



Proposal for Funding from the California Department of Water Resources

Semitropic Water Storage District has written this proposal, requesting \$5 Million of funds from the Groundwater Storage Construction Program through the California Department of Water Resources. The funds are to be used as outlined in Proposition 13, Chapter 9, Article 2 of the law of the State of California.

Already being one of the largest underground water storage districts in the Kern County Area, Semitropic is looking to expand and improve its storage capacity even further with the construction of the new Stored Water Recovery Unit. Being a government agency, Semitropic cannot raise its own funds and must rely on government fund such as this grant for assistance in completing projects. For these reasons, Semitropic is a well-qualified, ideal candidate to receive a portion of the funds allotted in the Groundwater Storage Construction Program.

Awarded funds would be used in the construction of the second phase of the groundwater banking program that is currently permitted and ready to begin. Data recorders also need to be purchased to monitor the levels of the stored water. Any remaining funds will be used to help support the objectives of the program.

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Overview of Semitropic Water Storage District

Semitropic Water Storage District (Semitropic) located in Wasco, CA is seated in Kern County along with eight or nine other underground water storage and recovery facilities. The Kern Water Bank, along with Semitropic, are two of the largest such facilities in the world. Kern County is an ideal place for groundwater banking due to its location near the California Aqueduct, the Kern River, and the federal Friant-Kern Canal. The Semitropic Water Storage Bank helps to increase water supply reliability to its banking partners in drought years and also aids the state in meeting its contractual obligations when they have fallen short.

Surplus and wet year water at Semitropic is stored mainly through in-lieu recharge by utilizing surface water instead of pumping groundwater. The surface water is then delivered to farms for irrigation. Direct recharge is also used throughout Semitropic's service area, as several recharge basins allow water to percolate to the groundwater basin.

Whenever necessary, stored water is returned to banking partners through a Semitropic contract entitlement or through "pumpback" to the California Aqueduct. Semitropic's banking partners include:

- Metropolitan Water District of Southern California
- Santa Clara Valley Water District
- Alameda County Water District
- Newhall Land and Farming Company
- Vidler Water Company and
- Zone 7 Water Agency

There are 450,000 acre-feet of storage capacity still available at this time. Semitropic is looking for additional partners who wish to utilize some of this storage capacity. Banking partners can range from public agencies, metropolitan sub-agencies, CALFED Environmental Water Account users, private investors, developers needing assured water supply, or power companies requiring reliable generation of cooling water.

Monitoring the Water

Storage and recovery of water for each account is metered and closely monitored. The district tracks the activities and levels of the storage bank every time water is moved into or out of the bank. A groundwater monitoring committee helps to ensure the reliability and accountability of the groundwater bank. The monitoring committee is made up of representatives of Semitropic and adjacent districts that share the groundwater basin. An expert groundwater hydrologist also serves as a consultant to the committee.

Every effort is made to retain the trust of each partner by providing adequate information and providing full disclosure to all participation agencies. Partners also have the option of auditing Semitropic at any time.

Plans for the Future

At this time, Semitropic has permitted and is ready for construction of a second phase of the groundwater banking program. Completing this new unit, called the Stored Water Recovery Unit, will increase the current storage capacity by 650,000 acre-feet to a maximum of 1.65 million acre-feet. Recovery capacity will also increase by 200,000 acre-feet/year for a total pumpback capacity of 290,000 acre-feet/year. Overall, this means that Semitropic will be able to deliver up to 423,000 acre-feet per year of dry year yield to the California Aqueduct. Semitropic's banking partners will all be able to share in the benefits of the Stored Water Recovery Unit.

Use of Funds

Semitropic is proposing that they receive \$5 million worth of funds from the Groundwater Storage Construction Project in order to aid in the construction of the Stored Water Recovery Unit and maintain the objectives listed below. With these funds, Semitropic also plans to purchase data recorders to aid in measuring and keeping a constant record of the rise and fall of the water table throughout the year. Through data recorders in the monitoring wells, Semitropic will be able to measure the water table levels, as well as the quality of the water. The data recorders will allow precise records to be kept from day to day and year to year, so that we can get a clear picture of how the groundwater basin is fluctuating on a seasonal basis.

Objectives

There are five main objectives that Semitropic has identified for the Groundwater Maintenance Program.

4. *Maintain Groundwater Levels and Viable Pumping Lifts*
 - a) Preserve District's State Water Project water yield
 - b) Support/develop within-District water banking
 - c) Participate in outside-District water banking
 - d) Support/develop facilities that deliver surface water in-lieu of groundwater pumping
 - e) Facilitate import of surface supplies to neighboring water agencies
5. *Control Degradation and Enhance Groundwater Quality*
 - e) Maintain groundwater levels to mitigate saline movement
 - f) Provide guidelines to landowners for well construction methods that minimize potential for aquifer contamination

- a) Seek partners to convert waste water to useable supplies
 - b) Test groundwater quality in new wells
 - c) Gather/update data on poor quality zones
 - d) Update knowledge on known contamination sites
1. *Limit Inelastic Subsidence*
 - a) Maintain groundwater levels within historical fluctuations
 - b) Provide facilities that promote flexibility in operations to maintain groundwater levels
 2. *Preserve the Historical Flows of Pose Creek into the Area*
 - a) Maintain existing agreements with North Kern and Cawelo water districts
 - b) Maintain District's existing diversion permit and convert to a license at appropriate time
 3. *Operate Groundwater Bank to Benefit District Landowners without Adverse Impacts*
 - a) Water must be stored before withdrawn
 - b) State Water Project water retained to maintain water quality
 - c) 10% bank deliveries retained for losses
 - d) For given farm, pump-bank limited to prior deliveries
 - e) Dedicated monitor well network to be constructed
 - f) Based on 3-year average, withdrawal stopped when project groundwater levels lower than non-project level
 - g) Groundwater levels reviewed by Monitoring Committee

Semitropic has already successfully met some of the above-mentioned goals. With the help of funds from the California Department of Water Resources, Semitropic can continue to work towards these goals.

Conclusion

As outlined in the proposal above, Semitropic meets the requirements for receiving funds from the California Department of Water Resources through the Groundwater Storage Construction Project. If awarded funds through this grant, Semitropic will be able to complete the construction of the Stored Water Recovery Unit, obtain data recorders, and work toward completing the remaining goals that have been identified for the Groundwater Maintenance Program.

Works Cited

California Department of Water Resources. Home page. 26Nov.2004
<www.dwr.water.ca.gov>.

California Legislative Information. Home page.26Nov.2004
<www.leginfo.ca.gov>.

Groundwater Storage Construction Program. Grant information page.
26Nov.2004 <grantsloans.water.ca.gov/grants/storageconstr.cfm>.

Luna, John M. Personal Interview. 26November 2004.

Semitropic Water Storage District. Home page. 26Nov.2004
<www.semitropic.com>.

Wallace, Craig. "grant info. from Semitropic Water." E-mail to Kristie Hille.
29November 2004.

Wallace, Craig. "GWMP Table_implementation." E-mail to Kristie Hille.
29November 2004.