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4 **BEFORE THE STATE WATER**
5 **RESOURCES CONTROL BOARD**
6

7 In the Matter of the State Water Resources) Hearing Date: September 24, 2007
8 Control Board (State Water Board))
9 Hearing to consider Monterey Peninsula) Carmel River in Monterey County
10 Water Management District's (MPWMD))
11 Petitions to Change Permits 7130B and)
12 20808 (Applications 11674B and 27614))
13
14

15 **EXHIBIT DF-2**

16 **MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**

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18 **MPWMD-CAW ASR Management and Operations Agreement**
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23
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**Aquifer Storage and Recovery (ASR)
Management & Operations Agreement
between
California American Water
and
Monterey Peninsula Water Management District**

This Aquifer Storage and Recovery (ASR) Management & Operations Agreement (hereafter the "Agreement") between California American Water (hereafter "Cal-Am"), and Monterey Peninsula Water Management District (hereafter "Water Management District" or "District") is entered into as of the date last written below.

RECITALS

WHEREAS, Cal-Am is an investor owned, public utility providing water service to the Monterey Peninsula; and

WHEREAS, the Water Management District is a public agency, authorized in 1977 by the California Legislature (Chapter 527 of the Statutes of 1977, as amended, found at West's Water Law Appendix, Section 118-1, et seq.). The voters of the Monterey Peninsula ratified creation of the Water Management District in June 1978. The District holds comprehensive authority to integrate management of the ground and surface water resources in the Monterey Peninsula area; and

WHEREAS, the Monterey Peninsula has an insufficient supply of water available to it, and whereas this lack of water supply has been exacerbated by the effects of State Water Resources Control Board (SWRCB) Order WR 95-10, and the listing of the California red-legged frog and steelhead as threatened species under the federal Endangered Species Act; and

WHEREAS, Cal-Am and the Water Management District desire to define and clarify means by which they may cooperate and operate Aquifer Storage and Recovery facilities to augment the supply of water available to the Monterey Peninsula for the benefit of Cal-Am's rate payers, and the constituents of the Water Management District; and

WHEREAS, Cal-Am and the Water Management District have a mutual desire to expand and clarify the operations of existing Aquifer Storage and Recovery facilities, and to accelerate implementation of future ASR facilities;

WHEREAS, the California Department of Health Services requires that an Agreement between Cal-Am and the Water Management District clarify and define responsibilities relating to the long-term operation of the Santa Margarita Well;

NOW, THEREFORE, BE IT RESOLVED the parties hereby enter into this Aquifer Storage and Recovery (ASR) Management & Operations Agreement as follows:

1. **Purpose.** This Agreement is intended to set forth general facts and assumptions concerning Aquifer Storage and Recovery (ASR) facilities and operations. This Agreement clarifies areas of joint effort and cooperation between the parties to facilitate present and future actions. The Parties agree to cooperate in order to optimize operation of the Existing ASR Facilities for present use and benefit to the rate payers of Cal-Am, and the constituents of the Water Management District. The Parties agree to further cooperate to facilitate expansion of Existing ASR Facilities and to plan for the creation and operation of Future ASR Facilities.

2. **Parties.** The sole parties to this Agreement are California American Water (hereafter "Cal-Am") and Monterey Peninsula Water Management District (hereafter "Water Management District" or "District"). This Agreement does not confer upon any person or entity, other than the Parties, any rights or remedies, and shall not be enforceable by any third parties.

3. **ASR Facilities.** Any reference in this Agreement to ASR Facilities shall mean all pumps, motors, piping and appurtenant ASR equipment located outside the points of connection to the Cal-Am water distribution system piping. This reference shall include land and rights of way in the City of Seaside and upon former Fort Ord lands relating to existing ASR facilities. The Water Management District shall solely and exclusively own all ASR Facilities, which ownership shall be inclusive of any rights pertaining to permits issued in relation to those ASR facilities. The parties agree to meet and confer, and engage in joint decision-making with respect to any capital improvement, facility modification, and repair or maintenance effort for the ASR Facilities.

4. **Associated ASR Facilities.** The term "Associated ASR Facilities" shall refer to all pipeline modifications, regulating station modifications and booster pump modifications installed within the Cal-Am water distribution system (including all points of connection, but excluding ASR Facilities as defined above, located outside the points of connection) and operated in connection with the Existing ASR. Cal-Am shall solely and exclusively own all Associated ASR Facilities, which ownership shall be inclusive of any rights pertaining to permits issued in relation to those Associated ASR facilities. The parties agree to meet and confer, and engage in joint decision-making with respect to any capital improvement, facility modification, and repair or maintenance effort for the Associated ASR Facilities.

5. **ASR Operator.** Cal-Am shall be the sole operator for all ASR Facilities and all Associated ASR Facilities, except as described in the Santa Margarita Test Injection Well (SMTIW) Aquifer Storage and Recovery (ASR) System, Operation and Maintenance Manual, a copy of which is attached to this Agreement as Exhibit A. Operations shall conform to all requirements set by the California Public Utilities Commission (CPUC) and the Department of Health Services (DHS) to meet the needs of the Cal-Am service area. Operations shall further conform to the water supply budget set by the Water Management District.

6. **ASR Operations.** References in this Agreement to ASR Operations shall mean activities undertaken in accord with the Santa Margarita Test Injection Well (SMTIW) Aquifer Storage and Recovery (ASR) System, Operation and Maintenance Manual, a copy of which is attached to this Agreement as Exhibit A. The Operation and Maintenance Manual may be modified from time to time by the written agreement of the Parties. Any such modification shall be made an exhibit to this Agreement. The term ASR Operations shall refer to both injection and recovery activities, but shall distinguish both Existing ASR and Future ASR, shall distinguish both ASR

Facilities and Associated ASR Facilities, and shall distinguish both Future ASR Facilities and Future Associated ASR Facilities, as those terms are defined by this Agreement. The Operations and Maintenance Manual shall define and designate the sole operator for the SMTIW. With respect to Future ASR, the Operation and Maintenance Manual shall be jointly devised, and modified from time to time by the parties. Cal-Am shall timely and with due diligence repair and/or replace any ASR Facility or Associated ASR Facility, or component thereof, necessary for the full and effective function of either of those Facilities.

7. **Existing ASR.** The term "Existing ASR" shall refer to the existing Santa Margarita Test Injection Well ASR facility (SMTIW), existing appurtenant on-site and off-site facilities, and related lands held by the Water Management District and Cal-Am. Existing ASR shall constitute both ASR Facilities and Associated ASR Facilities as those terms are defined in this Agreement. Existing ASR shall not include any facilities defined as Future ASR, except as may be provided by an addendum or amendment to this Agreement.

8. **Future ASR.** The term "Future ASR" shall refer to Phase I and all other planned phases of Future ASR Facilities that will support the permanent expansion of ASR Operations by the Water Management District and Cal-Am. Future ASR shall be comprised of both Future ASR Facilities and Future Associated ASR Facilities, as those terms may be defined in an amendment or addendum to this Agreement authorized by the Water Management District Board of Directors.

9. **Water Rights.** Cal-Am and the Water Management District agree to cooperate and support the acquisition of water rights needed for the Water Management District Phase I ASR Operations. Cal-Am and the Water Management District shall jointly hold all relevant applications and water rights permits. Cal-Am and the Water Management District further agree to jointly cooperate and support each other's efforts to extract and use water associated with ASR Operations. Cal-Am agrees to withdraw and dismiss, with prejudice, any complaint or protest it has lodged with the State Water Resources Control Board in reference to any aspect of the Water Management District's request to obtain or use water rights associated with its Phase I ASR Operations. Cooperative efforts shall extend to both existing ASR, as well as Future ASR. This Agreement, however, shall not affect or define the right or interest of either Party to store water in the Seaside Groundwater Basin.

10. **Future Water Rights.** Cal-Am and the Water Management District shall enter into good faith negotiations to establish one or more Agreements pertaining to the acquisition and joint ownership of present and future water rights used or usable from any water source suitable to provide potable water for municipal supply for the benefit of the Monterey Peninsula area. Water sources affected by the Agreement(s) for present and future water rights shall include, but shall not be limited to, waters from the Carmel River or any other river, waters subject to appropriation, groundwater, waters deriving from desalination, storm waters, and recycled or reclaimed waters. The intent of the Agreement(s) shall be to enable cooperative use and acquisition of water rights, to prevent and extinguish any complaint or protest to the use or acquisition of water rights by one Party as against the other, and to set terms and conditions relating to the joint ownership and exercise of water rights.

11. **Permits.** Cal-Am and the Water Management District shall cooperate in the acquisition of all permits or approvals required for ASR Operations. The parties agree that they shall

mutually cooperate and support each other's efforts pursuant to this paragraph, as may relate to Existing ASR and Future ASR, as well as to ASR Facilities and Associated ASR Facilities.

