

EAST RIDING OF YORKSHIRE COUNCIL

Report to: Environment and Regeneration Overview and Scrutiny Sub-Committee
2 November 2011

Wards:
South West Holderness

Petition 04/11 Smells from Yorkshire Water Treatment Works, Saltend

Report of the Director of Environment and Neighbourhood Services

A. Executive Summary

In response to the petition received at the meeting of 21 September 2011, this report provides the committee with an overview of the history of the Hull Waste Water Treatment Works, the issues that have arisen this summer and the responses made. The report also outlines the next steps to be taken to ensure there is no repeat of the unacceptable odour releases experienced in recent months. Matters with regard to the existence of a statutory nuisance are being kept under close review and arrangements are in place to respond fully applying relevant use of our powers to hold Yorkshire Water to account should a statutory nuisance be found.

B. Corporate Priorities 2008-2011

Valuing Our Environment
Local Problem Solving

C. Portfolio

Environment, Housing and Planning
Rural Issues and Cultural Services

D. Matters for Consideration

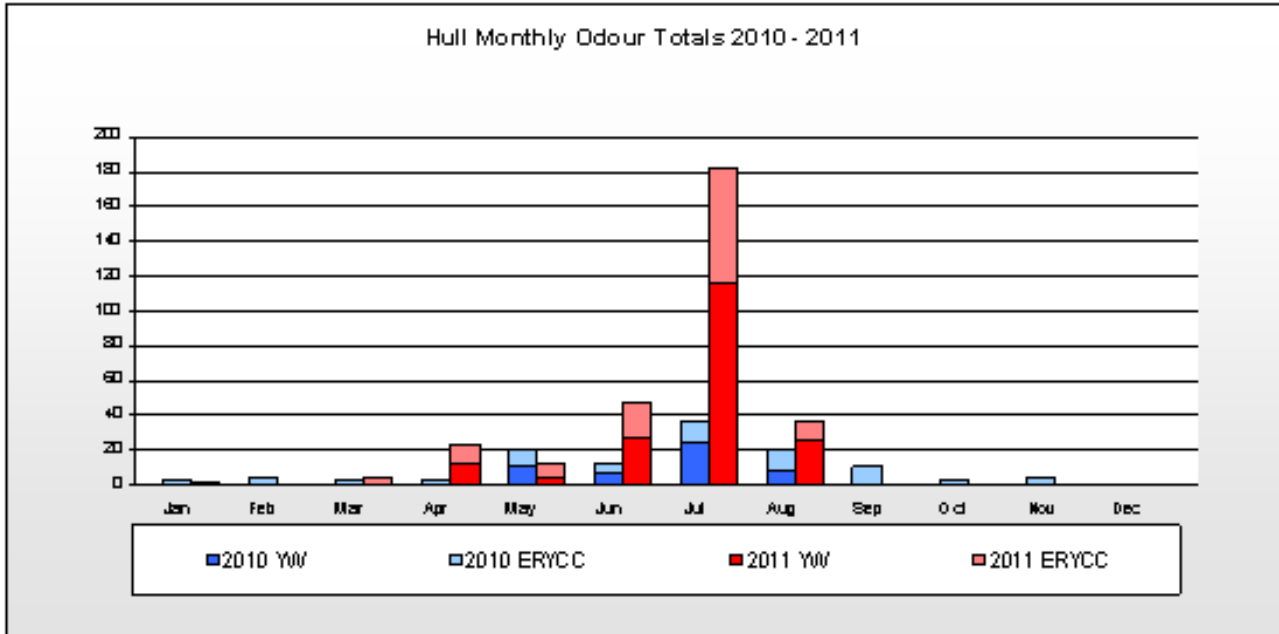
- That Members confirm their lack of confidence in Yorkshire Water, given Yorkshire Water's failures to manage and control the release of offensive odours from their Hull Waste Water Treatment Works, causing unacceptable disturbance to the local community.
- That Yorkshire Water is reminded that they serve the community of the East Riding and have a responsibility to paying customers who have no practical alternative but to obtain water services from their company.
- That Members support the approach being taken by the Council to bring about a substantial improvement to stop offensive odours being released from Hull Waste Water Treatment Works.
- That Members require an update report following the commissioning of the new odour control unit planned for November 2011.
- Yorkshire Water to advise members of Root Cause Investigation outcomes.

