

**SPECIAL MEETING OF THE GROUNDWATER QUALITY COMMITTEE
OF THE BOARD OF DIRECTORS
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BOULEVARD, LAKEWOOD, CA 90712
2:00 P.M., WEDNESDAY, JUNE 23, 2010**

AGENDA

EACH ITEM ON THE AGENDA, NO MATTER HOW DESCRIBED, SHALL BE DEEMED TO INCLUDE ANY APPROPRIATE MOTION, WHETHER TO ADOPT A MINUTE MOTION, RESOLUTION, PAYMENT OF ANY BILL, APPROVAL OF ANY MATTER OR ACTION, OR ANY OTHER ACTION. ITEMS LISTED AS "FOR INFORMATION" MAY ALSO BE THE SUBJECT OF ANY "ACTION" TAKEN BY THE BOARD OR A COMMITTEE AT THE SAME MEETING.

- 1. DETERMINATION OF A QUORUM**
- 2. PUBLIC COMMENT**
- 3. APPROVAL OF THE MINUTES OF MARCH 24, 2010 AND APRIL 14, 2010**
Staff Recommendation: Approve as submitted.
- 4. GROUNDWATER QUALITY UPDATE – PROPOSED WATER QUALITY REGULATIONS FOR 1,2,3 - TRICHLOROPROPANE**
Staff Recommendation: For information.
- 5. GROUNDWATER QUALITY UPDATE – CHEMICALS OF EMERGING CONCERN SCIENCE ADVISORY PANEL DRAFT REPORT**
Staff Recommendation: For information.
- 6. GOLDSWORTHY DESALTER UPDATE**
Staff Recommendation: For information.
- 7. SAFE DRINKING WATER PROGRAM – MAYWOOD MUTUAL NO. 2- WELL 52ND AMENDMENT**
Staff Recommendation: Approve an amendment to the Agreement and Promissory Note with the Maywood Mutual Water Company No. 2, subject to approval as to form by District Counsel, increasing the agreement and promissory note amount by \$220,000 for a revised contract amount not to exceed one million one hundred and twenty thousand dollars (\$1,120,000).
- 8. DIRECTORS' REPORTS, INQUIRIES, AND REVIEW OF DIRECTIONS TO STAFF**
- 9. ADJOURNMENT**

Posted by Abigail C. Andom, Deputy Secretary, June 21, 2010.

In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the Board meeting, please contact Deputy Secretary Abigail Andom at (562) 921-5521 for assistance to enable the District to make reasonable accommodations.

All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712.

Agendas and minutes are available at the District's website, www.wrd.org.

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MINUTES

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**MINUTES OF MARCH 24, 2010
MEETING OF THE GROUNDWATER QUALITY COMMITTEE
OF THE BOARD OF DIRECTORS OF THE
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

A meeting of the Groundwater Quality Committee of the Board of Directors of the Water Replenishment District of Southern California was held on Wednesday, March 24, 2010, 11:58 a.m., at the District Office, 4040 Paramount Boulevard, California. Chairperson Rob Katherman called the meeting to order and presided thereover. Administrative Specialist Sheryll A. Moffat recorded the minutes.

1. DETERMINATION OF A QUORUM

Committee: Directors Rob Katherman and Sergio Calderon
Guests: Jeff Kaminski, 3M; Lindsay Swain, Swain Hydrogeology;
Gustavo Villa and Humberto Bobadilla of Maywood
Mutual Water Company #2; Sergio Palos of Maywood
Mutual Water Company #1; and Robert Rohlf of Maywood
Mutual Water Company #3
Staff: Ted Johnson, Hoover Ng, Charlene King, Phuong Ly

2. PUBLIC COMMENT

Jeff Kaminski of 3M gave a presentation on 3M Scotchkote Spray in Place Pipe 269 Coating which provides a resistant coating for water pipelines to prolong their life.

3. APPROVAL OF THE MINUTES OF JANUARY 27, 2010

The minutes of January 27, 2010 were approved as submitted.

**4. GROUNDWATER QUALITY UPDATE-SECONDARY DRINKING
WATER STANDARDS FOR AESTHETIC CONSIDERATIONS**

Senior Engineer Hoover Ng said that this is an informational item. He said that staff conducted a bottled water versus tap water taste testing at the District's Groundwater Festival on March 13th and 50% of the people preferred bottled water, 30% thought that the MWD water from the Colorado River was excellent, and finally 20% thought that groundwater tasted best right out of the kitchen tap.

