

# FINAL WORK PLAN

Contract No. W9126G-07-D-0028

Task Order No. DO11



*Prepared for:*

**Camp Stanley Storage Activity**

**Boerne, Texas**

*Prepared by:*

**PARSONS**

Austin, TX

June 2009

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## 1.0 INTRODUCTION

Parsons is under contract with the U.S. Army Corps of Engineers (USACE) Fort Worth District (CESWF) to provide groundwater monitoring under Contract W9126G-07-D-0028, Task Order DO11. Services will be provided for Camp Stanley Storage Activity (CSSA) at the facility located in Boerne, Texas. The work shall be performed in accordance with requirements of the Resource Conservation and Recovery Act (RCRA) 3008(h) Order in effect for CSSA.

This work plan provides a description of the activities to be conducted to complete the requirements of the scope of work in effect for DO11. Existing work plans for current and previous CSSA task orders fulfilled by Parsons are in effect and are available in the CSSA Environmental Encyclopedia, Volume 1, Work Plans. Activities to be conducted for DO11 will follow the provisions of those prior work plans, as applicable. This work plan sets out project-specific activities directly related to groundwater monitoring to be conducted under DO11.

## 2.0 GROUNDWATER MONITORING SCOPE OF WORK

The activities covered by this work plan include monitoring existing on- and off-post groundwater wells, sampling Westbay-equipped wells, providing data validation, and providing on- and off-post granular activated carbon (GAC) maintenance.

### 2.1 GROUNDWATER SAMPLING

Groundwater monitoring will be conducted in the months of March 2009, June 2009, September 2009, and December 2009. Twelve months of on- and off-post GAC maintenance will be conducted (through December 2009). **Table 2-1** indicates the number of wells and sampling parameters to be completed under this TO. Wells may be removed from or included in the sampling schedule based on the recommendations of the Final Long-Term Monitoring Optimization (LTMO) Study (Parsons, 2005) and/or the provisions of the Data Quality Objectives (DQOs) for the Groundwater Monitoring Program (Parsons, 2006). It was determined that a snapshot, with all wells being sampled in one event, is needed to better define plume migration from year to year. The snapshot is scheduled for March 2009, Table 2-1, this can be adjusted depending on rainfall and groundwater elevations at the time of sampling. Wells to be sampled are shown on **Attachments 1** through **3**.

Prior to sampling, each well will be purged in accordance with low-flow sampling techniques. Parsons will follow the methods approved in CSSA Quality Assurance Program Plan (QAPP) and the Sampling and Analysis Plan (SAP) for DO11. Quality Assurance/Quality Control (QA/QC) sampling and analysis will be performed to meet the requirements in the CSSA QAPP. The purge water will be containerized and transported for treatment in the GAC treatment system prior to discharge at CSSA's Outfall 002. Further details on the groundwater sampling are included in the sampling and analysis plan for DO11.

GAC maintenance includes inspection and replacement of the pre-filters installed at each GAC system every three weeks. The GAC system is also inspected for condition and operation.

The carbon canisters at the off-post GAC systems located at (LS-6, LS-7, OFR-3, RFR-10 and RFR-11) are scheduled for replacement every six months, or as needed based on analytical results. Carbon exchange is scheduled for November 2009 and May 2009. During the May 2009 carbon exchange the GAC structures will be replaced at wells LS-6, LS-7, OFR-3, and RFR-10. The well house at RFR-11 will also be upgraded during this carbon exchange.

## 2.2 ANALYTICAL VALIDATION AND VERIFICATION

The analytical validation and verification task includes issues related to analytical data, including oversight of sample collection and submittal efforts, interaction with the selected laboratory, data verification, data validation, and management of electronic analytical data. Groundwater results from the on- and off-post monitoring and drinking water wells are validated in accordance with the CSSA QAPP. Westbay and outfall or GAC effluent sampling 002 and 004 should meet the requirements of the Camp Stanley QAPP and Groundwater Monitoring DQOs as screening level data.

