

## EXHIBIT 1-A



ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

October 28, 2005  
Project No. 2005-3357

Monterey Peninsula Water Management District  
Post Office Box 85  
Monterey, California 93942

Attention: Mr. Joe Oliver

Subject: Proposal for Hydrogeologic and Engineering Services, Santa Margarita Test Injection Well, Water Year 2006 Program

Dear Joe:

In accordance with your request, Padre is pleased to present this proposal for additional hydrogeologic and engineering services associated with the Santa Margarita Test Injection Well (SMTIW) project. We understand that the Monterey Peninsula Water Management District (District) anticipates that it will be able to obtain water for injection operations through the Cal-Am distribution system this winter, beginning as early as December 1, 2005 (depending on the timing of permit approval from SWRCB and flow conditions in the Carmel River). The District therefore desires to amend Padre's existing contract to assist with the SMTIW program for Water Year 2006 (WY2006). Based on our discussions and understanding of the program needs, our proposed scope of work includes the provision of hydrogeologic and engineering services in the following areas:

- General assistance with the development and implementation of the SMTIW WY2006 testing program.
- Implementation of formal rehabilitation of the SMTIW.
- Engineering and planning assistance with the City of Seaside Conditional Use Permit associated with the installation of a second well at the site.

### BACKGROUND

The District is investigating the feasibility of implementing an Aquifer Storage and Recovery ([ASR] a.k.a. injection/recovery) program on the Monterey Peninsula. The concept involves injecting 'excess' filtered and treated water originating from the Carmel River aquifer system into the aquifer system in the Seaside Basin for storage and subsequent recovery during periods of high demand and/or dry years. As part of the investigation of ASR, the SMTIW was constructed in the spring of 2001. The well is perforated solely in the Santa Margarita Sandstone aquifer to assess the hydrogeologic conditions for injection/storage/recovery of this aquifer system. The design injection rate of the SMTIW is approximately 1,000 gallons per

minute ([gpm]) approximately 4.4 acre-feet per day), with a recovery capacity in excess of 2,000 gpm.

Formal testing of the SMTIW has been performed in the past four years, with a total of approximately 850 acre-feet (AF) of water successfully injected into the Seaside Groundwater Basin with the SMTIW. As a result of the success of the SMTIW project, the District is currently pursuing an incremental expansion of the ASR project with the installation of a second well similar to the SMTIW at the existing site (Phase 1 ASR Project). ASR is also being evaluated as a possible component of a California American Water Company (Cal-Am) sponsored alternative water supply project for the Monterey Peninsula (currently known as the Coastal Water Project).

Over the past several years, evaluation of ASR well hydraulics, groundwater basin response, and issues related to water quality (i.e., intermixing with native groundwater, biodegradation, and geochemical interaction with aquifer minerals) have shown that the SMTIW design injection rate of 1,000 gpm is sustainable, and recovery of potable water into the Cal-Am distribution system is feasible. The operational parameters for the SMTIW have been largely established, and District staff can now perform most operations with little assistance.

While operation of the well has become somewhat routine, the SMTIW is almost five years old and has not been formally rehabilitated since its construction. Experience at injection wells throughout the world shows that all injection wells are subject to some amount of plugging because no water source is completely free of particulates, and the Cal-Am source water is no exception. During injection, trace amounts of suspended solids are continually being deposited in the gravel pack and aquifer pore spaces, much as a media filter captures particulates in the filter bed. The effect of plugging is to impede the flow of water from the injection well into the aquifer, causing increased injection heads in the well to maintain a given injection rate, or reduced injection rates at a given head level. Well plugging reduces injection and extraction capacity, and if not mitigated, useful well life.

Periodic redevelopment of injection wells is necessary to restore well performance by removing materials deposited around the well bore during injection. While plugging of the SMTIW has been managed in the past through routine backflushing and periods of sustained recovery pumping, some unavoidable declines in performance have occurred as would be expected for any injection well. In addition, recovery pumping of the SMTIW could not be performed in WY2005 as a result of unresolved regulatory issues that prevented recovery into the Cal-Am distribution system (it is anticipated that these issues will be resolved and recovery pumping will be conducted as part of the WY2006 program). The inability to conduct recovery pumping in WY2005 has resulted in exacerbation of residual plugging of the SMTIW, which, if not mitigated, could negatively affect injection performance in the future.

