

Addendum to the Area I Plume Migration Control Feasibility Study (FS)

Perchlorate Community Action Group Meeting
29 May 2008

- **FS Addendum submitted to the Water Board on 15 April 2008**
- **For the Intermediate Aquifer:**
 - **Confirms the schedule for design, installation and startup of the Intermediate Aquifer Containment and Cleanup System (IACS)**

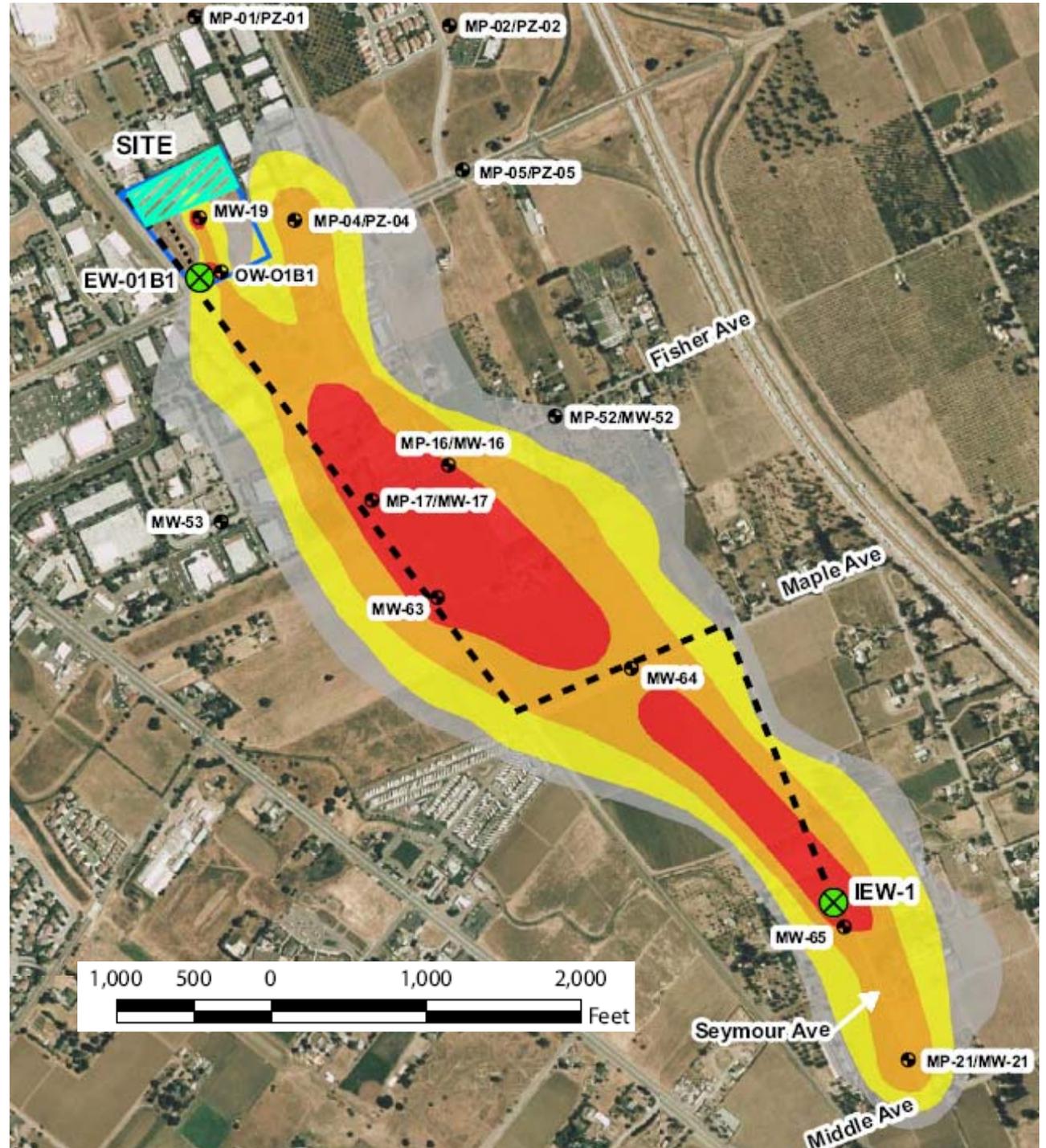
- **For the Deep Aquifer:**
 - Provides the approach and schedule for completion of characterization of perchlorate distribution
 - Provides recommendations and a proposed schedule for activities related to the Deep Aquifer