**Table 2-1  
 Sample Quantities and Analytical Parameters**

|                           |    | Analyses & Method |        |            |      |      |                  |
|---------------------------|----|-------------------|--------|------------|------|------|------------------|
|                           |    | VOCs              | Metals | Trip Blank | MS   | MSD  | Field Duplicates |
| Well Type/Total No. Wells |    | 8260              | 6010   | 8260       | 8260 | 8260 | 8260             |
| March 2009                |    |                   |        |            |      |      |                  |
| Total Wells               | 86 | 8260              | 6010   | 8260       | 8260 | 8260 | 8260             |
| CSSA Wells                |    | 46                | 46     | 5          | 2    | 2    | 5                |
| Off-Post Supply Wells*    |    | 40                | --     | 3          | 2    | 2    | 4                |
| June 2009                 |    |                   |        |            |      |      |                  |
| Total Wells               | 55 | 8260              | 6010   | 8260       | 8260 | 8260 | 8260             |
| CSSA Wells                |    | 15                | 15     | 2          | 1    | 1    | 2                |
| Off-Post Supply Wells     |    | 40                | --     | 3          | 2    | 2    | 4                |
| September 2009            |    |                   |        |            |      |      |                  |
| Total Wells               | 76 | 8260              | 6010   | 8260       | 8260 | 8260 | 8260             |
| CSSA Wells                |    | 36                | 36     | 4          | 2    | 2    | 4                |
| Off-Post Supply Wells*    |    | 40                | --     | 3          | 2    | 2    | 4                |
| December 2009             |    |                   |        |            |      |      |                  |
| Total Wells               | 47 | 8260              | 6010   | 8260       | 8260 | 8260 | 8260             |
| CSSA Wells                |    | 7                 | 7      | 1          | 1    | 1    | 1                |
| Off-Post Supply Wells     |    | 40                | --     | 3          | 2    | 2    | 4                |

\*Off-post supply wells include post GAC sampling for wells with treatment systems every six months.

Parsons will oversee each sampling event, including reviewing each chain-of-custody for accuracy and completeness, verifying that the laboratory sample log-in sheets match the chain-of-custody forms, addressing any sample receipt issues (such as broken sample containers), and maintaining continuous contact with the laboratory regarding scheduling.

Laboratory data packages will be reviewed by Parsons chemists for completeness and adherence to the CSSA QAPP and the approved laboratory variances. All associated analytical QA/QC data will be examined, and all exceptions will be noted in both the case narrative and data verification report (DVR). The sample results associated with noncompliant QC performance will be qualified in accordance with the CSSA QAPP.

Following verification of the laboratory data, the data usability as related to the project DQOs will be assessed. Validation will include examination of historical data (if available), laboratory data trends, and the reasons for data collection. Based on the overall assessment of the data, flags may be removed or changed to reflect usability of the data. The basis for such changes will be detailed in the project summary report.

Electronic data submitted by the laboratories will be loaded into the CSSA GIS database, verified for accuracy, and updated to reflect all data qualifier changes incurred through the data verification and validation process. The data are to be supplied in Environmental Resource Program Information Management System (ERPIMS) compliant format.

## **2.3 REPORTING PROCEDURES**

Various reports are required under the DO11 scope of work, including: Quarterly Groundwater Monitoring Reports, Annual Groundwater Monitoring Report, Health and Safety Plan, Sampling and Analysis Plan, Project Activities Work Plan, Annual Groundwater Fact Sheet, Status Reports, and Meeting Minutes. Specific reporting procedures will follow the provisions of the statement of work (SOW) and the procedures set out below.

### **2.3.1 Groundwater Reports**

All results from the four rounds of groundwater sampling will be included in the quarterly groundwater reports and one annual groundwater report, summarizing all of 2009. The preliminary analytical data will be provided to CSSA within five days of receipt at Parsons. All reports will be prepared as both draft and final versions, with one round of government comments before issuance of the final reports. Three summary quarterly groundwater reports will be prepared and submitted to document the findings of contaminant concentration and delineation. One annual groundwater report (December 2009) will be prepared to summarize the quarterly reports for all sampling in 2009.

The samples collected from Outfalls 002 and 004 are reported in monthly discharge monitoring reports, to be submitted to TCEQ. The discharge monitoring reports will be provided each month to CSSA for submittal to TCEQ.