12. **Planning & Construction.** Cal-Am shall be the lead entity related to the planning and construction of all Associated ASR Facilities. The Water Management District shall be the lead entity related to the planning and construction of all ASR Facilities. The parties agree to jointly investigate means to minimize expenses of both ASR Facilities and Associated ASR Facilities relating to property acquisition, ownership, construction, and debt issuance. Cal-Am agrees that it shall not treat any cost or expense Cal-Am may incur with respect to ASR Facilities as an investment in utility plant, and as such Cal-Am shall not seek approval of rates from the California Public Utilities Commission that include any profit or return on equity (ROE) that may apply to a capital facilities investment in ASR Facilities.

13. **Long Term License & Franchise.** The Parties intend that the Water Management District shall issue to Cal-Am a fifteen (15) year term license to operate all ASR Facilities. The license shall recognize Cal-Am as the ASR Operator, with operational control over all ASR Facilities and all Associated ASR Facilities, provided those operations conform to the water supply budget set by the Water Management District. This license shall be in the form of a franchise, and it shall be irrevocable during its term, provided Cal-Am fully complies with all terms and conditions of both this Agreement and the License & Franchise, and further provided that Cal-Am continues throughout that term to provide water for the benefit of its customers on the Monterey Peninsula.

14. **Water Charges.** The Parties shall not charge or impose any fee or other expense upon each other, except as otherwise provided for in this Agreement, for the use of the ASR Facilities or the Associated ASR Facilities.

15. **Water Use.** All water produced from storage by either the ASR Facilities or the Associated ASR Facilities shall be held exclusively for the benefit of customers of Cal-Am.

16. **ASR Expenses.** All costs associated with operation of the ASR Facilities or the Associated ASR Facilities, including but not limited to costs of administration, operation, maintenance, repair, replacement, and insurance shall be borne by Cal-Am. Cal-Am shall further reimburse the Water Management District actual and necessary costs it may incur related to the ASR Facilities or the Associated ASR Facilities.

17. **Extraordinary Use of ASR Facilities.** Where the ASR Facilities are utilized by Cal-Am in lieu of operating other water production facilities, and when this operation does not relate to the recovery of water as part of the ASR Operations, then Cal-Am shall pay to the Water Management District for any costs it may incur with respect to the in lieu operation, including but not limited to costs of administration, operation, maintenance, repair and replacement. Cal-Am may operate ASR Facilities for these purposes only upon the advance written consent of the Water Management District.

18. **Effective Date.** This Agreement shall take effect on April 1, 2006.

19. **Renewal Option.** To the extent ASR Facilities or Associated ASR Facilities are constructed having a usable life that exceeds the term of the license and franchise set by Section

12 above, Cal-Am shall have the option to extend and renew this Agreement to coincide with the remaining usable life of those ASR Facilities or Associated ASR Facilities, whichever has the longer remaining usable life. Notice of Cal-Am's intent to exercise this Renewal Option shall be communicated to the Water Management District, in writing, no less than one hundred eighty (180) days prior to the date referenced in Section 12. Cal-Am shall include a statement as to the remaining usable life of those ASR Facilities or Associated ASR Facilities in that notice. The Parties agree to meet and confer, and engage in joint decision-making with respect to determining any question regarding the remaining usable life of either the ASR Facilities or Associated ASR Facilities. Nothing in this paragraph, however, shall be construed to limit the discretion of the Water Management District to cause the early termination of the License & Franchise, as set forth in Paragraphs 13 and/or Paragraph 23 of this Agreement, which provisions shall prevail over the renewal option set forth in this paragraph.

20. **Termination.** The term of this Agreement shall be co-terminus with the term of the License & Franchise set forth in accord with Paragraph 13, 19 and Paragraph 23.

21. **Limitation.** It is understood by the parties that all Agreements, obligations, debts and liabilities of Cal-Am do not constitute the Agreements, obligations, debts and/or liabilities of the Water Management District, its officers, agents and employees. Further, it is understood by the parties that all Agreements, obligations, debts and liabilities of the Water Management District do not constitute the Agreements, obligations, debts and/or liabilities of Cal-Am, its officers, agents and employees.

22. **Public Utilities Commission.** Cal-Am and the Water Management District recognize and acknowledge that Cal-Am is subject to certain regulatory practices and authority of the California Public Utilities Commission (CPUC), and that Cal-Am may require expenditure authorization from the CPUC in order to implement discrete aspects of this Agreement. The Parties agree to work cooperatively, and with due diligence, to obtain any CPUC approval necessary to implement this Agreement.

23. **Assignment.** This Agreement, and rights referenced herein, shall be assignable by either Party only upon the advance written consent of the other Party, which consent shall not be unreasonably withheld. The Water Management District may, in its sole discretion, terminate this Agreement, and any License or Franchise issued pursuant to this Agreement, in the event Cal-Am ceases to provide for the benefit of Cal-Am's customers on the Monterey Peninsula, whether by sale, purchase, eminent domain or other public acquisition.

24. **Arbitration.** In case any disagreement, difference, or controversy shall arise between Cal-Am and the Water Management District with respect to any matter in relation to or arising out of or under this Agreement, whether as to the construction or operation thereof, or the respective rights and liabilities of Cal-Am or the Water Management District, and the parties cannot mutually agree as to the resolution thereof, then such disagreement, difference, or controversy shall be determined by arbitration under the commercial arbitration rules of the American Arbitration Association or upon such other rules as the Parties may agree, provided that the arbitrator shall be a former judge of the Superior Court or the Court of Appeal. Any arbitration hearing shall be noticed and open to the public. The submission to arbitration in accordance with the requirements of this section of any and all agreements, differences, or controversies that may arise hereunder is made a condition precedent to the institution of any

action or appeal at law or in equity with respect to the controversy involved. The award by the arbitrators, provided it shall not exceed the sum of fifty thousand dollars (\$50,000), shall have the same force and effect and may be filed and entered, as a judgment of the Superior Court of the State of California and shall be subject to appellate review upon the same terms and conditions as the law permits for judgments of Superior Courts. A "Prevailing Party" shall be determined in the Arbitration, and the prevailing party shall be entitled to reasonable attorney's fees and costs incurred, and accrued interest on any unpaid balance that may be due. Costs shall include the cost of any expert employed in the preparation or presentation of any evidence. All costs incurred and reasonable attorney fees shall be considered costs recoverable in that proceeding, and be included in any award.

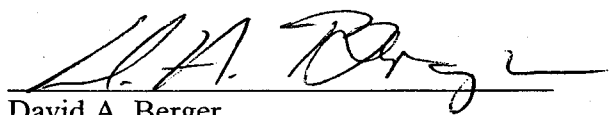
25. **Litigation.** In the event a dispute arises relating to performance under this Agreement or regarding the License & Agreement, where the amount or value relating to the controversy exceeds fifty thousand dollars (\$50,000), or for any arbitration award that exceeds fifty thousand dollars (\$50,000), then and in that event the parties may skip any arbitration requirement, and if already completed, that arbitration shall be deemed advisory. The dispute shall instead be resolved in a court of law competent to hear the matter. Venue for the matter shall be in the County of Monterey. The prevailing party shall be awarded costs of suit, and reasonable attorneys' fees and accrued interest on any unpaid balance that may be due. Costs shall include the cost of any expert employed in the preparation or presentation of any evidence. All costs and attorney fees shall be considered costs recoverable in that proceeding, and be included in any award.

26. **Entire Agreement.** This document represents the entire Agreement between the parties, and supersedes any prior written or oral negotiations and representations between the parties.

