

**LAKE MEAD WATER QUALITY FORUM**  
**October 30, 2007**  
**Meeting Summary**

**I. Introductions – Forum members and participating audience members introduced themselves.**  
See attached sign-in sheet.

**II. Status Reports:**

**1. Perchlorate Update – Todd Croft (NDEP – Las Vegas)**

Todd Croft reported the following updates for perchlorate:

Tronox continues to operate the FBR Perchlorate Treatment System. The amount of perchlorate removed on a pound per day basis, is between 1,500 and 2,000 lbs/day. In September, the removal rate was 1,543 lbs/day. The total amount of perchlorate removed from the environment to date is 2,379 tons. That breakdown comes from three locations:

- (1) Seep area - 388 tons
- (2) Athens Road – 706 tons
- (3) On-site – 1,285 tons

Mr. Croft further mentioned that several different entities continue to show interest in developing drinking water standards for perchlorate. California recently completed the process and in September announced a decision to set a State of California maximum contaminant level (MCL) at 6 ppb for perchlorate.

Mr. Croft stated that Shannon Harbor, NDEP Las Vegas, would be giving a presentation later in the meeting. Ms. Harbour would then present details as to the current state of perchlorate levels and other pertinent information.

**LV Wash:**

- The perchlorate mass flux passing Northshore Road for the past 7 months ranges between 55 to 90 lbs/day (February thru Sept 2007). The 8-month average is 78 lbs/day.
- This continues to be about an 85-90% reduction from pre-remediation values when the mass flux at Northshore Road was approximately 900-1,000 lbs/day.

### **Willow Beach:**

- The perchlorate concentrations measured at Willow Beach in the Colorado River system continue to remain low and have been measured at < 4 parts per billion (ppb) since June 2004. For the 10 of the 12 months in 2005, all of 2006 and through September 2007. Willow Beach perchlorate concentrations were reported ranging between 1.4 and 3.0 ppb (Jan-Aug 2007).
- Sampling of Willow Beach and Northshore Road transitioned from NDEP to AMPAC & Tronox in January 2007.
- The analytical method used for Willow Beach sample analyses transitioned to EPA Method 332.0 beginning with the September 2007 sample. A comparison of analytical results is planned for a 6-month period wherein replicate samples will be analyzed using both EPA Method 314.0 & EPA Method 332.0.

### **Colorado River:**

- Monthly perchlorate concentrations have been reported at < 4 ppb by the Metropolitan Water District (MWD) of Southern California water quality laboratory for all samples collected between June 2004 and July 2007.
- MWD reduced their reporting limit to 2 ppb in September 2003 and has reported perchlorate concentrations of < 2 ppb for all samples collected between October 2005 and July 2007. Except in November 2005, April 2006, and May 2006, samples had been reported between 2.0 and 2.3 ppb.

### **Tronox LLC (formerly Kerr-McGee):**

- Tronox' Fluidized Bed Reactor (FBR) perchlorate treatment system continues to operate. Perchlorate concentrations in the treated water discharge are routinely < 18 ppb.
- Perchlorate removal rates for the Tronox remediation system are typically reported between approximately 1,500 and 2,000 lbs. per day. Tronox reported 1543 lbs/day removal rate for September 2007.
- Removal of perchlorate from the environment through September 20, 2007: 2,379 tons total; 388 tons from the seep area; 706 tons from Athens Road; and 1,285 tons from the on-site system.
- A new UV assembly is currently being installed at the effluent side of the sand filter. This unit will replace the original UV system; is designed to function similarly by sterilizing bacteria present in the effluent and was chosen based upon reduced maintenance requirements.
- Tronox has submitted a Workplan for Capture Zone Analyses in response to an NDEP request to demonstrate the degree of mass capture provided by the existing three well fields. The referenced Workplan is under NDEP review.