Mr. Ng stated that the Department of Public Health (DPH) has established secondary drinking water standards in regard to the aesthetics of drinking water. He said that two constituents that do not have established standards are bicarbonate and magnesium noting that water systems are required to comply with these drinking water standards. If there are exceedances they must be reported to the California DPH. He said that chlorine residuals, metallic ions, algal growth are all contributing factors that may affect the taste and odor of water. He said that imported surface

water from MWD may at times be subjected to algal growth and even though the water is filtered and disinfected there are some chemicals that cannot be completely removed and may affect the taste and/or odor of the water.

5. GROUNDWATER CONTAMINATION UPDATE - PERCHLORATE

Water Quality Specialist Phuong Ly said that her report this month will focus on one region, specifically the Los Angeles Forebay, rather than two sites. Ms. Ly said that perchlorate is both a naturally-occurring chemical and a man-made chemical and, that in humans, it inhibits the proper intake of iodine and can also cause thyroid tumors. She said that ion exchange is the most common treatment but bioreactors and granular activated carbon are also effective. She said that staff has prepared several maps showing perchlorate detections in production wells located within the Los Angeles Forebay.

Mr. Lindsay Swain mentioned that fertilizer used in the 1940's in this area may have contained perchlorate.

Director Katherman asked that staff closely monitor the contamination and return to the committee with quarterly reports.

6. TIME EXTENSION WITH USGS FOR CENTRAL BASIN GROUNDWATER CONTAMINATION STUDY

The committee concurred with the staff recommendation to extend the termination date of the existing agreement with the USGS for the Central Basin Groundwater Contamination Study to December 31, 2011 with no additional cost to the District.

7. TIME EXTENSION FOR PROFESSIONAL SERVICES AGREEMENT WITH URS CORPORATION

Director Katherman said the he would have to abstain from voting on this item as he has done consultant work for the URS Corporation but would like the staff recommendation to go forward to the Board. President Calderon indicated that the item would go under Consent Calendar.

8. DIRECTORS' REPORTS, INQUIRIES, AND REVIEW OF DIRECTIONS TO STAFF

Director Katherman asked that the budget be brought to this committee next month for review and discussion. A special meeting will be held on April 8, 2010 at 12:00 p.m.

9. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 1:40 p.m.

Chairperson

Attest:

Director

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**MINUTES OF APRIL 14, 2010
MEETING OF THE GROUNDWATER QUALITY COMMITTEE
OF THE BOARD OF DIRECTORS OF THE
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

A meeting of the Groundwater Quality Committee of the Board of Directors of the Water Replenishment District of Southern California was held on Wednesday, April 14, 2010, 12:21 p.m., at the District Office, 4040 Paramount Boulevard, California. Chairperson Rob Katherman called the meeting to order and presided thereover. Administrative Specialist Sheryll A. Moffat recorded the minutes.

1. DETERMINATION OF A QUORUM

Committee: Directors Rob Katherman and Sergio Calderon

Staff: Robb Whitaker, Ted Johnson, Hoover Ng, Paul Fu,
Charlene King

2. PUBLIC COMMENT

There was none.

3. REVIEW OF GROUNDWATER QUALITY PROJECTS

Chief Hydrogeologist Ted Johnson said that there are five projects that fall under this year's budget: the Goldsworthy Desalter; the Water Quality Improvement Program; Groundwater Monitoring; the Safe Drinking Water Program and the Hydrogeology Program.

Senior Engineer and Project Manager Paul Fu said that the first item is \$200,000 intended for the preliminary engineering study for expansion of the Desalter; this expansion will double the plant's capacity. Director Katherman asked if staff is looking at horizontal drilling to which Mr. Johnson said yes, staff is looking at 2 scenarios one is a horizontal well and the other is a series of vertical wells. Layne Christensen is preparing a report on this. This project will be brought back to the committee in June for possible action on the RFP.

Mr. Johnson said that the Water Quality Improvement Program is managed by Senior Engineer Hoover Ng and Senior Hydrogeologist Nancy Matsumoto. Director Katherman asked if there is enough funding from a policy point of view. Mr. Johnson said that staff feels that they have budgeted appropriately for the upcoming year; if there are additional cleanups we would need more funding but we are comfortably funded for the monitoring.

Mr. Johnson said that the Regional Groundwater Monitoring program is a very good program and right on track. We have budgeted \$80,000 more than last year but we have added additional monitoring wells. Mr. Johnson said that the Groundwater Contamination Forum is in its 8th year and is very successful with many local area agencies participating.

