

- **Board of Directors**
Water Quality and Operations Committee

October 14, 2008 Board Meeting

8-9

Subject

Authorize entering into an agreement with Semitropic Water Storage District to implement a Demonstration Arsenic Treatment Program; and appropriate \$2.5 million in Metropolitan funds

Description

Authorization is requested to enter into an agreement with the Semitropic Water Storage District (Semitropic) to remove arsenic from water recovered from Metropolitan's existing groundwater storage account. The agreement will fund a demonstration arsenic treatment program costing Metropolitan up to \$2.5 million or up to \$50 per acre-foot of returned banked water. Metropolitan expects to recover up to 50,000 acre-feet of banked water this fall. Without arsenic treatment, a significant portion of this supply could not be delivered to Metropolitan because of a failure to meet the Department of Water Resources' (DWR) water quality criteria.

Since its inception in 1994, the Semitropic Groundwater Storage Program has provided Metropolitan with dry-year water supply benefits. Under the storage program, Metropolitan has stored nearly 500,000 acre-feet and recovered close to 300,000 acre-feet. However, water quality issues have developed that may reduce the utility of the program. In January 2001, the United States Environmental Protection Agency reduced the maximum contaminant level for arsenic from 50 parts-per-billion (ppb) to 10 ppb. Without treatment, the projected Semitropic pump-in concentration could reach 15.5 ppb which would be above the ambient levels in the California Aqueduct of 2 ppb to 3 ppb. Under the terms of the program agreement Metropolitan is responsible for mitigation required by a change in standards.

In 2008, DWR set criteria limiting groundwater pump-in from increasing the ambient arsenic levels in the California aqueduct by no more than 2 ppb and a flow weighted average of the pump-in programs of no more than 10 ppb. In dry years, such as 2008, the base flows in the California Aqueduct are expected to be much lower than normal, creating the potential for arsenic impacts that exceed those criteria. Without arsenic treatment, complying with the criteria could potentially reduce Metropolitan's water supply by up to 20,000 acre-feet. If the program yield is reduced in 2008, Metropolitan may need to purchase more costly water transfers next year to make up for the lost supply.

Semitropic has proposed a temporary demonstration treatment process using their distribution system that would remove arsenic from water pumped into the aqueduct. Implementation will assist in assessing feasibility and planning of long-term treatment concepts for the arsenic. Metropolitan and Semitropic staff have developed a term sheet that would provide the basis for a funding agreement ([Attachment 1](#)). The term sheet includes provisions that limit Metropolitan's financial risk and provides Metropolitan with indemnification for both the treatment of the arsenic and the disposal of arsenic sludge.

The demonstration treatment process could provide many benefits to Metropolitan. The treatment would hopefully improve Metropolitan's ability to recover additional supplies from the Semitropic program this year and help with the conceptual design of a permanent treatment facility. The levels of arsenic in the California Aqueduct should be better managed reducing impacts to downstream users. The removal of arsenic at the source also has the potential to protect Metropolitan other downstream state water contractors and member agencies from increased treatment costs for State Water Project supplies.

Policy

By Minute Item 40996, dated August 19, 1994, the Board authorized the General Manager to enter into an agreement with Semitropic Water Storage District for a water storage program.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Pursuant to the provisions of CEQA and the State CEQA Guidelines, the Semitropic Water Storage District (Semitropic), acting as Lead Agency, prepared and processed a Final Environmental Impact Report (Final EIR) for the proposed project. The Final EIR was certified and the project was approved by the Lead Agency on July 13, 1994. The Lead Agency also approved the Findings of Fact (findings) and the Mitigation Monitoring and Reporting Program (MMRP). On August 5, 1994, Metropolitan, as Responsible Agency, reviewed and considered the information contained in the certified Final EIR, along with the findings and the MMRP. At that time, the Board also authorized the General Manager to enter into an agreement with Semitropic for the Semitropic Groundwater Banking Project. The present proposed board action is solely based on the implementation of a pilot study to remove arsenic from the water recovered from Metropolitan's existing groundwater storage account and not on any other substantial changes to the original Semitropic Groundwater Banking Project. Hence, the previous environmental documentation reviewed and considered by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further environmental documentation is necessary for the Board to act on the proposed action. In addition, the proposed action involves a pilot arsenic treatment study that would assist in the feasibility and planning of a permanent water treatment solution in the future. As such, the proposed action is not subject to CEQA because it involves only feasibility studies for possible future actions which have not been approved, adopted or funded (Section 15262 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action has been previously addressed in the 1994 certified Final EIR and related environmental documentation (i.e., findings and MMRP) and that no further environmental analysis or documentation is required. In addition, the proposed pilot study on water quality involves only feasibility studies for possible future actions and as such, is not subject to CEQA (Section 15262 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Authorize an agreement with Semitropic for a demonstration arsenic treatment program consistent with the terms in [Attachment 1](#); and
- b. Authorize appropriation of \$2.5 million to implement the treatment program.

