

**Part B6 – Customer Service Strategy and Changes in Service (Odour)****Summary Report by Reporter****Summary of Audit Findings & Reporter Opinion**

In AMP5 Thames are looking to minimise statutory nuisance risk at STW's from odour release. The extent of odour abatement proposed for AMP5 is for those sites where odour complaints have been received and the risk of abatement by legal procedures is considered significant.

An investment is proposed for AMP 5 for improvements at Beckton, Long Reach, Hogsmill, Little Marlow, Slough, Farnham, Cranleigh, Guildford and Earlswood. Earlswood is a new inclusion to the FBP. (TEXT REDACTED)

Except for the removal of the scheme to replace 8 no sludge scrapers which were not considered cost effective, proposals for Beckton have not changed between DBP and FBP though significant changes were made to the baseline odour model which required careful review.

Whilst we had some concerns over the changes from the DBP to the FBP at Beckton, and that the methodology in some instances was not clear and unambiguous, we recognise these weaknesses to be relatively minor and ultimately considered not to influence the solution as proposed. We are therefore satisfied that the methodology adopted by Thames Water is reasonable.

We consider that the proposed solution for Beckton, though cost beneficial, does not represent the most optimal investment point applying Thames CBA framework. Nevertheless after detailed review of the information provided, the proposed solution is the only amelioration option, subject to the accuracy of the methodology. (TEXT REDACTED). We are therefore satisfied that it represents the most appropriate solution.

Though not considered as a driver for investment, the consequence of this solution is to also remove currently undeveloped areas (TEXT REDACTED) from potential odour nuisance.

Cost estimates have been improved since DBP. (TEXT REDACTED)  
We reviewed both the base costs plus the indirect on-costs and consider that the cost estimates are now satisfactory.

## Reporter Engagement & Scope of Audit

We confirm that we have undertaken a complete review of Thames' Part B6 submission in respect of proposed odour investment.

The audit commenced initially on 6<sup>th</sup> May 2008 with a preliminary meeting on the Draft Business Plan (DBP). An initial commentary was issued to Thames on 19<sup>th</sup> May following a full review of documentation and a period for clarification. Further meetings were conducted on the 7<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> July to address specific areas of the methodology which we considered required further detailed explanation or clarification.

Audit of the Final Business Plan (FBP) was carried out following completion by Thames on 16<sup>th</sup> March 2009. Feedback was prepared and Thames provided their responses. Further clarifications of the FBP were conducted through telephone conversations and e-mail communications.

Thames prepared a series of documents for each site which were fully reviewed during the course of the Audits. (TEXT REDACTED)

Development of the odour investment programme also generated a large number of internal and external reports all of which were covered by audit as were the relevant background documents including latest industry codes of practice and guidance reports, namely:

1. DEFRA Code of Practice on Odour Nuisance from Sewage Treatment Works, April 2006
2. UKWIR Best Practicable Means – A Guide for Odour Control at Wastewater Treatment Works - report ref: 06/WW/13/8
3. IPPC Technical Guidance Note H4 Horizontal Guidance for Odour Part 1 – Regulation and Permitting (DRAFT)
4. UKWIR (2001) Odour Control in Wastewater Treatment A technical reference document Report Ref. No. 01/WW/13/3, ISBN 1 84057 246 9
5. UKWIR Project WW13A208 Cost Benefit Analysis Of Odour Control Measures
6. PR09 Technical Studies. Customer Willingness to Pay for Reducing Odour Nuisance from the Beckton Sewage Treatment Works. Report for Thames by ICS Consulting, June 2008.

It is also fair to note that Thames Water carried out a large amount of work in developing its odour programme for PR09. Procedures adopted by Thames followed an organised pathway of data collection, reviews, site surveys, checking, external auditing and calculation. The methodology adopted by

Thames is outlined in the section below which included substantial contributions from external consultants.

The procedures adopted by Thames in the preparation of the odour investment programme have been carried out to a high standard by all parties and are deemed satisfactory.

Audit procedures have followed Reporter Guidance and all points in the audit plan covered.

We have followed Reporter Guidance and have addressed the points set out in our audit plan.

### **Summary of Thames's Methodology**

Procedures adopted by Thames in development of its odour investment plans followed an organised pathway of data collection, reviews, site surveys, checking, external auditing and calculation. All processes were covered in the audit. (TEXT REDACTED)

Thames employed a number of external organisations to assist it in the development of the odour programme. (TEXT REDACTED)

Thames also carried out their own audit checks in the preparation of the odour programme.