Mr. Whitaker said that the Safe Drinking Water Program has no budget as it is funded out of reserves and then paid back. He said that the Technical Advisory Committee (TAC) has advocated a pay go on this project and at the time recommended we budget \$2M a year and then fund requests as we can. Discussion followed on possibly requiring pumpers to show their timeline and commitment to their project by a certain date; this committee will need to review how we process the requests.

Director Katherman said that after this year we can put an additional \$1M in the budget for the program and then discuss how the applicants could qualify for the program. It was decided that a policy discussion should be held in the new fiscal year as we will need some constraints after this year. Mr. Whitaker said that currently there is no cap on the loan program and this committee could possibly recommend to the Board to set a cap.

Mr. Johnson said that the Hydrogeology Program includes managing the Engineering Survey Report. He said the overall project is \$100,000 less than the previous year. Director Katherman asked if this was adequate funding to which Mr. Johnson said yes.

Mr. Whitaker thanked staff for attending and thanked Mr. Johnson for covering the hydrogeology projects as well as the engineering projects.

4. TIME EXTENSION WITH DEPARTMENT OF WATER RESOURCES FOR AB 303 GRANT

The committee recommended that the Board authorize the General Manager to execute an amendment to the Local Groundwater Assistance Grant Agreement (AB303) with the State of California Department of Water Resources to extend the termination date to November 15, 2011. All other conditions of the agreement will remain the same.

5. DIRECTORS' REPORTS, INQUIRIES, AND REVIEW OF DIRECTIONS TO STAFF

The regularly scheduled meeting of April 28th was cancelled.

6. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 1:35 p.m.

Chairperson

Attest:

Director



MEMORANDUM

ITEM NO. 4

Prepared by: Hoover Ng

Reviewed by: Ted Johnson

Approved by: Robb Whitaker

DATE: JUNE 23, 2010

TO: GROUNDWATER QUALITY COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: GROUNDWATER QUALITY UPDATE – PROPOSED WATER QUALITY REGULATIONS FOR 1,2,3 - TRICHLOROPROPANE

SUMMARY

The California Department of Public Health (CDPH) recently indicated that 1,2,3 – trichloropropane (TCP) is a potential candidate for water quality rulemaking in the near future. It was one of several unregulated contaminants for which monitoring is required to determine if there was widespread occurrence in the state. As of July 1, 2009, it was detected in 2 or more samples in 335 sources with the highest level at 57 micrograms per liter (ug/L) from a Burbank Operable Unit. Most detections were in Kern, Fresno, and Los Angeles counties. In the District's service area, TCP was found above the Notification Level (NL) of 0.005 ug/L in 2 production wells in 2001. However, in follow up samples, it was not detected.

TCP has been shown to cause cancer to animals and is recognized as a human carcinogen. It has historically been used as a degreaser, paint and varnish remover, and cleaning solvent, as well as a pesticide. More recent analytical methods were developed that are more sensitive and have lower detection limits (0.005 ug/L) than earlier methods (0.5 ug/L), and therefore, more detections were noted. The CDPH NL for TCP is 0.005 ug/L, the same as the detection limit. There is no federal standard.

TCP is slightly soluble in water and does not adsorb well on soil, and therefore would be readily transported in an aquifer if it were present. Because it is denser than water, it is also prone to migrate into deeper aquifers. Because it is a chlorinated hydrocarbon, treatment options for TCP would be air stripping and activated carbon. In addition, oxidation with potassium permanganate and biological degradation has shown some success in removal as well.

In September 2007, the State Office of Environmental Health Hazard Assessment (OEHHA) released a draft Public Health Goal (PHG) and in January 2009, a revised draft PHG. In August 2009, OEHHA finalized the PHG at 0.0007 ug/L for TCP. A PHG is established after reviewing health effects information only and may or may not be realistic or achievable in practice. After this PHG has been finalized, CDPH will proceed with establishing a drinking water Maximum Contaminant Level (MCL) as close as possible to the PHG, and will consider not only health effects, but also occurrence and exposure levels and technical and economic feasibility.

The CDPH follows several steps before establishing an enforceable regulatory standard, or MCL.