## PURPOSE AND SCOPE

The overall purpose of the ongoing SMTIW program is to further assess and demonstrate the capabilities and limitations of injection, storage, and recovery of treated Carmel River system water in the Santa Margarita Sandstone aquifer of the Seaside Groundwater Basin. Given the age of the SMTIW, combined with the lack of recovery pumping last year, it is necessary to perform formal rehabilitation of the well. Therefore, in addition to providing as-requested assistance to the District with basic ASR system operations in the continuing program to enhance basin recharge for the public good, the WY2006 program also includes the formal rehabilitation of the SMTIW to restore and maintain the capacity of the well and maintain its service life.

### Scope of Services

Based on our understanding of the District's needs and our experience with the SMTIW and similar projects, we have prepared the following scope of services to assist the District with the SMTIW program for WY2006:

**Task 1 – WY2006 Test Program Development and Implementation Assistance.** Padre will review existing conditions at the site and meet with District staff and Cal-Am to discuss test program goals and scheduling. Padre will provide the following services associated with program development.

- Project kickoff meeting(s) with District and Cal-Am.
- Develop hydrogeologic and water quality test program and data needs for a complete injection/storage/recovery (ISR) cycle.
- Develop analytic laboratory testing schedule.
- Develop well rehabilitation goals and scheduling.

Padre will also assist District staff with the implementation of the test program. This task assumes that District staff will continue to take the lead in the ongoing operation, data collection, and water quality sampling for the test program. Based on our discussions and understanding of project needs, we have budgeted for assistance at a similar overall level as was provided during WY2005; however, it will be provided on an as-needed/requested basis as opposed to a pre-scheduled routine. This will provide more flexibility in tailoring our assistance to address critical project needs as they arise. We envision that our minimum involvement will include assistance with the initiation of each test phase (i.e., injection and recovery start-up phases), as well as conducting on-going site visits to provide field assistance on an 'as-requested' basis during the various phases of the program, depending on District and project needs.

Padre will also assist the District with implementation of the on-going water quality data collection program. Specific water quality testing and analyses to be performed in this task include the following:

- Assistance with monitoring and tracking of field water quality parameters during various phases of injectate, storage, and recovery, as well as periodic grab sampling and analysis for characterization and assessment of injectate and recovered waters to supplement field water quality data.
- Sampling and analysis of disinfection by-products (DBPs, e.g., TTHMs and HAAs) and chloride ion to assess DBP formation/degradation and mixing of the injectate and native groundwater in the subsurface.

Water quality testing will occur at regular intervals during all phases of the ISR cycle (it is assumed that WY2006 recovery water will be able to be pumped into the Cal-Am distribution system). It is anticipated that Padre will retain laboratory services for DBPs and chloride ion with Monterey Bay Analytical Services, located near the District's office in Ryan Ranch. It is assumed that District staff will perform most of the grab sampling at SMTIW and delivery of samples to the laboratory. It is also assumed that the District will provide lab services for certain additional analyses (e.g., general mineral and general physical parameters) provided through the District's agreement with the Monterey County Consolidated Laboratory.

**Task 2 - Coordination and Implementation of Formal Well Rehabilitation.** This task will involve the coordination and implementation of formal rehabilitation of the SMTIW. Based on our knowledge of the available data, and our experience with similar well rehabilitation projects, we have developed a scope of work for this task to include the following:

Task 2.1 - Data Review/Analysis and Development of Specifications. Padre will review all available well performance and water quality data to identify the cause(s) of the well performance declines. This will include the performance of additional water quality sampling and analyses from the well (prior to initiating injection operations) for specialized chemical and bacterial analyses targeted at evaluating the sources of plugging in the well. The correct identification of the primary cause of the well performance declines will be instrumental in the development of an effective rehabilitation program.