### **2.3.2 Report Distribution**

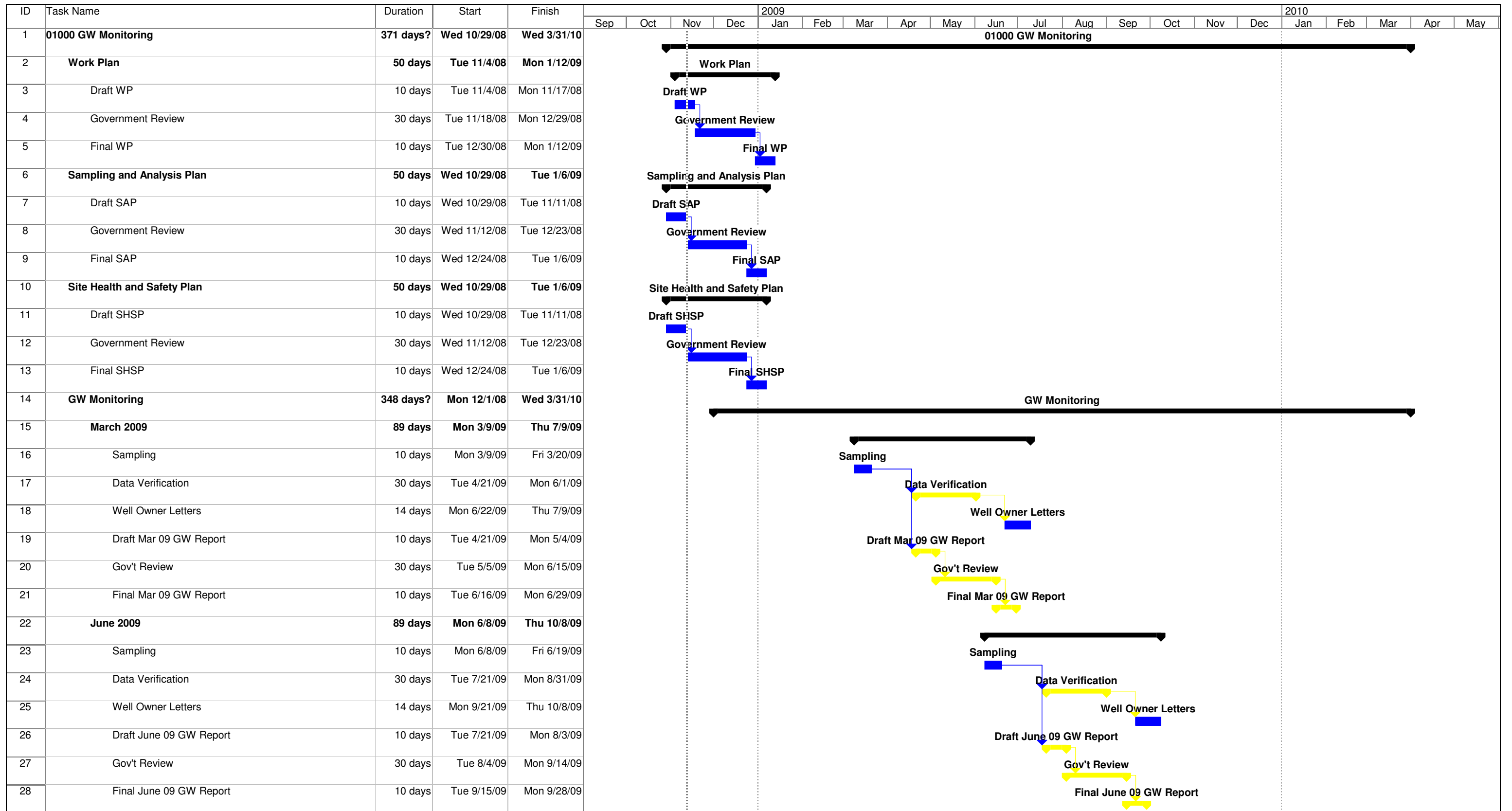
From the field efforts for groundwater monitoring covered in this work plan, three reports will be submitted in draft and final versions. In addition, all technical reports produced as part of DO11 will be submitted in accordance with the SOW provisions. The project deliverables will be prepared and submitted to the entities defined in the SOW, USACE and CSSA.

### **3.0 SCHEDULE**

The activities covered by this work plan will be performed in accordance with the schedule given in Table 3-1.

Table 3-1 provides a tentative timeline for the progression of work. With the current scope of work, quarterly groundwater reporting will be completed by March 2010. The schedule will be maintained and updated, and submitted with the bi-monthly status reports.

