

**MEETING OF THE GROUNDWATER QUALITY COMMITTEE  
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA  
4040 PARAMOUNT BLVD., LAKEWOOD, CA. 90712  
9:30 AM, TUESDAY, JANUARY 8, 2019**

**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" or "For discussion" may also be the subject of an "action" taken by the Board or a Committee at the same meeting.

- 1. DETERMINATION OF A QUORUM**
- 2. PUBLIC COMMENT**  
*Pursuant to Government Code Section 54954.3*
- 3. PROPOSITION 1 GRANT APPLICATION FOR A WELL DESTRUCTION PROGRAM**  
*Staff Recommendation:* The Groundwater Quality Committee recommend that the Board authorize the General Manager to submit a Proposition 1 Grant Application to the State Water Resources Control Board for a Well Destruction Program.
- 4. SAFE DRINKING WATER OUTREACH UPDATE**  
*Staff Recommendation:* The Groundwater Quality Committee receive and file the report.
- 5. SAFE DRINKING WATER PROGRAM - DISADVANTAGED COMMUNITIES OUTREACH PILOT PROGRAM UPDATE**  
*Staff Recommendation:* For discussion only.
- 6. ENVIRONMENTAL SITES REVIEW**  
*Staff Recommendation:* The Groundwater Quality Committee receive and file the report.
- 7. DIRECTORS REPORTS, INQUIRIES AND FOLLOW UP OF DIRECTIONS TO STAFF**
- 8. ADJOURNMENT**  
*The Committee will adjourn to the next regular meeting currently scheduled for Tuesday, February 11, 2019 at 9:30 a.m.*

Agenda posted on 01/05/2019. In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the meeting, please contact Brandon Mims, Board Deputy Secretary 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](http://www.wrd.org). EXHAUSTION OF ADMINISTRATIVE REMEDIES – If you challenge a District action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Deputy Secretary at, or prior to, the public hearing. Any written correspondence delivered to the District office before the District's final action on a matter will become a part of the administrative record.

**MEMORANDUM****ITEM NO. 3**

**DATE: JANUARY 8, 2019**

**TO: GROUNDWATER QUALITY (GWQ) COMMITTEE**

**FROM: ROBB WHITAKER, GENERAL MANAGER**

**SUBJECT: PROPOSITION 1 GRANT APPLICATION FOR A WELL  
DESTRUCTION PROGRAM**

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**SUMMARY**

The District has been successful in securing outside funding for various projects and we continue to look for additional funding opportunities through our existing grant management contract with Kestrel Consulting (Kestrel). The Kestrel team recently identified an opportunity to fund a well destruction program through the Proposition 1 Groundwater Grant Program administered by the State Water Resources Control Board (SWRCB). WRD staff developed a well destruction program with the assistance of Kestrel and submitted a concept proposal to the SWRCB for consideration on August 3, 2018.

The goal of the well destruction program is to eliminate the potential threat of contaminants entering an inactive well and moving into and impacting the water quality in aquifers. By properly destroying inactive water supply wells that may be acting as conduits to deeper aquifers in the Central Basin and West Coast Basin (CBWCB) will help ensure the protection of those aquifers, which is one of WRD's key missions.

Because the cost of well destruction can run a hundred thousand dollars or more, many well owners do not have the funds available to properly destroy their wells, leaving the inactive wells as-is for years and a continued threat to groundwater quality. WRD will focus its well destruction program, if awarded, on areas susceptible to contamination (i.e. industrial areas) and areas located within disadvantaged communities (DACs).

The SWRCB accepted our concept proposal and invited us to submit a more detailed, full proposal by February 18, 2019. WRD is in the process of developing the full proposal with a goal of destroying up to nine water supply wells in the CBWCB. A 20%

match (i.e., our contribution) is required for well destructions benefiting a DAC. All other well destructions require a contribution of up to 50%. It's estimated the well destruction program, if awarded, will cost approximately \$1,800,000. WRDs contribution could range from \$360,000 (at a match of 20%) to \$900,000 (at a match of 50%).

### **FISCAL IMPACT**

None at this time pending decision by the SWRCB on our grant application. Should WRD be awarded the grant, a 20% match (i.e., WRD's contribution) is required for well destructions benefiting a DAC. All other well destructions require a contribution of up to 50%. It's estimated the well destruction program, if awarded, will cost approximately \$1,800,000. WRDs contribution could range from \$360,000 (at a match of 20%) to \$900,000 (at a match of 50%). These funds will be budgeted in the subsequent year's operating budget.

