

**SUBJECT: HTW – BCT Meeting**  
**October 9, 2007**  
**1:00 p.m.**

| Check<br>(✓)  | Name             | Organization  | Phone        | E-mail address                                                                     |
|---------------|------------------|---------------|--------------|------------------------------------------------------------------------------------|
| RR            | Roman Racca      | DTSC          | 916/255-6407 | Rracca@dtsc.ca.gov                                                                 |
| KB            | Kate Burger      | DTSC          | 916/255-6537 | <a href="mailto:kburger@dtsc.ca.gov">kburger@dtsc.ca.gov</a>                       |
|               | Stewart Black    | DTSC          | 916/255-3665 | sblack@dtsc.ca.gov                                                                 |
|               | John Chesnutt    | U.S. EPA      | 415/972-3005 | Chesnutt.john@epa.gov                                                              |
| <del>MA</del> | Martin Hausladen | U.S. EPA      | 415/972-3007 | Hausladen.martin@epamail.epa.gov                                                   |
| <del>GH</del> | Grant Himebaugh  | RWQCB         | 805/542-4636 | Ghimebaugh@waterboards.ca.gov                                                      |
| WM            | Bill Mabey       | TechLaw Inc   | 415/281-8730 | bmabey@techlawinc.com                                                              |
| GY            | Gail Youngblood  | Fort Ord BRAC | 831/242-7918 | <a href="mailto:gail.youngblood@us.army.mil">gail.youngblood@us.army.mil</a>       |
| DJL           | Derek Lieberman  | AHTNA         | 831/242-4873 | Derek.S.Lieberman@us.army.mil                                                      |
| WKC           | Bill Collins     | Fort Ord BRAC | 831/242-7920 | <a href="mailto:William.K.Collins@us.army.mil">William.K.Collins@us.army.mil</a>   |
|               | Rob Robinson     | Fort Ord BRAC | 831/242-7900 | <a href="mailto:clinton.w.robinson@us.army.mil">clinton.w.robinson@us.army.mil</a> |
| <del>GS</del> | George Siller    | COE           | 916/557-7418 | George.L.Siller@usace.army.mil                                                     |

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| Check<br>(✓)                                                                        | Name             | Organization  | Phone                 | E-mail address                                                         |
|-------------------------------------------------------------------------------------|------------------|---------------|-----------------------|------------------------------------------------------------------------|
|                                                                                     | David Eisen      | COE           | 831/393-9692          | David.Eisen@usace.army.mil                                             |
|                                                                                     | Guy Romine       | AED           | 971/645-3645          | <a href="mailto:Guy.romine1@us.army.mil">Guy.romine1@us.army.mil</a>   |
|    | Peter Kelsall    | Shaw E & I    | 831/883-5810 ext. 810 | Peter.Kelsall@shawgrp.com                                              |
|                                                                                     | Eric Schmidt     | Shaw E & I    | 831/883-5809          | <a href="mailto:Eric.Schmidt@shawgrp.com">Eric.Schmidt@shawgrp.com</a> |
|    | Ed Ticken        | MACTEC E&C    | 415/884-3176          | ejticken@mactec.com                                                    |
|                                                                                     | Carlene Merey    | MACTEC E&C    | 415/884-3276          | cmerey@mactec.com                                                      |
|    | Marc Edwards     | COE           |                       | Marc.A.Edwards@usace.army.mil                                          |
|                                                                                     | Michael Taraszki | MACTEC E&C    | 415/884-3325          | mdtaraski@mactec.com                                                   |
|                                                                                     | Chuck Holman     | Ahtna         | 916/372-2000          | <a href="mailto:cholman@ahtnagov.com">cholman@ahtnagov.com</a>         |
|                                                                                     | Kelly O'Meara    | Ahtna         | 916/372-2000          | <a href="mailto:komeara@ahtnagov.com">komeara@ahtnagov.com</a>         |
|  | Mike Bombard     | HydroGeoLogic | 916/614-8770          | <a href="mailto:mbombard@hgl.com">mbombard@hgl.com</a>                 |
|  | Don Jones        | HydroGeoLogic | 916/614-8770          | djones@hgl.com                                                         |
|  | Roy Evans        | HydroGeoLogic | 303-984-1167 x5       | revans@hgl.com                                                         |



**HTW BCT Meeting**

October 9, 2007 at 1:00 p.m.

| <b>Item</b>                               | <b>Action</b> | <b>Comment</b>                                          |
|-------------------------------------------|---------------|---------------------------------------------------------|
| OU1 Groundwater Remediation               | Status Update | HGL                                                     |
| OU1 Off-Site                              | Status Update |                                                         |
| OU2 and 2/12 Treatment Systems            | Status Update |                                                         |
| Other Groundwater Issues                  | Status Update | -Annual sampling<br>-Marina Heights/University Villages |
| Groundwater Treatment System Optimization | Status Update |                                                         |
| OU2 Landfill Gas                          | Status Update |                                                         |
| OUCTP RI/FS/ROD/Pilot Study               | Status Update |                                                         |
| Basewide Range Assessment                 | Status Update |                                                         |
| Site 39 Eco Risk Work                     | Status Update |                                                         |
| Site 39 Feasibility Study Addendum        | Status Update |                                                         |
| Site 3 Post Remediation Monitoring        | Status Update |                                                         |
| FFA Schedule                              | Status Update |                                                         |
| Five Year Review report                   | Status Update |                                                         |
| FOST/FOSET Issues                         | Status Update |                                                         |
| October CIW/TRC                           | Status Update |                                                         |
| Calendar Update                           | Update        |                                                         |



## Former Fort Ord Groundwater Treatment Systems Operational Data and Status – September 2007

| OU2 GWTP Treatment Statistics   |                          |                                               |                  |                    |
|---------------------------------|--------------------------|-----------------------------------------------|------------------|--------------------|
| OU2 Treatment (Month)           | Volume Treated (gallons) | Average Operational Flow (gallons per minute) | % of Time Online | Mass Removed (lbs) |
| September 2007                  | 28,233,000               | 654                                           | 100.0            | TBD                |
| <i>Total since October 1995</i> | 4.465 billion            |                                               |                  | TBD                |

| 2/12 GWTP Treatment Statistics |                          |                                               |                  |                    |
|--------------------------------|--------------------------|-----------------------------------------------|------------------|--------------------|
| 2/12 Treatment (Month)         | Volume Treated (gallons) | Average Operational Flow (gallons per minute) | % of Time Online | Mass Removed (lbs) |
| September 2007                 | 7,946,000                | 184                                           | 100.0            | TBD                |
| <i>Total since May 1999</i>    | 1.073 billion            |                                               |                  | TBD                |

| Key Events for OU2 and Sites 2/12 for September 2007 |                                                                         |    |                                                                                              |    |                                                  |    |
|------------------------------------------------------|-------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------|----|--------------------------------------------------|----|
| S                                                    | M                                                                       | T  | W                                                                                            | T  | F                                                | S  |
|                                                      | *100+ USA Alerts in September, none of which required onsite attention* |    |                                                                                              |    |                                                  | 1  |
| 2                                                    | 3                                                                       | 4  | 5<br>Western Network off-line for tie-in of EW-OU2-06-A                                      | 6  | 7<br>Tie-in complete, Western Network on-line.   | 8  |
| 9                                                    | 10                                                                      | 11 | 12<br>Continued annual sampling of OU2 extraction wells. Restarted EW-OU2-11-A. <sup>1</sup> | 13 | 14<br>Modem in PLC at Shoppette non-operational. | 15 |
| 16                                                   | 17                                                                      | 18 | 19<br>CSUMB PLC modem installed at Shoppette.                                                | 20 | 21                                               | 22 |
| 23/30                                                | 24                                                                      | 25 | 26                                                                                           | 27 | 28                                               | 29 |

<sup>1</sup> Several Eastern Network wells have been offline due to construction at Marina Heights development.