- Gather and evaluate occurrence data
- Evaluate available analytical methods and estimate monitoring costs at a draft MCL
- Estimate population exposures at a draft MCL
- Identify best available treatment (BAT) options
- Estimate treatment costs at the draft MCL
- Review costs and associated health benefits (health risk reductions)
- Propose draft MCL
- Adopt a final MCL

FISCAL IMPACT

None.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO. 5

Prepared by: Hoover Ng

Reviewed by: Ted Johnson

Approved by: Robb Whitaker

DATE: JUNE 23, 2010

TO: GROUNDWATER QUALITY COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: GROUNDWATER QUALITY UPDATE – CHEMICALS OF EMERGING CONCERN SCIENCE ADVISORY PANEL DRAFT REPORT

SUMMARY

The State Water Resources Control Board (SWRCB) adopted a new recycled water policy in May 2009 that recognized the importance and increased role of recycled water in the state. One of the provisions in this policy is how to address new classes of chemicals, such as pharmaceuticals, personal care products, and industrial chemicals, collectively referred to as "chemicals of emerging concern (CEC)," that may be present in recycled water. The Policy authorized the formation of a science advisory panel (Panel) to address this issue and use the best science available for its work.

The Panel was convened in May 2009, and is comprised of the following experts – human health toxicologist, environmental toxicologist, risk assessment/ epidemiologist, biochemist, civil engineer familiar with design and construction of recycled water treatment projects, and chemist familiar with advanced laboratory methods for the detection of CECs.

The Panel was tasked to provide responses and recommendations to the following questions:

- What are the appropriate constituents to be monitored in recycled water, and what are the applicable monitoring methods and detection limits?
- What toxicological information is available for these constituents?
- Would the constituent list change based on level of treatment? If so, how?
- What are the possible indicators (i.e. surrogates) that represent a suite of CECs?
- What levels of CECs should trigger enhanced monitoring in recycled, ground or surface waters?

The Panel was explicitly charged with developing their responses in the context of recycled water use in groundwater recharge and landscape irrigation projects and how its use might impact human health. A separate panel and effort is underway to address environmental impacts. Several meetings have been held and findings from their draft report, "Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water" was released on April 15, 2010. Public comments were received on May 15, 2010. The following highlights of the report and the SAP's responses to the public comments.

The approach and conceptual framework that the Panel decided to follow to help prioritize CEC monitoring was generally considered acceptable:

- Compile occurrence data or measurable environmental concentrations (MEC)
- Develop monitoring trigger levels (MTL) based on toxicological relevance
- Compare the MEC with the MTL, and prioritize those CEC's with MEC/MTL is > 1
- Screen the priority CEC's to ensure robust analytical methods are available

Provisions of this framework also include prioritizing chemicals that are presently unknown by using yet-to-be-developed bioanalytical methods to screen for them. Chemicals that are already regulated or being considered for regulation were excluded from review and prioritization, since they are no longer considered "emerging".

In addition, the Panel also defined an approach to identify indicator compounds for assessing treatment performance, which would include additional CECs or surrogate parameters, such as Total Organic Carbon. The chemicals selected for monitoring would depend upon the treatment process.

The Panel utilized these approaches to screen candidate CECs for toxicological relevance, i.e. potential health impacts. A key finding is that for groundwater recharge projects, they found only 4 compounds that met their criteria, MEC/MTL > 1 , that should be monitored –

- 17 beta-estradiol – steroid hormone
- Caffeine – stimulant
- Triclosan - antimicrobial
- nitrosodimethylamine (NDMA) – disinfection byproduct

It was noted that any monitoring program is for information only at this time and are not intended to be used for regulatory compliance purposes. They further recommended that responses to the detection of these and any other CECs are to be flexible and adjustable, based on findings, and may include repeat monitoring, source investigations, and/or shut down of operations, depending upon the ratio of MEC/ MTL. Laboratory analytical methods need to be further developed to be robust enough for commercial laboratories to employ. The amount of monitoring for CECs should be based on the level of detections.

For future improvements in monitoring and interpreting CEC data, the Panel recommended more and better analytical methods, development of bioanalytical screening techniques to better identify future unknowns, and development of a process to predict likely CEC concentrations, based on production, use, and environmental fate, as a means of prioritizing chemicals on which to focus method development and toxicological investigations.

The SAP will submit their final report to the SWRCB by June 25, 2010, and the SWRCB will consider adoption of this report and its recommendations in November 2010.

FISCAL IMPACT

None.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO. 6

Prepared by: Paul Fu,
Nancy Matsumoto
Reviewed by: Ted Johnson
Approved by: Robb Whitaker

DATE: JUNE 23, 2010
TO: GROUNDWATER QUALITY COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: GOLDSWORTHY DESALTER UPDATE

Several activities have been occurring recently regarding the Goldsworthy Desalter (Desalter), including redevelopment of the Madrona Well #2 and a meeting with City of Torrance to discuss numerous topics. A summary of these activities is provided below.

