



# City of Biggs

## Agenda Item Staff Report For the Regular City Council Meeting: Nov 12, 2013

TO: Honorable Mayor and Members of the City Council  
FROM: City Administrator  
SUBJECT: Waste Water Quality Update (Informational)

### Background

In the years since the construction of many small Waste Water Treatment Plants (WWTP) including Biggs' WWTP, discharge requirements have become increasingly more stringent. In Biggs' case, the changes to discharge requirements eventually caused its WWTP to be out of compliance, most notably out of compliance with the effluent ammonia limitations as outlined in the table below.

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Ammonia	mg/L	1.23	2.15	--	--

In response to the historical compliance issues, in October 2012 the California Regional Water Quality Control Board (RWQCB) issued a Time Schedule Order (TSO) to the City of Biggs which among many other things established interim ammonia discharge limitations as seen in the table below.

Parameter	Units	MEC	Mean	Standard Deviation	Number of Samples with Detections	Calculated Interim Limitation	Interim Limitation (Average Monthly)	Interim Limitation (Maximum Daily)
Ammonia	mg/L	18.0	9.6	3.2	52	20.2 <sup>1</sup>	27 <sup>2</sup>	27 <sup>2</sup>

<sup>1</sup> Based on 3.3 x Std Dev + Mean  
<sup>2</sup> Based on previous Order No. R5-2007-0032 and the MEC of 27 mg/L

From the tables above we can see that while the effluent standard allows a maximum daily discharge level of 2.15 mg/L, the TSO sets Biggs' interim maximum daily discharge level at 27 mg/L.

The attached graphs show the results of weekly ammonia level testing for Biggs since 01/03/2012, and we can see that while Biggs' WWTP effluent ammonia levels are above the standard effluent limitations, with peaks at 16 mg/L they are well below the interim limitations set by the TSO.

While a simple facultative pond treatment plant such as Biggs' is unlikely to achieve ammonia compliance we expect to see a reduction in ammonia levels as aeration consistently improves levels of dissolved oxygen.

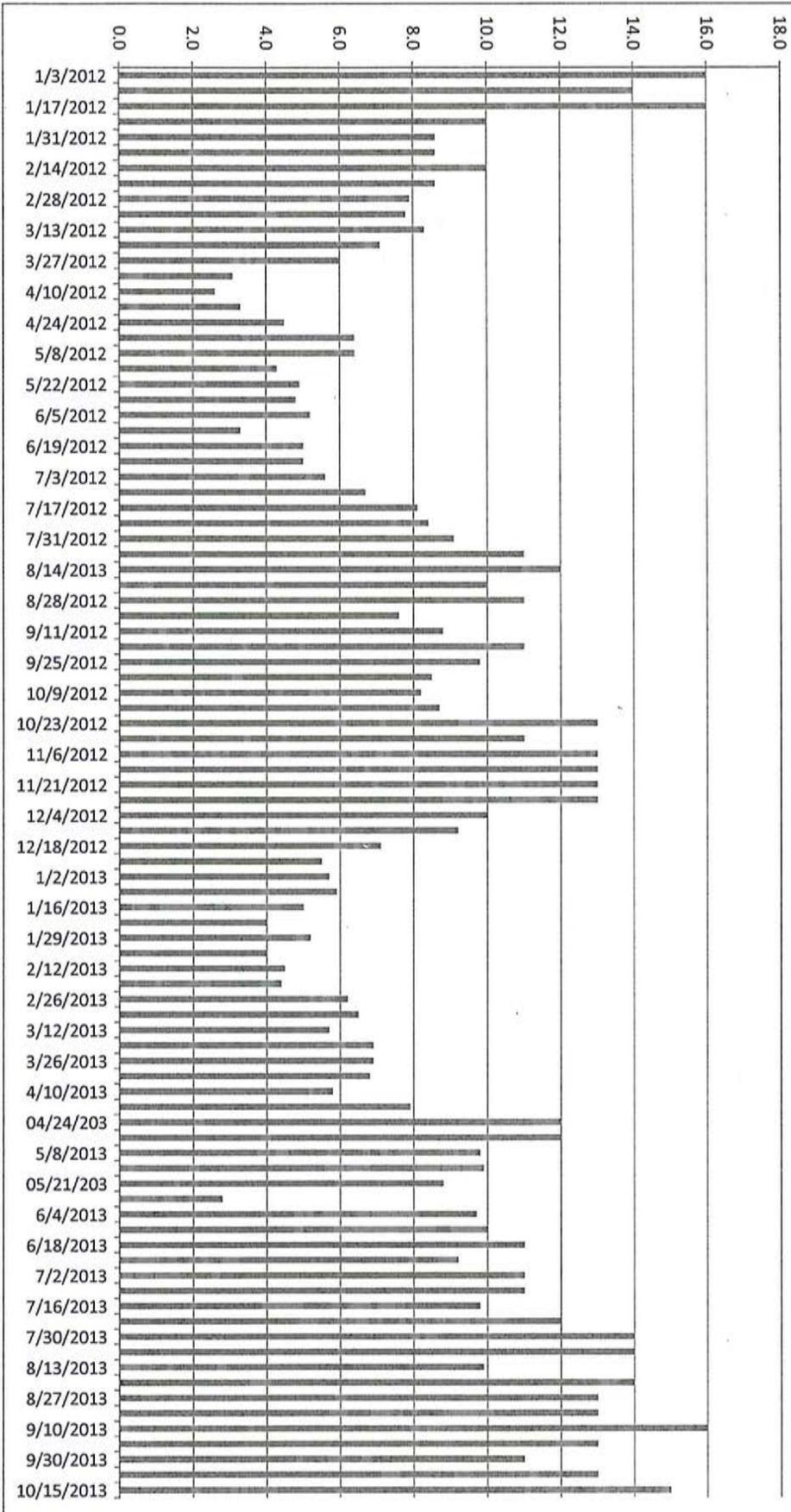
As stable and improved levels of dissolved oxygen are achieved through steady and adequate aeration we expect to see improved nitrification of ammonia, which would result in lower levels of ammonia in the effluent.