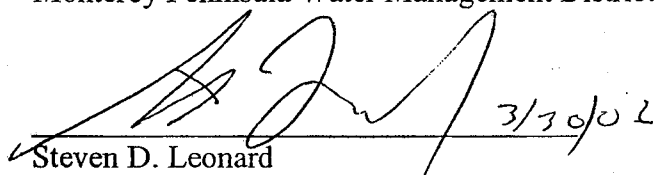
27. **Amendment.** This Agreement may be amended or modified only by an instrument in writing duly approved and signed by each party hereto. Any waiver of any terms or conditions must be in writing and signed by the parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement:

Dated: *MARCH 28, 2006*



David A. Berger
General Manager
Monterey Peninsula Water Management District



Steven D. Leonard
Vice President / Manager
Monterey Coastal Division
California American Water

U/WMD/Gen 2005/ASR Management & Operations Agreement- Final #7(4)

SANTA MARGARITA TEST INJECTION WELL (SMTIW)
AQUIFER STORAGE AND RECOVERY (ASR) SYSTEM

OPERATING AND MAINTENANCE MANUAL

March 24, 2006

CONTENTS

1.0 INTRODUCTION

I. Scope and Purpose.....1

2.0 SMTIW-ASR SYSTEM DESCRIPTION

I. Operation and Control Strategy2

A. Injection

B. Extraction

C. Proposed Extraction Method

II. Primary Components3

III. Piping Schematic

Extraction pumping to Seaside Ozone Treatment Plant.....4

IV. Valve Locations.....4

V. Proposed Extraction System Piping Schematic

Extraction pumping to Seaside distribution system connection at Hilby Ave. and
Luzern St.4

VI. Proposed Plan for General Jim Moore Blvd. temporary intertie pipeline to
connection at Hilby Ave and Luzern St., Seaside.....4

3.0 OPERATION

I. Injection Procedures.....5

A. Startup/Shutdown

B. Monitoring

C. Alarm Conditions

D. Emergency Procedures

II. Extraction Procedures-Existing Piping System to Seaside Ozone Treatment
Plant.....7

A. Startup/Shutdown

B. Monitoring

SANTA MARGARITA TEST INJECTION WELL (SMTIW)
AQUIFER STORAGE AND RECOVERY (ASR) SYSTEM

OPERATING AND MAINTENANCE MANUAL

March 24, 2006

CONTENTS

1.0 INTRODUCTION

I. Scope and Purpose.....1

2.0 SMTIW-ASR SYSTEM DESCRIPTION

I. Operation and Control Strategy2

A. Injection

B. Extraction

C. Proposed Extraction Method

II. Primary Components3

III. Piping Schematic

Extraction pumping to Seaside Ozone Treatment Plant.....4

IV. Valve Locations.....4

V. Proposed Extraction System Piping Schematic

Extraction pumping to Seaside distribution system connection at Hilby Ave. and
Luzern St.4

VI. Proposed Plan for General Jim Moore Blvd. temporary intertie pipeline to
connection at Hilby Ave and Luzern St., Seaside.....4

3.0 OPERATION

I. Injection Procedures.....5

A. Startup/Shutdown

B. Monitoring

C. Alarm Conditions

D. Emergency Procedures

II. Extraction Procedures-Existing Piping System to Seaside Ozone Treatment
Plant.....7

A. Startup/Shutdown

B. Monitoring

- C. Alarm Conditions
- D. Emergency Procedures

III. *Proposed* Extraction Procedures –Future pipeline along General Jim Moore Blvd. to connection at Hilby Ave and Luzern St., Seaside9

- A. Startup/Shutdown
- B. Monitoring
- C. Alarm Conditions
- D. Emergency Procedures

4.0 MAINTENANCE.

- I. Daily/ Weekly.....11
 - A. Injection System
 - B. Extraction System
- II. Periodic..... 11
 - A. Injection System
 - B. Extraction System

5.0 WELL AND AQUIFER PERFORMANCE MONITORING AND MAINTENANCE

- I. ASR System Performance Evaluation.....12
 - A. Assessment of DBP occurrence and fate in aquifer.
 - B. Evaluation/adjustment of long term injection rates and backflushing frequency.
- II. Well Screen Maintenance.....12
- III. Well Backflushing and Redevelopment..... 12

FIGURES- (FOLLOWING PAGE 4)

- Figure-1 Piping Schematic for Existing SMTIW-ASR System
- Figure-2 Valve Locations for Existing SMTIW-ASR System (Ord Grove Ave.)
- Figure-3 Valve Locations for Existing SMTIW-ASR System (General Jim Moore Blvd.)
- Figure-4 Piping Schematic for Proposed Connection to Seaside Distribution System (Temporary Intertie Pipeline Along General Jim Moore Blvd.)

TABLES

Table-1 Primary Components for the SMTIW-ASR System.....	6
Table-2 Valve Identification and Sequencing for ASR Operations.....	6

APPENDIX A

Contact Phone Numbers

APPENDIX B

AS BUILT DRAWINGS FOR THE TEMPORARY INTERTIE PIPELINE ON GENERAL JIM MOORE BLVD. WITH CONNECTION TO THE SEASIDE DISTRIBUTION SYSTEM AT HILBY AVE. AND LUZERN ST. (TO BE INCLUDED UPON COMPLETION OF TEMPORARY INTERTIE PIPELINE)

**SANTA MARGARITA TEST INJECTION WELL (SMTIW)
AQUIFER STORAGE AND RECOVERY (ASR) SYSTEM**

OPERATING AND MAINTENANCE MANUAL

March 24, 2006

1.0 INTRODUCTION

The Santa Margarita Test Injection Well (SMTIW) was designed and constructed to serve as part of an Aquifer Storage and Recovery (ASR) system. During the rainy season when treated water is available from Carmel River sources, potable water from the California American Water (CAW) distribution system will be injected into the well. During the summer and fall when the Monterey area is relying entirely on groundwater withdrawals, the well will be available as a source of potable water that can be pumped directly to the distribution system under certain monitoring protocols. Operation of the ASR system is a joint effort between the Monterey Peninsula Water Management District (MPWMD) and CAW, under permitting authority of the California Department of Health Services (DHS).

Scope, and Purpose

On November 30, 2004, CAW submitted an Operations Plan for the Santa Margarita Well to DHS along with other requested information. Following that submittal, a consensus was reached between MPWMD and CAW staff that a more procedural document was needed. As a result, the following document was prepared to be a guide and reference for CAW operators in their daily operation of the SMTIW injection and extraction systems. It contains only information and protocols specific to the SMTIW-ASR system, and its focus is only on the information that may be needed by CAW operators in the field. Though MPWMD plays a critical role in the operation of the system, this document only delineates those areas of responsibility and does not provide additional detail.

This manual is intended to be a working document that will be continually updated as the system is expanded or modified, or to reflect changes in operational procedures or areas of responsibility.

All updates to this document will be made with the mutual written consent of the CAW and MPWMD general managers, and copies of the latest updated version shall be kept at the SMTIW site, and at both the CAW and MPWMD offices.

2.0 SMTIW-ASR SYSTEM DESCRIPTION

I. Operation and Control Strategy

During the rainy season, typically December through May, the SMTIW will be operated in Injection mode to store surplus Carmel River Alluvial Aquifer water for future use. During the dry season, typically June through October, the SMTIW will be operated in Extraction mode and be used as a water supply source for the Monterey system (DHS # 271004).

Piping currently connects the SMTIW to the CAW distribution system at the Luzern Well site and the Paralta Well site. Control wiring currently exists between the SMTIW panel and the panel at the Paralta well site. (When constructed, a proposed piping connection will also connect the SMTIW to the CAW distribution system near the intersection of Hilby Avenue and Luzern St.

A. Injection

Once distribution system valves are set properly, potable water is injected into the SMTIW from the CAW distribution system via the ASR Booster pump located at the Luzern Well (Luzern Well 02). The pump is operated manually from a switch at the Luzern Well Control Panel.

B. Extraction

When the SMTIW is used as a supply source, the SMTIW pump is under automatic control by the PLC settings on the Paralta Well panel. The SMTIW is only used when the Paralta Well is shut down, and vice versa, so the SMTIW is under exactly the same ON/OFF control logic as the Paralta Well.

Water from the SMTIW is pumped to the Seaside Ozone Treatment plant for removal of any hydrogen sulfide and final chlorination prior to distribution. A variable frequency drive (VFD) on the SMTIW well ensures that the pumped flow from the well does not exceed the Seaside Ozone Treatment Plant capacity. The VFD is controlled manually at the SMTIW control panel.

C. Proposed Extraction Method- Direct connection to Seaside distribution system via temporary intertie pipeline along General Jim Moore Blvd.

Chlorinated, potable water from the SMTIW will be pumped directly to the Seaside distribution system via a temporary above-ground pipeline along General Jim Moore Blvd to a connection on Hilby Ave. The SMTIW pump will be configured to run automatically on a timer, since the hydraulic conditions of the Seaside distribution system preclude using automatic control to call the pump based on system pressure or Hilby Tank level. To minimize cycling, the VFD on the pump will also be adjusted manually to match anticipated system demand at the time of

operation. The SMTIW pump will be shut down automatically if an overflow condition is reached at the Hilby Tank, or if pump discharge and pressure conditions indicate a sudden failure of the 16" pipeline along General Jim Moore Blvd.

II. Primary Components

Table-1 Primary Components for the SMTIW-ASR System.

