



A Public Agency 12800 RIDGE ROAD, SUTTER CREEK, CA 95685 • (209) 223-3018 Fax: (209) 257-5281

MEMORANDUM

To: Amador Water Agency, Board of Directors

From: Chris McKeage, Operations Manager

Date: November 23, 2009

Subj: Recent CDPH Comment Regarding Water Produced at the Tanner WTP.

The Amador Water Agency is charged with the responsibility of producing and delivering a safe and ample water supply to all its customers. Staff continues to work proactively with both our State regulators, wholesale customers and our retail customers alike. Safety and public health are our primary concern, but cost and efficiency are a constant driving factor as well.

Recently, the City of Jackson had three (3) lead samples that exceeded the MCL. Historically, to our knowledge, the city has always passed the 90th percentile MCL as required by state and federal law. However, recent chemical changes at the Tanner Water Treatment Plant (Tanner WTP) actually increased the corrosive effect of our water. The change which was prompted by recommendations made in a recent CDPH inspection report that suggested the agency could save some money and still provide an equal level of corrosion abatement. Unfortunately this ended up not being the case. As a result the Agency is ordering a new supply of corrosion inhibitor (Zinc-orthophosphate). This is the original corrosion inhibitor that the Tanner WTP has used for many years. While it is a little more expensive the corrosion mitigating performance is clearly superior.

Max Godde, the District Systems Operator of both the Jackson and Drytown systems, is working cooperatively with the Agency to conduct follow up water quality testing to verify the effectiveness of the Tanner WTP adjustments. The City of Drytown does seem to have one (1) sample site with other contributing factors. The Agency is interested in further investigation as to why the lead level of that particular site has tested consistently higher than the rest of the city. This test location negatively skews the data for the city as a whole. Ultimately we're sure a satisfying solution will be achieved.

The high lead levels of the recent Jackson and Drytown water quality testing prompted the November 16, 2009 CDPH letter which tries to make certain points and requests data. Previously in my letter to CDPH (see attached), I supplied the data and information we had,

including specific MSDS sheets, historical chemical dosing and plant water quality monitoring data. This was expected to meet the request made by CDPH.

The letter from CDPH goes on to discuss matters involving the LaMel Heights water system, Rabb Park, Ridgeway Pines, Pine Grove System and the Buckhorn Water Treatment Plant. All past lead and copper issues have been addressed and recent water quality data verifies this. These systems are not relevant to the current issue with the Tanner WTP which serves City of Jackson, Sutter Creek, Drytown, Amador City and now City of Plymouth.

Agency staff takes all water quality issues seriously and are working diligently to produce safe water at the most reasonable cost possible. If you or any of your customers have questions please have them give me a call at 209-257-5248 or attend our next board meeting on December 10, 2009 at 9:00 am for an update. I hope this letter and attached information is helpful.

Respectfully,



Chris McKeage,
Operations Manager

cc. Gene Mancebo, Interim General Manager, AWA
Doug Yardley, Water Production Supervisor, AWA
Michelle Opalenik, Amador EHD
Mike Daily, City of Jackson
Edwin Kaffer, Drytown CSD
Jay Olig, Pine Grove CSD
Frank Baumann, FJB Water Technology
Max Godde, Operator
Joseph Spano, P.E. CDPH

Encl. November 3rd response letter from AWA to CDPH
November 16th letter from CDPH to AWA

CM/ jm



A Public Agency 12800 RIDGE ROAD, SUTTER CREEK, CA 95685 • (209) 223-3018 Fax: (209) 257-5281

November 3, 2009

Mr. Joe O. Spano, P.E.
District Engineer
31 E. Channel Street, Ste: 270
Stockton, Ca 95202

RE: Water Corrosivity at Tanner Water Treatment Plant

This letter is in response to your emails of October 23, 2009 and October 27, 2009 regarding the corrosivity of water produced at the Tanner Water Treatment Plant. I have included a spreadsheet with the data you requested, but some added comment is needed.

