

**EXHIBIT 4-B**



November 2, 2011  
Project No. 06-0029

Monterey Peninsula Water Management District  
5 Harris Court, Building G  
Monterey, California 93942

Attention: Mr. Joe Oliver, Water Resources Manager

Subject: Proposal for Hydrogeologic and Engineering Services for Phase 2 ASR Project;  
Fiscal Year 2011-2012 Program **DRAFT**

Dear Mr. Oliver:

In accordance with your request, Pueblo Water Resources, Inc. (PWR) is pleased to submit this proposal for ongoing hydrogeologic and engineering services for the Monterey Peninsula Water Management District (MPWMD or District) Phase 2 Aquifer Storage and Recovery project (a.k.a. Water Project 2). Presented in this proposal are a detailed scope of work, schedule, and estimated costs to assist the District with various Phase 2 ASR-related tasks during the remaining period of Fiscal Year 2011-2012 (FY 2011-2012). It should be noted that this proposal is not for a new project, but rather is to provide continuing ASR operational support and engineering services for the Seaside Middle School site that have been deferred to FY 2011-2012. PWR's authorization to perform this work is necessary to maintain existing program direction and to avoid the additional costs and delays associated with re-starting the program.

**BACKGROUND**

Aquifer Storage and Recovery (ASR) on the Monterey Peninsula involves the diversion of excess flows from the Carmel River system for recharge, storage, and subsequent recovery in the Seaside Groundwater Basin (SGB). The ASR project is operated cooperatively by the District and California American Water (CAW). The excess water is captured by CAW wells in the Carmel Valley during periods when flows in the Carmel River exceed fisheries bypass flow requirements, treated to potable drinking water standards, and then conveyed through CAW's distribution system to Seaside. Aquifer recharge is accomplished via injection of these excess flows into ASR wells in the SGB that have been designed, constructed, and tested by the District. The recharged water is temporarily stored underground in the SGB, utilizing the available storage space within the aquifer system. During periods of high demand, the same ASR wells and/or existing CAW production wells in the SGB are used to recover this "banked" water, which in turn allows for reduced extractions from the Carmel River system during dry periods.

The District has been actively pursuing an ASR program the Monterey Peninsula since 1996. The District's efforts have evolved over time, from the performance of various technical feasibility investigations, leading to the construction and testing of pilot- and then full-scale ASR



test wells to demonstrate the viability and operational parameters for ASR wells in the SGB. The existing ASR program, known as the Phase 1 ASR Project (a.k.a. Water Project 1), consists of two full-scale ASR wells (ASR-1 and ASR-2) located on a District-leased parcel at 1910 General Jim Moore Blvd in Seaside (a.k.a. the Santa Margarita ASR Facility). The Phase 1 ASR Project is operated in cooperation with CAW and has an injection capacity of approximately 3,000 gallons per minute (gpm) with an estimated average annual yield of 920 acre-feet per year (afy).

Based on the success of the Phase 1 ASR Project, the District in 2008 began investigating the feasibility of implementing an expansion of the existing ASR program, known as the Phase 2 ASR Project (a.k.a. Water Project 2) at the Seaside Middle School site, located approximately 1,250 feet north of the Phase 1 (Santa Margarita) ASR site. The Phase 2 ASR project is the latest effort by the District in expanding the existing ASR program on the Monterey Peninsula. The District is cooperating with CAW (the easement holder for the Seaside Middle School ASR site property) on development of the first ASR well at the site and expansion of the site as a full-scale ASR facility.

As part of the Phase 2 ASR Project investigation, the District negotiated access to the Seaside Middle School (formerly known as Fitch Middle School) site, and in October 2009, the District drilled an exploratory boring to a depth of 1,080 feet and completed two monitoring wells (one in the Santa Margarita Sandstone aquifer and one in the Paso Robles aquifer) at the site. The information acquired through the exploratory boring confirmed the presence of the Santa Margarita Sandstone aquifer (the target aquifer for ASR in the SGB) at the site with an overall thickness comparable to that at the Phase 1 ASR site.

Based on the favorable 2009 exploratory drilling findings, the District advanced the investigation of the Phase 2 ASR Project through the installation of a full-scale ASR test well at the site during the summer / fall of 2010. The purpose of the Seaside Middle School Test Well (SMSTW) was to determine the well production characteristics and aquifer parameters of the Santa Margarita Sandstone aquifer underlying the Seaside Middle School site. The SMSTW results confirmed that the characteristics of the Santa Margarita Sandstone aquifer at the project site were consistent with expectations and suitable for development of a full-scale ASR facility.

Most recently, the District and CAW have cooperated in converting the SMSTW into a permanent ASR well, referred to as Seaside Middle School ASR-1 (a.k.a. ASR-3). These activities have included the installation of the permanent pump / motor assembly (including a downhole flow control valve) and wellhead piping, as well as interim piping to temporarily intertie the well back to the Santa Margarita ASR Facility backflush pit and the installation of temporary PG&E electrical service. These efforts were intended to make ASR-3 fully operational the fall of 2011 in order to comply with provisions of the recent Cease and Desist Order (CDO) from the State Water Resources Control Board (SWRCB Order WR 2009-0060) to CAW, requiring CAW to implement one or more "small projects" that, when taken together, provide at least 500 afy within 24 months of issuance of the CDO (CDO adopted on October 20, 2009).