A. ASR Booster Pump	
Location	Luzern Well Site
Type	Standard close-coupled Centrifugal
Motor Size	100 HP
Motor Drive	Single Speed
Power Supply	480 V, 3 PH
Backup Power	Portable Generator
Rated Capacity	2,000 GPM @ approx. 150 ft TDH
Controls	Manual, Switch at Luzern Panel
Discharge Piping Diameter, Luzern Well to SMTIW	12 inch
Approximate Injection Test Flow (2004 season)	Approximately 600-1,450 gpm
Design Injection Flow (best long-term performance)	1,000 gpm
Backflushing Frequency	weekly
B. SMTIW Pump	
Location	SMTIW site
Type	Vertical Turbine
Motor Size	400 HP
Motor Drive	Variable Frequency Drive (VFD) Adjusted to match pump output to Seaside Ozone Treatment Plant Output
Power Supply	480 V, 3 PH
Backup Power	Off-site portable generator. No backup power facilities on-site.
Rated Capacity	2,600 gpm @ approx. 425 ft TDH
Average Extraction Flow (2004 season)	Approximately 1,570 gpm
ON/OFF Control	Automatic (PLC)- switch at Paralta Panel
VFD	Manual rheostat at SMTIW control panel.
Discharge Piping Diameter	12 inch
Typical Backflush Flow (2004 season)	1,700- 2,600 gpm

III. Existing Piping Schematic

Extraction pumping to Seaside Ozone Treatment Plant

(Please refer to Figure-1.)

IV. Existing Valve Locations

(Please refer to Figure-2 and Figure-3.)

V. Proposed Extraction System Piping Schematic

Extraction pumping to Seaside distribution system connection at Hilby Ave. and Luzern St.

(Please refer to Figure-4.)

VI. Proposed Plan for temporary intertie pipeline along General Jim Moore Blvd. to connection to Seaside distribution system at Hilby Ave and Luzern St., Seaside

(Please refer to Appendix B for description of proposed project.)

3.0 OPERATION

I. INJECTION PROCEDURES

Injection operation is when potable water from the CAW distribution system is pumped back into the SMTIW. This typically happens during the period from December through May.

A. Startup/Shutdown

All startup and shutdown shall be coordinated with MPWMD. After initial startup, temporary shutdown and restart will be required periodically (approximately weekly) as needed for backflushing of the well. This will be also be directed by MPWMD.

MPWMD contact - Joe Oliver, phone 831-658-5640, cell 915-9031.

The specific startup sequence is as follows:

a.) Startup:

1. CAW notifies MPWMD that capacity and demand will allow for injection.
2. MPWMD notifies CAW that it is ready to proceed with injection operations.
3. CAW operators check valves V-1 through V-30 as shown in Table-1 (below) and verify that they are in the "ASR Position". A piping schematic and a map showing the location of each valve are provided in the previous section (Chapter 2).
4. MPWMD adjusts V31, V32, and V33 as required. Operation of these valves will not be the responsibility of CAW operators.
5. Once all valves are set correctly, a CAW operator starts the ASR Booster pump from the control panel located at the Luzern Well site.

b.) Shutdown (reverse of startup sequence):

1. MPWMD notifies CAW that it intends to stop injection operations.
2. A CAW operator shuts down the ASR Booster pump from the control panel located at the Luzern Well site.
3. CAW operators re-position valves V-1 through V-30 as shown in Table-1 (below) and verify that they are in the "Normal CAW Position (Summer)". A piping schematic and a map showing the location of each valve are provided in the previous section (Chapter 2).
4. MPWMD will adjust V31, V32, and V33 as required.

B. Monitoring

There are no additional monitoring responsibilities for CAW operators for the Injection operation. MPWMD may continue to evaluate water quality of injected water as part of the ongoing testing program.

C. Alarm Conditions

There are no additional alarm conditions. Notify MPWMD of booster pump failure. Repair or replace pump as necessary.

D. Emergency Procedures

General CAW emergency protocols apply. Call 911 for Medical, Fire, or Law Enforcement Emergency. Follow CAW standard procedures for main breaks or other system emergencies. Notify MPWMD of any emergency that would affect injection operations.

Table -2: Valve Identification and Sequencing for ASR Operations

Valve #	Type	Condition	Installation	Location/ Facility	EXTRACTION	INJECTION		
					Normal CAW Position (Summer)	ASR Position	ASR Start Up Sequence	ASR Shutdown Sequence
V1	BF	E	U	Ord Grove @ Luzern	0	X	5	19
V2	G	N	U	Ord Grove @ Luzern	X	0	21	12
V3	G	N	A	Luzern	X	0	23	13
V4	G	N	A	Luzern	X	0/X	25*	1*
V5	G	N	U	Luzern	X	0	22	14
V6	BF	E	A	Luzern	0	X	10	15
V7	G	E	A	Luzern	0	0	e	e
V8	G	E	A	Luzern	X	0	e	e
V9	G	E	A	Luzern	0	X	6	16
V10	G	E	U	Luzern	0	0	e	e
V11	BF	E	A	Luzern	X/0	X	8	e
V12	G	E	A	Luzern	X/0	X	9	e
V13	G	E	A	Luzern	0	X	7	17
V14	G	E	A	Luzern	X	0	11	18
V20	G	N	U	Ord Grove @Hacienda	X	0	16	7
V21	G	N	A	Hacienda Intertie	X	0	17	8
V22	Ball Valve	N	A	Hacienda Intertie	X	X	18	11
V23	G	N	A	Hacienda Intertie	X	0	19	10
V24	G	N	U	Hacienda Intertie	X	0	20	9
V25	BF	E	U	Ord Grove @ Cemetery	0	X	1	20
V26	G	E	U	Ord Grove @ Cemetery	0	X	2	21
V27	G	E	U	03 Treatment Plant	0	X	3	22
V28	BF	N	A	Paralta	X	0	15	6
V29	G	E	A	Paralta	0	X	4	e
V30	G	N	U	Paralta	0	0	14	5
V31	G	N	A	SMW	X	0	10	4
V32	G	N	A	SMW	X	0/X	5	3
V33	G	N	A	SMW	X	0/X	12	5
PUMP	e	e	e	Luzern	OFF	ON*	24*	2*

Type: BF= Butterfly, G= Gate, OSY= Outside Stem and Yoke
 Condition: E= Existing, N= New
 Installation: A= Aboveground, U= Underground

Valve Position: O= Open, X= Closed

*Please refer to previous section for piping schematic and map showing valve locations.

II. EXTRACTION PROCEDURES -Existing system using Seaside Ozone Treatment Plant
Extraction is when the SMTIW is used as a water source for the Monterey system. This occurs during the dry season, typically June through October.

A. Startup/Shutdown

All startup and shutdown shall be coordinated with MPWMD.

MPWMD contact - Joe Oliver, phone 831-658-5640, cell 915-9031.

The specific startup and shutdown sequences are as follows:

a.) Startup:

1. CAW notifies MPWMD that the SMTIW is needed to meet demand and that it intends to proceed with extraction operations.
2. MPWMD acknowledges that CAW will begin pumping from the SMTIW.
3. CAW operators check valves V-1 through V-30 as shown in Table-1 (below) and verify that they are in the "Normal CAW Position". A piping schematic and a map showing the location of each valve are provided in the previous section (Chapter 2).
4. MPWMD will adjust V31, V32, and V33 as required. Operation of these valves will not be the responsibility of CAW operators.
5. At the Paralta Well site, a CAW operator closes the discharge valve on the Paralta Well and opens the valve on the SMTIW pipe connecting to the CAW distribution system.
6. CAW operators will rewire contacts in Paralta Well Panel so that the SMTIW can be operated remotely in AUTO mode from the Paralta Well Panel using the same control logic as the Paralta Well.
7. Coordinate with MPWMD to set the VFD on the SMTIW pump to match current Seaside Ozone Treatment Plant output.
8. After the VFD on the SMTIW pump has been adjusted satisfactorily, a CAW operator places the SMTIW starter switch in the AUTO position at the Paralta Well Panel

b.) Shutdown (reverse of startup sequence):

1. CAW notifies MPWMD of its intent to shut down extraction due to system demand conditions.
2. A CAW operator shuts down the SMTIW pump at the Paralta Well control panel.
3. At the Paralta Well site, a CAW operator opens the valve on the Paralta Well discharge and closes the valve on the SMTIW piping connection to the distribution system
4. A CAW operator re-configures the connections in the Paralta Well control panel so that the Paralta Well pump will be under control of the PLC.

5. A CAW operator places the Paralta Well starter switch in the AUTO position at the Paralta Well Panel.

c.) Alternate startup/shutdown procedure to accommodate CAW operational conditions necessitating interim or temporary use of the SMTIW:

1. CAW notifies MPWMD that startup of SMTIW needed for a temporary specified time period, due to a CAW well or wells being taken offline.
2. MPWMD acknowledges SMTIW use for this purpose.
3. Startup/shutdown procedures as described in Sections 3.0 II. A. a.) and b.) above shall be followed for this use of the SMTIW.
4. If after 15 days of such use of the SMTIW, MPWMD may thereafter give notice of, and hold a hearing if it appears that repair or replacement or other activities necessary to restore CAW facilities are not being completed promptly or diligently. MPWMD shall give CAW not less than 30 days advance written notice for any such hearing, which notice shall set forth the basis of the hearing. Upon considering the evidence presented (including written materials that may be included in an Administrative Record), MPWMD may determine the period of time during which the SMTIW shall continue to be used for this purpose. MPWMD shall give CAW written notice of any such determination, and the determination shall be effective on the 15th day following service of the notice by personal delivery, or by facsimile.

