

Transport and Environment Committee

10am, Tuesday, 2 June 2015

Seafield Waste Water Treatment Works – Monitoring of Scottish Water Odour Improvement Plan

Item number	7.15
Report number	
Executive/routine	
Wards	All

Executive summary

At its meeting on 26 August 2014, the Transport and Environment Committee agreed representation should be made to Scottish Water to seek reassurances that all appropriate measures would be pursued to mitigate and minimise the potential impact of odour, with a specific focus on storm tank cleaning operations, from the Seafield Waste Water Treatment Works (WWTW) to the surrounding local community.

Committee instructed Council officers to explore with Scottish Water which of the remaining potential odour improvement measures (options B to E) contained in the Scottish Water Odour Improvement Plan (OIP), implemented in 2011, continue to be relevant, and if not already implemented, could be employed to further reduce odour emissions.

A letter was sent to Scottish Water on 13 October 2014 which acknowledged Phase 1 of the OIP had been fully implemented and requested further key information. This letter and the Scottish Water response are presented in this report. Committee also requested further research into a number of key actions which required dialogue with Scottish Water and other Council Service Teams and an update is provided on progress for these actions.

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Recommendations

It is recommended that Transport and Environment Committee:

- 1.1 notes that the Council's odour monitoring and assessment programme shows that while the sewerage nuisance and major incidents affecting local residents have reduced substantially since 2012, there has been no significant further reduction since 2013 and it is recognised that local residents continue to complain about odour nuisance;
- 1.2 notes that the findings of the Council's odour monitoring and assessment programme from 1 March 2012 to 31 October 2014 show Scottish Water continue to remain compliant with the Code of Practice (CoP) and the implementation of the Scottish Water OIP;
- 1.3 instructs officers to continue, for one further year, the odour monitoring and assessment programme. This includes responding to complaints of sewerage nuisance and carrying out monitoring when activities which pose an odour release risk are due to be implemented within the WWTW;
- 1.4 notes the recent improvements which have become operational as set out in section 3.15 and requests that an evaluation report be provided in one year detailing the findings of the continued monitoring and assessment programme, including the outcome of any investigations into any major odour incidents;
- 1.5 notes Scottish Water has advised the Council that although the Seafield WWTW storm tanks have the potential to be a significant source of odour, Scottish Water has specifically focussed both managerial and investment effort on these tanks, and see these efforts as a primary route to minimising the risk of odour release;
- 1.6 requests that Scottish Water continue to give ongoing consideration to what additional enhancements and operational improvements might be provided to further enhance odour risk mitigation;
- 1.7 notes the response from Scottish Water on the relevance and possible implementation of the remaining potential odour improvement measures (options B to E) contained in the Scottish Water OIP;

- 1.8 recognises that the City of Edinburgh Council’s experience of application, and interpretation, of the Sewerage Nuisance (CoP) (Scotland) Order 2006 is concurrent with six other Scottish Local Authorities;
- 1.9 notes that advice provided internally by Legal Services on an interpretation of what represents a “material breach” of the CoP is in line with the officer interpretation previously presented to stakeholders; and
- 1.10 notes the information provided by the Council’s Planning Enforcement Team on Planning conditions and consents relating to boundary odour monitoring at the WWTW.

Background

- 2.1 The Sewerage Nuisance (Code of Practice) (CoP) (Scotland) Order 2006 placed a duty on Scottish Water to develop an Odour Improvement Plan (OIP) to minimise sewerage odour emissions detectable out with the boundary of Seafield Waste Water Treatment Works (WWTW). The CoP also placed a duty on the Council to monitor and assess the effectiveness of Scottish Water’s Seafield OIP.
- 2.2 The Water Services etc (Scotland) Act 2005 placed a duty on the Council to monitor compliance with the CoP and to investigate complaints of sewerage nuisance.
- 2.3 As previously reported, the Council’s monitoring programme to assess the OIP commenced on 1 June 2011, following implementation of the OIP in May 2011.
- 2.4 Following meetings held on 21 July 2014 and 5 August 2014 between representatives of Leith Links Residents Association (LLRA), local elected members, Professor Robert Jackson (a consultant acting on behalf of LLRA) and Council officers, a series of actions were agreed as follows:
 - the Council should seek further reassurances from Scottish Water that all appropriate measures be pursued to mitigate and minimise odour release due to storm tank cleaning;
 - Council officers should engage in further dialogue with Scottish Water on future plans for odour minimisation from the storm tanks;
 - the Council is to formally advise Scottish Water that Abatement Measure A, as set out in the Scottish Water and Stirling Water OIP, has been fully implemented;
 - to explore with Scottish Water which of the remaining odour improvement measures (options B to E) outlined in the OIP continue to be relevant and could still be employed to further reduce odour emissions;