- Historically the Tanner Water Treatment Plant added zinc orthophosphate to aid in corrosion control. Back in early 2009 after a discussion with you, staff decided to try a variant in the form of ortho-polyphosphate. The thought was that it was primarily the phosphate that mitigates water corrosivity and polyphosphate cost less than zinc orthophosphate. All of this was an effort to produce good quality water at a lower cost. In no way are we committed to staying with ortho-polyphosphate.
- The Agency started utilizing ortho-polyphosphate at the Tanner water treatment plant in July of 2009, but the plant recording forms did not get updated in the column description reflecting this change. Our forms have since been changed.
- As you can see in the accompanying graph the treated water leaving the clearwell has run fairly consistent in pH. Note that in May of 2007 we saw an increase in raw pH. This was about the time the Agency put the new Amador Pipeline into service. It seems the cement lining on the new ductile line leached some lime and for a period increased the pH level.
- Staff switched from 50% caustic soda to 25% years ago when the Tanner Water Treatment Plant was converted from Cl_2 gas to 12% sodium hypochlorite. This change allows the continued use of the existing feed system.

As we discussed last week the Agency became aware of the high level of lead and copper in Jackson and high follow up sample in Drytown. We decided to up our ortho-polyphosphate feed rate from 2 ppm to 3 ppm and bring the finished water pH up to 8. Max Godde the operator of both the above systems agreed to re-sample the failed sites. Based on those results Amador Water Agency will decide to either maintain the higher level of dosing, or consider going back to zinc orthophosphate. For many years before the use of ortho-polyphosphate, the areas of Sutter Creek, Jackson and Amador City have met the 90% MCL for both lead and copper. Drytown for some reason has had some elevated levels of lead and copper which may need further investigation.

Though we have corrosive water and our alkalinity is low, the adjustments of pH and use of zinc orthophosphate historically has been sufficient to meet State Regulations. Staff will move to explore the range of our existing mitigating ability to improve any corrosive tendencies.

We look forward to any assistance afforded by the Department to analyze out Tanner Water Treatment Plant Quality.

If you have any questions or concerns do not hesitate to contact me at 209-257-5248.

Respectfully,

A handwritten signature in blue ink, appearing to read "Chris Mckeage".

Chris Mckeage
Operations Manager
Amador Water Agency

CM: jm

CC. Gene Mancebo, Interim General Manager
Doug Yardly, Water Supervisor
Eric Christeson, Interim Engineering Supervisor
Michelle Opalenik, Environmental Health Specialist

0310003 Tanner Water Treatment Plant Corrosivity of Water
2007

	Average ZnPO ₄ mg/L	Average PO ₄ mg/L	Average (25%) Caustic Soda mg/L	Finished pH	Raw pH
Jan-07	1.0		1.7	7.3	7.0
Feb-07	1.1		2.2	7.2	7.0
Mar-07	1.0		2.0	7.3	7.1
Apr-07	1.1		2.2	7.5	7.3
May-07	2.0		1.0	7.7	7.5
Jun-07	1.1		*	8.0	7.5
Jul-07	1.4		*	7.9	7.6
Aug-07	1.4		*	7.7	7.3
Sep-07	1.6		*	7.6	7.3
Oct-07	1.6		*	7.7	7.4
Nov-07	1.6		*	7.8	7.5
Dec-07	1.6		*	7.6	7.2

* June 2007-May 2008 Caustic Soda feeder was turned off because the treated water pH was high due to switching over to the new Amador Transit Pipeline.

2008

	Average ZnPO ₄ mg/L	Average PO ₄ mg/L	Average (25%) Caustic Soda mg/L	Finished pH	Raw pH
Jan-08	1.5		*	7.7	7.9
Feb-08	1.5		*	7.5	7.7
Mar-08	1.3		*	7.7	7.7
Apr-08	1.4		*	7.7	7.7
May-08	1.4		*	7.6	7.4
Jun-08	1.3		0.07	7.7	7.4
Jul-08	1.3		0.7	7.7	7.3
Aug-08	1.4		0.5	7.8	7.4
Sep-08	1.5		0.6	7.6	7.4
Oct-08	1.7		0.5	7.6	7.4
Nov-08	2		1.6	7.6	7.6
Dec-08	2		1.6	7.7	7.5

When Tanner WTP started injecting sodium hypochlorite instead of chlorine gas we switched from 50% to 25% Caustic Soda. Logs were never changed. Made changes to logs for Oct-09