REDEVELOPMENT OF MADRONA WELL #2

The Goldsworthy Desalter has been operating since 2002 to treat salty (brackish) groundwater located deep in the aquifers beneath the City of Torrance (City) in the West Coast Basin. Since the inception of the facility, over 12,000 acre-feet of brackish groundwater has been pumped out and treated using reverse osmosis technology and turned into potable water for supply to the City.

The District's Madrona Well #2 pumps out the brackish groundwater for the Desalter. As with any water well, it requires regular maintenance to ensure efficient operations and a long, useful life. Because the well had not been redeveloped since June 2006, the Board approved well redevelopment work for the well in March 2010. The redevelopment work was completed during March and April.

Redevelopment tasks included: collecting water level measurements and calculating specific capacity of the well before redevelopment; removing the existing pump equipment and air line; video logging the well before redevelopment; performing well redevelopment consisting of swabbing, Aqua Freed[®] liquid carbon dioxide injection, airlifting and development pumping; video logging the well after redevelopment; reinstalling the existing pump equipment and a new air line; collecting water level measurements and calculating the new specific capacity of the well after redevelopment.

Based on data collected prior to and following the redevelopment work, the specific capacity of Madrona Well #2 was improved from approximately 16 gpm/ft to 23 gpm/ft, or 44%.

MEETING WITH THE CITY OF TORRANCE

District staff met with City of Torrance Water Department on May 28, 2010 to discuss topics associated with the Desalter. A summary of the meeting discussions is presented in the following paragraphs.

Desalter Operations: It has been 5 months since the City took over the operations of the Desalter. The City has been doing a good job in operating and maintaining the facility.

Desalter Expansion: The City has expressed desires for the District to expand the Desalter. District staff explained that the District is preparing a water master plan for the West Coast Basin, and a draft report is expected to be available by the end of this year. In addition, WRD staffs are collecting chloride data from wells and will be preparing a 2010 saline plume maps. The master plan and maps will present options to address the saline plume in the area. The District plans to evaluate these options and develop a saline plume policy. The expansion of the Desalter will be considered in the District's saline plume policy. The City was receptive to District's proposed plan.

Future Well for Desalter: If the Desalter is expanded, a groundwater source will be required. Several potential sources were discussed, including new vertical wells or horizontal wells in areas to maximize chloride concentrations. WRD is performing modeling to assess horizontal well technology versus traditional vertical wells to meet this need.

Pumping Rights: Groundwater extractions for the Desalter are currently being performed using the City's pumping rights. This arrangement with the City will last until the end of 2011, although the City expressed willingness to continue this agreement if other solutions to water rights are not secured.

FISCAL IMPACT

None at this time.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO. 7

Prepared by: Charlene King

Reviewed by: Ted Johnson

Approved by: Robb Whitaker

DATE: JUNE 23, 2010

TO: GROUNDWATER QUALITY COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: SAFE DRINKING WATER PROGRAM – MAYWOOD MUTUAL NO. 2- WELL 52ND AMENDMENT

SUMMARY

On June 19, 2009, the Board executed an agreement with Maywood Mutual Water Company No. 2 for installation of a wellhead treatment facility at Well 52nd which is currently affected with iron and manganese. The Board approved the funding for the Maywood Mutual No. 2 Well 52nd treatment project for an amount not to exceed \$900,000. Based on the Safe Drinking Water Program guidelines, this project is categorized as a Priority B project which is comprised of a 10 year, zero-interest loan. The water company is the lead agency for design, construction and installation of the treatment system.

The treatment facility is currently under construction but has encountered unforeseen change orders. Because the original estimated cost was below the requested \$900,000, Maywood's budget and their loan request to the District estimated the installation of the system would not exceed \$900,000. Maywood Mutual No. 2 has now requested a loan increase from the District in the amount of \$220,000 to cover the additional installation changes. The change orders consist of modifications to the treatment equipment, additional site modifications related to the treatment system, and additional electrical upgrades.

FISCAL IMPACT

The amendment will increase the agreement by an additional \$220,000 to a revised loan amount of \$1,120,000. The funding increase will come from District reserves and loan payments used to fund future Safe Drinking Water Projects.

STAFF RECOMMENDATION

Approve an amendment to the Agreement and Promissory Note with the Maywood Mutual Water Company No. 2, subject to approval as to form by District Counsel, increasing the agreement and promissory note amount by \$220,000 for a revised contract amount not to exceed one million one hundred and twenty thousand dollars (\$1,120,000).