- Council officers contact all other Scottish Local Authorities requesting information on their experience of odour nuisance from WWTWs in their areas;
- a report be provided on a legal interpretation of a “material breach” of the CoP;
- a report be provided containing information on planning conditions attached to planning consents relating to boundary odour monitoring; and
- data be provided on any exceedances of 10 parts per billion of hydrogen sulphide measured at the site boundary over the past 5 years.

These actions were endorsed by Transport and Environment Committee on 26 August 2014.

- 2.5 This report provides an update on the findings of the Council’s odour monitoring and assessment programme from 1 March 2012 to 31 October 2014, and the progress on the actions officials were asked to take forward by Transport and Environment Committee and key stakeholders.

Main report

Monitoring and assessment programme

- 3.1 The Council’s monitoring and assessment programme for Scottish Water’s Seafield WWTW OIP commenced on 1 June 2011. Progress reports were presented to Committee on 29 November 2011, 18 June 2012, 13 September 2012 and 23 November 2012.
- 3.2 Table 1 below, provides the findings of the programme, set out as three full comparison periods, which can be used to assess the effectiveness of the OIP. This allows for a comparison of the warmer months of the year when residents are more likely to experience odour release.
- 3.3 The table shows a reduction in complaints received by the Council in 2013 and 2014, compared with the same period in 2012.
- 3.4 2012 was considered a problematic year for odour release with four major incidents (and an acceptance from Scottish Water that the management of the WWTW could be improved); therefore it is reasonable to use this as a baseline year.

Monitoring Period	1 March to 31 October 2012	1 March to 31 October 2013	1 March to 31 October 2014
Complaints received	182	82	81
No. of days where complaints were received	63	49	46
Complaint visits where staff detected odour	11	10	7
Days where 3+ complaints were received	16	6	8
Number of individual household complaining	60	33	35
Major Odour Incidents	4	0	1
Surveillance visits by staff to assess odours	452	124	93
Days when staff detected moderate or strong odour	14	4	6

Table 1 Seafield WWTW odour monitoring and assessment data

- 3.5 The table shows a reduction in complaints received by the Council in 2013 and 2014, compared with the same period in 2012.
- 3.6 2012 was considered a problematic year for odour release with four major incidents (and an acceptance from Scottish Water that the management of the WWTW could be improved); therefore it is reasonable to use this as a baseline year.
- 3.7 Council action ensured that Scottish Water and its WWTW operators, Veolia Water, made significant improvements to the operational management of the works commencing 2013.
- 3.8 The CoP requires Scottish Water to minimise sewerage nuisance, not to eliminate it. Using validated complaint and assessment data collected by the Council through the monitoring and assessment programme, the figures in Table 1 for 2013 and 2014 indicate that odour nuisance continues at a reduced level in line with the CoP. The seven complaints investigated in the monitoring period of 1 March to 31 October 2014, were linked to the Seafield Waste Water Treatment Plant and odour was noted in the community. Two of the witnessed complaints related to one storm tank cleaning incident (previously reported), where a change of wind direction occurred while cleaning operations were underway.

- 3.9 There have been no further major odour incidents witnessed by Council monitoring staff since the last report to Committee. Four odour complaints were received by the Council's contact centre on 13 February 2015 between 16.52 and 17.23 and in line with the monitoring and assessment programme procedures, a visit to the locus of the complaints was carried out, followed by an inspection of the works. No odour was detected in the local community and the inspection of the works did not reveal any specific odour source.
- 3.10 A further four complaints were received the following day relating to a time period between 11.00am and noon with similar findings following a visit to the locus and a further works inspection. In both cases, discussions with the works operator revealed that on both days, there were no maintenance or breakdown issues that could have contributed to any odour release.
- 3.11 As the Council's monitoring and assessment programme has proved a useful tool in assisting the Council to determine whether Scottish Water is currently meeting their odour minimisation responsibilities as described in the CoP, it is recommended that the programme is continued on a risk assessed basis. This continues to allow for proactive assessment visits to be carried out at times when the local community are likely to be most at risk from odour release, such as during planned maintenance activities or periods of warm weather.