### **STAFF RECOMMENDATION**

The Groundwater Quality Committee recommend that the Board authorize the General Manager to submit a Proposition 1 Grant Application to the State Water Resources Control Board for a Well Destruction Program.



**MEMORANDUM**

**ITEM NO. 4**

**DATE: JANUARY 8, 2019**

**TO: GROUNDWATER QUALITY (GWQ) COMMITTEE**

**FROM: ROBB WHITAKER, GENERAL MANAGER**

**SUBJECT: SAFE DRINKING WATER OUTREACH UPDATE**

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**SUMMARY**

The District administers an ongoing Safe Drinking Water Outreach Program aimed at providing cities, pumpers, and local legislators information about WRD's grant and loan assistance programs for wellhead treatment to protect and improve water quality. District staff participate in outreach activities and education campaigns to inform the public and elected representatives about the efforts WRD takes to ensure safe drinking water and to provide necessary resources to interested parties.

**FISCAL IMPACT**

None.

**STAFF RECOMMENDATION**

The Groundwater Quality Committee receive and file the report.

**MEMORANDUM****ITEM NO. 5**

**DATE: JANUARY 8, 2019**

**TO: BOARD OF DIRECTORS COMMITTEE**

**FROM: ROBB WHITAKER, GENERAL MANAGER**

**SUBJECT: SAFE DRINKING WATER PROGRAM - DISADVANTAGED COMMUNITIES OUTREACH PILOT PROGRAM UPDATE**

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**SUMMARY**

The District administers the Safe Drinking Water Program (SDWP) which provides grant or loan assistance to basin pumpers for wellhead treatment to remove contaminants and improve water quality. The Grant Program provides treatment for removing groundwater contaminants from man-made sources (e.g. Volatile Organic Compounds); whereas the Loan Program provides 10-year, zero-interest loans for providing water treatment to remove unacceptable levels of contaminants from natural sources (e.g. iron, manganese, and arsenic).

The District approved three wellhead treatment projects as part of the Safe Drinking Water Program: California American Water Arlington Well, Huntington Park Well 15, and Lynwood Well 11. The wellhead treatment system at all three wells will consist of a complete granular activated filtration system built within the boundaries of the existing well sites owned and operated by the water systems. All three projects are currently under construction.

**Safe Drinking Water DAC Program**

As an extension of the District's Safe Drinking Water Program, the District approved the creation of the Safe Drinking Water Disadvantage Communities (DAC) Program. The goal of this program is to assist water systems located in disadvantaged communities within the District's service area with state and federal funding to address the issues related to their drinking water wells. The focus of the program is to provide technical assistance and extensive outreach to help the systems secure funding that is set aside specifically for disadvantaged communities. Currently there are nine water systems

participating in the program and receiving assistance: City of Bell Gardens, City of Compton, City of Huntington Park and City of Lynwood, Maywood Mutual Water Company No. 1, Maywood Mutual Water Company No. 2, Maywood Mutual Water Company No. 3, Sativa LA County Water District and Tract 180 Mutual Water District.

The Maywood Avenue Wellhead Treatment DAC Project is currently in the construction phase. The Notice to Proceed was issued to Pacific Hydrotech on November 14, 2018 and the Pre-construction meeting was held November 29, 2018. This project will be funded through Prop 84 and Prop 1 funding and the District will be reimbursed.

#### Safe Drinking Water Program Outreach Efforts

Outreach efforts continue as staff is preparing follow-up outreach to cities, particularly disadvantaged communities, to schedule presentations for upcoming city council meetings to further explain WRD's programs.

#### **FISCAL IMPACT**

None.

#### **STAFF RECOMMENDATION**

For discussion only.

**MEMORANDUM****ITEM NO. 6**

**DATE:           JANUARY 8, 2019**

**TO:             GROUNDWATER QUALITY (GWQ) COMMITTEE**

**FROM:          ROBB WHITAKER, GENERAL MANAGER**

**SUBJECT:       ENVIRONMENTAL SITES REVIEW**

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**SUMMARY**

WRD continues to take an active role in groundwater quality protection, cleanup, and investigation. As part of its Groundwater Contamination Prevention Program, WRD established the Central and West Coast Basin Groundwater Contamination Forum, a data-sharing and discussion forum with key stakeholders that include various cities, water purveyors, the United States Environmental Protection Agency (EPA), California Department of Toxic Substances Control (DTSC), Los Angeles Regional Water Quality Control Board (RWQCB), State Water Resources Control Board Division of Drinking Water (DDW), United States Geological Survey (USGS), and California Department of Water Resources (DWR).