Fiscal Impact: \$2.5 million

Business Analysis: The removal of arsenic will help ensure the maximum return of previously stored water to Metropolitan in 2008. Treatment will also protect the water quality for downstream users of the State Water Project, including Metropolitan and member agency treatment plants.

Option #2

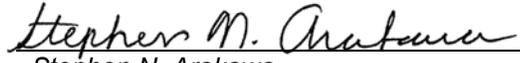
Do not authorize an agreement with Semitropic to implement a demonstration arsenic treatment program.

Fiscal Impact: Increased costs to replace reduced yield from program

Business Analysis: Not authorizing the expenditure could result in higher costs by requiring Metropolitan to obtain additional transfer supplies in 2009.

Staff Recommendation

Option #1



Stephen N. Arakawa
Manager, Water Resource Management

10/8/2008
Date



Jeffrey Kightlinger
General Manager

10/8/2008
Date

Attachment 1 – Semitropic Demonstration Arsenic Treatment Program Term Sheet

BLA #6340

Semitropic Demonstration Arsenic Treatment Program Term Sheet

- In December 1994 when Metropolitan entered into the agreement with Semitropic for a water banking program, the USEPA maximum contaminant level (MCL) for arsenic was 50 ppb. Pump-in water returned at that time was well below the MCL. However, in January 2001, the USEPA reduced the MCL to 10 ppb and now many of the Semitropic wells exceed the new MCL. Under the existing agreement the Banking Partners are responsible for any treatment cost increases associated with a regulatory change.
- The DWR Facilitation Group in 2007 and 2008 established criteria for the introduction of arsenic into the California Aqueduct. The criteria limits the pump-in from increasing the ambient arsenic levels no more than 2 ppb and a flow weighted average of the total Kern County pump-in programs of no more than 10 ppb. The impacts to the California Aqueduct will be monitored based on a seven-day running average.
- Metropolitan recognizes the need to efficiently manage pump-in programs to balance both the water supply benefits and water quality impacts to downstream users. In 2008, the background flows in the California Aqueduct are expected to be lower than normal creating the potential for larger arsenic impacts to downstream users. Metropolitan supports the study and implementation of a Demonstration Arsenic Treatment Program that would treat a significant portion of the pump-in water in 2008.
- Under Section 5.7 of Metropolitan's existing agreement with Semitropic, Metropolitan can accept the costs associated with the improvement of water quality for direct pumpback. Metropolitan agrees to fund the Demonstration Arsenic Treatment Program in the amount of \$46 for every acre-foot of total pumpback water returned during the treatment operation. If the program is implemented again next year the costs charged to Metropolitan would not include the same capital costs that were funded under the letter agreement. In January 2009, the treatment cost will be trued up, if necessary. However, at no time shall the cost for arsenic treatment exceed \$50 per acre-foot without the prior written approval of Metropolitan.

Arsenic Treatment Cost per Acre-Foot = Cost to Treat Metropolitan Water/ Metropolitan Program Pumpback Supply

Example: Arsenic Treatment Cost per Acre-Foot = \$2.3 Million / 50,000 Acre-feet = \$46/AF

- If other banking parties contribute financially to the Demonstration Arsenic Treatment Program that reduces Metropolitan's share of the costs, Metropolitan would be reimbursed accordingly.
- Semitropic has the exclusive control of the design, construction, operation, and sludge handling related to the Demonstration Arsenic Treatment Program. Semitropic will indemnify and hold harmless Metropolitan for the Demonstration Arsenic Treatment Program.
- Semitropic shall comply with all applicable local, state, and federal laws as they relate to the Demonstration Arsenic Treatment Program and the handling of any sludge created from the treatment process.
- Semitropic shall operate the program wells and the Demonstration Arsenic Treatment Program in a manner that minimizes the arsenic impacts to the California Aqueduct and the amount of arsenic found in the treatment sludge. The treatment process will be operated so as to minimize the production of hazardous waste.
- The Demonstration Arsenic Treatment Program is to be implemented as soon as practical but not extend beyond December 31, 2008, without the consent of both parties.