Odour nuisance and mitigation

- 3.12 At its meeting on 26 August 2014, Transport and Environment Committee agreed that representations should be made to Scottish Water to seek reassurance that all appropriate measures would be pursued to mitigate and minimise the impact of odour generated by storm tank cleaning in the local community.
- 3.13 Committee also instructed officers to explore with Scottish Water which of the remaining potential odour improvement measures (options B to E) contained in the Scottish Water OIP, implemented in 2011, continue to be relevant and if not already implemented, could be employed to reduce further odour emissions. These requests are set out in a letter from the Council (Appendix 1) on 13 October 2014.
- 3.14 Scottish Water has in its response, provided information on the outcome of the discussions with Council officers regarding the relevance of options B to E as contained within the 2008 OIP. Scottish Water response is attached at Appendix 2 and concludes that options B and C have been delivered, where the actions impacted on higher risk odour risk and the remaining options would bring little benefit in further reducing odour risk.

Recent Improvements

- 3.15 Since the last report to committee, a number of further improvements have become operational within WWTW. These include:

Seafield Waste Water Treatment Works – Monitoring of Scottish Water Odour Improvement Plan

- The Thermal Hydrolysis sludge treatment project which was commissioned in early 2015 which will lower odour potential in the final sludge product;
- Specific operational and investment focus on storm tanks (approximately £220,000) which allows a sequential filling of the tanks during storm flow. Scottish Water has advised that the main benefit of this change is that storm water volumes can be controlled and managed more effectively. The enhanced ability to fill, empty and clean tanks reduces the potentially exposed area of sludge during cleaning operations with a consequential reduction in odour risk;
- Changes in operational practice with Scottish Water and Veolia focussed on odour prevention by ensuring that all one-off or periodic activities are risk assessed for odour emission prior to work commencing. The majority of such work now takes place on a proactive rather than a reactive basis to minimise the potential emission of odour; and
- Frequent and open communication with the Council on planned activities allow targeting of monitoring and assessment visits. Regular meetings are held to review plant and odour performance and look ahead to planned maintenance tasks and management of any associated odour risk.

The impact of these improvements on odour performance will be monitored through the Odour Monitoring and Assessment Programme as outlined in paragraph 3.11.

- 3.16 Scottish Water has confirmed its ongoing commitment to work with the Council and other stakeholders on odour related issues. It has indicated that, in the absence of any incidence of mechanical breakdown or failure, its core focus is on ensuring operational vigilance supported by a regime by proactive maintenance.
- 3.17 Scottish Water has, however, highlighted that the OIP was developed over six years ago and the baseline performance and condition of the WWTW is now different to the situation which existed when the modelling was carried out to inform the odour improvement measures described within the 2008 OIP. Should it be determined that further abatement investment is required, then this would warrant a new set of studies to be undertaken from which any additional abatement measures would be evaluated.
- 3.18 Scottish Water representatives agreed at a Scottish Water Seafield Stakeholder meeting on 11 March 2015 to give ongoing consideration to what additional enhancements might be provided to further enhance odour risk mitigation during the cleaning of storm tanks. This work continues, with Scottish Water advising that improved operational practice is key to risk mitigation and that current focus has been to ensure that all appropriate odour mitigation measures are in place

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ahead of the summer period. Dialogue with Scottish Water and Council officers is ongoing.

- 3.19 As advised to Stakeholders in March 2015, Scottish Water is currently reviewing their complaint process to try and improve on the manner of investigations and thus the quality of ensuing customer feedback. It has advised that one area under review is to better pinpoint the location of any reported odour so that it is not assumed that the cause is the wastewater treatment plant as it may be a network or other unrelated activity. A pilot is being trialled elsewhere in Scotland and when proven will be capable of application to Seafield later in the year.
- 3.20 Further, as part of a wider consideration of activities across the catchment which serves Seafield WWTW, the Council in partnership with Scottish Water, is funding an Integrated Catchment Study of the flood risks associated with sewers, culverts, watercourses and drainage areas. This study will identify strategic issues and inform co-ordinated solutions which meet environmental, regulatory and customer needs. In undertaking this work Scottish Water is acutely aware that any solutions or options which emanate from the study which influence flows being transported to and arriving at Seafield are understood and must not result in an increased risk of odour generation resulting either from the network or at the waste water treatment works itself. The first phase of the study will be completed in July 2015 and will initially be used to assess flood risk and associated mitigations.
- 3.21 Scottish Water is also pro-actively promoting a policy of wider engagement throughout the local community by a variety of means. Forthcoming activities arranged by Scottish Water to achieve this objective include an information event within a local supermarket, attending an upcoming meeting of the Leith Links/Central Community Council and, in conjunction with Veolia Water, hosting a series of visits to Seafield to delegates attending the World Water Congress which will be held in Edinburgh at the end of May 2015.