1. Background Information

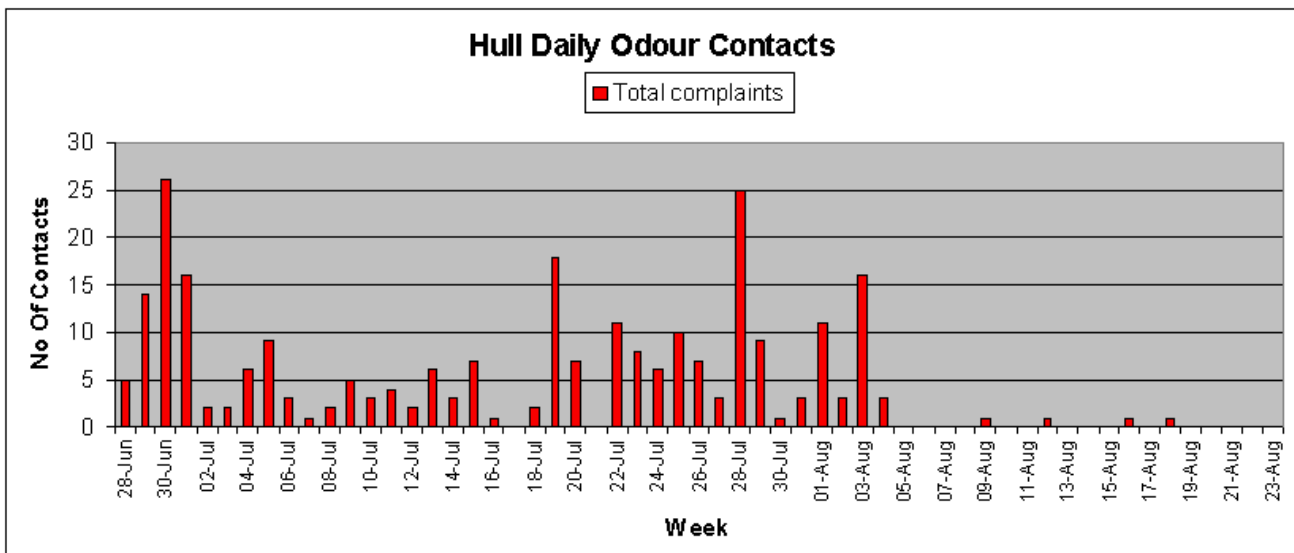
- 1.1 Hull Waste Water Treatment Works (WWTW) was granted planning permission in October 1997 and became operational in 2002. At first the works operated without a high level of complaint from residents, however from 2004, following some illegal discharges by businesses which impacted on the operation of the works, a level of complaint regarding the WWTW arose that has never entirely died down.
- 1.2 The WWTW, in general terms, has two loads to deal with. For most of the year it operates at a level of throughput that is derived from the population it serves and the industry of Hull. The peak demands are placed upon the WWTW by the “pea season” in which peas are harvested, processed and frozen by local food companies. This places additional significant loads upon the operation of the works. The timing of the pea season varies slightly but in general terms is between late June and early August.
- 1.3 The only legal control at the Council’s disposal to force Yorkshire Water into action is provided by the Statutory Nuisance provisions within the Environmental Protection Act 1990. If a statutory nuisance is established then the Council is under a duty to serve an abatement notice. It must be appreciated that when the term statutory nuisance is used it describes an issue which is prejudicial to health or a nuisance which can be described as an unreasonable interference with the enjoyment of land or property. This is a high legal test which takes into account factors such as the strength of an odour, the duration of it and how often it occurs. It must also arise from something that is not the normal use of a property; this is an important issue because it is expected that a sewage works will generate some odours. Should a notice be served, Yorkshire Water has the right of appeal to a magistrate’s court. The notice would also have to specify the works that would be required to abate the nuisance and these can also be appealed. If an appeal is made, the Council would have to provide evidence sufficient to show that a statutory nuisance was being caused. Part of the evidence that could be relied on to establish a nuisance is witness statements from local residents and diaries of the problems suffered from.
- 1.4 Other bodies have separate powers, the Water Services Regulation Authority (OFWAT) has separate powers and a specific duty to protect the interests of consumers.
- 1.5 If a notice was served and was upheld on appeal the Council would then be in a position to prosecute Yorkshire Water if the requirements of the notice were breached. Yorkshire Water would have a defence that they were employing “best practicable means” to prevent a nuisance arising, and would make reference to the steps contained in Appendix 1.
- 1.6 In response to the historic complaints, public protection officers investigated and determined that whilst there is significant cause for concern about the offensive odours released from the site, the evidence collected has not triggered a sufficiently robust ‘statutory nuisance’. A series of improvements were carried out by Yorkshire Water as “Medium Term Odour Mitigation Works”. These included a modification programme on the existing Odour Control Unit (OCU). Monitoring by public protection officers in 2009 did appear to show that these improvements had been successful and as a result the levels of complaints dropped under normal operating circumstances.
- 1.7 A scheme of “Long Term Odour Mitigation Works” has also been set in motion. This will culminate in the commissioning of a new odour control unit towards the end of 2011. Installation of this unit is well underway and it should be fully operation long before the commencement of the next pea season.

