

Comments from the Minister of Planning and Environment on 'Jersey's Wastewater Strategy Peer review'

28 April 2014

1. Regulatory position of the Department of the Environment

The management, treatment and ultimate disposal of any liquid waste to the environment is regulated by the Minister for Planning and Environment under the provisions of the Water Pollution (Jersey) Law, 2000 (the Law). These regulatory responsibilities are delegated to Environmental Protection (The Regulator). Discharge permits are issued and enforced for both the sewage treatment works and pumping stations. Under the Law, Department officers also investigate reported pollution incidents deriving from the sewage network.

To safeguard against any perceived conflict by one States Department regulating another, Environmental Protection must report all matters arising and regulatory approaches to the Attorney General (AG)¹. EP also operate in strict accordance to an enforcement policy and guidance that has been agreed with the AG.

2. Replacement sewage treatment works

It is considered that the current proposal by TTS to replace the existing works is reasonable, given the age and low environmental performance of the existing facility and the likely increased future demands, both in terms of population size and environmental requirements. It is important to note that the build of a replacement sewage treatment works as detailed in the current Waste water Strategy is to be implemented through a phased approach. The initial replacement works will not include a nutrient (nitrate) removal plant. The regulator has signed up to this approach as the scientific evidence-base to date does not fully justify the high capital and operating costs that the nutrient removal plant would require.

Department's comment

The Department therefore considers that the report would benefit from highlighting the:

- 1) phased approach and the rationale for this approach
- 2) need for future trigger points that will indicate the need for further (and evidenced) investment by the States for nutrient removal or other treatment options

3. Legislation (page 1 and Chapter 2).

It is recognised why Aecom have considered EU legislation in terms of drivers of best practice but events and issues pertaining to this subject matter are driven by domestic legislation, the effect and provisions of which, it would appear, have not been considered.

4. Recommendation 1 (page 5)

The classification of St Aubin's Bay should be completed as soon as possible to understand whether nitrification and denitrification are required to meet nitrogen and ammonia consents

¹ A quarterly report submitted to the Attorney General that provides details of enforcement action taken against all States Departments in breach of administered legislation.

Department's comment

Several studies of the trophic status and source apportionment within St Aubin's Bay have been undertaken. There were completed in 1997 (CREH)², 2009-10 (CREH)³ and 2013 (Cascade)⁴. These studies had different aims and resource constraints which limit the utility of each data set and they addressed different national and international recommendations on the calculation of trophic status.

The waters of Zone B within St Aubin's Bay, would not be classed as sensitive to eutrophication: i.e. given a strict application of the assessment criteria suggested in CSTT (1997). However, as in our earlier 1997 assessment, this is a marginal case. The difference between the 1997 and 2009/10 assessments is driven by the change in criteria outlined in the CSTT (1997) guidance.

5. Recommendations 2

Discussions regarding the proposed discharge consent for the new STW should be held to ensure that the treatment options proposed are reasonable.

Department comment

The ecological concern posed by excess nutrients within St Aubin's Bay is eutrophication, specifically the intermittent and recurring nuisance of macrophyte (sea lettuce) that form floating mats as a strand line on the beach. A recent WFD visioning workshop for the Bay involving representative stakeholders (leisure users, hotels, concessions etc.) identified sea lettuce as a major concern⁵.

Current studies indicate that:

- i. The principal terrestrial loadings of available nitrogen discharging to the Bay are streams draining the island of Jersey and the sewage effluent discharged to the intertidal zone through an outfall.
- ii. There is no statistically significant evidence of elevated concentrations in available nitrogen concentrations in St Aubin's Bay compared to the wider sea water outside St Aubin's Bay.
- iii. A high tidal range of Jersey produces a high degree of water and nutrient exchange between St Aubin's Bay and this outer marine environment.

Specifically, Zone B water (the main Bay) only rarely exceeds the available nitrogen threshold of 12 mmol/m³ and 18 mmol/m³ (suggested in CSTT (1994 and 1997) and UKTAG (2010) respectively). Thus, following the CSTT (1997) methodology, eutrophication was not present within St. Aubin's Bay. This suggests that a numeric compliance limit for total nitrogen strictly according to the UWWT Directive is not appropriate for that purpose.