## **AMPAC:**

- Start-up of the Interim ISB System was initiated on June 12, 2006. Degradation of perchlorate to non-detectable concentrations (<6 ppb) was achieved in the lead (first/closest) performance monitoring well by July 24, 2006.
- Activation of the second phase occurred in late December 2006 with the transfer of operations to the long-term ISB building, decommissioning of the interim ISB System, and activation of the Athens Road & Athens Pen Well Fields. Shakedown of the Permanent ISB System continued throughout May 2007.
- Currently, 4 of the 9 extraction wells are operating and 6 of the 6 injection wells are in use. Flow through the system is approximately 235 gpm with an average influent perchlorate concentration of 15 ppm and an average mass reduction of about 39 lbs/day.
- The current schedule calls for operating in this manner through at least the end of 2007 to evaluate optimized mass capture through selective pumping. A detailed performance review is underway through review of an 08/23/07 report.

## **Perchlorate Modeling:**

- McGinley & Associates, Inc. (MGA) initiated work in January 2007 and completed that work in June 2007 on perchlorate modeling efforts. This work resulted in development of a detailed two-dimensional groundwater flow and particle tracking model of the Athens Road Well Field area within a portion of the Tronox Perchlorate Plume.
- The 2007 Modeling Report provides a review of the remediation efforts conducted by Tronox at the Athens Road Well Field. Tronox, AMPAC, and other interested parties have been invited to a project debriefing which is planned for 11/07/07. Conclusions in the report will support decision-making efforts regarding remediation effectiveness and guide optimization efforts to be implemented over the next several months.

## **SCOP:**

Several meetings have been conducted with members of the Clean Water Coalition (CWC) to help guide future subsurface work in the vicinity of Pabco Road. The City of Henderson Wastewater Reclamation Facility (WRF) will be tied into the primary SCOP conveyance pipeline via a subsurface north/south trending Force Main. The Force Main will be constructed roughly parallel to Pabco Road from the WRF to the vicinity of the Las Vegas Wash where it will then cross the Wash via a deep tunnel.

This pipeline has the potential to allow for contaminant migration through the backfill in areas close to the Las Vegas Wash due to shallow groundwater conditions. Discussions are on-going to: (1) mitigate preferential flow through design considerations (i.e. water stop features); (2) address water disposition generated through extensive excavation dewatering; and (3) address water disposition generated through possible aquifer testing events (pump tests).

## **Nationally:**

- The California Department of Health Sciences (CDHS) announced on September 19, 2007 that the California MCL for perchlorate was set at 6 ug/L with an effective date of October 18, 2007.

## **2. Quagga Mussels (NDOW)**

Mr. Jon Sjoberg of the Nevada Division of Wildlife (NDOW) stated that on a statewide basis, there has been no detection of quagga mussels off of the Colorado River system. NDOW has been monitoring waters in eastern and northern Nevada that were stopped out of the Lake Mead hatchery. Prior to the discovery of quagga mussels in the system, none of the current monitoring has shown a positive detection at this time. So far everything has shown up negative for quagga mussels off the main stem of the river.

Mr. Sjoberg stated that he heard there had been a possible detection at Lake Powell at one of the marinas. A person in the audience spoke out to say that the detection at Lake Powell has not been verified.

Monitoring is still ongoing at Lake Mead. With the observational work that has been performed by the Parks Service and the direct monitoring by the Bureau of Reclamation, numbers of quagga mussels are being found in every basin in Lake Mead. The numbers tend to get higher downstream through the system. There are no areas of Lake Mead that have not had some level of detection.

In Lake Mojave, this summer, through August, there were very high numbers of quagga mussels being found. Because the Lake Mead hatchery is still shut down due to the quagga mussel issue, they have been using some of the net pens suspended in the river channel for trout rearing. Mr. Sjoberg further reported that the nets were so coated with adult quagga, most of the flow through the net pens had become restricted.

Mr. Sjoberg mentioned that the quagga mussels seem to be thriving and multiplying in the Las Vegas environment. Mr. Porta added that northern Nevada (i.e. Lake Tahoe) has taken an aggressive stance on preventative measures for the control of evasive species including quagga mussels.