2009

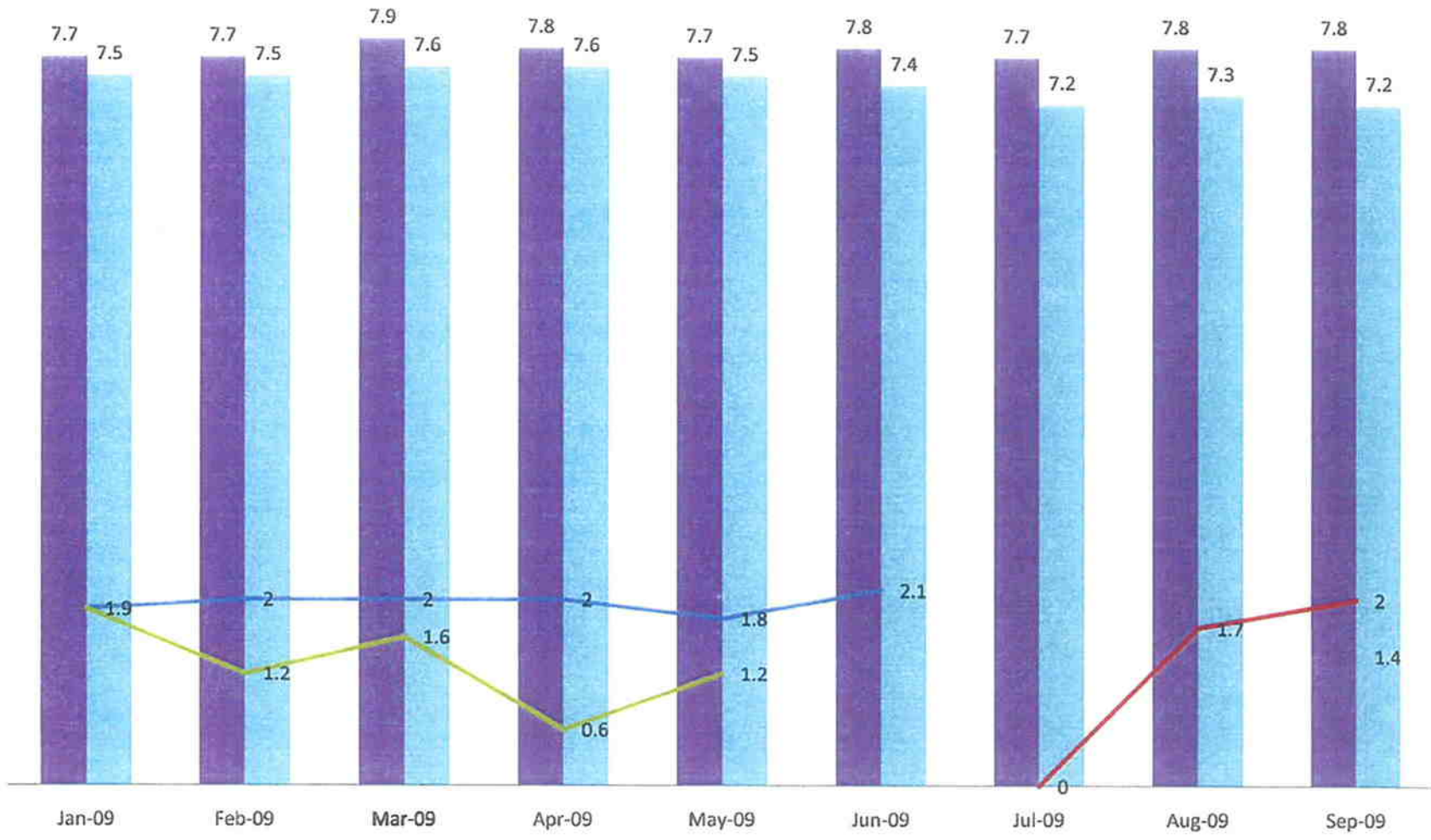
	Average ZnPO ₄ mg/L	Average PO ₄ mg/L	Average (25%) Caustic Soda mg/L	Finished pH	Raw pH
Jan-09	1.9		1.9	7.7	7.5
Feb-09	2		1.2	7.7	7.5
Mar-09	2		1.6	7.9	7.6
Apr-09	2		0.6	7.8	7.6
May-09	1.8		1.2	7.7	7.5
Jun-09	2.1		**	7.8	7.4
Jul-09		*1.8	**	7.7	7.2
Aug-09		1.7	**	7.8	7.3
Sep-09		2	1.4	7.8	7.2