Customer and Stakeholder Views were elicited by Thames using a range of different surveys and forums as detailed in their Final Business Plan. A stated preference (SP) study was carried out by consultants who compared different service sectors and interviewed residential customers to establish a 'willingness to pay'. Deliberative research forums and follow up surveys of customers living alongside STW's were also conducted.

The benefits of schemes were assessed using odour dispersion modelling carried out by industry experts. Odournet. Odour surveys were carried out in 2006 at priority sites to identify odour sources and their level of emissions. The results were further modelled to provide odour contour maps indicating the average level of odour exposure in the surrounding area. Reference to 2006 complaints data indicated that the threshold odour at which complaints appeared to be lodged corresponded to an odour level of 2 ouE/m<sup>3</sup> (as a 98th percentile value of hourly averages). We were satisfied with the procedures carried out to this point and the adoption of a 2 ouE/m<sup>3</sup> guideline standard as an odour threshold below which nuisance and complaints are expected to diminish.

In regard to achieving future improvements, odour levels that could be reduced or addressed through operational means were firstly identified and procedures formalised in the preparation of site odour management plans. The resultant odour concentration post baseline measures were again modelled and sites identified that required additional amelioration measures to reduce the possibility of complaints.

Where necessary, schemes were developed that provided a staged approach to odour reduction at each of the priority sites, in accordance with the UKWIR methodology, and odour dispersion modelling was again used to estimate benefit of each scheme in terms of a reduction in potential impacted properties (PPI - properties potentially impacted). The PPI reductions for all abatement options at each site were then converted to whole life benefits, using the results from the stated preference WTP survey. Thames Asset Planning System then calculated the NPV for each abatement option and the net benefit of each assessed to determine the preferred scheme.

### **Thames's Proposals**

In AMP5 Thames are looking to minimise statutory nuisance risk at STW's from odour release. The extent of odour abatement proposed for AMP5 is for those sites where odour complaints have been received and the risk of abatement by legal procedures is considered significant. Odour abatement plans formulated for the DBP included future encroachment i.e. housing developments planned in AMP5 but not yet constructed, but following challenge these proposals were removed and odour abatement covers existing populations only.

With the well published case of odour nuisance at 2 sites, and with customers' awareness of odour issues heightening, Thames consider it needs to include odour abatement in its planned programme of work under AMP5. Also a new voluntary Code of Practice (CoP) was published by DEFRA in AMP4 which clarifies stakeholder responsibilities with regard to statutory nuisance. Thames anticipates more abatement notices at sites with odour problems and where there are current high levels of complaints. (TEXT REDACTED)

### ***Draft Business Plan***

(TEXT REDACTED)After detailed review of the DBP, we were satisfied with proposals for the odour control at the following sites:

Slough  
Farnham

Cranleigh

Guildford

Issues were identified during DBP at the following sites and challenges prepared for:

Beckton

Long Reach

Hogsmill

Little Marlow.

(TEXT REDACTED)

Whilst being generally in agreement with the methodology adopted, questions were raised with Thames Water during the audit to the effect that the dispersion modelling on which the nuisance was characterised appeared not to take into account high strength emitters located near residential areas. This was particularly relevant to Longreach and Hogsmill with the location of the sludge treatment and storage facilities close to properties. We accepted that Thames Water had adopted a straightforward methodology based on best practice approach advocated in the UKWIR BPM study, but considered that the approach may have been too literal to the extent that 'common sense' abatement measures may have been overlooked in the scheme of remedial measures. It was left with Thames to reconsider whether 'common sense' measure were to be included in the FBP.

In this context, we believed that the methodology adopted would have benefitted from a secondary approach of assessing benefits and costs for different thresholds as part of a cross checking and sensitivity checking exercise in addition to using methods as defined in the Defra and UKWIR. Thames responded by intending to review proposals where sludge treatment may be a factor and to carry out a Monte Carlo analysis for Beckton STW to provide confidence in their proposals.

There was uncertainty as to the future of sludge treatment at Little Marlow which may negate any investment for odour control at the site. This was unresolved during DBP stage and was held over for review during the FBP.