B. Monitoring

Since the SMTIW will be operated as a supply well in place of the Paralta Well, all routine water quality monitoring of the finished water prior to distribution will be in accordance with the existing Seaside Ozone Treatment Plant operating permit with the Department of Health Services (DHS), and otherwise be in compliance with all Title 22 drinking water regulations for groundwater sources. There are no additional routine monitoring responsibilities for CAW operators for the SMTIW Extraction operation.

Additional monitoring for Disinfection Byproducts (DBPs) is required as part of the DHS operating permit for the SMTIW. Sample collection, analysis, and submittal will continue to be under the direction of Leslie Jordan, CAW Water Quality Supervisor (phone 646-3258).

In addition, MPWMD may continue to take samples to evaluate water quality of the extracted water as part of its ongoing testing program.

C. Alarm Conditions

Alarm conditions for disinfectant residual or pump failure are the same as for the Seaside Ozone Treatment Plant.

There are no other alarm conditions.

Notify MPWMD of well pump failure.

D. Emergency Procedures

General CAW emergency protocols apply.

Call 911 for Medical, Fire, or Law Enforcement Emergency.

Follow CAW standard procedures for leaks, equipment failure, or loss of power.

III. PROPOSED EXTRACTION PROCEDURES -Future connection to Seaside distribution system at Hilby and Luzern via temporary intertie pipeline along General Jim Moore Blvd.

(To be finalized in accordance with as-built configuration)

A. Startup/Shutdown

The proposed procedures will be the same as the current procedures, EXCEPT for the following:

- 1. Instead of operating the valve at the intertie to the Paralta Well, operators will operate a valve on the intertie pipeline on General Jim Moore Blvd.*
- 2. The PLC On/Off controls will be configured to run the SMTIW pump on a pre-set timer. CAW operators will adjust the timer based on specific system demand conditions when the temporary intertie pipeline is put into service.*
- 3. The VFD on SMTIW pump will be adjusted manually to match anticipated demand conditions at the time the intertie pipeline is put into service.*
- 4. As a precaution to detect abnormal pump operation in the event of pipeline failure, flow and pressure sensors near the pump discharge will shut down the pump on sudden drop in discharge pressure or sudden increase in flow. To prevent operation without chlorination, the hypochlorite feed pump will be interlocked with the SMTIW pump. A dialer will be installed to signal alarm conditions and pump failure.*
- 5. To prevent Hilby Tank overflow in the event the altitude valve fails to close on the inlet, the SMTIW pump will shut down if the normal high level setpoint is exceeded.*

B. Monitoring

The proposed procedures will be the same as the current procedures, EXCEPT for the following:

- 1. When the extraction system is operating, the above ground pipeline along General Jim Moore Blvd. will be visually checked twice daily for leaks or other signs of damage or immediate failure. At other times of the year it will be checked on a monthly basis for signs of vandalism or other exterior damage.*

2. *Distribution system monitoring for DBPs will be conducted as required from the Seaside distribution system, in accordance with the Stage 2 Disinfection Byproducts Rule (Stage 2 DBPR).*

C. Alarm Conditions

The proposed configuration will have the following Alarm conditions that will shut down the SMTIW pump:

1. *Hilby Tank, High Level*
2. *Sudden Drop in SMTIW Pump Discharge Pressure*
3. *Sudden Increase in SMTIW Pump Flow*
4. *SMTIW Hypochlorite Feed Pump Fail*

D. Emergency Procedures

The proposed procedures will be the same as the current procedures, EXCEPT for the following:

1. Leak or Pipeline Failure

If a leak in the pipeline is discovered or reported, the following response protocol will be followed:

- A. Shut down SMTIW well pump manually.
- B. Close isolation valves as required along pipeline to isolate leak or damaged area.
- C. If repair cannot be made quickly (within 2-4 hours), re-configure system to pump to the Seaside Ozone Treatment plant to meet demand while the leak is being repaired.
- D. Notify affected customers as necessary, depending on severity of damage and duration of repairs, in accordance with CAW standard procedures.
- E. If vandalism or unreported vehicle accident is suspected, notify the City of Seaside Police Department.

2. DBP Event

If distribution system monitoring in the Seaside distribution system detects DBPs in excess of the MCLs, the SMTIW pump will be shut down and the system will be reconfigured for extraction through the Seaside Ozone Treatment Plant, as described in Part II.

4.0 MAINTENANCE

The majority of the maintenance procedures for the SMTIW-ASR System are covered under routine maintenance practices for the Paralta Well, or in the Operation and Maintenance Manual for the Seaside Ozone Treatment Plant. Listed here are only the additional responsibilities that arise from the SMTIW-ASR system.

I. Daily

A. Injection System

1. Visually inspect all above-ground piping and valves for leaks or damage and repair if necessary.
2. Inspect ASR Booster Pump seals, adapters, and connections for leaks.
3. Watch and listen to ASR Booster Pump and note any overheating, excess vibration, or unusual noises indicating bearing wear. Schedule repairs as required.

B. Extraction System

1. Visually inspect all above-ground piping and valves for leaks or damage, and schedule repairs as necessary. Notify MPWMD of any abnormal conditions observed at the SMTIW wellhead.
2. Watch and listen to SMTIW Pump Motor and note any overheating, excess vibration, or unusual noises indicating bearing wear. Notify MPWMD of any abnormal conditions.
3. Inspect control panel for any signs of damage. Notify MPWMD of any abnormal conditions.

Proposed Configuration Only:

4. *Verify operation of hypochlorite feed system.*
5. *Verify chemical metering pump discharge rate.*
6. *Verify that the chlorine residual is within range.*
7. *Check supply of hypochlorite solution in storage tank. Order more as needed.*
8. *Check entire feed system for leaks or spills and clean-up as necessary.*
9. *Verify alarm settings and function.*

II. Periodic

A. Injection System

1. Thoroughly clean and inspect ASR Booster Pump and Motor at end of season and replace parts according to manufacturers maintenance schedule.

B. Extraction System

1. Periodic / annual maintenance of the SMTIW Pump and motor will be coordinated by MPWMD. CAW operators will not routinely be involved.

Proposed Configuration Only:

2. *On a monthly basis, CAW operator shall visually inspect above-ground Hilby Pipeline for any signs of leaks, damage, or vandalism.*

5.0 WELL AND AQUIFER PERFORMANCE MONITORING AND MAINTENANCE

CAW Operators will have no additional routine tasks in this area.

I. ASR System Performance Evaluation

Ongoing evaluation of the ASR system performance will be conducted by the MPWMD with input from the CAW Engineering staff and outside consultants. CAW operators will have no direct involvement in this process.

A. Assessment of DBP occurrence and fate in aquifer:

MPWMD and its consultants will coordinate and direct as necessary. CAW will collect and submit DBP samples from the distribution system in accordance with Title 22 regulations regarding Disinfection Byproducts (DBPs).

B. Evaluation/adjustment of long term injection rates and backflushing frequency.

MPWMD and its consultants will coordinate and direct as necessary.

II. Well Screen Maintenance

MPWMD and its consultants will coordinate and direct as necessary.

III. Well Backflushing and Redevelopment

MPWMD and its consultants will coordinate and direct as necessary.