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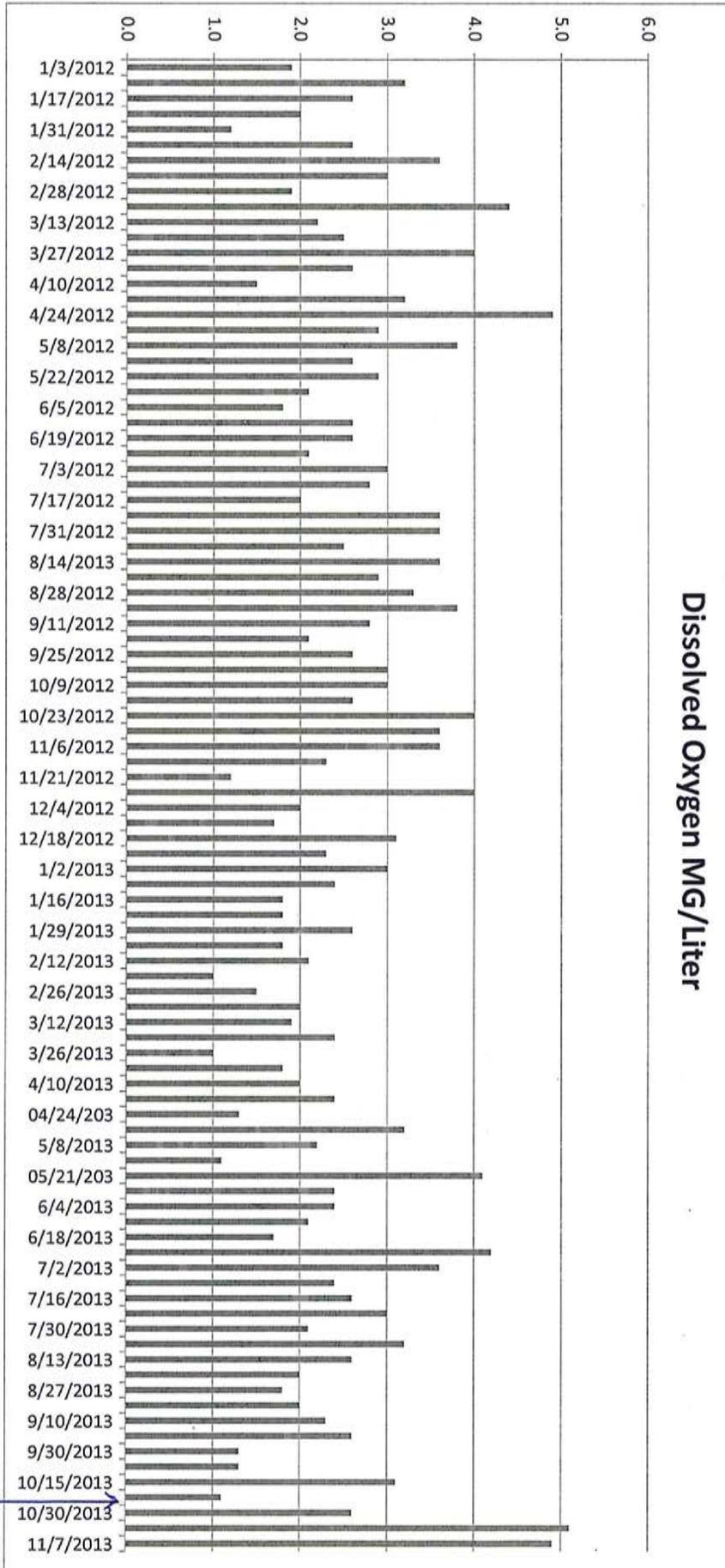
Mark Sorensen, City Administrator

# Effluent Ammonia Mg/Liter

■ Effluent Ammonia Mg/Liter



Dissolved Oxygen MG/Liter



2 NEW AERATORS  
INSTALLED 10/28/13