one hour.

3.11 – Appropriate mitigation? – An undertaking to "encourage" HGV operators to conform to the highest European standards, to "encourage" the use of alternate fuels and to "encourage" the use of work travel is not effective or enforceable mitigation

3.13 – Residual impacts acceptable? – No one knows because the modelling and the traffic input is inaccurate and flawed.

4.6 – Traffic data appropriate? – No they are contrived.

4.7 – Model results verified? – No they do not reflect local experiences.

4.8 – Appropriate sensitive locations? – All analysis has been done on the basis that existing tree cover will remain. The trees are not protected and there is a policy to return much of the land to heath land. It is a fact that NOX levels in some sensitive areas are already above the National Maximum. (Table 15 ES Addendum Aug 2008)

4.10 – Impacts addressed appropriately? – This is not possible in the light of the other inadequacies set out in this section.

5.1 - Appropriate odour assessment? – The only odour assessment has been done on site. Odour assessment must be conducted for Pondtail as a minimum.

8 KEY REASONS FOR REJECTION REGARDING AIR QUALITY

8.1 The introduction of this development in the area of Rushmoor and Hart will by definition reduce the Air Quality of the area. More trucks and cars is worse than the same trucks and cars or less.

8.2 The results of Air Quality modelling are very largely dependant upon the input information submitted to the model and the accuracy of the modelling algorithms to the location being considered. Neither of these aspects has been addressed in the environmental statements provided with the planning application. STATS confirmed in their review of the ES during the spring of 2008 that input data was impossible to establish. It is now clear that the ES addendum included misleading information concerning the establishment of the base traffic load.

8.3 In summary, the key issues by which SPLAT believe the plan should be rejected for air quality reasons are:-

- SPLAT has a list of numerous issues that must be modelled that have not.
- SPLAT has a list numerous areas where the conclusions in the Statement of Common Ground on Air Quality are wrong.

- Air quality was modelled using traffic numbers that we do not accept and are shown to be underestimates in SPLAT's Proof of Evidence on Traffic.
- The Appellant is modelling the wrong year – the site is fully operational in 2016 and the modelling stops in 2012. The modelling should reflect the year of completion of construction not the beginning.
- There is a lack of justification for the choice of the growth parameter of network traffic.
- The base flow onto which the development traffic is added has been shown to be unreliable.
- It is not demonstrated that the modelling reasonably addresses the issue of increased congestion on the M3. The modelling takes a linear extrapolation of pollution based on the number of vehicles and it should logically be an exponential relationship as the queuing increases - we are therefore challenging the logic.
- The Air Quality impacts of on-site operations have not been assessed.
- There has been no attempt to assess Air Quality in Pondtail as the Appellant seems to believe it is too far away and the intervening trees will disperse any effect. The trees are not protected nor are they owned by the Appellant. The MoD intends to revert the land to heath.
- The modelling is disputed because of experience of existing and historic operations on the site which have caused noise and odour in the vicinity of Pondtail. The primary causes are topography and micro-climatic conditions.
- The proposal is to add a permanent bad neighbour to an existing infrequent one.

Steven La Pensée

24th Oct 2008