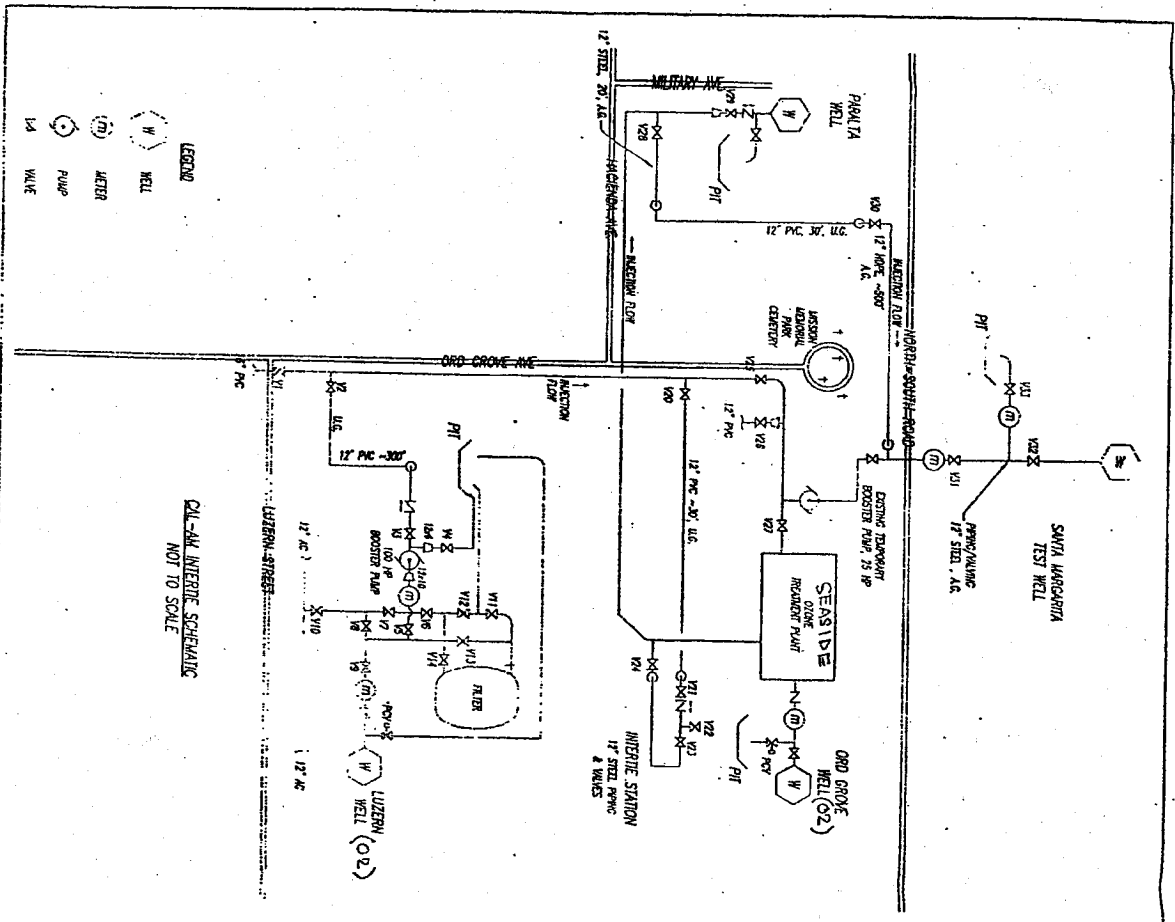
APPENDIX A.

**SANTA MARGARITA TEST INJECTION WELL
OPERATION AND MAINTENANCE**

CONTACT PHONE NUMBERS

FOR MEDICAL OR LAW ENFORCEMENT EMERGENCY, DIAL 911

Agency/Person	Title	Phone
Monterey Peninsula Water Management District (MPWMD)		
Joe Oliver	Water Resources Manager	658-5640; cell 915- 9031
Tom Lindberg	Associate Hydrologist	958-5642; cell 915- 5978
California American Water Operators		
Craig Evans	Production Foreman	646-3250; cell 236-7497
Mike Magretto	Operations Supervisor	646-3220; cell 236-7530
Other Involved Personnel		
Aman Gonzalez	CAW Operations Engineer	646-3230; cell 236-6828
Leslie Jordan	CAW Water Quality Supervisor	646-3258; cell 236-7533
David Norris	CAW Operations Engineering Consultant	659-9230; cell 601-6240
Jan Sweigert	Engineer, Department of Health Services	655-6935
Steve Tanner	Engineering Consultant, Padre Associates	805-683-1233 805-340-3622
Other Agencies		
Fire, Ambulance, Law Enforcement	Emergency	911
Seaside Police Department	(Non-emergency, suspected vandalism to facilities.)	394-6811



LEGEND
 (W) WELL
 (M) MOTOR
 (P) PUMP
 (V) VALVE

CALL-AM INTERIE SCHEMATIC
 NOT TO SCALE

Table 2: Valve Identification and Sequencing for ASR Operations

Valve #	Type	Condition/Installation	Location/Facility	EXTRACTION	WJECTION	
				Normal Cam Position (turning)	ASR Start Up	ASR Shutdown
V1	BF	E	Old Green & Luera	X	21	19
V2	G	N	Old Green & Luera	X	21	19
V3	G	N	Old Green & Luera	X	21	19
V4	G	N	Luera	X	22	20
V5	G	N	Luera	X	22	20
V6	BF	E	Luera	X	22	20
V7	G	N	Luera	X	22	20
V8	BF	E	Luera	X	22	20
V9	G	N	Luera	X	22	20
V10	G	N	Luera	X	22	20
V11	G	N	Luera	X	22	20
V12	G	N	Luera	X	22	20
V13	G	N	Luera	X	22	20
V14	G	N	Luera	X	22	20
V15	G	N	Luera	X	22	20
V16	G	N	Luera	X	22	20
V17	G	N	Luera	X	22	20
V18	G	N	Luera	X	22	20
V19	G	N	Luera	X	22	20
V20	G	N	Luera	X	22	20
V21	G	N	Luera	X	22	20
V22	Valve	N	Headed Inlets	X	18	11
V23	G	N	Headed Inlets	X	18	11
V24	G	N	Headed Inlets	X	18	11
V25	BF	E	Headed Inlets	X	18	11
V26	G	N	Headed Inlets	X	18	11
V27	G	N	Headed Inlets	X	18	11
V28	G	N	Headed Inlets	X	18	11
V29	BF	E	Headed Inlets	X	18	11
V30	G	N	Headed Inlets	X	18	11
V31	G	N	Headed Inlets	X	18	11
V32	G	N	Headed Inlets	X	18	11
V33	G	N	Headed Inlets	X	18	11
V34	G	N	Headed Inlets	X	18	11
V35	G	N	Headed Inlets	X	18	11
V36	G	N	Headed Inlets	X	18	11
V37	G	N	Headed Inlets	X	18	11
V38	G	N	Headed Inlets	X	18	11
V39	G	N	Headed Inlets	X	18	11
V40	G	N	Headed Inlets	X	18	11
V41	G	N	Headed Inlets	X	18	11
V42	G	N	Headed Inlets	X	18	11
V43	G	N	Headed Inlets	X	18	11
V44	G	N	Headed Inlets	X	18	11
V45	G	N	Headed Inlets	X	18	11
V46	G	N	Headed Inlets	X	18	11
V47	G	N	Headed Inlets	X	18	11
V48	G	N	Headed Inlets	X	18	11
V49	G	N	Headed Inlets	X	18	11
V50	G	N	Headed Inlets	X	18	11
V51	G	N	Headed Inlets	X	18	11
V52	G	N	Headed Inlets	X	18	11
V53	G	N	Headed Inlets	X	18	11
V54	G	N	Headed Inlets	X	18	11
V55	G	N	Headed Inlets	X	18	11
V56	G	N	Headed Inlets	X	18	11
V57	G	N	Headed Inlets	X	18	11
V58	G	N	Headed Inlets	X	18	11
V59	G	N	Headed Inlets	X	18	11
V60	G	N	Headed Inlets	X	18	11
V61	G	N	Headed Inlets	X	18	11
V62	G	N	Headed Inlets	X	18	11
V63	G	N	Headed Inlets	X	18	11
V64	G	N	Headed Inlets	X	18	11
V65	G	N	Headed Inlets	X	18	11
V66	G	N	Headed Inlets	X	18	11
V67	G	N	Headed Inlets	X	18	11
V68	G	N	Headed Inlets	X	18	11
V69	G	N	Headed Inlets	X	18	11
V70	G	N	Headed Inlets	X	18	11
V71	G	N	Headed Inlets	X	18	11
V72	G	N	Headed Inlets	X	18	11
V73	G	N	Headed Inlets	X	18	11
V74	G	N	Headed Inlets	X	18	11
V75	G	N	Headed Inlets	X	18	11
V76	G	N	Headed Inlets	X	18	11
V77	G	N	Headed Inlets	X	18	11
V78	G	N	Headed Inlets	X	18	11
V79	G	N	Headed Inlets	X	18	11
V80	G	N	Headed Inlets	X	18	11
V81	G	N	Headed Inlets	X	18	11
V82	G	N	Headed Inlets	X	18	11
V83	G	N	Headed Inlets	X	18	11
V84	G	N	Headed Inlets	X	18	11
V85	G	N	Headed Inlets	X	18	11
V86	G	N	Headed Inlets	X	18	11
V87	G	N	Headed Inlets	X	18	11
V88	G	N	Headed Inlets	X	18	11
V89	G	N	Headed Inlets	X	18	11
V90	G	N	Headed Inlets	X	18	11
V91	G	N	Headed Inlets	X	18	11
V92	G	N	Headed Inlets	X	18	11
V93	G	N	Headed Inlets	X	18	11
V94	G	N	Headed Inlets	X	18	11
V95	G	N	Headed Inlets	X	18	11
V96	G	N	Headed Inlets	X	18	11
V97	G	N	Headed Inlets	X	18	11
V98	G	N	Headed Inlets	X	18	11
V99	G	N	Headed Inlets	X	18	11
V100	G	N	Headed Inlets	X	18	11

Type: BF= Butterfly, G= Gate, OSY= Outside Stem and Yoke Installation, E= Existing, N= New Installation, A= Aboveground, U= Underground
 Valve Position: O= Open, X= Closed
 *Please refer to previous section for piping schematic and map showing valve locations.