## **3. Selenium Subcommittee**

Pam Willard of NDEP stated there was not much to report this meeting. Kathy Sertic was unable to attend this meeting, however, a lunch meeting would be held after the scheduled "facility tour". Anyone is welcome to attend. The discussion will basically be an updated history review.

#### **4. Las Vegas Wash Coordination Committee**

Mr. Seth Shanahan of the SNWA mentioned two activities that have occurred since the last meeting was held. Recently, the annual tour of the Las Vegas Wash was held. They took a look at the Clark County Parks and Recreation Project. Currently, 165 acres have been restored along the Wash. The tour also went to the Upper Diversion Weir Project which is one of the most recent weir projects. It is a unique structure in that it actually takes the flow of the Wash and splits it down a bypass channel also allowing a portion of the flow to go down into the Wash.

From the Upper Diversion Weir, the tour continued down where they visited the educational kiosk location. Visitors who come there are able to take a look at the Wash. There were discussions of wildlife surveys, outreach activities and the partnerships that help make the process successful. Then they visited a variety of other project and re-vegetation sites down by the crossing weir. The tour ended at an overlook at Las Vegas Bay. The next meeting of the Las Vegas Wash Coordination committee will be held on January 22<sup>nd</sup> at 9:00 am. There will be an e-mail sent out regarding that.

On October 9, 2007 they held the Management Advisory Committee (MAC) meeting. A variety of activities were discussed in that meeting including the 2008 Capital Improvements Plan. This plan was offered up to MAC for approval. In the plan it authorized about \$100 million dollars worth of future expenditures of weir projects and similar projects. Currently, there is a \$20 million dollar shortage of funds which will be further discussed to help the programs to continue. Also discussed was the Las Vegas Wash Wildlife Management Plan which will be on the agenda for the January meeting for approval. The next MAC meeting is schedule to be held on January 14<sup>th</sup> at 1:30 pm. One of the issues to be discussed is the forming of a Las Vegas Valley Watershed Advisory Committee which will be put in place to deal with issues regarding the Las Vegas Wash, watershed issues and Lake Mead.

#### **5. SCOP Update:**

Lynn Orphan with the Clean Water Coalition mentioned that as of the end of the previous week they have issued all of the final design contracts for the SCOP projects. Starting in November and December of 2007 they will begin the Boulder Basin adaptive management process.

### **III. Presentations**

1. Glen Canyon Dam Long-Term Experimental Plan  
(Jayne Kelleher, U.S. Bureau of Reclamation)
2. Upper Colorado River Basin Hydrologic Update  
(Heather Patno, U.S. Bureau of Reclamation)
3. Lower Colorado River Basin Shortages and Operations Guidelines  
(Terry Fulp, U.S. Bureau of Reclamation)
4. Perchlorate in the Las Vegas Valley: Remediation Status and Significant Achievements  
(Shannon Harbour, Nevada Division of Environmental Protection)

These presentations are available on the NDEP website at [ndep.nv.gov/forum](http://ndep.nv.gov/forum)

### **IV. Other Issues**

Mr. Tom Porta mentioned he had received a letter from the Clark County Regional Flood Control District (CCRFCD) concerning workshops. Mr. Porta asked Mr. Kevin Eubanks of the Clark County Regional Flood Control District to elaborate. Mr. Eubanks reported that on November 15<sup>th</sup> they were having an open-house in order to provide information about the development of programs for the Las Vegas Valley storm water discharges. In response to an EPA audit, they are looking to improve their program for construction sites, post construction etc., which includes pollution control. The meeting will be an open format. Anyone who is interested may attend and ask questions and get information. The meeting will be held at the Clark County Regional Flood District in Room 108 (main conference room).

The next Stakeholder meeting will be held on January 8<sup>th</sup> and will continue to be held every second Tuesday of the month. This meeting will be started after the Storm Water Management Committee meetings. The purpose of this is to reach out to the regulated community, however, any other interested parties are welcomed to attend.

### **V. Next Forum Meeting**

The next Lake Mead Water Quality Forum meeting was scheduled for February 5, 2008.

### **VI. Adjourn**

The meeting was adjourned at 12:40 pm