- **Extraction well (IEW-1) installed & tested to confirm hydraulic (pumping rate) assumptions**
 - Testing resulted in estimated pumping rate of 300 to 400 gpm
- **Hydraulic capture zone analysis performed**
 - Regional groundwater flow model updated
 - Extraction well location verified as capable of meeting remedial goal
- **Ion Exchange selected as treatment technology**
- **On-Site Recharge confirmed for water disposition**
- **Implementation Schedule is consistent with CAO**

Perchlorate Distribution – Intermediate Aquifer

Legend

- Concentration Contours (ppb)
- 4.0 TO 6.0
 - 6.1 to 11 (Priority Zone C)
 - 11.1 to 24.5 (Priority Zone B)
 - 24.6 and greater (Priority Zone A)
- Treatment & Recharge System
- Conveyance Piping
- Extraction Well
- Monitoring Well Location
- Site Boundary



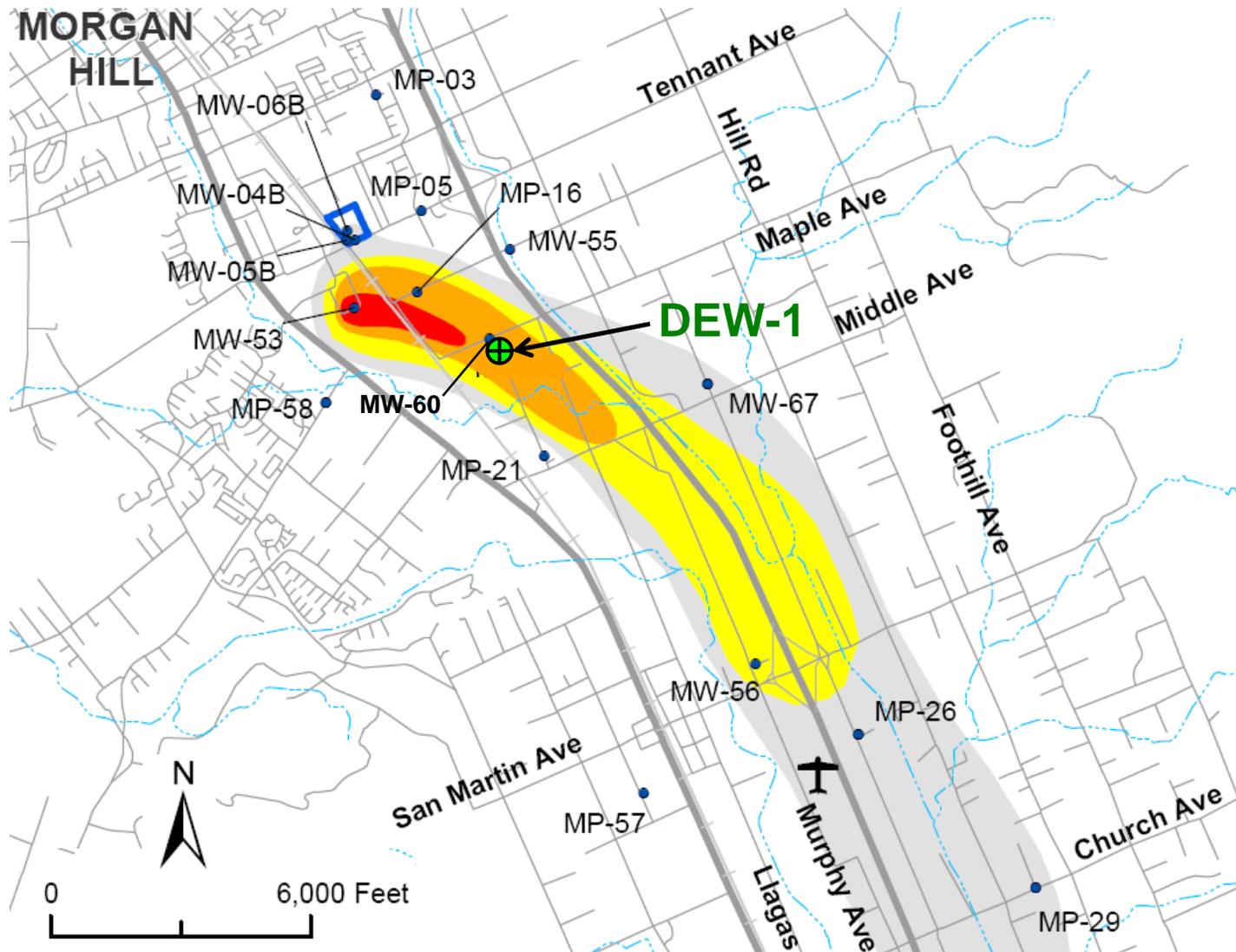
- **Engineering Design & Permitting**
 - 45%, 90%, 100% Engineering Design Packages (for Water Board approval)
 - Permitting (well permits, county rights-of-way, encroachment)
 - Treated groundwater recharge/re-use (TGRR) program application
- **Groundwater Extraction System**
 - Power drop @ extraction well IEW-1
 - Mechanical vault to house IEW-1; pump installation
 - Electrical/controls housing
- **Conveyance System**
 - >7,000 ft of piping in county rights-of-way
 - Traffic control plans
 - Pavement restoration