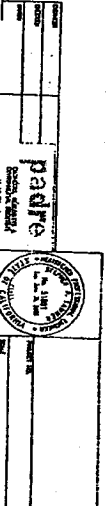


Figure-1 Piping Schematic for Existing SMTIW-ASR System

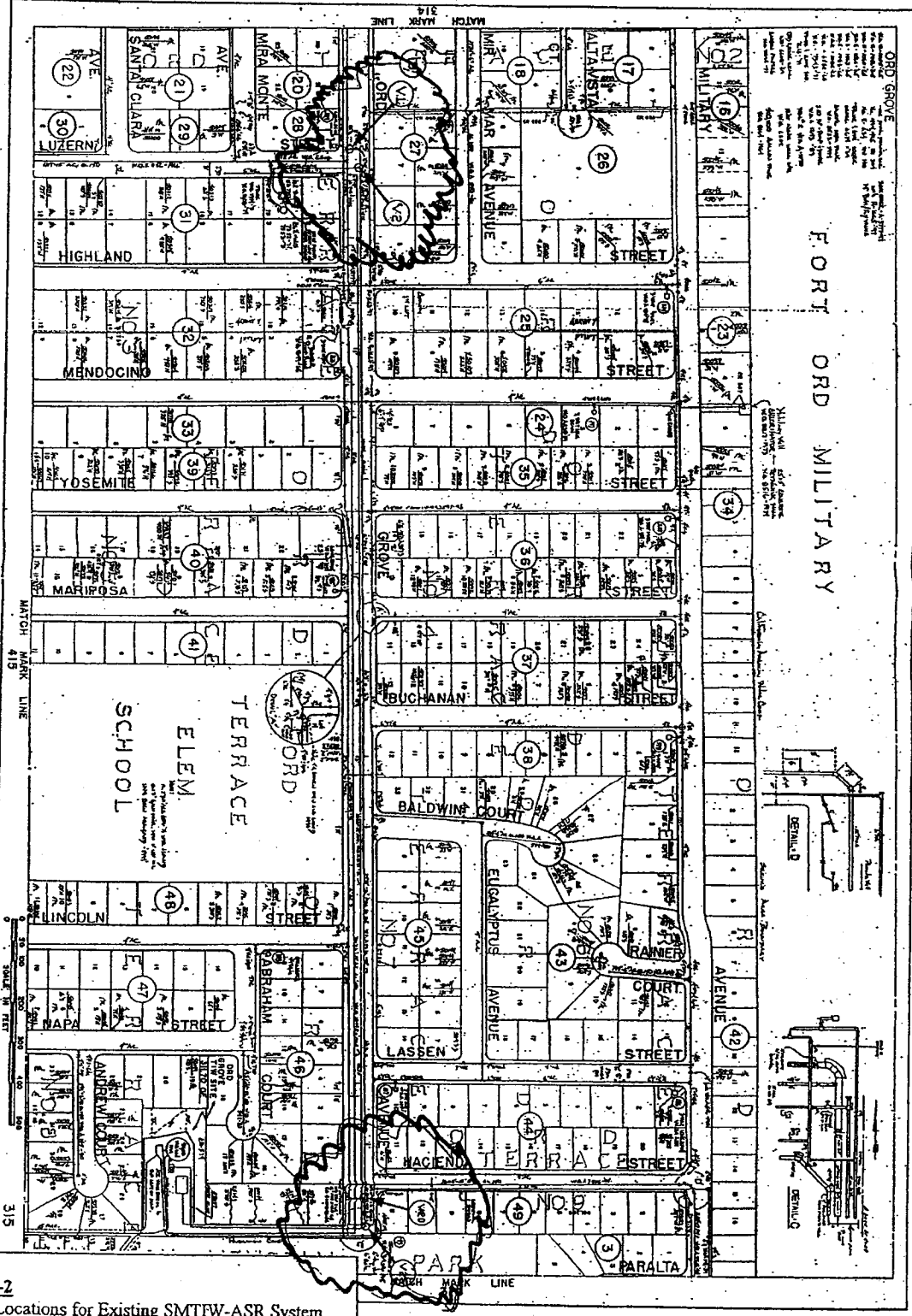


Figure-2
Valve Locations for Existing SMTFW-ASR System

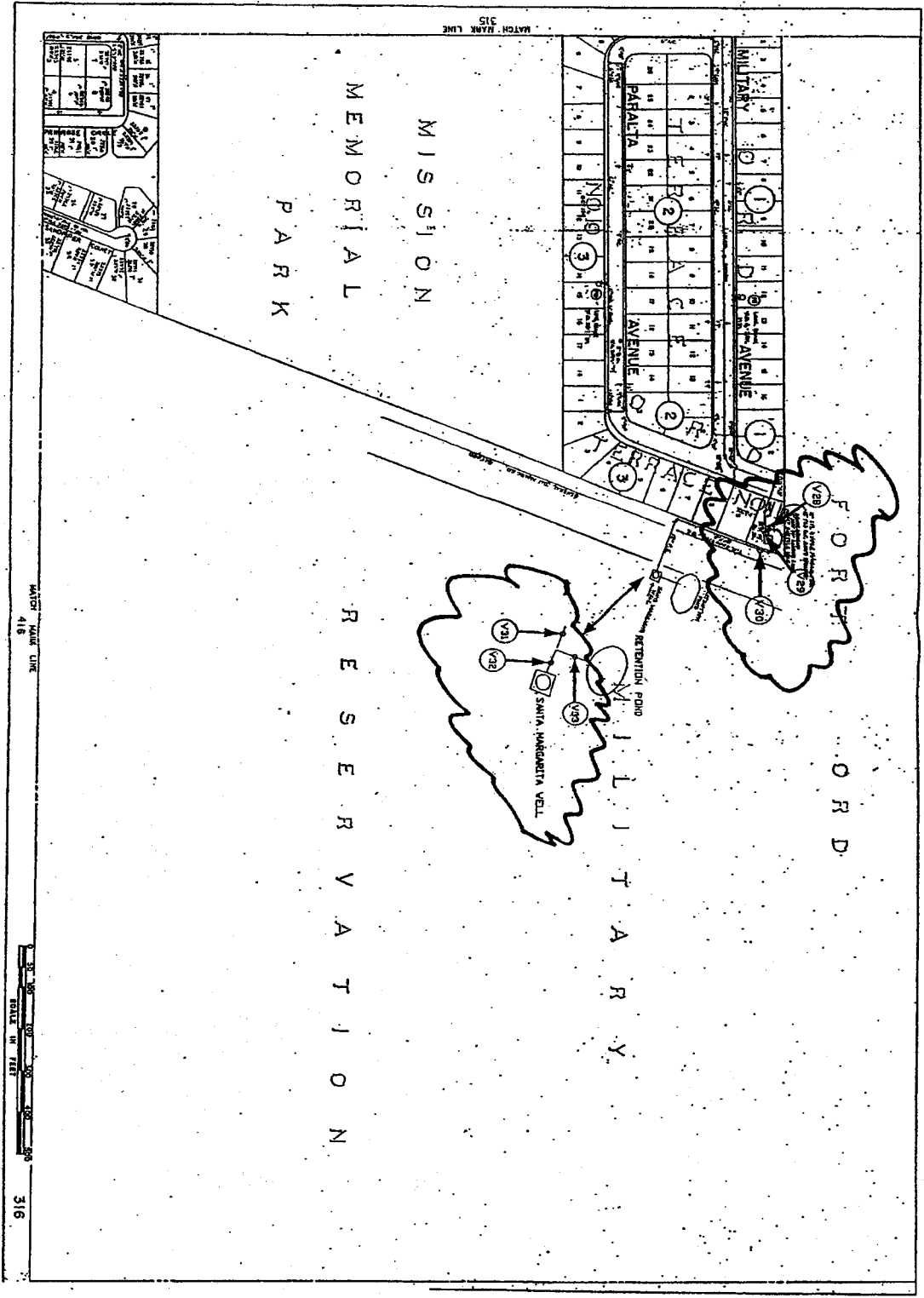
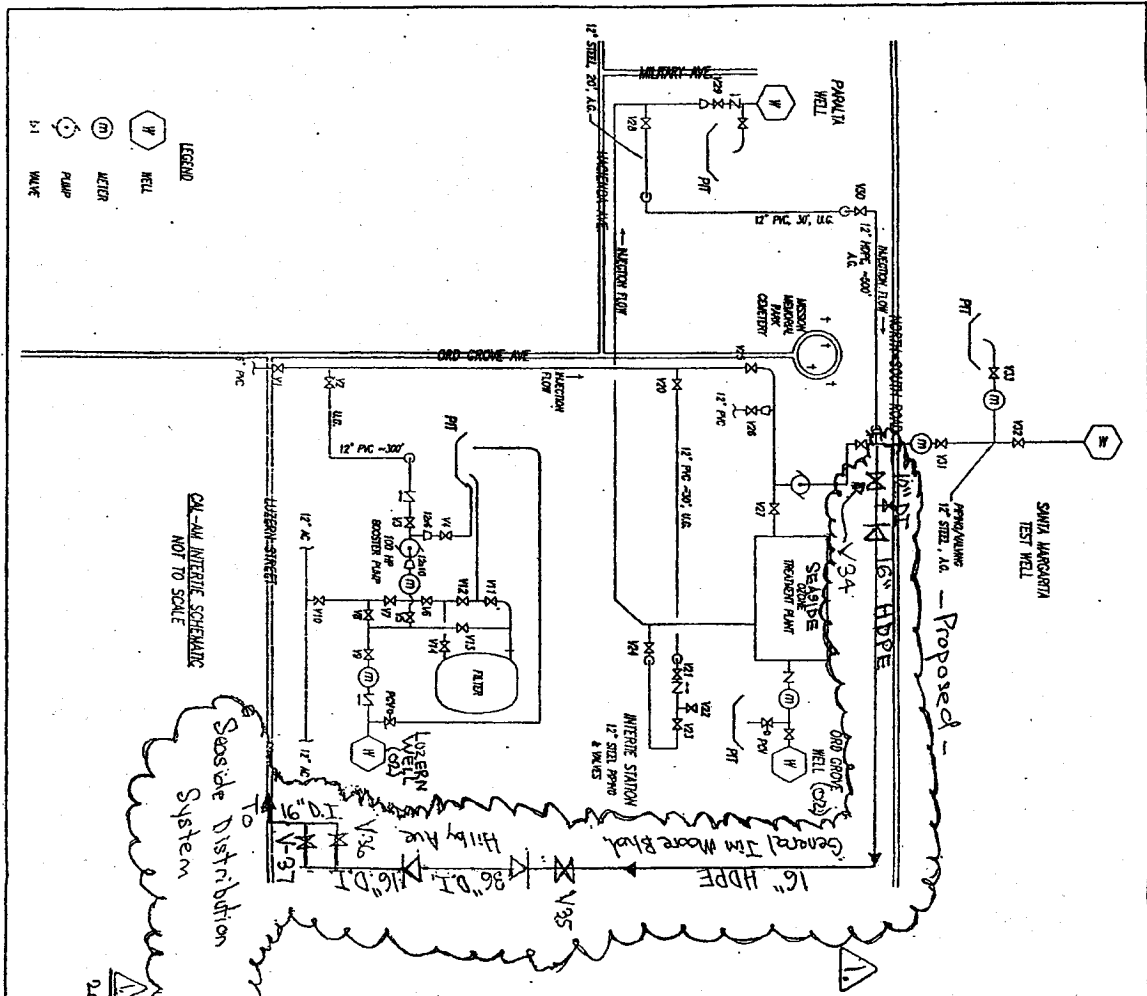