Based upon our review and analysis of the available data, Padre will develop a rehabilitation program for the well. We envision that the program will include a combination of mechanical and chemical methods, such as wire (nylon) brushing, bailing, acid treatment, and airlift swabbing. Once developed, and upon approval of the District, the rehabilitation program will be formalized, and technical specifications for the work will be developed. The technical specifications will include descriptions of materials and methods for the rehabilitation work. The specifications will also include methods for and criteria associated with the disposal of rehabilitation fluids and produced water.

As part of the rehabilitation work, provisions will be made for the removal and reinstallation of the permanent pump and downhole flow control valve (FCV). While the permanent pump is out of the hole, pre- and post-rehabilitation downhole video surveys of the well casing and screen will be conducted to visually assess the effectiveness of the rehabilitation efforts. Prior to reinstallation, the FCV will also be inspected for the source of the

suspected gas leak that has resulted in the ongoing loss of nitrogen gas since its original installation. At this time, it is anticipated that any corrective actions will be relatively minor (e.g., tightening or remaking of loose gas fitting connections); we have not budgeted for any extensive repairs of the FCV. Should repair and/or replacement of FCV parts or accessories be necessary, they can be purchased directly by the District.

Task 2.2 - Bidding and Contractor Selection. Based on the specifications developed in Task 2.1, Padre will solicit bids from qualified C-57 well rehabilitation contractors, and will retain the selected contractor to perform the work. The selected contractor will have demonstrated experience performing work in similar situations and will be capable of performing the work within the scheduling objectives identified in Task 1.

Task 2.3 - Rehabilitation Management and Oversight. Prior to contractor mobilization, Padre will coordinate a pre-construction meeting to introduce involved parties, establish contact numbers, review the key work elements, and develop a schedule of the work to be performed.

During the rehabilitation of the well, Padre will oversee and document contractor activities to ensure adherence to the project specifications. We will document materials and quantities of well rehabilitation chemicals, field water quality parameters, and production rates during airlifting and pumping. Padre will also monitor and document the handling and discharge of fluids produced from the well during rehabilitation. Following well rehabilitation and replacement of the permanent pump and FCV, Padre will perform performance tests through which the success of the rehabilitation work can be evaluated.

**Task 3 –Assistance with Permitting of Second ASR Well.** Padre will provide engineering and planning assistance in support of the District's application to the City of Seaside (City) for a Conditional Use Permit (CUP) associated with the expansion of the site and the installation of a second ASR well (i.e., the Phase 1 ASR Project). At this time, the specific City requirements for a CUP for this type of project (i.e., a public works/utility project) have not been established. However, while preliminary site plans and layouts have already been prepared for the project as part of the Phase 1 ASR Project Environmental Impact Report, it is anticipated that the City may require additional preliminary design drawings of the permanent chemical/utility building and other on-site facilities associated with the second ASR well. Padre has allocated approximately 80 hours Principal Engineer time for this task.

**Task 4 - Data Analysis and Reporting.** A summary of operations report will be prepared documenting the ISR testing and rehabilitation program, procedures, and results. Conclusions regarding the relative success of the testing and rehabilitation, and recommendations for further analysis, modeling, or subsequent test phases will be provided. Much of the data and information developed in this task will be directly applicable to the District's planned expansion of the ASR program in the Seaside Basin.

### Services Not Included

Completion of WY2006 program may require the services of other entities as well as additional costs or fees, which are not included in our scope of services. These items are assumed to be provided by District staff, contractors retained by the District, or others. Work items that are not a part of our services include the following.

- Hermit and Mini-Troll transducers/data-loggers (assumed District provided)
- Analytic laboratory fees for analyses that can be performed by Monterey County Consolidated Laboratory
- Permit fees (if any)
- Cost of water, electricity, or other utilities
- Any others items not specifically included in Padre's scope of services

### Special Note

Work Task 2.3 involves Padre's retaining a qualified, licensed subcontractor to perform work on existing District facilities (ie the SMTIW Well). Prior to engaging in this work, Padre will ensure that insurance policies which are satisfactory to the District are obtained by the subcontractor, and that such policies name the District as additionally insured (as well as Padre). The costs associated with such insurance may result in increased costs for this Task.