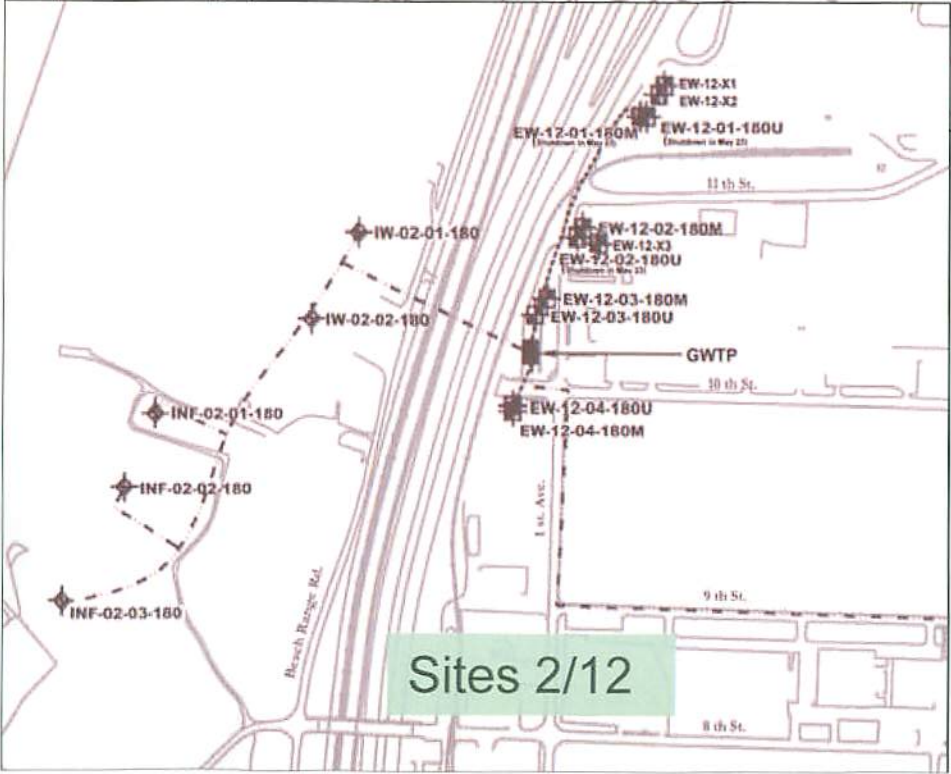
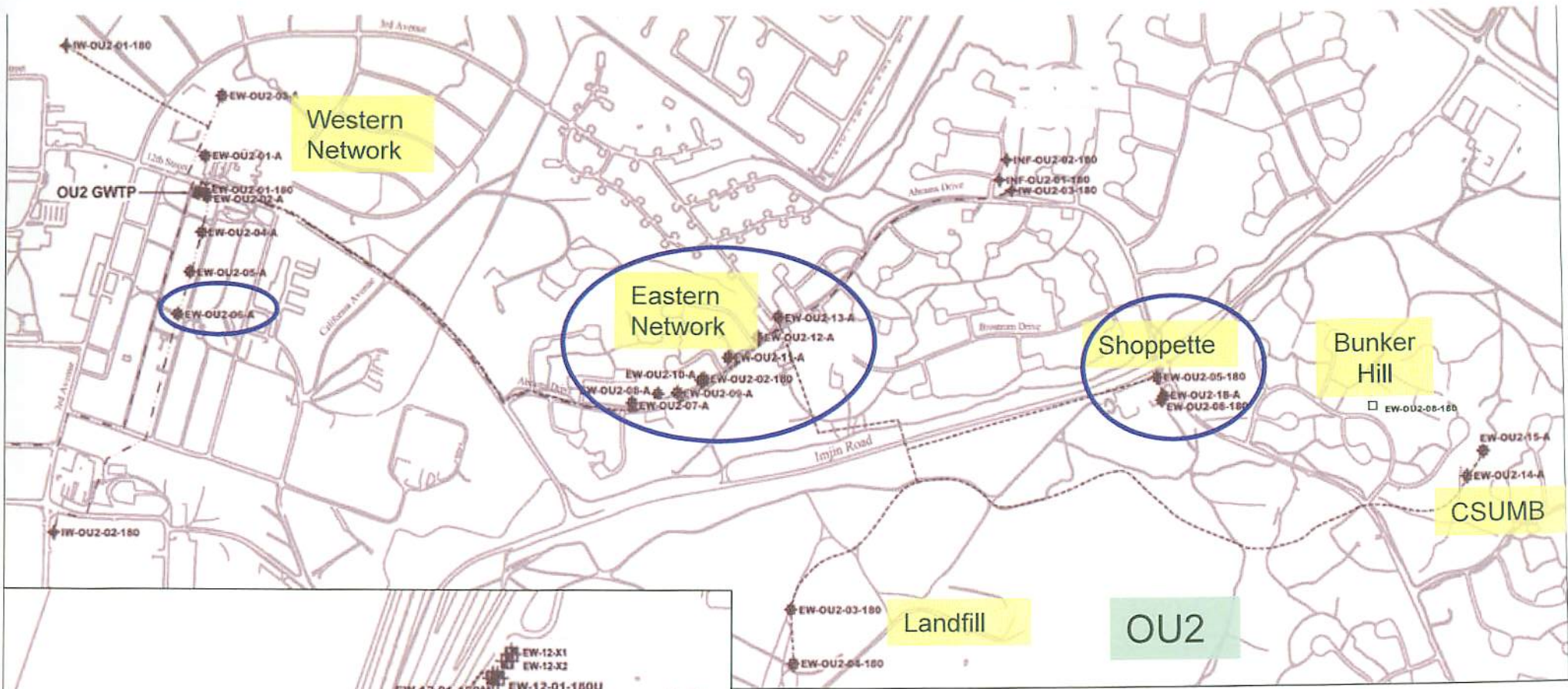
| OU2 Analytical Results at TS-OU2-INJ |                        |                                  |
|--------------------------------------|------------------------|----------------------------------|
| COC                                  | Discharge Limit (µg/l) | Sample Date / Analytical Results |
|                                      |                        | 9/13/2007                        |
| 1,1-DCA                              | 5.0*                   | 0.69                             |
| 1,2-DCA                              | 0.5                    | ND                               |
| 1,2-DCP                              | 0.5                    | ND                               |
| Benzene                              | 0.5                    | ND                               |
| Carbon Tetrachloride                 | 0.5                    | ND                               |
| Chloroform                           | 2.0*                   | 0.24 J                           |
| Cis-1,2-DCE                          | 6.0*                   | ND                               |
| Methylene Chloride                   | 0.5                    | 0.21 J                           |
| PCE                                  | 0.5                    | ND                               |
| TCE                                  | 0.5                    | ND                               |
| Vinyl chloride                       | 0.5                    | ND                               |