- **Treatment System – Ion Exchange**
 - Increase footprint of on-Site treatment plant
 - Increase resin volume
 - Upgrade capacity of piping
 - Upgrade pump sizes
 - Update instrumentation & controls
- **Water Disposition**
 - Install additional recharge wells
 - Install conveyance piping
 - Update instrumentation & controls

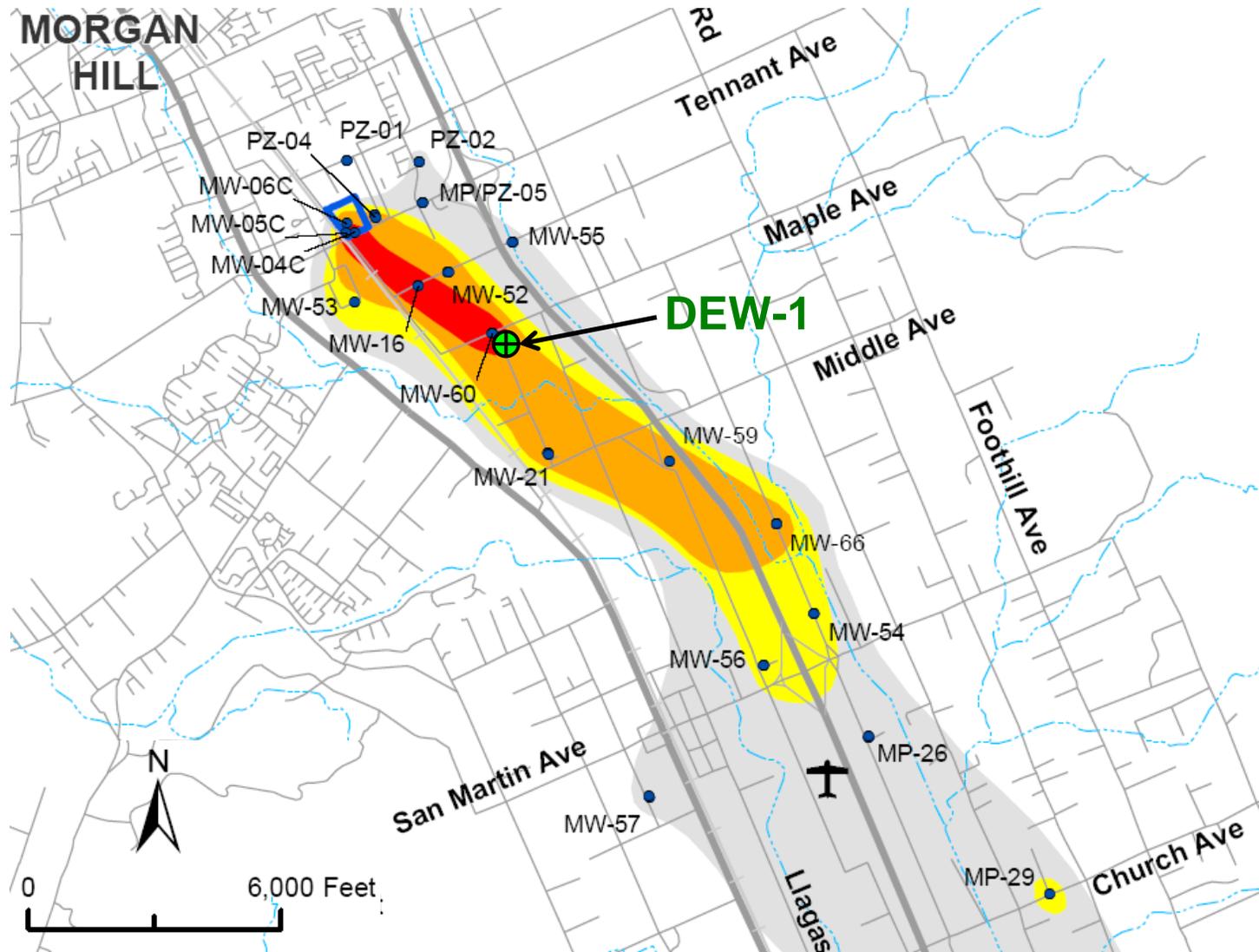
Deep Aquifer System Progress

- **Deep aquifer has been sub-divided into upper (U), middle (M) and lower (L) sub-units**
- **Characterization of U and M sub-units is sufficiently complete to proceed with extraction well placement & installation activities**
- **U/M deep aquifer extraction well to be installed & tested in 2008**
- **L-deep characterization to continue in 2008**

Perchlorate Distribution - Upper Deep Aquifer



Perchlorate Distribution – Middle Deep Aquifer



Deep Aquifer System Schedule

ID	Task Name	Duration	M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
1	Addendum to Area I FS	30 days														
2	Submit Addendum to Board	0 days														
3	Water Board Review & Concurrence	30 days														
4																
5	Installation of Characterization Wells	150 days														
6	Permitting/Contracting	30 days														
7	Well Installation, Development & Sampling	120 days														
8																
9	Upper/Middle Deep Aquifer Well Installation Work Plan	30 days														
10	Prepare & Submit Work Plan	20 days														
11	Water Board Review & Concurrence	10 days														
12																
13	Installation of Upper/Middle Deep Extraction Well	120 days														
14	Permitting/Contracting	30 days														
15	PMW Installation, Development & Sampling	20 days														
16	Deep Extraction Well Location Selection	20 days														
20	Extraction Well Installation, Development & Testing	40 days														
21	Data Evaluation	10 days														
22																
23	2008 Characterization Report	62 days														
24	Prepare & Submit Characterization Report	22 days														
25	Water Board Review & Comment	40 days														
26																
27	FS Addendum 2 (FSA2) - Upper/Middle Deep Aquifers	62 days														
28	Prepare & Submit FSA2	22 days														
29	Water Board Review & Comment	40 days														

Questions?