Legal

- 3.22 Committee further instructed officers to contact other Scottish Local Authorities requesting information on their experiences of dealing with odour nuisance from other Scottish WWTWs. Six Local Authorities responded to the Council's request which focused on interpretation of the CoP and specifically on the circumstances in which a Local Authority can serve an enforcement notice. It should be noted that all six responses concurred with this Council's interpretation of when an enforcement notice can be served.
- 3.23 On the instruction of Committee, the Council's Legal Service was requested to consider a legal interpretation of a "material breach" of the CoP. The advice provided was that an enforcement notice can only be served when there has been a material breach of the CoP. This advice further stated that a failure to

minimise odour may constitute a material breach, however, the mere existence of odour caused by a WWTW is not a material breach of the CoP as steps may have been taken to minimise this.

Planning

- 3.24 As a result of enquiries from elected members and LLRA representatives, Committee requested information relating to the planning conditions attached to relevant planning consents relating to odour monitoring at the boundary of the WWTW. The original waste water treatment plant at Seafield was developed under permitted development rights, in the mid 1970s, whereby planning permission was deemed to be granted at a national level for certain developments. In these circumstances there was no requirement for an application to be submitted to the Edinburgh District Council, as the local planning authority at that time, for planning permission. Therefore, no planning conditions could be attached to restrict or control the operations.
- 3.25 In 1998, Stirling Water submitted a planning application (A 02160 98) to the City of Edinburgh Council as local planning authority, to modify and improve works and build new process building and tanks at the site of Seafield WWTW. This application was subsequently approved by the Council in December 1998.
- 3.26 This planning permission was granted subject to a number of conditions, including 'EJ2' which required the developers to create a system for monitoring hydrogen sulphide and control the level of hydrogen sulphide at the site boundaries as a result of concerns in relation to odours emanating from the site.
- 3.27 The use of conditions has been subject to considerable scrutiny since the application was determined in 1998. The Government circular, The Use of Planning Conditions, 4/99, was published in 1999, and has influenced the approach of planning authorities in respect of the inclusion of conditions to planning permissions. Planning conditions continue to be subject to scrutiny and challenge, and in the last two years, the Planning Service has assessed its methodology to ensure that it is up to date and consistent with the legislation and any consequences of stated cases and relevant appeal decisions. On current assessment of condition EJ2, it is clear to the Planning Service that it fails to meet two of the six tests for planning conditions that are set out in the relevant government circular. These two tests relate to reasonableness and enforceability.
- 3.28 In assessing its reasonableness, regard must be had to the history of the site. There was no planning requirement for the 1998 permission to be implemented. Indeed the WWTW was capable, in planning terms, of continuing to operate lawfully without any controlling conditions. No change of use was proposed as part of permission A 02160 98, merely an extension to the existing, lawful use.

Therefore, the view of the Planning Service is that it was unreasonable to seek to impose more onerous controls on the site.

- 3.29 In terms of enforceability, and setting aside the test of reasonableness, it would be impossible to distinguish hydrogen sulphide particles generated through that development approved in 1998 from those generated through processes from within the original and non-conditioned plant. Accordingly the Council would not be in a position to state that the condition EJ2 was being breached as a consequence; there would be no prospect of securing any conviction in the courts or defending the service of a planning enforcement notice at appeal.

Measures of success

- 4.1 A decrease in the number of major odour emission events from Seafield and a reduction in complaints from the local community.
- 4.2 That implementation of the Scottish Water OIP, allied to improvements in operational management, results in minimisation of odour as required by the Sewerage Nuisance (CoP) (Scotland) Order 2006.

Financial impact

- 5.1 The cost of continuing to operate the current odour assessment and monitoring programme can be met from existing budgets.