### Schedule

The general schedule anticipated for the WY2006 program is presented below:

- Injection Operations - December 1, 2005 through May 31, 2006 (depending on the SWRCB permit timing and conditions, and flow conditions in the Carmel River).
- Storage/Recovery Operations - June 1 through Mid-September, 2006.
- Summary of Operations Report (draft) – Submitted in late October/early November, 2006.
- Well Rehabilitation - We anticipate that well rehabilitation will be scheduled to occur sometime during the injection season, preferably during a period when conditions in the Carmel River require temporary suspension of injection operations. The goal of this scheduling will be to allow the development of pre- and post-rehabilitation injection performance data to evaluate the effectiveness of the rehabilitation without compromising the ability to divert and inject as much water into the Basin as possible.

### Estimated Fees

Based on the scope of services presented herein, we estimate the fees for our services (not including optional tasks) will be approximately \$149,972, which will be billed on a time-plus-expenses basis in accordance with our current Fee Schedule (attached). A summary of costs by task is also attached. A 10 percent contingency has been noted in the attached budget summary (total w/contingency is \$164,969) 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 Padre.

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 14 days of your authorization. We appreciate the opportunity to work with the District on this important project, and look forward to a timely and successful completion of the work. As always, if you have any questions or would like to modify the scope of services, please call us.

Sincerely,

PADRE ASSOCIATES, INC.



Robert C. Marks, P.G., C.Hg.  
Project Hydrogeologist  
P.G. 7553, C.Hg. 834



Stephen P. Tanner, P.E.  
Principal Engineer  
RCE 51,881

RCM:SPT:av

Attachments: Cost Summary  
Fee Schedule

## 2005 WATER RESOURCES Fee Schedule

### Professional Services

Senior Principal Professional.....	\$	150/hr
Principal Professional.....	\$	140/hr
Senior Professional.....	\$	125/hr
Project Professional.....	\$	115/hr
Staff Professional.....	\$	90/hr
Senior Technician.....	\$	85/hr
Technician.....	\$	75/hr
Drafting.....	\$	50/hr
Word Processing.....	\$	45/hr

### Other Direct Charges

Subcontracted Services.....	Cost Plus 15%
Outside Reproduction.....	Cost Plus 15%
Travel, Subsistence, and Expenses.....	Cost Plus 15%
Vehicle.....	\$ 75/day
Automobile Mileage (beyond 50 miles from Padre offices).....	\$ 0.36/mile



Monterey Peninsula Water Management District

Santa Margarita Test Injection Well - WY2006 Program

BUDGET

\$149,972

2005 Rates

Professional Services				Prim	Senior	Project	Staff	Word Proc.	Data Entry	Graphics	
TASK DESCRIPTION	HOURS	FEE		\$150	\$125	\$115	\$90	\$45	\$40	\$50	
Task 1 Test Program Development and Assistance	177	\$ 21,130		30	20	120		4		3	
Task 2 Well Rehabilitation	163	\$ 18,550		15	16	100	30			2	
Task 3 Permitting Assistance	110	\$ 14,590		80	6	10		2		12	
Task 4 Data Analysis and Reporting	131	\$ 14,955		30	20	55	10	6	4	6	
<b>TOTAL (LABOR)</b>			<b>581</b>	<b>\$ 69,225</b>	<b>155</b>	<b>62</b>	<b>285</b>	<b>40</b>	<b>12</b>	<b>4</b>	<b>23</b>
Other Direct Charges (ODC)											
	Number	Rate\$	Fee								
Task 1 Travel Expenses	24	\$ 150	\$ 3,600								
Task 1 Outside Lab Fees	20	\$ 300	\$ 6,000								
Task 2 C57 Well Rehabilitation Contractor	1	\$ 60,000	\$ 60,000								
Task 2 Specialized Outside Lab Fees	1	\$ 615	\$ 615								
SUBTOTAL (ODC)			\$ 70,215								
15% markup			\$ 10,532								
SUBTOTAL (ODC)			\$ 80,747								
<b>SUBTOTAL \$ 149,972</b>											
10% Budget Contingency \$ 14,997											
<b>TOTAL BUDGET \$ 164,969</b>											