2. Issues in 2011

2.1 Levels of complaint have been generally low from the beginning of the year through to the beginning of the pea season. At the end of June however a significant increase in complaints was noted. The first graph below shows the monthly totals of odour complaints for the last two years, including both Yorkshire Water and East Riding of Yorkshire Council records.



2.2 The second graph below shows the daily levels of complaints received by Yorkshire Water, providing more detail of the duration of the complaints which coincides very closely with the pea season.



2.3 Information provided by Yorkshire Water indicated that the origin of this summer's odour problems lay in a large amount of concentrated effluent discharged to the works; at a time when low rainfall failed to dilute it. The concentrated load impacted upon the biological systems that treat the water, causing knock on effects throughout the works and generating un-acceptable levels of odour.

3. The Response of Yorkshire Water

- 3.1 When complaints began to be received towards the end of June 2011 Yorkshire Water took a series of steps to minimise odour from the site. Although the full root cause investigation report has not yet been received measures undertaken included the following: Cessation of clean out operations of the grit & grease channel, chemical dosing of sludge to inhibit the creation of Hydrogen Sulphide, regular sampling and review of dosing rates which included change of dosing chemical when process conditions allowed, regular desludging of the primary settlement, regular review and control of the sequential batch reactors in particular a rolling system of maintenance to ensure air supply.
- 3.2 A public meeting was held in Hedon on 24 August in order to allow local residents to express their feelings. It is understood that over 80 residents attended. The views of the residents relating to the odour issues were very clearly expressed. Yorkshire Water apologised for the problems caused and undertook to prevent its recurrence.

4. The Response of East Riding of Yorkshire Council

- 4.1 Following the increase in complaints Public Protection officers have visited complainants in order to make a professional judgement as to the existence or not of a statutory nuisance.
- 4.2 Because of Yorkshire Water's historic and recent failures of effective controls in managing odours released from their Hull Waste Water Treatment Works, it is possible that future events may constitute a 'statutory nuisance', particularly in areas closer to the site where offensive odours are stronger, and more frequent in nature.
The Council would require the full assistance of the local community to evidence nuisance and the adverse impact caused to people's enjoyment of land or property.
- 4.3 A second response entailed officers increasing the level of visits to the WWTW to understand what was occurring on site and to make suggestions as to possible solutions.
- 4.4 Meetings with senior staff from Hull City Council Environmental Health have been held in order to ensure that the response from both Councils is coordinated and that information has been shared.
- 4.5 Members of the public have expressed concern about the health effects of the odours from the waste water treatment works. The main gas of concern is H₂S, Hydrogen sulphide. Figures provided by Yorkshire Water from the ARUP Report 2008 show that of 84 individual on site samples taken over three different days the highest recorded level was 0.14ppm H₂S. In addition to the on site measurements a number of samples off site were taken and of the 34 individual sample results over three different days the highest off site reading was 0.108ppm H₂S. H₂S is detectable by the human nose at concentrations as low as 0.028ppm. The lowest levels of health effects are reported by asthmatics at 2ppm and the 8 hour exposure limit is 5ppm. Whilst it is clear that levels of H₂S have been detected off site at levels higher than the detection threshold they have not been detected at any level near to that which the lowest levels of health effects are reported by asthmatics 2ppm.
- 4.6 Ward members, the portfolio holder and officers met with Graham Stewart MP and representatives of Yorkshire Water on 5 August to raise the concerns of residents. In addition to frankly expressing concern at the failure of the odour control systems in place it was also suggested that Yorkshire Water should meet local residents to allow them to express their opinions directly (see 3.2 above).

4.7 In addition to the communications with the company, the Director of Environment and Neighbourhood Services has also been in contact with the OFWAT and the Consumer Council for Water, providing them with evidence for their investigations. This correspondence is ongoing.

5. Resolution of the Odour Problems.

5.1 Residents and elected representatives have expressed concern that the problems this summer arose despite numerous previous attempts at resolving them. There is a lack of confidence that the management arrangements being put in place, including the new odour control unit, will be sufficient to achieve the required level of control for stopping the release of offensive odours in future.

5.2 Yorkshire Water has said that the new odour control unit will be in place in time to prevent a recurrence of the odour problems experienced by residents in 2011. They are also confident that the improvement in the management of the WWTW will have a beneficial effect. Public Protection officers are maintaining pressure for robust management action by Yorkshire Water to ensure all necessary controls are put in place.