In 2005, the stakeholders drafted and signed a Memorandum of Understanding (“MOU”) agreeing to meet regularly and share data on major groundwater contaminated sites within the Central Basin and West Coast Basin. WRD acts as the meeting coordinator and data repository/distributor, helping stakeholders to characterize the extent of contamination to identify pathways for contaminants in shallow aquifers to reach deeper drinking water aquifers and develop optimal methods for remediating contaminated groundwater. The overall purpose of the Forum is to expedite the cleanup of these major contaminated sites in the basins.

With the cooperation and support of all stakeholders in the Groundwater Contamination Forum, WRD developed a list of high-priority groundwater contaminated sites (“environmental sites”) located within the District. This list is a living document, subject to cleanup and “closure” of sites, as well as discovery of new sites warranting further attention. Currently, the list includes 46 sites located throughout the Central Basin and West Coast Basin. The list was developed based on the following criteria:

- Site location and hydrogeology
- Distance to nearest drinking water well
- Depth to shallowest water-supply aquifer beneath site
- Concentration of detected contaminants
- Fate and transport of detected contaminants
- Presence of contamination in nearby drinking water wells
- Status of site characterization with respect to groundwater contamination
- Status of site remediation with respect to groundwater contamination
- Stage of regulatory agency involvement

WRD works in close consultation with the lead regulatory agencies for each of these sites to provide data and technical support to facilitate site characterization and expedite cleanup. An update is provided below for the Phillips 66 - former Unocal Tosco Refinery (Wilmington area in the West Coast Basin) and Phillips 66 - former Unocal Tosco Refinery (City of Carson in the West Coast Basin).

#### PHILLIPS 66 - FORMER UNOCAL TOSCO REFINERY (WILMINGTON AREA)

The 424-acre active petroleum refinery and bulk storage facility (Site) commenced operations in 1919. The Site includes pipelines, process areas and equipment, material / waste storage areas, treatment / disposal units, and multiple aboveground storage tanks (AST's). Exploratory borings have been drilled to delineate the extent of petroleum contaminated soil and several thousand cubic yards of contaminated soil have been removed from the Site. A large dissolved phase benzene plume is present beneath a significant portion of the Site. The refinery also released a large amount of light non-aqueous phase liquid (LNAPL). The 114 wells in the current well network monitor groundwater in multiple aquifers including the Gage Aquifer (90 wells), Lynwood Aquifer (18 wells), and Silverado Aquifer (6 wells). Regulatory oversight is provided by the RWQCB.

The groundwater flow direction is variable in the shallower aquifers primarily due to its location at the western terminus of the Dominguez Gap Barrier Project (DGBP). The deeper regional aquifers flow to the north-northeast with the nearest down-gradient active potable water supply well located within approximately 3.0 miles (Well #279-01) and is owned by California Water Service Company. A common petroleum-related constituent Tertiary Butyl Alcohol (TBA), has been detected twice in the water supply well at low concentrations in 2011 and 2014. No other petroleum-related constituents have been detected in the well through September 2018.

The RWQCB recently released a public notice fact sheet describing the contents of an updated site cleanup plan entitled "Dissolved Phase Management Plan" dated March 30, 2018. The cleanup plan builds upon the existing remedial efforts that currently include a source elimination program to monitor active pipelines and ASTs, a groundwater extraction system in the southwest refinery boundary to hydraulically contain elevated TBA, a biosparging system to address various petroleum constituents in the northern boundary of the Site, and a groundwater extraction system to recover

mobile LNAPL. Two additional monitoring wells are planned along the northern portion of the refinery to further delineate the groundwater plume and five additional extraction wells are being proposed within the refinery property to remediate dissolved phase constituents (including TBA) and the LNAPL. Since 1997, the refinery has recovered approximately 141,807 gallons of LNAPL through the third quarter of 2018.