As reported in the audit of the DBP, we found that there was some inconsistency and lack of transparency in the prioritisation of sites and in the clustering process (solution generation). Despite this we were, and remain, satisfied that the identification and step-wise amelioration of the individual odour sources at each site each represented sensible and obvious means of addressing the problems and that an appropriate series of solutions were

developed in accordance with UKWIR methodology for final cost benefit evaluation.

We considered that the cost-estimating base, from which the odour costs have been prepared, was possibly too small to ensure a reasonable level of accuracy. The on-costs adopted for calculation of the final sums appeared to have little basis however Thames intended to compare the costs with other recent odour control schemes constructed, or being constructed, under AMP4 programmes to increase confidence in the cost model and include in the submission of the FBP.

Thames has not proposed any changes in levels of service. We considered that the proposals are consistent with the Company' SDS.

### ***Final Business Plan Audit Findings***

#### Changes to FBP compared with DBP

Based on a combination of scheme development and challenges from the Auditor and Regulator, changes were made to the DBP as follows:

1. FBP does not rely on future development for its justification or to determine its scope.
2. Cost estimates have now been based on an individual bottom up approach due to lack of cost information available in the Thames EES, validated by supplier quotations and outturn costs from other abatement projects.
3. Revision of Thames odour dispersion modelling has been carried out at Beckton and Long reach. At Beckton this accounted for the change in scope of scraper replacement work in AMP4. At Long Reach the revision accounted for the impact of the existing imported sludge cake storage area which had not been included in the draft estimate
4. AMP5 Scraper replacement costs at Beckton have been transferred to the Capital Maintenance programme, as the key driver for investment is to address the condition of the asset rather than improvements in odour performance.
5. The addition of Earlswood STW as new site.

#### Methodology

We are satisfied that the methodology adopted by Thames Water is reasonable and generally robust. We commend the use of odour modelling in this regard without which proposed schemes would have an unacceptable level of uncertainty. Nevertheless odour modelling is not yet an exact science and results are subject to an unquantifiable level of uncertainty at any one time due to variable meteorological conditions, including strength and direction of prevailing winds, to the inherent variable nature of the odour sources themselves, influenced by the nature of material discharged to sewer and ambient conditions, and by the nature of the odours themselves which can be perceived differently by people. So whilst essential, modelling can only serve as the best current means of predicting an outcome. Thus, in regard to the proposed schemes, we (or Thames) can not be certain that they will have the desired results.

The threshold level was the subject of much discussion during the DBP audit. We concur with Thames Water's response to the question and consider the adoption of a 2 ou threshold as reasonable and with foundation. The threshold of 2 ou was derived by Odournet following a correlation exercise between complaints data, dwelling numbers and odour modelling, as explained. There may have been a case for adopting a slightly tighter threshold of 1.5 ou in line with IPPC levels. However, given precedents and the findings of Odournet, there would have been no justification for the extra costs that would have been incurred.

We make no comment about the Customer Willingness to Pay (WTP) survey preferring to defer comment to others that have studied and reviewed the procedure in more detail.

#### Proposed Schemes

We are satisfied with proposals for the odour control at the following sites and have no difficulty in recommending their full acceptance:

- Slough
- Farnham
- Cranleigh
- Guildford
- Earlswood and
- Hogsmill

We are satisfied with proposals for Earlswood which was not in the DBP and proposals in the FBP for Hogsmill can now be confirmed as being satisfactory.

Some issues remain with Beckton, Long Reach and Little Marlow which required further discussion.

#### Beckton and Long Reach

Revisions were made to the FBP for Beckton and Long Reach where encroachment was removed as a driver for investment.

However, during the preparation of the final funding submission, changes were also made to the 'baseline' odour dispersion models for Beckton and Longreach which resulted in a change in the predicted exposures levels around the site. We challenged Thames for an explanation and following clarification we are satisfied with the explanation given for Longreach and have no further issues regarding the site.

With regard to Beckton, the key changes that were applied to the model since DBP had the effect of increasing odour emissions by approx 18% compared with the DBP. This was explained as being due to scraper replacement in 8 of the PSTs being deferred from AMP 4 to AMP5 resulting in increasing the odour levels at the start of AMP 5. We had difficulty in accepting this change but following detailed discussion we now accept that odour levels in the PST may indeed be affected by poor scraper operation to the extent as suggested. Research documents were provided that supported of Thames views.