5.3 To complete the investigation a final letter has been written to complainants requesting the provision of any records they have that could be used as evidence. The position will be kept under regular review.

5.4 Ongoing liaison arrangements between elected members, officers and Yorkshire Water will be maintained for as long as necessary.

6. Conclusion

6.1 The impact of the odours from the WWTW has been unacceptable this year resulting in the highest ever level of recorded complaints.

6.2 The levels of odours from the WWTW that will affect the local community are expected to be significantly reduced by the management improvements and the completion of the additional odour control unit.

6.3 The limitations of statutory provisions permit Yorkshire Water to refer to mitigation and programmed work, which prevent the Council from issuing an odour abatement notice.

6.4 Should evidence be found, or provided by residents as requested at section 4.2, the position with regard to nuisances will be closely reviewed, and where appropriate, promptly acted upon applying the relevant powers to hold Yorkshire Water to account for the release of offensive odours from their site, which is adversely affecting the local community.

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Background Papers

APPENDIX 1 – TIME LINE OF IMPROVEMENT WORKS UNDERTAKEN (Source – Yorkshire Water Plc)

ITEM	BENEFIT	DATE
Lamella tanks and channels covered with permanent GRP covers	Reduce emission of odour from primary treatment stage and send for treatment in OCU	2001
Upgrade to Water Softener and replacement of Three Stage OCU media	Removal of limescale from dosing water and prevent further media replacement. Increase longevity and efficiency of media.	2005
Odour Management Plan developed - now being used as a working document and remains under constant review and development.	Ensures the site is operated and maintained in such a way to reduce the impact and frequency of any odour generated on site. Completed in line with Defra Code of Practice on Odours from Sewage Treatment Works	2005
Unlawful Discharge Plan developed	Quick reaction to illegal trade effluent discharges into the Hull Sewerage system allows the source to be traced but also gives options around treatment or diversion thus protecting the biological treatment process	2005
Installation of Activated Carbon as 4 th stage to OCU	Additional stage ensures that 99% of odours are removed by the OCU	2006
Activated carbon replaced in 4 th Stage to OCU	Regular replacement of activated carbon ensures that the maximum capacity is available within the carbon to absorb the odour compounds	2007 2008 2009
New Sludge Tank Mixers installed	Improved performance from Sludge Treatment Facility and thus reducing the amount of downtime and potential for odour generation	2006
Sludge Chemical Dosing trials instigated	Identified the most effective chemical to dose into the sludge to reduce the generation of odour	2006
Chemical dosing of MPOX into sludge commenced - Initially intermittent and as required but now continuously dosing	MPOX dosing directly into the sludge feeding into the Sludge Treatment Facility removes hydrogen sulphide and thus reduces odours generated during sludge treatment process	2006
SBR Splitter Chamber masking sprays	If odour is generated by SBR's then the sprays can be immediately employed to neutralise any odour	2006 ongoing
SBR's cleaned out	Removal of all rags and grit enables the biological stage of the process to operate at the peak of it's efficiency	2007
Inlet Pumping Station cleaned out	Allows inlet pumps to work on FFT pumps and operate at low levels thus reducing opportunity for septicity to develop and then be pumped forward into treatment stages	2007

ITEM	BENEFIT	DATE
New Inlet Works completed	Reduced risk of blockages caused by rags throughout the whole treatment works and sludge treatment facility. Thus improving overall works performance, reducing emergency repairs, not allowing septicity to develop and keeping biological process in a healthy, balanced and stable state	2008
Appointment of two Energy & Process Technicians	Provides improved technical focus for the operation of the OCU. Improved performance of the biological process which reduces the risk of odour being generated.	2008
OCU scheme completed	Complete refurbishment and remodelling of units to give improved reliability, operability, control, capacity and performance of OCU	2009
Instrumentation improvements	New instruments installed at key parts of the process allow for greater degree of automatic control and therefore increase the stability and reliability of operational process units.	2009
Digesters cleaned out	Removal of accumulated rags and grit has increased the efficiency of the digesters and reduced the possibility of blockage, breakdown and spillages.	2009
Lamellas cleaned out.	Biological and solid removal rates improved therefore decreasing the biological load passing forward to the SBR's and reducing the possibility of septicity developing in the biological treatment stage	2009
Weekly odour meeting	Meeting attended by key YW individuals and representatives from ERYCC Environmental Health Department. Allows all to keep up to speed with day to day operation and continuous improvements with regard to odour. Levels of odour discussed and also levels of complaints.	2009