* July 06, 2009 Switched from ZnPO₄ to PO₄

** Caustic Soda turned off because finish water pH was at 7.8.

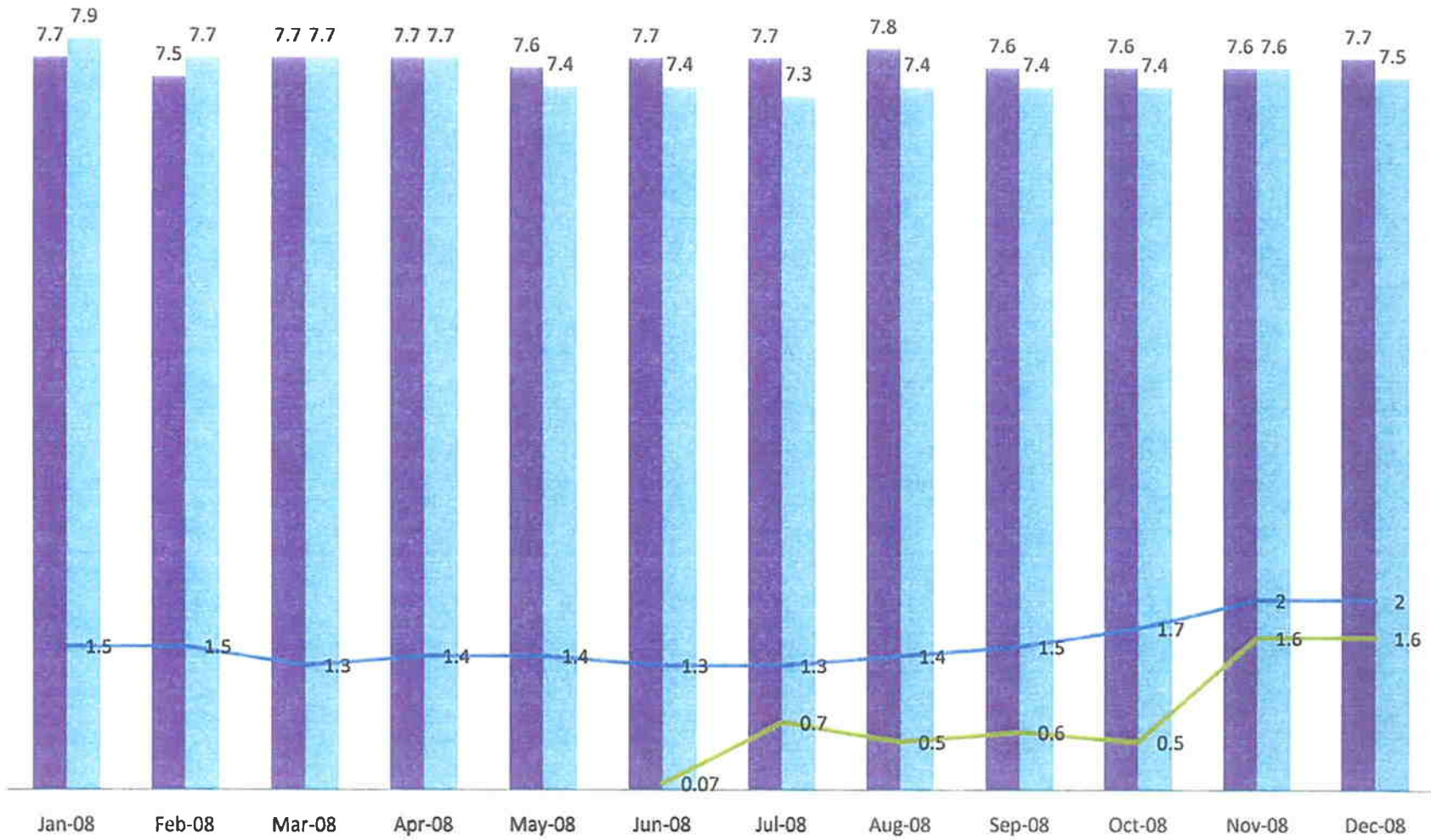
Tanner Corrosivity Rates 2009

■ Finished pH
 ■ Raw pH
 — Average ZnPO4 mg/L
 — Average PO4 mg/L
 — Average (25%) Caustic Soda mg/L



Tanner Corrosivity Rates 2008

■ Finished pH
 ■ Raw pH
 — Average ZnPO4 mg/L
 — Average PO4 mg/L
 — Average (25%) Caustic Soda mg/L



Tanner Corrosivity Rates 2007

■ Finished pH
 ■ Raw pH
 — Average PO4 mg/L
 — Average ZnPO4 mg/L
 — Average (25%) Caustic Soda mg/L