The schemes developed and considered for Beckton by Thames are as follows:

- Option 1: Cover and Treat settled sewage channels and desludge chambers.
- Option 2: Cover and Treat settled sewage channels and desludge chambers. Cover **8** primary tanks.
- Option 3: Cover and Treat settled sewage channels and desludge chambers. Cover **12** primary tanks.
- Option 4: Cover and Treat settled sewage channels and desludge chambers. Cover **16** primary tanks.

(TEXT REDACTED)

Except for the removal of the scheme to replace 8 no sludge scrapers which were not considered cost effective, proposals for Beckton have not changed

between DBP (TEXT REDACTED) and FBP despite the removal of encroachment as an investment driver. Notwithstanding the current levels of exposure, this implies that the proposals will also provide odour control covering encroachment in the future. The position appears inconsistent.

However, the key change between draft and final which allowed Thames to promote covering 16 primary tanks at Beckton without including encroachment benefits is that it selected an option that is cost beneficial, but not the most cost beneficial i.e., the optimal investment point. According to Thames, this approach at FBP was supported by Ofwat when it met with them in February, as there are mitigating factors (explained in B6 text). At DBP the 16 covers option represented the optimal investment point (maximum reward) when encroachment benefits were included. The other change was the revision of the odour dispersion model which we have discussed earlier.

Detailed investigation of the odour contour maps between DBP and FBP stage suggests that encroachment may have been over emphasised as a driver during the DBP. It is noted that for the Draft business plan, future dwellings referred to all types of proposed dwellings whether planning permission was granted or not, Thames accepted at draft that this could represent an overstatement of future benefit so for the FBP it took a more stringent view of encroachment, with only future dwellings associated with approved development scheduled for completion by 2015 accounted for. Again the benefit of future dwellings was not used in the investment modelling at FBP, but is including in the B6 text for the purposes of comparison only.

Therefore, the most noticeable driver for the preferred solution in the FBP is that of addressing odour nuisance for the existing population located around Beckton the closest of which are located to the North and North East of the site and from where the majority of complaints originate. Greater benefits indeed accrue if encroachment is considered but the basic requirement is nevertheless dealing with the existing population (TEXT REDACTED) which remains cost beneficial.

Whilst we have some concerns over the changes from the DBP to the FBP, and that the methodology in some instances has not been clear and unambiguous, we recognise these weaknesses to be relatively minor and ultimately considered not to influence the solution as proposed.

Simply speaking, Thames' proposed option in both the DBP and the FBP of covering all of the 16 PSTs is the only amelioration option, within the accuracy of the procedure, which removes the closest dwellings located to the North and North East of the treatment site, from potential odour nuisance.

Although future dwellings are not accounted for in the benefits assessment, the consequence of this is to also remove currently undeveloped areas to the North West of the site from potential odour nuisance, though these sites are some distance away and would have been effectively removed by covering only half the 16 tanks. More importantly, the covering of 16 tanks reduces the risk to the East of the site where a large development is planned on undeveloped land close to the Works. This is the planned Barking Riverside development for which planning has been granted subject to final procedural approvals. In addition, covering of the 16 tanks also reduces potential nuisance to the immediate South East of the Site where British Gas plan new development though part of the site remains within the 2 OU contour due to its close proximity to the adjacent sludge holding tanks (covered but not odour free). Here the planned development offers no buffer zone so we feel that it is unrealistic to plan for future development to that extent. Thames Water has also advised that planning permission for the British Gas site has not been granted and Thames have raised an objection to the development.

In the context of current dwellings, we consider that covering the 16 PSTs is the most appropriate solution for Beckton though it does not represent the most cost effective solution. The preferred solution has been derived so as to protect as far as is practical and cost effective, those properties closest to site to the North and North West. Encroachment has not been considered a driver but the solution proposed has benefits in regard to future development to the East and South East of the site though the nuisance is not likely to be eradicated especially in regard to the South East development which borders the site. A risk of odour nuisance will remain also to the East of Beckton site due to being leeward of the prevailing wind nevertheless. In both instances, it may not be considered Thames' responsibility and there is therefore scope for developers contributing to improvements, if required.