While ASR-3 will be fully operational for the WY 2012 recharge season in compliance with the CDO, several engineering and hydrogeologic tasks remain attendant to this well's operation during the upcoming Water Year 2012 injection season. In addition, development of the Seaside Middle School site for the full Phase 2 ASR project facilities will require the design



and engineering of several facility items during the remaining portion of FY 2011-2012 in preparation for construction activities currently planned for the summer of 2012 (major construction work at the Seaside Middle School site is generally limited to the school summer break period), including the following:

- Design and bid document preparation for the second Seaside Middle School ASR well (a.k.a. ASR-4);
- Design and bid document preparation for the onsite backflush pit (including geotechnical soils investigation and analysis);
- Remaining site underground water and electrical piping;
- Permanent instrumentation and electrical control equipment for both wells, and;
- Final site grading, paving, landscaping and fencing, compatible with the above additions.

### **PURPOSE AND SCOPE**

We understand that the District anticipates that water will be available for recharge operations from the CAW system during WY 2012 as soon as excess Carmel River system water is available per State Water Resources Control Board (SWRCB) water rights permit allowance. The purpose of the proposed work is to:

- Assist District and CAW staff with ASR-3 well operations during the upcoming WY 2012 recharge season;
- Provide the District with design, engineering, and bidding support services for the construction of interim Phase 2 ASR Project facilities planned for construction during summer of 2012, and;
- Coordinate with CAW regarding incorporation of Regional Water Project (and other CAW ASR projects) into the site facilities and ASR program.

### **Scope of Services**

Based on our understanding of the District's needs and our experience with this and other ASR projects, we propose to provide the following hydrogeologic and engineering services during the remainder of FY 2011-2012.

#### **Task 1 – Project Management and Meetings**

PWR will review existing conditions at the site and meet with District and CAW staff at a kick-off meeting to discuss FY 2011-2012 program goals and scheduling for the Phase 2 ASR Project. As part of this task, a detailed Phase 2 ASR Project schedule (Gantt Chart) will be developed and maintained. In addition, it is anticipated that on-going "ASR Coordination" meetings between the District and CAW will be required during the FY 2011-2012 period. Design and construction of the Phase 2 ASR facilities will require ongoing coordination with involved agencies to avoid duplication (or conflict) with utilities and system infrastructure currently being contemplated by CAW for the Regional Water Project (RWP), Marina Coast Water District (MCWD), and Fort Ord Reuse Authority (FORA) in the proximate area; particularly within the General Jim Moore Boulevard (GJM Blvd) corridor. Consistent with past



practice, it is assumed that meetings will be held on an approximate monthly basis and will be attended by a PWR Principal Engineer and/or Hydrogeologist, depending on meeting agenda and project needs at the time. To the extent feasible, PWR attendance at meetings will be coordinated with other project tasks to minimize project costs.

### **Task 2 – Water Year 2012 Operational Support**

This task consists of providing operational support during the WY 2012 recharge season. It is noted that the scope of work and budget for performing baseline injection testing of Seaside Middle School ASR-1 (SMS ASR-1 or ASR-3) is included in PWR's previously approved Contract Amendment No. 6 (PWR Project No. 06-0027). This task specifically consists of providing as-needed assistance to District and CAW staff with on-going ASR-3 well operations, data collection, and water sampling during the WY 2012 program after the initial baseline injection testing has been performed, assuming that injection operations continue after completion of baseline injection testing. This task includes providing ongoing monitoring and evaluation of ASR well performance during WY 2012. ASR well operational issues and parameters that will be routinely monitored and evaluated during the course of WY 2012 include the following:

- Injection and extraction well performance;
- Well plugging during injection;
- Sustainable injection rates and backflushing frequency;
- Aquifer hydraulic response to injection and extraction, and;
- Disinfection Byproducts (DBPs) occurrence and fate in the aquifer.

It is our understanding that the District will be primarily responsible for the ongoing downloading and maintenance of the water-level transducers/dataloggers at the Seaside Middle School site and that the District and/or CAW will be responsible for implementing the WY 2012 Sampling and Analysis Plan (SAP). It is assumed that the District will provide PWR with ASR operational, water-level and water-quality data collected during WY 2012 on an approximate weekly basis. PWR will process and evaluate the data for the issues listed above on an ongoing basis and provide routine status reports and operational recommendations during the course of WY 2012 operations.

### **Task 3 – Seaside Middle School ASR-2 Design and Bid Document Preparation**

This task consists of providing the Basis-of-Design, plans, specifications, and bidding support for the SMS ASR-2 (a.k.a. ASR-4) well in preparation for planned well construction during the summer of 2012 (major construction work at the Seaside Middle School site is generally restricted to periods when school is not in session). Construction observation services are not included in this proposal, as construction is not envisioned until summer of 2012. These services are anticipated to be included in subsequent FY 2012-2013 contract work.