Risk, policy, compliance and governance impact

- 6.1 Compliance with the Water Services etc. (Scotland) Act 2006 and the associated Sewerage Nuisance (CoP) (Scotland) Order 2006, and demonstration of compliance with the OIP.

Equalities impact

- 7.1 This report proposes no changes to current policies or procedures and as such, a full impact assessment is not required.

Sustainability impact

- 8.1 Scottish Water's OIP is intended to reduce odour output from Seafield WWTW to a level which will not constitute a sewerage nuisance, in accordance with the Sewerage Nuisance (CoP) (Scotland) Order 2006.

Consultation and engagement

- 9.1 Community representatives, local MSP's and the Council are members of the Seafield Stakeholder Liaison Group which meets periodically along with Scottish Water and Veolia Water to discuss the Council's role as regulator, actions proposed by Scottish Water and Veolia Water to minimise odour emissions and any other issues relating to the impact of the works on local community.

- 9.2 Meetings with elected members and LLRA representatives have taken place in July and August 2014, to agree a series of actions to progress the exploration of further potential mitigation measures.
- 9.3 At the Scottish Water Seafield Stakeholder Meeting on 11 March Scottish Water tabled an engagement paper outlining proposals to further develop the current stakeholder engagement model with a view to promoting wider communication and engagement around a range of issues, whilst continuing to recognise the importance of odour.

Background reading/external references

[Seafield WWTW – Monitoring of Scottish Water OIP – August 2014](#)

[Seafield WWTW – Monitoring of Scottish Water OIP – November 2012](#)

[Seafield WWTW – Monitoring of Scottish Water OIP – September 2012](#)

[Seafield WWTW – OIP Update – June 2012](#)

[Seafield WWTW – OIP Update – November 2011](#)

[Seafield WWTW – OIP Update – November 2010](#)

[Seafield WWTW – OIP Update – November 2009](#)

[Seafield WWTW – OIP Update – May 2008](#)

Seafield STW Odour Emissions Inventory – Final Report – November 2013

John Bury

Acting Director for Services for Communities

Contact: Natalie McKail, Environmental Health/Scientific Services, Registration, Bereavement and Local Community Planning Manager

E-mail: Natalie.mckail@edinburgh.gov.uk | Tel: 0131 529 7300

Contact: Colin Sibbald, Food, Health and Safety Manager

E-mail: Colin.sibbald@edinburgh.gov.uk | Tel: 0131 469 5924

Contact: Alan Moonie, Team Manager, Planning Service

E-mail: Alan.moonie@edinburgh.gov.uk | Tel: 0131 529 3909

Links

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Single Outcome Agreement

SO4 – Edinburgh’s communities are safer and have improved physical and social fabric.

Appendices

Appendix 1 – Letter from the Council to Scottish Water (13 October 2014)

Appendix 2 – Letter from Scottish Water to the Council (15 December 2014)

Mr John Telfer
Head of PFI
Scottish Water
Fairmilehead Office
55 Buckstone Terrace
EDINBURGH
EH10 6XH

Date: Monday 13 October 2014

Dear John Telfer

Seafield Waste Water Treatment Works - Monitoring of Scottish Water Odour Improvement Plan

The City of Edinburgh Council's Transport and Environment Committee, on 26 August 2014, considered a report entitled Seafield Waste Water Treatment Works (WWTW) - Monitoring of Scottish Water Odour Improvement Plan. The report noted that the Council's odour and monitoring programme indicates that sewerage nuisance and major odour incidents affecting local residents have reduced since 2012, and that, the Odour Improvement Plan (OIP) allied to the improvements in operational management of the works, is currently minimising odour nuisance. It was also recognised in the report that local residents continue to contact the Council to make complaints about odour nuisance.

The Committee, in approving this report, instructed Council officers to formally advise Scottish Water that the Council acknowledge that Scottish Water have now fully implemented Phase 1 of the Scottish Water and Stirling Water OIP, comprising Abatement Measure A. This consisted of a range of capital improvement measures including the provision of a new odour control unit, improvements to preliminary treatment and a range of agreed operational measures. The Committee also further instructed officers to explore with Scottish Water which of the remaining potential odour improvement measures contained in the further options B to E as outlined in the OIP continue to be relevant and could be employed to further reduce odour emissions from the WWTW.

The Committee noted the key findings of the independent Odour Emissions Inventory carried out by Mott MacDonald for Scottish Water at the Committee's request, in particular that the storm tanks are identified as having the potential to be a significant source of odour.