Thames Water believe that the Company is at risk of not obtaining planning permission for the Tideway project if the views of Newham Council are not met which is to cover all of the PSTs. This would appear to be the case based on a communication from Newham Council dated 19th November 2008 forwarded to us from Thames. Thames is concerned that delay in gaining planning approval would have a significant financial impact for the Company. Thames Water are also of the view that Newham Council is deliberately delaying its final approval of developments in the region, including Tideway, whilst awaiting the PR09 determination from OFWAT in order to put pressure on both parties to resolve the matter of as soon as possible. This audit takes no account of the views of Newham Council or similar others in the development of the views contained within.

#### Little Marlow

Little Marlow is a high profile site and there is a strong case for odour mitigation measures for AMP5 in respect of the sludge composting process particularly.

The main element of the scheme for Little Marlow is the provision of wet chemical scrubbing for the existing sludge composting building. The composting building is located on the site boundary on the R. Thames with complainants on the opposing side of the river. Currently odour control is provided by two woodchip biofilter units, with residual odours comprising 67.1% of odours from the site and this has been identified as the main odour source.

Thames states categorically that there are no current plans for alternative sludge treatment processes at Little Marlow, and the use of the sludge building for composting will continue in AMP5. In the long term, during or beyond the AMP6 period, it is possible that sludge generated at Little Marlow will be transferred as raw cake to another site or sites, for example for digestion. In this instance, Thames advises that the composting building would be retained for the storage of sludge cake before transfer.

The current arrangement of the sludge dewatering facility is such that dewatered sludge cake drops through the wall into the composting building before being mixed with woodchip and transferred using a digger vehicle to bays on the other side of the building for composting. Whatever plans are finally adopted for Little Marlow in or beyond AMP6, Thames advises that there would be no change in the arrangement of dewatering equipment or the use of the building for the storage of sludge and that their proposed scheme is therefore correct because of the following reasons:

- The building will require ventilation at about 3 ac/h to meet Thames requirements for the maintenance of an acceptable and safe working atmosphere whether storing composted or raw sludge cake.
- The ventilation air must be treated to a high level (ie with a carbon stage) to avoid the risk of odour nuisance to properties adjacent to the site.
- The CAPEX of odour control equipment is proportional to the air flow rate treated and not to the odour load.
- Provision of a cake barn vented to odour control to mitigate odours from storage and handling of sludge cake is the same PR09 solution as proposed for Long Reach.

In addition, Thames have considered but discounted various possible alternatives that could be considered to reduce the cost of the odour control proposals. Possible alternatives considered by Thames are identified below:

- Reduction of ventilation rate of the building: Not acceptable as air flow rates are already at the lower limit of acceptable values for a building containing sludge treatment and handling processes
- Ventilation to the atmosphere without treatment: Not acceptable under current or future conditions due to the proximity of sensitive receptors.
- Treatment of the vented air with a single carbon stage (omitting wet chemical scrubbing): Not technically feasible in the short term due to the strength and humidity of the vented air and in the long term not the least cost solution due to the ongoing OPEX expense for replacement of carbon.
- Containment of sludge into a smaller area with separate ventilation from the remainder of the building: Not feasible while composting continues. In the longer term, the feasibility would depend on the amount of sludge that would be stored in the building and require extensive modifications to achieve an effective reduction in the size of the barn.
- Replacement of the sludge treatment process: No reduction in cost as the existing composting building would still be required for the storage of sludge cake, which would require ventilation and odour control as described above.
- Removal of liquid sludge from site by tanker. Not acceptable as, although this would enable closure of the composting building, the cost of transport of liquid sludge would be very much higher than transport as cake.

We have been unsure that the level of investment proposed for Little Marlow will provide long term benefit due the possibility that the composting plant may be closed in AMP6 leaving redundant assets. Having discussed the matter further with Thames, we can see that there is no alternative to providing odour mitigation as proposed and are satisfied that it represents the only meaningful solution.

We also recognise Thames' urgency in this matter given that it represents a site where the risk of an abatement notice is high and that the work is scheduled to complete in year 1 of AMP5.

### Cost Estimates

The cost estimates for odour improvements were reviewed during audit.

Costs have not been derived from the Company's EES cost models but have been developed from an elemental bottom-up approach.