**Table 3-1**  
**Schedule**

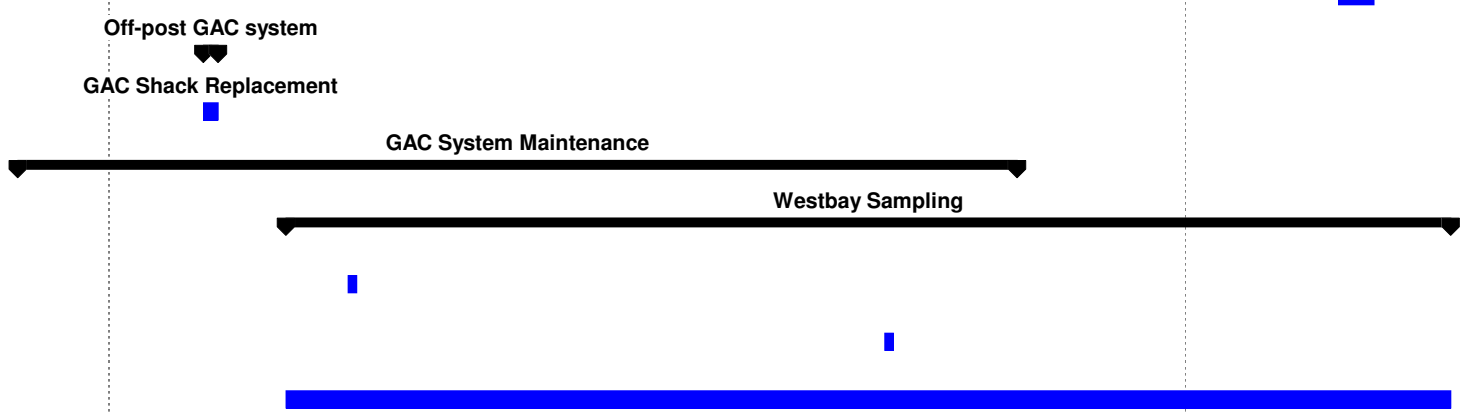
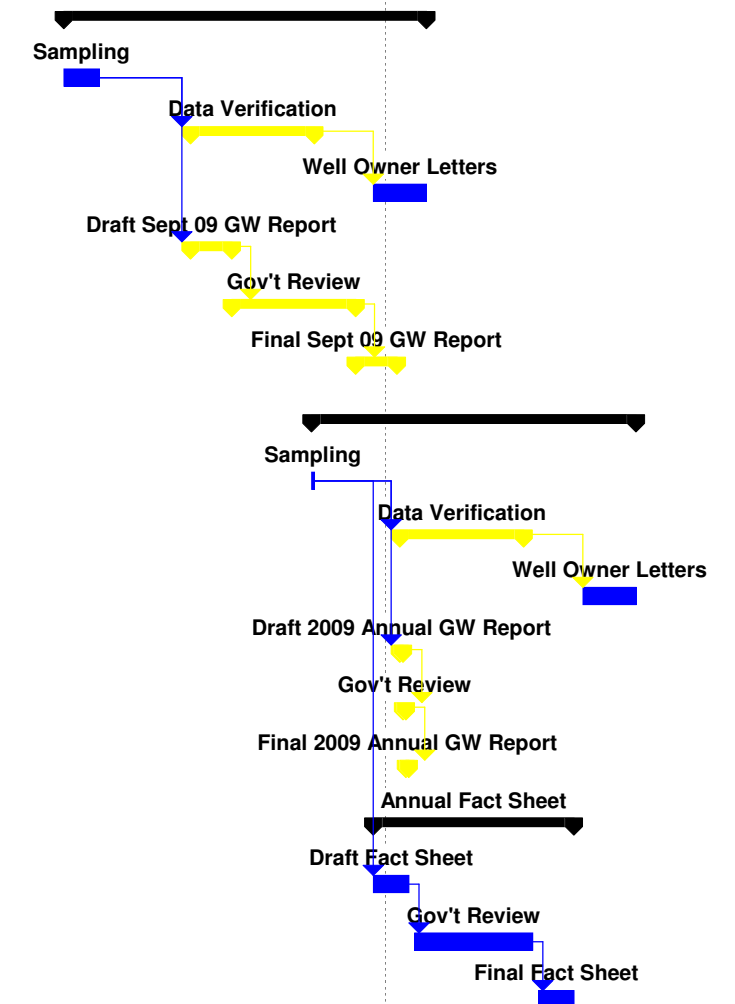