² CREH Trophic status of St Aubin's Bay, Nov. 1997, CREH, Estimation of nitrogen and phosphorous budgets entering St Aubin's Bay- Feb. 1997

³ CREH Trophic status of St Aubin's Bay, 200-2010

⁴ Cascade. St Aubin's Bay- winter and spring 2013 water quality monitoring report Aug 2013

⁵ St Aubin's Bay water quality workshop- setting of vision and objectives for St Aubin's Bay, 18 September 2013. Relevant objectives for this report were: 'Improved water quality due to better quality effluent from wastewater (sewage) treatment and cleaner run-off from land' and 'Understanding of the cause of sea lettuce and ensuring its minimal nuisance'

However, the mixing zone (area close to the STW outfall, streams and close inshore) does exhibit elevated available nitrogen and indeed phosphorus well into the period after the spring bloom of phytoplankton. This pattern of high available nitrogen concentration occurring each tidal cycle, for which there is a strong evidence-base, could be the principal distinguishing factor between St Aubin's Bay and the other Jersey bays, not receiving comparable sewage effluents and/or stream water fluxes, and for which surf zone nutrient concentration data do not exist.

The Department therefore considers it prudent to further investigate the water quality and the tidal circulation within the mixing zone (surf zone) in order to better inform what the impact of nutrients from the STW has on the growth of sea lettuce.

6. Water Framework Directive (page 7)

The monitoring of St Aubin's Bay according to the provision within the WFD was prioritised by the Department in line with the proposal by TTS to replace the current STW. The adoption of the principles of the WFD approach by the Department has been endorsed by the Environment Scrutiny Panel following their review of marine water quality⁶.

The monitoring includes the health of ecosystems and biota as well as chemical (including priority hazardous substances and nutrient concentration). Monitoring began in April 2012 and an interim classification of St Aubin's Bay was established in June 2013.

The Bay has an interim provisional classification of 'moderate' status according to the WFD sampling protocols. The failure to attain the recommended 'good' status was due to nutrient enrichment as evidenced by high levels of macroalgae (green seaweed) and an absence of extended flora of brown seaweeds on offshore rocks.

Monitoring is continuing and a final classification will be given in July 2015 (utilising the required three years of monitoring data).

The WFD approach will form part of the regulatory regime within the revised discharge permit for the replacement works. The permit will be further strengthened by conditions relating to 'end of pipe' measurements. The Department will seek external advice and guidance for the drafting the permit from the Environmental Agency, UK so that utmost protection of the receiving environment can be achieved.

7. EU Bathing Water Directive (page 7)

The report states that it is unclear whether the parameters required by the revised Bathing Water Directive are being analysed. The Department is fully implementing these provisions across the 16 island bathing water beaches and full classification will be undertaken prior to 2015 according to the Revised Bathing Water Directive (2006/7/EC). Annual bathing water compliance for the island is independently audited by the Centre for Environmental Health (CREH) each year. Island results are included as part of the MCS Good Beach Guide.

8. Sludge legislation (page 9)

The collection and disposal onto land of sewage sludge is administered by TTS. The island does not have any legislation to regulate this activity. The Department of the Environment has however recommended that TTS adhere to the principals of the UK 'Safe Sludge Matrix'.

The Department will be further auditing the nutrient management plans (field records in which all inputs of nutrients are recorded) of 10% of all farms on the island as part of cross-compliance requirements of the single area payment to farmers.

⁶ Environment Scrutiny Panel 'Protecting our Marine Environment-Report-9 November 2011 S.R.15/2001

9. Sewer network (page 15)

The Department supports the recommendation to put in place mitigation measures to control surface water ingress to the sewage network. The discharge permit for pumping stations allows 'storming events' to be taken into account as mitigation against overflows. However, during recent storms events several pumping stations have continued to storm after the rain had stopped. The Department are seeking advice concerning the legal definition of 'storming conditions' to better inform their enforcement approach of discharge permits during such conditions. The department will be undertaking a thorough review of the existing granted permits for all the island's pumping station and will modify them to ensure that they meet best environmental practise.

10. Flow rates (page 10)

Information on flow rates within the existing sewage network should be provided to inform likelihood of back-up problems that may lead to odour or flooding problems. This is especially important for the town area.

11. Surface water separation (page 10)

The Department support TTS work on separating surface water from the foul sewer system. Consideration should be given the effect of this separation on spill rates from existing pumping stations and the cavern.

12. Deep shaft process (page 20 – 23)

Details of costings for useful comparison with proposed methods would be useful. These linked to ease of import of appropriate drilling technology, likely diameter and more accurate depth prediction indicating site footprint, and geological conditions of substrate.

13. Sustainability (page 26-27)

The Department supports measures such as sustainable drainage systems, water minimisation and effluent re-use as a means of reducing the volume of sewage requiring treatment. The Department Ecoactive team and work by Jersey Water (universal metering etc.) help deliver these.

14. Climate change

It would be useful for the report to consider and assess the likely impact of climate change on the existing sewage network, pumping stations (inc. Cavern) and the STW. This would include increased loadings, flooding and over spills.