Figure-3
Valve Locations for Existing SMTIW-ASR System



LEGEND

- ⊕ WELL
- ⊙ METER
- ⊕ PUMP
- ⊕ VALVE

ALL-ALL INTERIE SCHEMATIC
NOT TO SCALE

To Seaside Distribution System

Proposed Hilby St. Connection
2005, CAW

Valve	Type	Condition	Location	Extraction	Injection
V34	BF	A	Gen Jim Moore	0	X
V35	BF	A	Gen Jim Moore at Hilby Ave	0	X
V36	G	U	Hilby Ave at Luzern	0	X
V37	G	U	Hilby Ave at Luzern	0	X

Typ: BF= Battery, G= Gas, OSV= Outside Stern and Yoke
Condition: E= Existing, N= New
Installation: A= Aboveground, U= Underground
Valve Position: O= Open, X= Closed

*Please refer to previous section for piping schematic and map showing valve locations.

Valve #	Type	Condition	Location	Extraction	Injection
V1	BF	E	One Drive @ Luzern	0	19
V2	G	N	Luzern	0	21
V3	G	N	Luzern	0	23
V4	G	N	Luzern	0	25
V5	G	N	Luzern	0	27
V6	G	N	Luzern	0	29
V7	BF	E	Luzern	0	31
V8	G	E	Luzern	0	33
V9	G	E	Luzern	0	35
V10	G	E	Luzern	0	37
V11	BF	E	Luzern	0	39
V12	G	E	Luzern	0	41
V13	G	E	Luzern	0	43
V14	G	E	Luzern	0	45
V15	G	E	Luzern	0	47
V16	G	E	Luzern	0	49
V17	G	E	Luzern	0	51
V18	G	E	Luzern	0	53
V19	G	E	Luzern	0	55
V20	G	E	Luzern	0	57
V21	BF	E	Luzern	0	59
V22	BF	E	Luzern	0	61
V23	G	E	Luzern	0	63
V24	G	E	Luzern	0	65
V25	G	E	Luzern	0	67
V26	G	E	Luzern	0	69
V27	G	E	Luzern	0	71
V28	G	E	Luzern	0	73
V29	G	E	Luzern	0	75
V30	G	E	Luzern	0	77
V31	G	E	Luzern	0	79
V32	G	E	Luzern	0	81
V33	G	E	Luzern	0	83
V34	G	E	Luzern	0	85
V35	G	E	Luzern	0	87
V36	G	E	Luzern	0	89
V37	G	E	Luzern	0	91
V38	G	E	Luzern	0	93
V39	G	E	Luzern	0	95
V40	G	E	Luzern	0	97
V41	G	E	Luzern	0	99
V42	G	E	Luzern	0	101
V43	G	E	Luzern	0	103
V44	G	E	Luzern	0	105
V45	G	E	Luzern	0	107
V46	G	E	Luzern	0	109
V47	G	E	Luzern	0	111
V48	G	E	Luzern	0	113
V49	G	E	Luzern	0	115
V50	G	E	Luzern	0	117
V51	G	E	Luzern	0	119
V52	G	E	Luzern	0	121
V53	G	E	Luzern	0	123
V54	G	E	Luzern	0	125
V55	G	E	Luzern	0	127
V56	G	E	Luzern	0	129
V57	G	E	Luzern	0	131
V58	G	E	Luzern	0	133
V59	G	E	Luzern	0	135
V60	G	E	Luzern	0	137
V61	G	E	Luzern	0	139
V62	G	E	Luzern	0	141
V63	G	E	Luzern	0	143
V64	G	E	Luzern	0	145
V65	G	E	Luzern	0	147
V66	G	E	Luzern	0	149
V67	G	E	Luzern	0	151
V68	G	E	Luzern	0	153
V69	G	E	Luzern	0	155
V70	G	E	Luzern	0	157
V71	G	E	Luzern	0	159
V72	G	E	Luzern	0	161
V73	G	E	Luzern	0	163
V74	G	E	Luzern	0	165
V75	G	E	Luzern	0	167
V76	G	E	Luzern	0	169
V77	G	E	Luzern	0	171
V78	G	E	Luzern	0	173
V79	G	E	Luzern	0	175
V80	G	E	Luzern	0	177
V81	G	E	Luzern	0	179
V82	G	E	Luzern	0	181
V83	G	E	Luzern	0	183
V84	G	E	Luzern	0	185
V85	G	E	Luzern	0	187
V86	G	E	Luzern	0	189
V87	G	E	Luzern	0	191
V88	G	E	Luzern	0	193
V89	G	E	Luzern	0	195
V90	G	E	Luzern	0	197
V91	G	E	Luzern	0	199
V92	G	E	Luzern	0	201
V93	G	E	Luzern	0	203
V94	G	E	Luzern	0	205
V95	G	E	Luzern	0	207
V96	G	E	Luzern	0	209
V97	G	E	Luzern	0	211
V98	G	E	Luzern	0	213
V99	G	E	Luzern	0	215
V100	G	E	Luzern	0	217

Table 2: Valve Identification and Sequencing for ASR Operations

Figure 4
Piping Schematic for Proposed Connection to Seaside Distribution System (Temporary Intertie Pipeline Along General Jim Moore Blvd.)

padre
PATERSON & ASSOCIATES
INC.