| Sites 2/12 Analytical Results at TS-212-INJ |                         |                                  |           |           |             |
|---------------------------------------------|-------------------------|----------------------------------|-----------|-----------|-------------|
| COC                                         | Discharge Limit (µg/l)‡ | Sample Date / Analytical Results |           |           |             |
|                                             |                         | 9/6/2007                         | 9/13/2007 | 9/19/2007 | 9/27/2007** |
| 1,1-DCE                                     | 6.0                     | ND                               | ND        | ND        | ND          |
| 1,2-DCA                                     | 0.5                     | ND                               | 0.12 J    | ND        | 0.12 J      |
| 1,3-DCP †                                   | 0.5                     | ND                               | ND        | ND        | ND          |
| Chloroform                                  | 2.0                     | ND                               | 0.17 J    | 0.16 J    | 0.23 J      |
| Cis-1,2-DCE                                 | 6.0                     | 0.61                             | 0.67      | 0.59      | 0.89        |
| PCE                                         | 3.0                     | ND                               | ND        | ND        | ND          |
| TCE                                         | 5.0                     | ND                               | ND        | ND        | ND          |

- J The analyte was positively identified, but the associated numerical value is an approximate concentration greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).
- ND The analyte was not detected above MDL.
- \* Discharge limits for low carbon affinity compounds were increased to the Aquifer Cleanup Level (ACL).
- ‡ Discharge limits are the ACLs for injection over the plume.
- † The reported value is the sum of both cis- and trans-isomers.
- \*\* Preliminary data; validation has not been completed.
- J± Data are qualified as estimated, with a high (+) or low (-) bias likely to have occurred. False positives or false negatives are unlikely to have been reported.

### September 2007 OU2 and Sites 2/12 Extraction Well Status

| Well Identification                 | % On | Avg. gpm | Total Gallons     | % of Total  | Comments                                  |
|-------------------------------------|------|----------|-------------------|-------------|-------------------------------------------|
| <b>Site 12 Extraction Wells</b>     |      |          |                   |             |                                           |
| EW-12-05-180M                       | 99.9 | 78       | 3,356,300         | 42.0        |                                           |
| EW-12-06-180M                       | 89.2 | 80       | 3,076,900         | 38.5        |                                           |
| EW-12-07-180M                       | 52.7 | 68       | 1,553,400         | 19.5        |                                           |
| EW-12-03-180U                       | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| EW-12-03-180M                       | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| EW-12-04-180U                       | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| EW-12-04-180M                       | 0    | 0        | 0                 | 0.0         | Ceased operating on 11/21/2005. No power. |
| <b>Total 2/12 gallons treated :</b> |      |          | <b>7,986,600</b>  | <b>100</b>  |                                           |
| <b>OU2 Extraction Wells</b>         |      |          |                   |             |                                           |
| <b>Western Network</b>              |      |          |                   |             |                                           |
| EW-OU2-01-A                         | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| EW-OU2-02-A                         | 93.4 | 53       | 2,298,320         | 7.1         |                                           |
| EW-OU2-03-A                         | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| EW-OU2-04-A                         | 92.9 | 53       | 2,276,740         | 7.0         |                                           |
| EW-OU2-05-A                         | 93.5 | 51       | 2,053,530         | 6.3         |                                           |
| EW-OU2-06-A                         | 38.6 | 30       | 497,270           | 1.5         | Well offline due to area construction.    |
| EW-OU2-01-180                       | 0    | 0        | 0                 | 0.0         | Well offline due to low concentrations.   |
| <b>Total gallons extracted :</b>    |      |          | <b>7,125,860</b>  | <b>22.0</b> |                                           |
| <b>Eastern Network</b>              |      |          |                   |             |                                           |
| EW-OU2-07-A                         | 0.7  | 25       | 7,170             | 0.0         | Well offline due to low concentrations.   |
| EW-OU2-08-A                         | 98.9 | 27       | 1,132,950         | 3.5         |                                           |
| EW-OU2-09-A                         | 98.8 | 23       | 997,890           | 3.1         |                                           |
| EW-OU2-10-A                         | 22   | 7        | 66,890            | 0.2         | Well offline due to area construction.    |
| EW-OU2-11-A                         | 61.7 | 16       | 426,640           | 1.3         | Well offline due to area construction.    |
| EW-OU2-12-A                         | 0    | 0        | 0                 | 0.0         | Well offline due to area construction.    |
| EW-OU2-13-A                         | 100  | 30       | 1,288,540         | 4.0         |                                           |
| EW-OU2-02-180                       | 0.4  | 165      | 31,000            | 0.1         | Well offline due to area construction.    |
| <b>Total gallons extracted :</b>    |      |          | <b>3,951,080</b>  | <b>12.2</b> |                                           |
| <b>Shoppette</b>                    |      |          |                   |             |                                           |
| EW-OU2-05-180                       | 91.7 | 105      | 4,162,700         | 12.8        |                                           |
| EW-OU2-06-180                       | 93.8 | 141      | 5,714,900         | 17.6        |                                           |
| EW-OU2-16-A                         | 81.7 | 19       | 670,000           | 2.1         |                                           |
| <b>Total gallons extracted :</b>    |      |          | <b>10,547,600</b> | <b>32.6</b> |                                           |
| <b>CSUMB</b>                        |      |          |                   |             |                                           |
| EW-OU2-14-A                         | 58.7 | 24       | 609,100           | 1.9         | Cycling due to low water levels.          |
| EW-OU2-15-A                         | 51.6 | 20       | 449,800           | 1.4         | Cycling due to high pressure.             |
| <b>Total gallons extracted :</b>    |      |          | <b>1,058,900</b>  | <b>3.3</b>  |                                           |
| <b>Landfill</b>                     |      |          |                   |             |                                           |
| EW-OU2-03-180                       | 87.9 | 145      | 5,521,000         | 17.0        |                                           |
| EW-OU2-04-180                       | 0.4  | 109      | 20,200            | 0.1         | Well offline due to low concentrations.   |
| <b>Total gallons extracted :</b>    |      |          | <b>5,541,200</b>  | <b>17.1</b> |                                           |
| <b>Bunker Hill</b>                  |      |          |                   |             |                                           |
| EW-OU2-08-180                       | 93.5 | 48       | 4,177,000         | 12.9        |                                           |
| <b>Total gallons extracted :</b>    |      |          | <b>4,177,000</b>  | <b>12.9</b> |                                           |
| <b>Total OU2 gallons treated :</b>  |      |          | <b>32,401,640</b> | <b>100</b>  |                                           |