Task 3.1 – Basis of Design. PWR will prepare a brief and focused Basis-of-Design technical memorandum. The purpose of the Basis-of-Design memo is to confirm the planned design features of the SMS ASR-2 (ASR-4) well, based largely on the findings from the SMSTW project. District staff, CAW staff and any other interested parties will then have the opportunity to review and comment on the design. With concurrence on the proposed well design,



preparation of the technical specifications and bid documents would follow immediately. An opinion of constructed cost will also be completed prior to bidding.

Task 3.2 - Technical Specifications and Bid Documents. Following District and CAW review and consideration of the Basis-of-Design memo and selection of the final well design features, technical specifications for the drilling and construction of the new ASR well will be prepared. The technical specifications are intended to provide adequate detail for bidding and well construction by competent, licensed (C-57) well drilling contractors. One of the key factors in the successful completion of ASR well construction projects is efficient, delay-free field operations; therefore, the contract documents will place special emphasis on timely initiation and completion of the work.

PWR will incorporate the well design and specifications for the well into a bid package using existing standard District format. The package will include the following:

- Invitation to Bid
- Bid Documents and Bidding Forms
- License and Bonding Requirements
- District Standard General Conditions
- Technical Specifications
- Special Conditions
- References and Contractor Qualification Forms

PWR will issue two draft copies of the completed contract documents for District review and comment. PWR will incorporate District comments and provide copies of the final contract package. It is assumed that the District will provide PWR with the District's "boiler plate", including general conditions and special insurance requirements, for incorporation into the final contract package. It is also assumed that the District will duplicate and distribute the bid packages and serve as the primary contact for prospective bidders.

Task 3.3 – Bidding Assistance. PWR will be available to assist the District throughout the bidding process. This will include responding to questions Contractors may have during the preparation of bids, preparing and distributing requisite addenda, and communicating to potential bidders other pertinent information.

#### **Task 4 – Seaside Middle School Site Interim Facilities Engineering**

Task 4.1 – Facility Design and Engineering. This task includes design and engineering services for the Seaside Middle School ASR site facilities that are planned for construction during the summer of 2012.

Specific work items in this task include the following:

- Design and engineering (including geotechnical investigation) for onsite backflush percolation pit;
- Plans, specifications, and bidding support for backflush percolation pit, underground water and electrical piping, and electrical building;



- Direct costs for the permanent water level transducer / datalogger for SMS ASR-1 (ASR-3) and a monitoring well sample pump for the new far-field monitoring well (PCA-East Deep).
- Specifications for the temporary discharge piping associated with development of the ASR-4 well.

PWR will incorporate the design and specifications for the site facilities into a single bid package using existing standard District format. The package will include the following:

- Invitation to Bid
- Bid Documents and Bidding Forms
- License and Bonding Requirements
- District Standard General Conditions
- Technical Specifications
- Special Conditions
- References and Contractor Qualification Forms
- Construction Drawings set (on 22" x 34" sheet size)

PWR will issue two draft copies of the completed contract documents for District and CAW review and comment. PWR will incorporate comments and provide copies of the final contract package. It is assumed that the District will provide PWR with the District's "boiler plate", including general conditions and special insurance requirements, for incorporation into the final contract package. It is also assumed that the District will duplicate and distribute the bid packages and serve as the primary contact for prospective bidders.

Task 4.2 – Bidding Assistance. PWR will be available to assist the District throughout the bidding process. This will include responding to questions Contractors may have during the preparation of bids, preparing and distributing requisite addenda, and communicating to potential bidders other pertinent information.

Construction observation services are not included in this proposal, as construction is not envisioned until summer of 2012. These services are anticipated to be included in subsequent FY 2012-2013 contract work.

### **Services Not Included**

Services which are (or may be) necessary for the completion of this project, which are not included in our proposal include the following:

- Water quality sampling and analyses (assumed District and /or CAW provided);
- Construction of Phase 2 site facilities (except as noted);
- Permit fees;
- Cost of water, electricity, or other utilities;
- Any others items not specifically included in PWR's scope of services.



### **Estimated Fees and Schedule**

Based on the scope of services presented herein, we estimate the fees for our services will be approximately \$360,058, which will be billed on a time-plus-expenses basis in accordance with our current Fee Schedule (attached). An estimated fee summary worksheet is attached summarizing the estimated man-hours and costs per task/work item. A 10 percent contingency has been noted in the attached budget summary (total with contingency is \$396,063) in the event that unforeseen project complications or constraints arise. We recommend the contingency be held for authorization by District staff upon written justification by PWR.

We understand that in order to authorize this work, your Board must first approve a formal contract amendment. Based on our current workload, we believe that we can commence work within two weeks of your authorization.



We appreciate the opportunity to provide assistance to the District on this important water supply project. If you require additional information regarding this or other matters, please call us.

Sincerely,  
PUEBLO WATER RESOURCES, INC.

Robert C. Marks, P.G., C.Hg  
Principal Hydrogeologist

Stephen P. Tanner, P.E.  
Principal Engineer

RCM:SPT

Attachments: 2011 Fee Schedule  
Cost Estimation Spreadsheet

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