#### PHILLIPS 66 - FORMER UNOCAL TOSCO REFINERY (CITY OF CARSON)

The 245-acre Carson Plant (the Site) refines and processes crude oil into unfinished intermediate petroleum products that is subsequently piped west for further processing and storage at their Wilmington Plant. The Site includes pipelines, process areas and equipment, material / waste storage areas, treatment / disposal units, and multiple AST's. A large petroleum hydrocarbon groundwater plume is present beneath a significant portion of the Site. The refinery also released a large amount of LNAPL. The 156 wells in the current well network monitor groundwater in multiple aquifers including the Water Table (128 wells), Gage Aquifer (27 wells), and Silverado Aquifer (1 well). Regulatory oversight is provided by the RWQCB.

Groundwater generally flows towards the west beneath the Site. The nearest active potable water supply well is located cross-gradient within approximately 1.3 miles (Well #279-01) and is owned by California Water Service Company. TBA has been detected twice in the water supply well at low concentrations in 2011 and 2014. No other petroleum-related constituents have been detected in the well through September 2018.

Unocal remedial efforts currently include (1) source elimination program to monitor active pipelines and ASTs, (2) groundwater extraction system along the western down-gradient property boundary to hydraulically contain dissolved-phase constituents in groundwater and LNAPL, and (3) limited vadose zone remediation in the central portion of the refinery using soil vapor extraction (SVE). Since 1986, the refinery reportedly recovered approximately 46,447 gallons of LNAPL and 3,537,526 gallons of water (or 10.9 acre-feet) through the third quarter of 2018.

The RWQCB also recently requested a significant amount of work in an agency letter dated November 16, 2018. The additional work generally includes (1) increasing recovery efforts site-wide including submerged LNAPL, (2) remediating dissolved-phase impacts near MW-2 / MW-22, and (3) delineating impacts in the Gage Aquifer. The RWQCB is also requiring a work plan to evaluate perfluoroalkyl and polyfluoroalkyl substances (PFAS).

PFAS chemicals are commonly associated with firefighting foams used by refineries for fire suppression and can contain two recently regulated PFAS: Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA). The Division of Drinking Water (DDW) also recently established a notification level for drinking water supply wells at a concentration of 13 parts per trillion (ppt) for PFOS and 14 ppt for PFOA.

**FISCAL IMPACT**

None.

**STAFF RECOMMENDATION**

The Groundwater Quality Committee receive and file the report.

**Phillip 66 Refinery, Wilmington Plant (Wilmington Area, West Coast Basin)**

Key Indicator Compounds in Groundwater (Results shown for FALL 2017)				
Chemical	MCL	Gage	Lynwood	Silverado
Benzene	1	2,600 at MW-048	3.1 at LMW-6M	0.74 at WW-005
TBA	12 (NL)	44,000 at MW-038	11,000 at LMW-6L	68 at WW-007
Naphthalene	17 (NL)	970 at MW-012	ND<50 at LMW-5U	ND<10 at WW-007
TPH-Gasoline	---	22,000 at MW-038	3,200 at LMW-6L	68 at WW-005

Results in µg/L.

Source: Fall 2017 Semiannual Groundwater Monitoring Report (Trihydro Corporation, January 30, 2018)

**Phillip 66 Refinery, Carson Plant (City of Carson, West Coast Basin)**

Key Indicator Compounds in Groundwater (Results shown for FALL 2017)				
Chemical	MCL	Water Table	Gage	Silverado
Benzene	1	24,000 at MW-22	1,600 at WD-10M	ND < 0.5
DIPE	---	2,400 at MW-38	930 at WD-10M	4.3 at WW-5
MTBE	13	4,100 at MW-22	46 at WD-2	ND < 1.0
TBA	12 (NL)	15,000 at MW-22	930 at WD-7M	38 at WW-5
TPH-Gasoline	---	18,000 at MW-17	7,900 at WD-10M	ND < 100

Results in µg/L.

Source: Fall 2017 Semiannual Groundwater Monitoring Report (Trihydro Corporation, January 30, 2018)

**Common Acronyms:**

PCE = Tetrachloroethene

TCE = Trichloroethene

DCE = Dichloroethene

DCA = Dichloroethane

TCA = Trichloroethane

Cr<sup>+6</sup> = Hexavalent Chromium

MTBE = Methyl Tertiary Butyl Ether

TBA = Tertiary Butyl Alcohol

LNAPL = Light Non-Aqueous Phase  
LiquidTPH = Total Petroleum  
Hydrocarbons

µg/L = Micrograms per Liter

ND = Not Detected

FT = Feet

MCL = Maximum Contaminant  
LevelFt BGS = Feet Below Ground  
Surface

NL = Notification Level