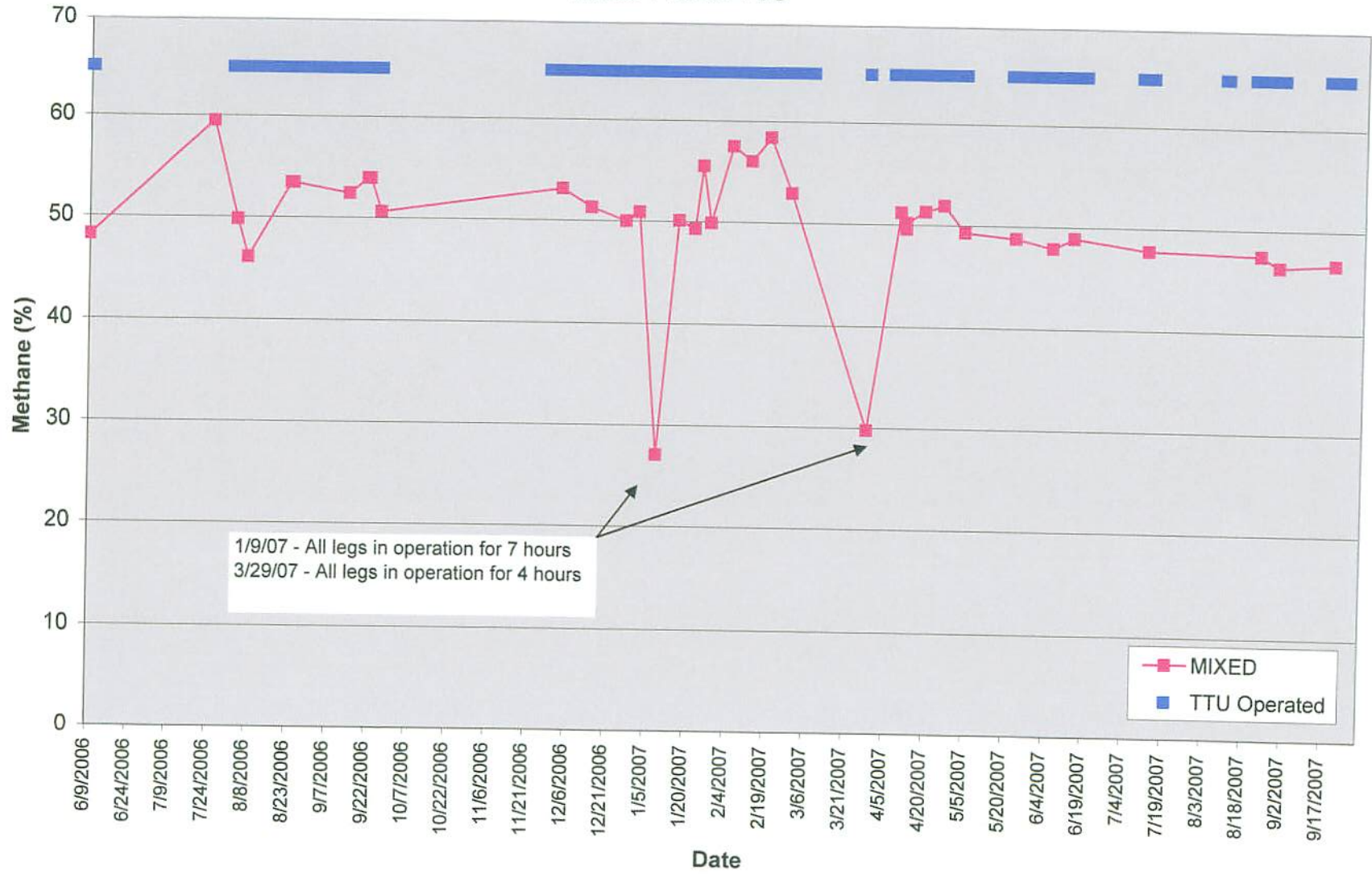
**Thermal Treatment Unit  
Operation Summary  
2007**

| Date TTU Started | Date TTU Shutdown | Hours Operated |
|------------------|-------------------|----------------|
| 1/1/07 0:00      | 3/8/07 12:00      | 1561           |
| 3/29/07 8:30     | 3/29/07 12:30     | 4              |
| 4/7/07 7:30      | 5/4/07 16:00      | 656.5          |
| 5/21/07 8:00     | 6/18/07 8:00      | 672            |
| 7/9/07 14:00     | 7/13/07 15:00     | 97             |
| 8/9/07 7:30      | 8/10/07 11:00     | 27.5           |
| 8/20/07 7:30     | 8/31/07 16:00     | 272.5          |
| 9/17/07 8:00     | 9/21/07 15:00     | 103            |
| 9/24/07 12:00    | 9/24/07 15:00     | 3              |
| 10/9/07 8:00     |                   |                |

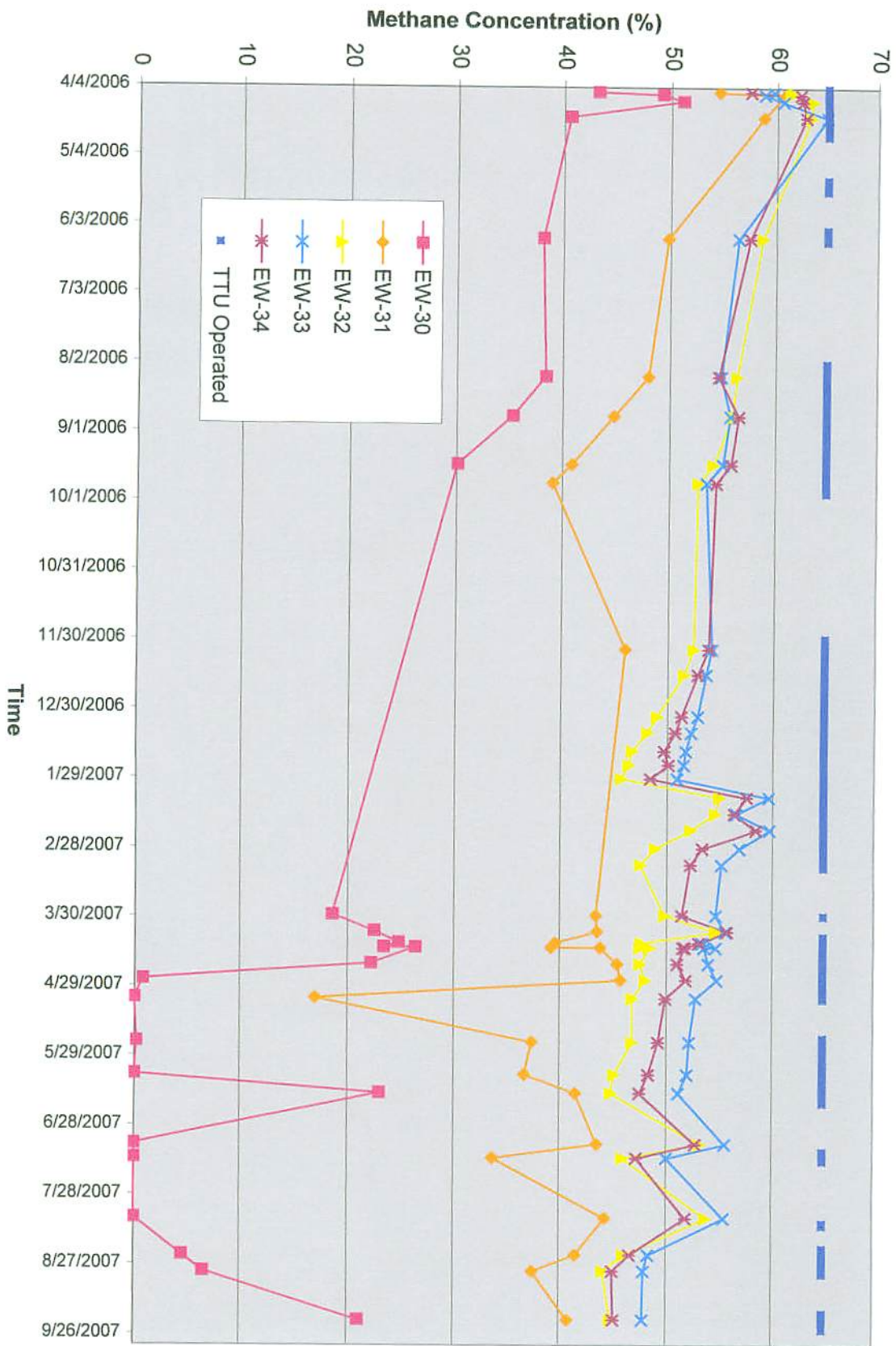
|                              |                 |
|------------------------------|-----------------|
| Start Date/Time:             | 1/1/2007 0:00   |
| Last Reading Date/Time:      | 9/24/2007 15:00 |
| Total Hours (2007):          | 6399            |
| Total Hours Operated (2007): | 3396.5          |
| % Operation:                 | 53%             |

