

## **DUNDEE CITY COUNCIL**

**REPORT TO:** Leisure, Arts and Communities Committee - 8 December 2008

**REPORT ON:** Reduction of Blue Algae Bloom

**REPORT BY:** Director of Leisure and Communities

**REPORT NO:** 607-2008

### **1.0 PURPOSE OF REPORT**

1.1 The purpose of this report is to seek consent for a programme of remedial water treatment at Clatto Reservoir and lower Stobswell Pond to reduce the bloom of blue algae over the summer period.

### **2.0 RECOMMENDATIONS**

2.1 It is recommended that the Committee approve:

2.1.1 remedial water treatment works at both locations during the period 2008-2009.

2.1.2 collaboration with Scottish Water, the Scottish Environmental Protection Agency, Dundee University and the Centre for Ecology and Hydrology over longer term reduction of blue algae bloom risk to ensure monitoring levels are reduced and maintained below safe human/animal immersion health risk levels under Health & Safety guidance.

2.1.3 remedial water treatment contract be subject to independent agreed performance measures, to be tested in 2009, prior to full settlement of the final contract payment.

### **3.0 FINANCIAL IMPLICATIONS**

3.1 The treatment will cost £32,000. £16,000 will be funded from the Leisure & Communities Department's Revenue Budget in 2008-2009 and £16,000 from the Council's Renewal and Repairs Fund in 2009-2010.

### **4.0 MAIN TEXT**

4.1 The following water locations subject to Blue Algae Bloom are used:

4.1.1 Clatto Reservoir provides a water and nature environment within a local park situated in the North West of the City.

The former ranger station and supporting Boat jetties and storage have been extensively upgraded during 2007-2008 and will be available for the promotion of outdoor education watersport activities from 1 April 2009 subject to blue algae monitoring levels. The availability of this resource will dramatically reduce transport, launching fees and travel time involved in use of sites outwith the city and contribute extensively to lower operating costs, reduced carbon footprint and an increase in tuition time on location.

The improvements in facilities at this location have been externally funded and have not been able to be fully utilised as safe due to the levels of blue algae bloom.

- 4.1.2 The lower Stobswell pond is increasingly used by Dundee Model Boat Club who lease accommodation at this site. The pond is no longer fed from the adjoining underground reservoir.

It has suffered from excess levels of blue algae in 2008. The Department has drained this pond and removed bottom debris to reduce contamination prior to refill. The bottom is clay.

## **5.0 FUTURE PROPOSALS**

- 5.1 At present, blue algae bloom is alleviated in part by the introduction of barley straw during early Spring and the reduction of water top ups from known infected/blue algae prone water sources.
- 5.2 The above treatment has not had any positive degree of success in 2007 and 2008 nor has flush through of clean water in 2008 at Clatto. The above treatments have been acknowledged as good initial practice by the Centre for Ecology and Hydrology.
- 5.3 After extensive internet research a European based company, Phoslock Water Solutions Ltd, Ottersberg, Germany, has been located who have had considerable operational success treating algae boom in inland lakes in Holland and Germany over the past 4 years. The company is anxious to expand its activities into the United Kingdom and is prepared to work collaboratively with key partners to develop a sustainable natural remedial option to reduce blue algae bloom to safe manageable proportions.

Dependent on site their remedial action has been successful in the level of reduction or elimination of the problem on treated sites.

- 5.4 The treatment depends on the use of the type of liquid Byzantium clay and when sprayed on the water surface during early winter, sinks to the bottom of the water and locks in phosphorus which is the main feeder of blue algae. Phosphates are usually introduced to water via the natural run off from agricultural fertilised farmland.

The topography of both sites suggests natural run off will not be a problem.

The product being a natural based product presents no adverse risk to fish or the environment ie the production of green algae which enhances water purity etc and the natural water/pond ecology. The treatment will require a permit for application by SEPA.

- 5.5 The treatment is usually a one off sprayed application at a measured dosage with follow up if necessary at a much reduced application between 5 to 12 years if monitored levels of blue algae cell count require reduction.
- 5.6 There are no known commercial providers offering the level of performance for water treatment services outwith this company throughout Europe.
- 5.7 This company has, at their own cost, reviewed all 2008 water samples and have twice taken extensive samples from both locations for scientific analysis. The conclusion and reports tabled indicate that both locations come high on their optimum treatment scale for success due to their isolated positions, topography and controlled water inputs.

## **6.0 POLICY IMPLICATIONS**

6.1 This report has been screened for any policy implications in respect of Sustainability, Strategic Environmental Assessment, Anti-Poverty, Equality Impact Assessment and Risk Management.

There are no implications.

6.2 Assessments under sustainability and strategic environmental assessment have been conducted by discussion with the Scottish Environmental Protection Agency, Scottish Water, Dundee University and the Scottish Centre for Ecology & Hydrology.

## **7.0 CONSULTATION**

7.1 The Chief Executive, Depute Chief Executive (Support Services), Depute Chief Executive (Finance) and Head of Finance have been consulted on this report and are in agreement with its content.

## **8.0 BACKGROUND PAPERS**

8.1 None.

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**DIRECTOR OF LEISURE AND COMMUNITIES**  
**3 NOVEMBER 2008**