Direct costs for civils and electromechanical works have been prepared in each instance on top of which Company on-costs have been applied. In summary, the total cost of each scheme is made up as follows:

- Base cost comprising civil and mechanical cost.
- Electrical costs taken from an estimate of the specific requirements in the case of Beckton or as 12% of mechanical cost and 12% of building cost. The value of 12% is a standard allowance used when no detail is available.
- ICA cost taken from estimate of specific requirements in the case of Beckton or as 4% of mechanical cost and 4% of building cost. The value of 4% is a standard allowance used when no detail is available.
- Indirect costs taken as 48% of the sum of base, electrical and ICA costs. This value of 48% is made up from three elements:
  - Risk 8%. This multiplier is made up from 6.64% risk to Thames Water (EES data) and 1.7% contractors risk (taken from outturn costs for at Mogden),
  - Construction General Items 25%. These are contractor indirect costs and include construction management, design, general items, bond and management fees. The value is taken from outturn costs for Project 59HF and
  - Other Project Costs 15%. These are Thames indirect costs. The value is taken from outturn costs for at Mogden.

The indirect cost multiplier is lower than for other PR09 projects due to the greater simplicity of odour projects compared to other PR09 projects, and as Thames found with the major odour project at Mogden.

The accuracy of the cost estimates has improved between the draft and final business plan with the current central estimate for the larger projects to be +/- 10% (compared to +/- 25% at draft), based on aluminium and steel prices at September 2007. This improvement is due to the level of detailed input from qualified and experienced cost estimators, including obtaining quotations from suppliers and comparison with additional in-house cost data from other AMP4 schemes to validate the cost functions. In general the bottom up approach has produced lower estimates than would have resulted from a top down approach allowing us to reflect a robust central estimate of what we believe can be achieved.

We recognise that Thames has made considerable efforts to improve the accuracy of its cost estimates between draft and final in response to the Ofwat challenge at the DBP stage and consider that they are now satisfactory.

### **Summary of Audit & Review**

There was no change in methodology between DBP and FBP though there has been a reassessment of the baseline odour emissions at Beckton and Longreach STWs. Nevertheless the series of solutions proposed and evaluated at each site remained the same so we remain satisfied in the methodology adopted and the means of evaluation for amelioration schemes at each site.

Thames has provided full disclosure of documentation prepared in development of the odour programme for PR09. Additionally, co-operation from the Thames team was good.

We are satisfied that the methodology adopted by Thames Water is reasonable. Whilst there were elements of the methodology that were not entirely clear we are satisfied that the correct solutions have been proposed for each of the sites.

Unfortunately due to the uncertain and changing nature of odour emissions, there is inherent uncertainty in odour modelling despite offering the best predictive method currently available for identifying potential nuisance. In that regard, it is not possible to be certain that the solutions as proposed will reduce odour nuisance to the extent as predicted or eradicate odour complaints entirely. This proposed investment however provides the best possible means of achieving a cost effective reduction in odour the basis for which future occurrences can be monitored and evaluated.

Cost estimates at FBP stage were improved using a bottom up costing procedure. We reviewed both the base costs comprising civil and mechanical cost plus the indirect on-costs. The indirect cost multiplier is lower than for other PR09 projects because Thames recognises the greater simplicity of odour projects compared to other PR09 projects.

We recognise that Thames has made considerable efforts to improve the accuracy of its cost estimates between draft and final in response to the Ofwat challenge at the DBP stage and consider that they are now satisfactory.

We consider that the key risks associated with Thames' proposed programme are:

1. Risk of schemes not achieving intended benefits due to inherent lack of certainty in odour modelling (not possible to reduce risk as best practical means of assessment used by Thames)
2. Risk of further pressure from Local Councils and Developers to improve odour mitigation at Thames' expense.

Development plans are supported principally by customer centred drivers and the avoidance of statutory provisions covering odour nuisance.

We consider that in general the rigor of analysis that underpins the Company's proposals is good, although as previously described there is some uncertainty in minor aspects of the methodology. We do not consider that this has resulted in any adverse or residual consequences.

The Company's plans represent a ramping up rather than a step change of odour mitigation within Thames region in recognition of the heightening public awareness of odour issues, pressure from Environmental Health Officers and perceived encroachment of building development close to site boundaries.

It is considered that a robust and effective CBA approach has been adopted at each of the priority sites to develop the business plan.

There are no risks foreseen for the implementation of the FBP for odour in terms of deliverability and sustainability. Technology is robust and proven and in accordance with widespread industry practice.

**Date:** 17 April 2009  
**Prepared By:** HMS  
**Version:** Final