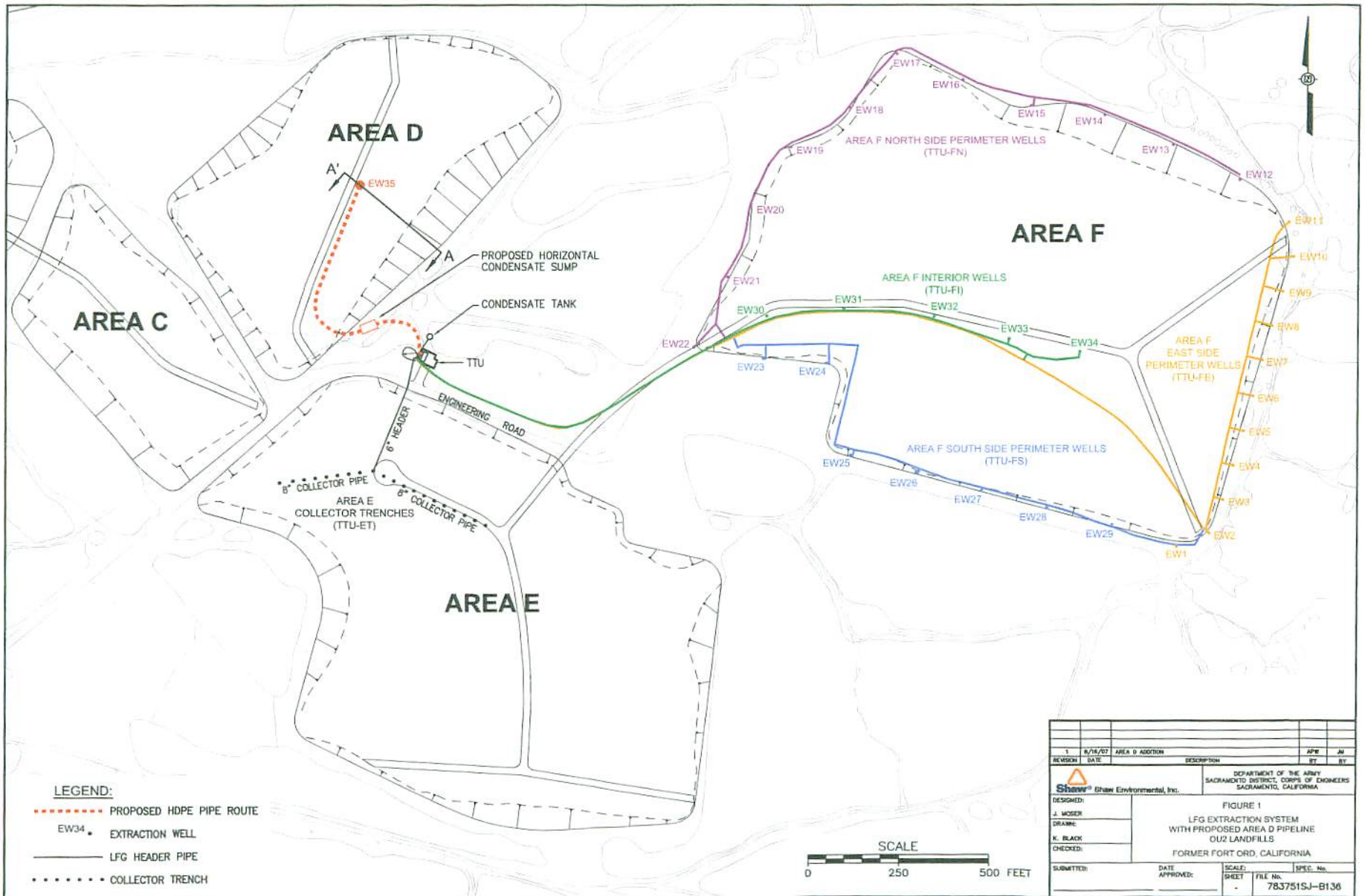
|                               |        |
|-------------------------------|--------|
| Pounds Methane Removed (2007) | 316757 |
|-------------------------------|--------|