Project: CSSA Schedule  
Date: Wed 11/12/08

|       |  |           |  |                 |  |                    |  |          |  |
|-------|--|-----------|--|-----------------|--|--------------------|--|----------|--|
| Task  |  | Progress  |  | Summary         |  | External Tasks     |  | Deadline |  |
| Split |  | Milestone |  | Project Summary |  | External Milestone |  |          |  |



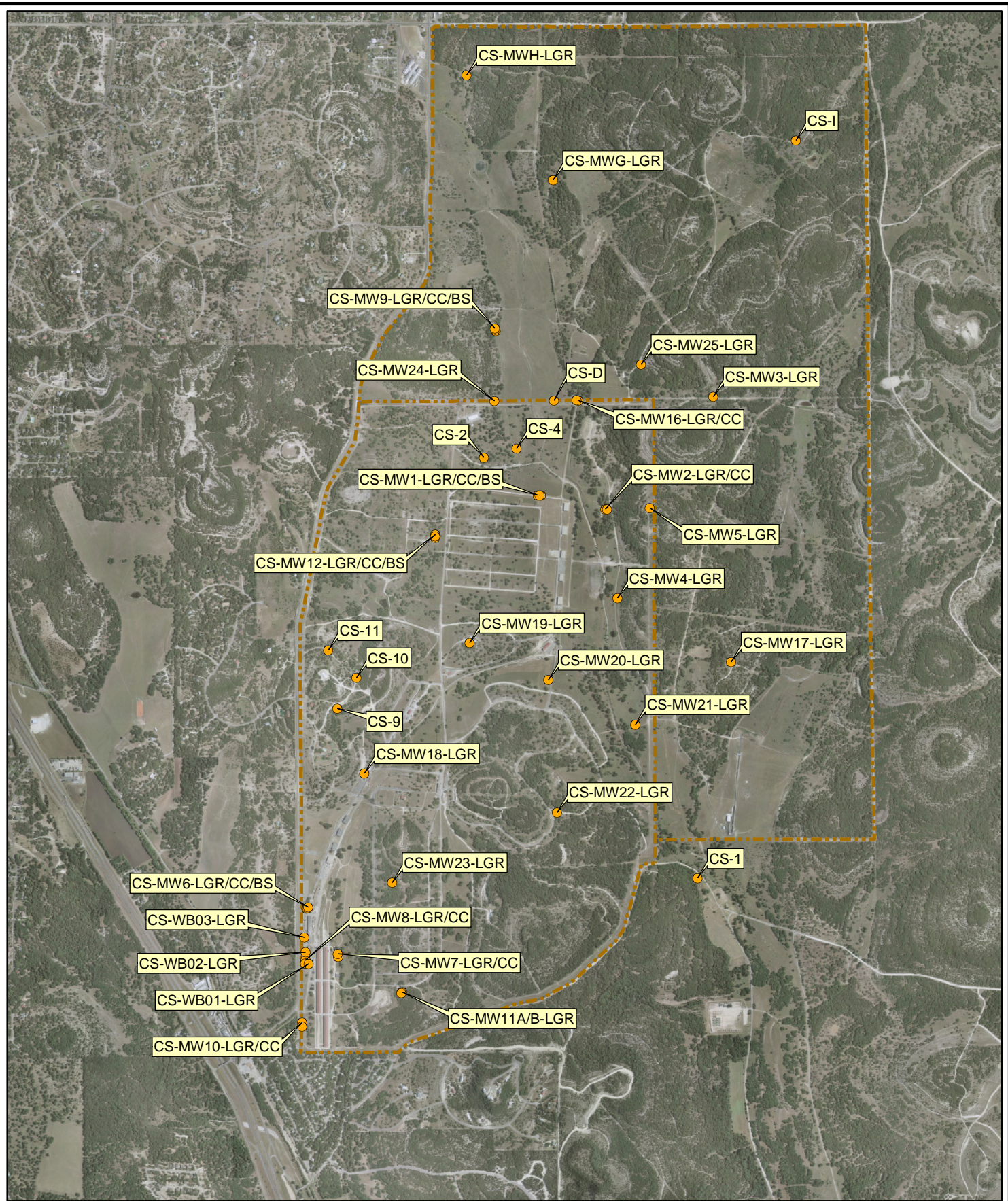
| ID | Task Name                     | Duration        | Start               | Finish             | 2009 |     |     |     |     |     |     |     |     |     |     |     | 2010 |     |     |     |     |     |
|----|-------------------------------|-----------------|---------------------|--------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
|    |                               |                 |                     |                    | Sep  | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep  | Oct | Nov | Dec | Jan | Feb |
| 29 | <b>September 2009</b>         | <b>89 days</b>  | <b>Mon 9/14/09</b>  | <b>Thu 1/14/10</b> |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 30 | Sampling                      | 10 days         | Mon 9/14/09         | Fri 9/25/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 31 | Data Verification             | 30 days         | Tue 10/27/09        | Mon 12/7/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 32 | Well Owner Letters            | 14 days         | Mon 12/28/09        | Thu 1/14/10        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 33 | Draft Sept 09 GW Report       | 10 days         | Tue 10/27/09        | Mon 11/9/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 34 | Gov't Review                  | 30 days         | Tue 11/10/09        | Mon 12/21/09       |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 35 | Final Sept 09 GW Report       | 10 days         | Tue 12/22/09        | Mon 1/4/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 36 | <b>December 2009</b>          | <b>80 days?</b> | <b>Mon 12/7/09</b>  | <b>Fri 3/26/10</b> |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 37 | Sampling                      | 1 day?          | Mon 12/7/09         | Mon 12/7/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 38 | Data Verification             | 30 days         | Wed 1/6/10          | Tue 2/16/10        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 39 | Well Owner Letters            | 14 days         | Tue 3/9/10          | Fri 3/26/10        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 40 | Draft 2009 Annual GW Report   | 1 day?          | Wed 1/6/10          | Wed 1/6/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 41 | Gov't Review                  | 1 day?          | Thu 1/7/10          | Thu 1/7/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 42 | Final 2009 Annual GW Report   | 1 day?          | Fri 1/8/10          | Fri 1/8/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 43 | <b>Annual Fact Sheet</b>      | <b>50 days</b>  | <b>Mon 12/28/09</b> | <b>Fri 3/5/10</b>  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 44 | Draft Fact Sheet              | 10 days         | Mon 12/28/09        | Fri 1/8/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 45 | Gov't Review                  | 30 days         | Mon 1/11/10         | Fri 2/19/10        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 46 | Final Fact Sheet              | 10 days         | Mon 2/22/10         | Fri 3/5/10         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 47 | <b>Off-post GAC system</b>    | <b>5 days</b>   | <b>Mon 2/2/09</b>   | <b>Fri 2/6/09</b>  |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 48 | GAC Shack Replacement         | 5 days          | Mon 2/2/09          | Fri 2/6/09         |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 49 | <b>GAC System Maintenance</b> | <b>243 days</b> | <b>Mon 12/1/08</b>  | <b>Wed 11/4/09</b> |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 62 | <b>Westbay Sampling</b>       | <b>283 days</b> | <b>Mon 3/2/09</b>   | <b>Wed 3/31/10</b> |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 63 | March 2009                    | 3 days          | Mon 3/23/09         | Wed 3/25/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 64 | September 2009                | 3 days          | Mon 9/21/09         | Wed 9/23/09        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |
| 65 | GAC Effluent Sampling         | 283 days        | Mon 3/2/09          | Wed 3/31/10        |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |



Project: CSSA Schedule  
Date: Wed 11/12/08

Task Progress Summary External Tasks Deadline 
  
 Split Milestone Project Summary External Milestone

**Attachments 1 through 3**  
**On-post and Off-post Groundwater Wells, CSSA**



- On-Post Wells and Off-Post Wells
- CSSA Boundary

0      2,000      4,000  
 Feet

|   |
|---|
| <b>Attachment 1</b>   |
| On-Post Ground Water Wells<br>Camp Stanley Storage Activity |
| Parsons   |



● On-Post Wells and Off-Post Wells

--- CSSA Boundary

0 1,000 2,000 Feet

## Attachment 2

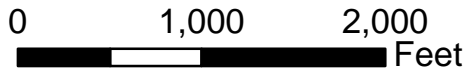
Western Off-Post Ground Water Wells  
Camp Stanley Storage Activity

Parsons



● On-Post Wells and Off-Post Wells

--- CSSA Boundary



### Attachment 3

South Western Off-Post Ground Water Wells  
Camp Stanley Storage Activity

Parsons