Natalie McKail | Environmental Health/Scientific Services, Registration, Bereavement and Local
Community Planning Manager | c/o City Chambers, Room 9.53, 253 High Street, EDINBURGH
EH1 1YJ | 0131 529 7300 | natalie.mckail@edinburgh.gov.uk



Therefore with regard to the storm tanks and specifically the cleaning operations associated with their use, officers are to engage in further dialogue with yourself and other colleagues at Scottish Water on your future plans for odour minimisation, with particular reference to engineering solutions, which could be put in place to mitigate odours from this process. Furthermore the Council seeks reassurance from Scottish Water that all appropriate measures will be pursued to minimise the impact of odour generated by storm tank cleaning in the local community.

Please do not hesitate to contact my office should you wish to discuss these matters further and I look forward to working with you on this.

Yours sincerely

Natalie McKail

Natalie McKail
Environmental Health/Scientific Services, Registration, Bereavement
and Local Community Planning Manager

15 December 2014



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Fairmilehead Office
55 Buckstone Terrace
Edinburgh
EH10 6XH

Customer Helpline
T: 0845 601 8855
W: www.scottishwater.co.uk

Natalie McKail
Environmental Health Manager
City of Edinburgh Council
c/o City Chambers
Room 9.53
253 High Street
EDINBURGH
EH1 1YJ

Dear Natalie

Seafeld WwTW – Monitoring of Scottish Water Improvement Plan

Thank you for your letter dated 13th October 2014. Following receipt of this letter my colleagues and I have given its contents careful consideration. As part of this process and, as requested, we have also met with your colleagues to discuss these issues prior to formalising our response.

At the outset I should state that notwithstanding our ongoing commitment to work with all our stakeholders in respect of odour related issues neither Scottish Water nor Stirling Water are currently in breach of their statutory obligations in respect of odour emissions and that no nuisance currently exists. As such, nothing contained within this letter should be construed or interpreted as an admission, implied or otherwise, that any such statutory breach has taken place requiring rectification.

Following the implementation of the major odour capital improvement works in 2011 our view is that in the absence of any incidence of mechanical breakdown or failure, the core focus is on ensuring operational vigilance is maintained throughout the works backed up by a regime of proactive maintenance. This point forms a central plank of our regular discussions with both Stirling Water and their operator, Veolia.

Within the context of these points we would respond to your specific points as set out below.

It is noted that the Transport and Environment Committee acknowledges that the capital and operational improvements comprising Abatement Measure A of the 2008 Odour Improvement Plan (OIP) have been fully implemented, re-endorsing the documentary sign off provided by the Council on this matter in February 2012.

The most substantive action emanating from your letter was for Scottish Water and the Council to explore which of the remaining potential odour improvement measures contained within the OIP continue to be relevant and could be employed to further reduce odour emissions from the wastewater treatment works. As noted above and given the absence of a statutory nuisance, any comment around measures which “could be employed” should not imply that they are required or that either Scottish Water or Stirling Water accepts any liability to implement such measures.

However, we believe that this last point is somewhat academic given that the OIP was developed over 6 years ago from a baseline assessment and odour modelling studies undertaken by WRc between 2003 and 2005. As such, you will appreciate that the current baseline of Seaford odour performance and plant condition is totally different to the situation which existed when this modelling was undertaken. All parties agree odour management and performance has markedly improved from that which prevailed back in 2005 both as a result of the extensive capital investment and significant improvements to operational practices which have taken place over the past 9 – 11 years.

Therefore, it is our basic premise that should a need ever arise where a decision is reached, by whatever means, that further odour abatement investment is required then it would warrant a completely new set of studies to be undertaken at that moment in time from which additional abatement measures, be they of a capital or operational nature, would be evaluated.

However, notwithstanding this point we have engaged with your colleagues to review the relevance of the remaining measures contained in Options B to E based on the original modelling undertaken.

The outcome of these discussions are summarised below;

- **Option B – cover and treat air from detritors and final effluent weirs.**

A key recommendation of the studies upon which the OIP was based was to address all the turbulent (i.e. presenting higher odour potential and risk) areas within the WwTW and these were fully addressed in the implementation of Option A. The scope of Option A was expanded to also include the inlet zone of the detritors.

The remaining less turbulent areas have not been associated with any odour complaints since implementation of Option A and are considered a low risk (a position reinforced by the Mott Macdonald independent audit). Cleaning operations within the detritors, historically a high risk activity generating complaints, have been undertaken with no discernible impact on odour performance, confirming that operational management controls are effective.