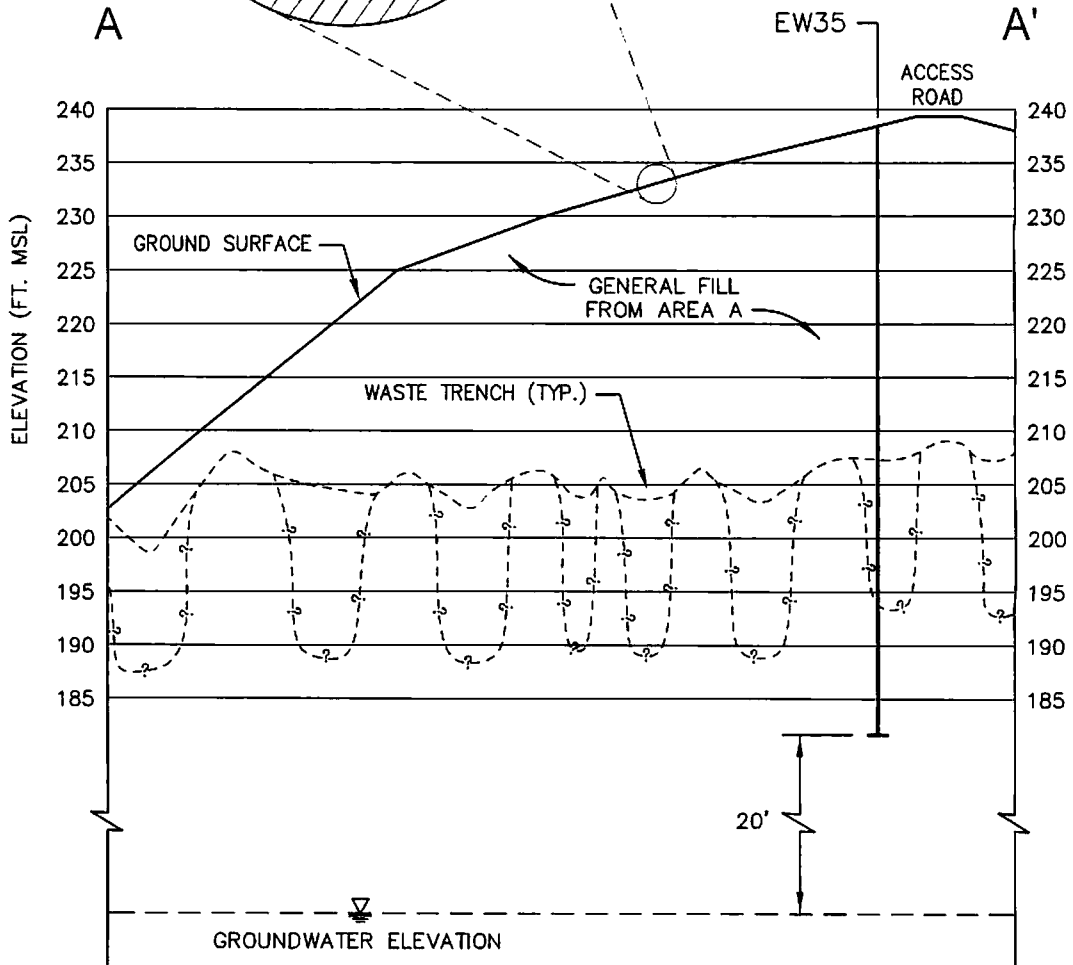
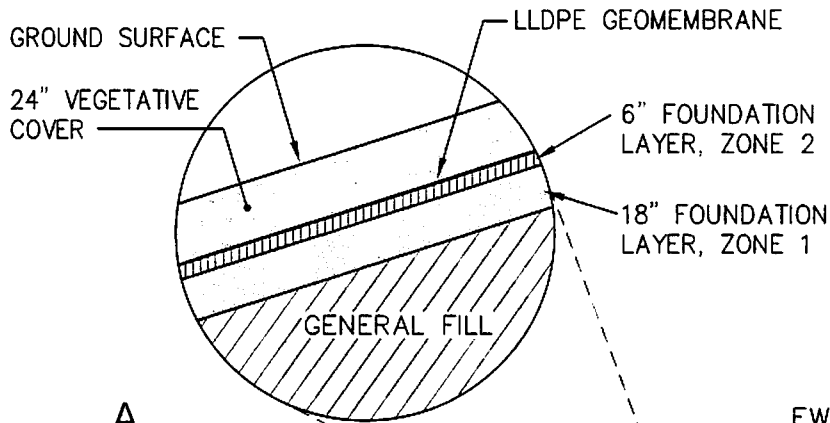
Methane Concentration vs. Time  
Mixed Port at TTU



Methane Concentration vs. Time  
Interior Extraction Wells



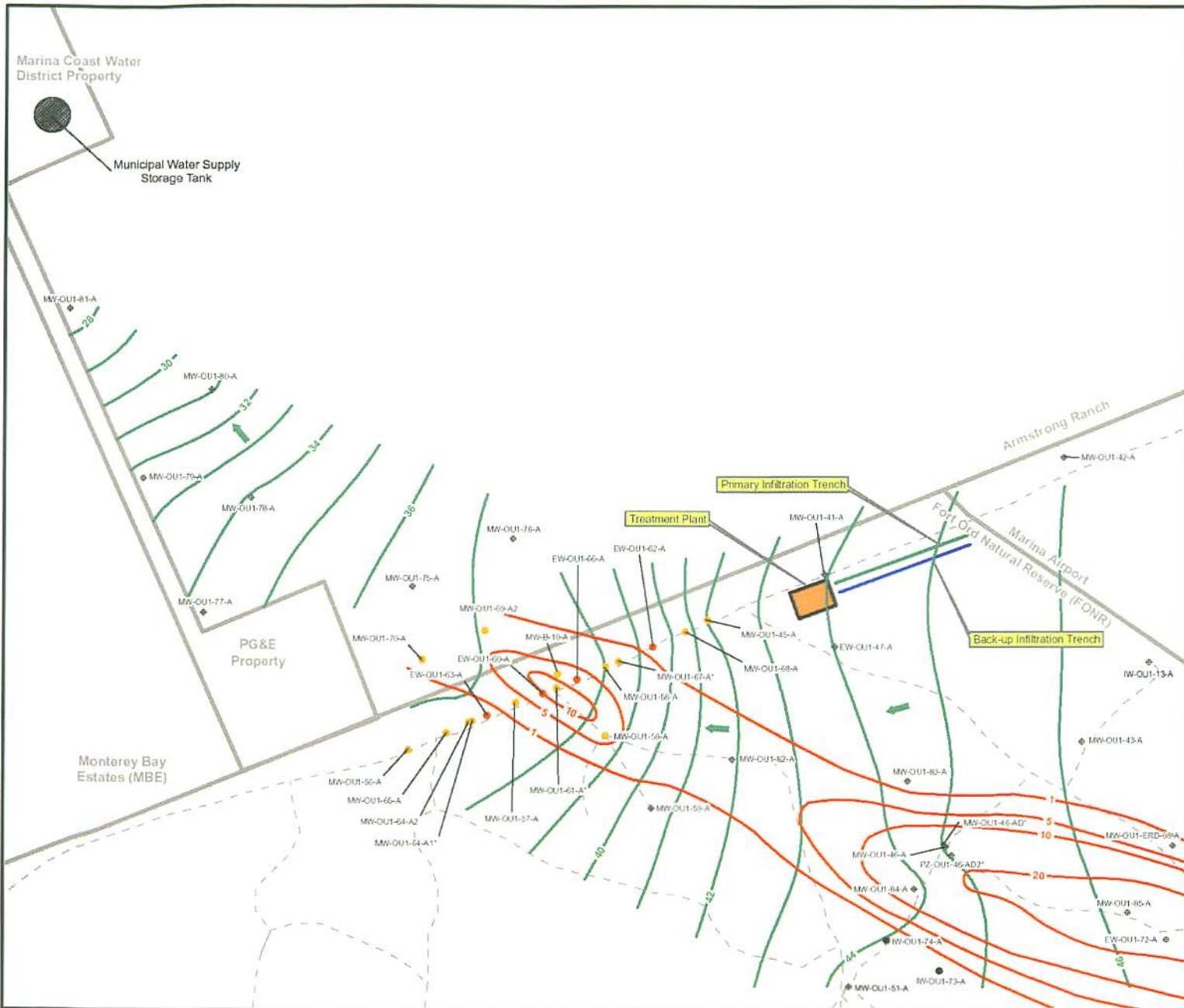




**NOTES:**

1. This section shows vertical exaggeration. Waste trenches estimated based on pre-closure surface settlement.
2. A-Aquifer groundwater elevation projected at 60 ft MSL.
3. Bottom of extraction well will be a minimum of 20 ft. above above groundwater. Geophysical survey will be performed to determine final depth.
4. Waste trench direction appears to be southwest to northeast.

| REVISION              | DATE | DESCRIPTION                                                                                 | CHKD.  | APPR.         |
|-----------------------|------|---------------------------------------------------------------------------------------------|--------|---------------|
|                       |      | DEPARTMENT OF THE ARMY<br>SACRAMENTO DISTRICT, CORPS OF ENGINEERS<br>SACRAMENTO, CALIFORNIA |        |               |
| DESIGNED:<br>J. MOSER |      | FIGURE 2<br>EXTRACTION WELL EW35<br>CROSS SECTION<br><br>FORMER FORT ORD, CALIFORNIA        |        |               |
| DRAWN:<br>K. BLACK    |      |                                                                                             |        |               |
| CHECKED:              |      |                                                                                             |        |               |
| SUBMITTED:            |      | DATE APPROVED:                                                                              | SCALE: | SPEC. No.     |
|                       |      |                                                                                             | SHEET: | FILE No.      |
|                       |      |                                                                                             | -      | 783751SJ-A260 |



**Figure 3.4**  
**TCE Concentrations in Groundwater**  
**and Groundwater Elevations**  
**(Dune Sand Wells Only)**  
**in March 2007 After Nine Months**  
**of HCPP Operation**

- Legend**
- ◊ Well/Piezometer
  - HGL Hydraulic Control Pilot Project (HCPP) Extraction Well
  - HCPP Performance Monitoring Well
  - FONR Injection Well (Treated Water Recharge)
  - - - Trail/Unimproved Road
  - Fence
  - March 2007 Groundwater Elevation Contour (feet above mean sea level)
  - March 2007 TCE Contour (µg/L)
  - Well ID
  - 37.05 March 2007 Groundwater Elevation
  - ← March 2007 Groundwater Flow Direction

**Notes**  
 µg/L Micrograms per liter  
 The following wells, shown with an asterisk on the map, were not used for contouring.  
 MW-OUI-64-A Well completed in channel fill unit only  
 MW-OUI-64-A1 Well completed in channel fill unit, sand pack extends into overlying Dune Sand  
 MW-OUI-67-A Well completed in channel fill unit only  
 MW-OUI-46-AD Well is adjacent to but deeper than MW-OUI-46-A, used water level from the shallower well for consistency with overall monitoring network  
 PZ-OUI-46-AD2 Well is adjacent to but deeper than MW-OUI-46-A, used water level from the shallower well for consistency with overall monitoring network



X:\041009\_F1\_Ord\_TO\_201\Maps\HCPP\_Evaluation\HCPP\_Evaluation\_March\_2007\TCE\_GW\_E\_March\_2007.mxd  
 Source: HydroGeologic, Inc.  
 03/17/07 PD



# Summary of OU1 Off-site Monitoring Well Analytical Results

| WELL IDENTIFICATION | ELEVATION (MSL) | TCE <sup>a</sup><br>March 28-30,<br>2006<br>(ug/L) | TCE<br>May 4,<br>2006<br>(ug/L) | TCE<br>May 23,<br>2006<br>(ug/L) | TCE<br>Sept 25,<br>2006<br>(ug/L) | TCE<br>Feb 2 & 6,<br>2007<br>(ug/L) | TCE<br>April 3,<br>2007<br>(ug/L) | TCE<br>May 22,<br>2007<br>(ug/L) |
|---------------------|-----------------|----------------------------------------------------|---------------------------------|----------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|----------------------------------|
| MW-OU1-75A          | 35.87           | 18.6                                               | 2.1                             | 1.7                              | 0.28J                             | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-75A          | 30.87           | --                                                 | 14                              | 9.8                              | 2.4                               | 0.64                                | 1.6                               | 0.82                             |
| MW-OU1-75A          | 25.87           | --                                                 | 15                              | 9.5                              | 2.5                               | 0.58                                | 1.7                               | 0.9                              |
| MW-OU1-75A          | 20.87           | --                                                 | 17                              | 9.5                              | 2.6                               | 15                                  | 1.6                               | 0.69                             |
| MW-OU1-75A          | 15.87           | --                                                 | 20                              | 26                               | 18                                | 0.75                                | 11                                | 12                               |
| MW-OU1-76A          | 32.33           | <0.5                                               | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-76A          | 27.33           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-76A          | 22.33           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-76A          | 17.33           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-76A          | 12.33           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-77A          | 29.1            | <0.5                                               | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5 <sup>d</sup>                |
| MW-OU1-77A          | 24.1            | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-77A          | 19.1            | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-78A          | 29.91           | 1.9                                                | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-78A          | 24.91           | --                                                 | 3.2                             | 2.1J <sup>b</sup>                | 1.4                               | 1.5                                 | 0.85                              | 0.6                              |
| MW-OU1-78A          | 19.91           | --                                                 | 2.7                             | 2.3                              | 1.2                               | 1.7                                 | 0.94                              | 0.81                             |
| MW-OU1-79A          | 29.72           | <0.5                                               | <0.5                            | <0.5UJ <sup>c</sup>              | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-79A          | 24.72           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-79A          | 19.72           | --                                                 | <0.5                            | <0.5                             | 0.59                              | 0.67/0.85                           | 3.5/3.6                           | 3.8/4.0                          |
| MW-OU1-80A          | 25.32           | <0.5                                               | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-80A          | 20.32           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-80A          | 15.32           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-80A          | 10.32           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-81A          | 21.39           | <0.5                                               | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-81A          | 16.39           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-81A          | 11.39           | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-81A          | 6.39            | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5                              | <0.5                             |
| MW-OU1-81A          | 1.39            | --                                                 | <0.5                            | <0.5                             | <0.5                              | <0.5                                | <0.5/<0.5                         | <0.5                             |

Notes:

<sup>a</sup> There is no associated discrete depth with the well development samples. These are composites.

<sup>b</sup> Data qualified as "J-" is estimated with low bias

<sup>c</sup> Data qualified as "UJ" is estimated non-detect due to quality control outliers

<sup>d</sup> an estimated concentration of carbon disulfide detected in this sample (0.75J)

# Operable Unit 1

## Off-Site Groundwater Pilot Study

- Goals
  - Collect additional data on the off-site extent of groundwater impacted by trichloroethene.
  - Determine the impact to groundwater under the residential area in the City of Marina.
  - Collect data on groundwater extraction rates and long-term impact to the off-site plume from groundwater extraction.
  - Evaluate short-term and long-term requirements for extracted groundwater treatment and disposal.
  - Initiate groundwater extraction to remove mass at the highest measured concentrations and minimize the spread of the plume with concentrations above the Aquifer Cleanup Levels.