The final settlement tank effluent weirs, although turbulent, are of low risk in terms of offensiveness and persistence (consisting of fully treated wastewater) and have never been correlated with odour complaints since completion of Option A.

As such, even based on the historical data implementation of Option B would bring little benefit in terms of reducing odour emissions and hence the potential for complaints.

- **Option C – sludge cake containment**

The cake pad was covered within an enclosed building in the Autumn of 2009 such that this Option was delivered prior to the implementation of Option A. In respect of the overall sludge treatment operation the Thermal Hydrolysis sludge treatment project, due for commissioning in early 2015 will yield wider benefits in terms of lower odour potential in the final sludge product, assisted by the covering of the digested sludge holding tank and additional odour treatment.

Therefore, Scottish Water considers that Option C has already been delivered.

- **Option D – full enclosure of the primary settlement tanks (PSTs)**

Since implementation of the inlet works project (a sub part of Option A) in 2011, sludge levels in the primary settlement tanks have been much easier to control and has been supported by the installation of an additional sludge thickener unit (which didn't form part of Option A). These factors together with the covering of the external weirs of the PSTs (part of Option A) have yielded significant benefits in reducing odour emitted from this source. Since implementation of Option A, barring a few isolated (understood) instances of primary sludge levels increasing above an agreed operational trigger point, sludge stocks have been controlled and therefore, has resulted in a much reduced odour risk and potential across the uncovered quiescent areas of the settlement tanks.

Therefore, it is our view that so long as the current operational regime is followed the implementation of Option D would have bring little benefit in terms of overall odour emissions and would not be justified on the basis of a cost benefit analysis, given the original evaluation indicated that this option would equate to expenditure of £850k per property (2007 prices) removed from the 5 odour unit contour based on the 2003/05 modelling assumptions.

- **Option E – covering of the activated sludge plant**

Our conclusion is that for as long as the biology of this treatment process remains healthy these units neither generate an offensive or persistent odour. Whilst it is agreed that there is an odour associated with this process (one that has been modelled) odour complaints have not been linked to this part of the site.

For this reason, even based on the historic modelling, we believe implementation of Option E would have little benefit in terms of reducing odour emissions and any ensuing complaints.

With regard to your comments regarding the operation of the storm tanks and the cleaning process you will be aware through the regular Seafield Odour Liaison meetings and Veolia's daily operational reports that odour risk assessment and minimisation is embedded into the operational regime at Seafield and the storm tanks form an integral part of this daily assessment. It is true that, in common with every other operational asset on the site, the storm tanks have the *potential* to be a significant source of odour if managed ineffectively.

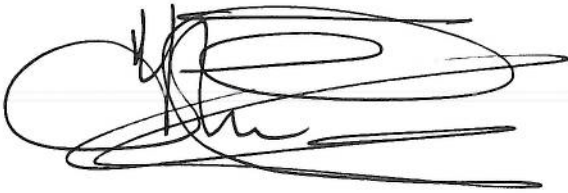
However, you will also be aware that the storm tanks have received specific operational focus and investment since the OIP was developed and are being managed in an effective manner. Alterations have been made to the inlet penstocks to allow automated sequential filling, giving the operator greater management control of flows and the ability to manage odour risks. This particular matter has received a significant amount of attention during the regular liaison meetings with your colleagues and SEPA such that all parties understand that cleaning operations are risk assessed in advance of any cleaning operation and that associated odour complaints form only a low percentage of overall complaint statistics. Notwithstanding this we are conscious to the sensitivities around this particular operation and will continue to ensure all reasonable and appropriate measures are taken to ensure that odour emissions are minimised from this source, especially during cleaning activities.

Through the various forums but most frequently via the Odour Liaison Group, Scottish Water will continue to work with your officers, SEPA, Stirling Water and Veolia to ensure

that all the assets and operations undertaken remain compliant with the controls outlined in the site Odour Management Plan and that their operation meets the requirements of the SEPA Licence.

I hope that this response fully addresses all of the points raised in your most recent letter and both my colleagues and I would be happy to meet with you to talk through its contents in greater detail and answer any questions which you may have.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'John Telfer', written over a horizontal line. The signature is somewhat stylized and overlaps the line.

**John Telfer
Head of PFI**