Marina Coast Water District Property

Municipal Water Supply Storage Tank

Proposed Ground Re-injection Area

Proposed Treatment Plant Area

### Proposed Extraction Well Areas

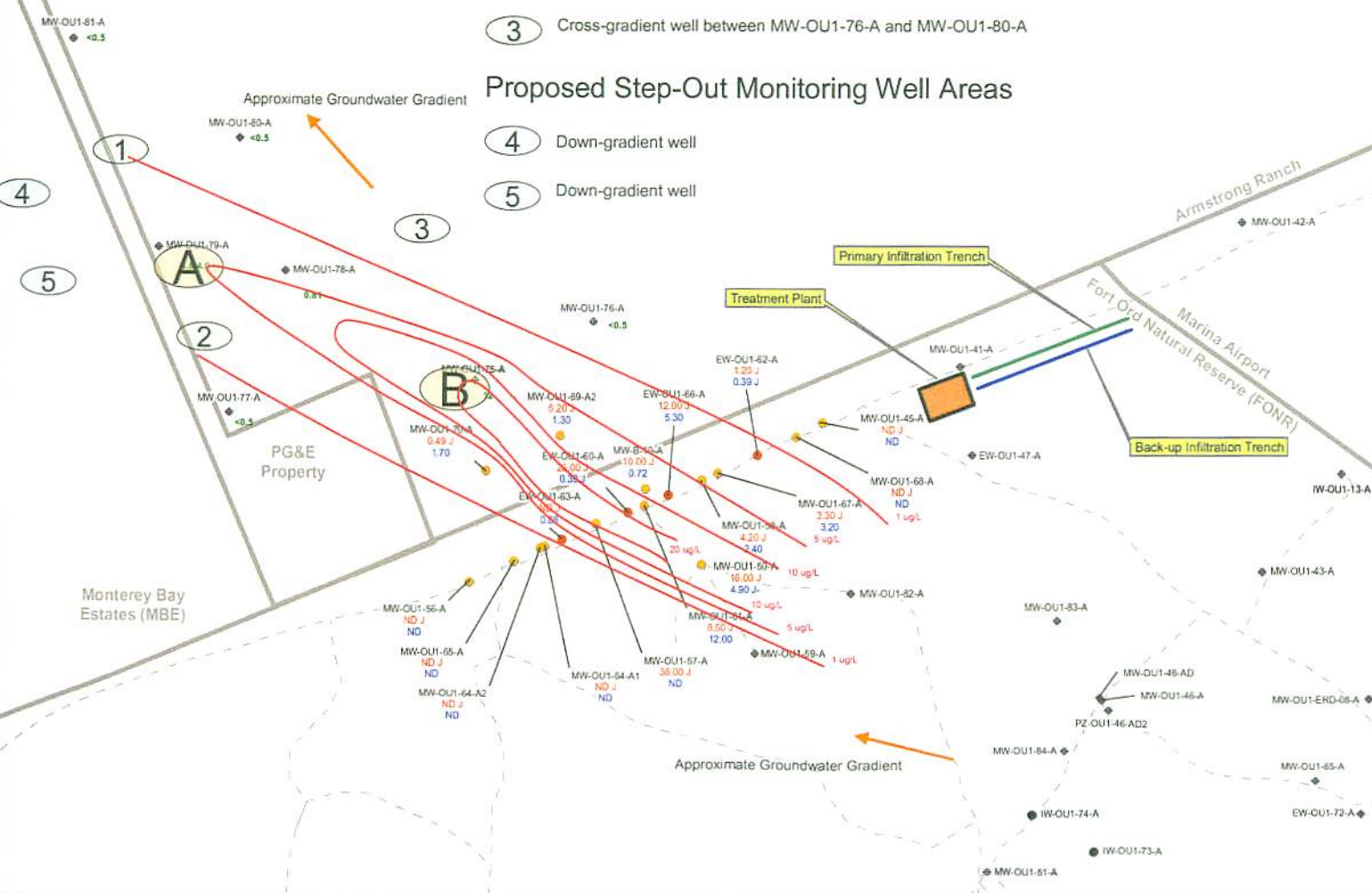
- (A) Capture groundwater with TCE concentrations above ACL (5 ug/L)
- (B) Capture groundwater with TCE concentrations above 20 ug/L

### Proposed Monitoring Well Areas

- (1) Down-gradient well between MW-OU1-80-A and MW-OU1-79-A
- (2) Down-gradient well between MW-OU1-77-A and MW-OU1-79-A
- (3) Cross-gradient well between MW-OU1-76-A and MW-OU1-80-A

### Proposed Step-Out Monitoring Well Areas

- (4) Down-gradient well
- (5) Down-gradient well



### TCE Concentrations in Performance Monitoring Well Network at Start (May/June 2006) and End (April 2007) of HCPP Evaluation Period

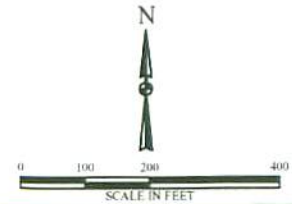
**Legend**

- ◆ Well/Piezometer
- HGL Hydraulic Control Pilot Project (HCPP) Extraction Well
- HCPP Performance Monitoring Well
- FONR Injection Well (Treated Water Recharge)
- Trail/Unimproved Road
- Fence

**Well ID**

|       |                                    |
|-------|------------------------------------|
| 4.2 J | June 2006 TCE Result (µg/L)        |
| 3.1   | March/April 2007 TCE Result (µg/L) |
| <0.5  | May 22, 2007, TCE Results (ug/L)   |

Notes:  
 ND = Non-detect.  
 J = Estimated value.  
 TCE concentrations correspond to sample dates as follows:  
 Red Values:  
 MW- wells sampled on 18 - 19 May, 2006.  
 EW-OU1-60-A data is from well development sample in March, 2006.  
 All other EW- wells sampled on 30 June, 2006.  
 Blue Values:  
 MW- wells sampled on April 16 - 17, 2007.  
 EW- wells sampled on March 12 - 13, 2007.  
 Wells with no values posted were not part of HCPP performance monitoring well network.  
 Maximum value posted where samples collected at multiple depths.  
 µg/L = microgram per liter



E:\014009\_Ft\_Ord\10\_201\Maps\HCPP\_Evaluation\HCPP\_Evaluation\_March\_2007\GWE\_Channel\_Fill.mxd  
 Source: HydroGeoLogic, Inc.  
 08/17/07 PD





# Marina Station Preliminary Grading Plan

# Operable Unit 1

## Off-Site Groundwater Pilot Study

- Planning
  - Technical Memorandum
    - Provide details for well installation (specific location and construction).
    - Expedite well construction and system installation.
  - Work Plan
    - Details for system construction, operations, and monitoring.
    - Issued for Agency review.
  - System Design
    - Design/build conducted during the development of the work plan.

# Operable Unit 1

## Off-Site Groundwater Pilot Study

- Pilot Study (General Overview)
  - Well Installation
    - Phase I – 2 extraction, 1 injection, and 3 monitoring wells (Armstrong Ranch).
    - Phase II – 2 additional monitoring wells within the City of Marina.
  - System Construction
    - Underground piping
    - GAC treatment
    - System electrical/automation
    - Groundwater re-injection or discharge to sanitary sewer
  - Baseline Sampling and Start-up
  - System Operations and Maintenance
    - Operate 24/7 for up to 2 years
    - Monthly monitoring of GAC performance
  - Monitoring
    - Quarterly monitoring of all extraction and monitoring wells on Armstrong Ranch property.

# Operable Unit 1

## Off-Site Groundwater Pilot Study

- Preliminary Schedule

- Technical Memorandum – October 2007
- Well Installation – mid-November 2007 (Phase I)
- Work Plan
  - Agency Review – November/December 2007
  - Finalize – December 2007
- System Construction – November/December 2007
- Baseline Sampling and Start-up – December 2007/January 2008
- System Operation – January 2008 to January 2010