

October 24, 2005

Via e-mail

Mr. Jesse Perez
HQ/AFCEE
3300 Sidney Brooks
Brooks City Base, TX 78235-5112

Subject: Final Data Quality Objectives (DQOs) No. 3 Meeting Minutes,
Construction of Outfall Reuse, Aboveground Storage Tank Relocation, & Interim
Remedial Actions at SWMU B-3 and AOC-65, Camp Stanley Storage Activity
Texas Contract FA8903-04-D-8675, Task Order (TO) 0006
Parsons Job Number 744223.01000

Dear Mr. Perez:

Attached please find draft minutes for the TO0006 DQO meeting held on Thursday, August 4, 2005. There was an official meeting agenda prepared for this meeting. The topics discussed were wbs activity descriptions and associated data needs to complete the requirements of the TO. A copy of the presentations used for the meeting and the meeting agenda are attached to the meeting notes.

Please let me know if you have any questions or comments.

Sincerely,



Brian Vanderglas
Project Manager

Attachments

xc: Glare Sanchez, CSSA POC
Jeff Aston, USACE/CSSA
Ely Wright, CSSA
Chris Beal, Portage
Joe Fernando, Portage
Stephanie Harr, Portage
Henry Dress, Parsons
Brian Vanderglas, Parsons
Eric North, Parsons
Scott Pearson, Parsons
Eric Tennyson, Parsons
744223 Project File



**DATA QUALITY OBJECTIVES NO. 3
MEETING MINUTES
CONSTRUCT OF OUTFALL REUSE SYSTEM,
ABOVEGROUND STORAGE TANK (AST) RELOCATION,
AND INTERIM REMEDIAL ACTIONS AT AOC-65 AND SWMU B-3
CAMP STANLEY STORAGE ACTIVITY, TEXAS
FA8903-04-D-8675/DELIVERY ORDER 0006
PARSONS 744223.01000**

Date: Thursday, 04 August 2005
 Time: 8:30 A.M. - 5:00 P.M.
 Place: Camp Stanley Storage Activity (CSSA)
 Subject: Data needs to address completion of various project tasks

Attendees:

Attendee	Organization	Phone
Glare Sanchez	CSSA ENV	(210) 698-5208
Jeff Aston	USACE	(210) 336-1270
Chris Beal	Portage	(210) 336-1171
Joe Fernando	Portage	
Ely Wright	CSSA	(210) 336-0077
Brian Vanderglas	Parsons	(512) 719-6059
Henry Dress*	Parsons	(512) 719-6063
Eric North	Parsons	(512) 719-6054
Scott Pearson	Parsons	(512) 719-6087
Eric Tennyson	Parsons	(210) 396-0136

*Minutes prepared by Eric North and Brian Vanderglas, Parsons.

INTRODUCTIONS AND TO 0006 REQUIREMENTS

The meeting was conducted by Brian Vanderglas and Henry Dress. The purpose of the meeting was to discuss data needs, technical requirements, and issues in relation to completing each of the required project tasks. The meeting opened with a short discussion on the AST upgrade and Outfall 001 issues. This discussion was conducted from 8:30 A.M. - 9:45 A.M and attendance was limited only to those most involved with this portion of the project. After a 15-minute break, the meeting reconvened to discuss project DQOs. Meeting notes are included on the attached pages.

MEETING NOTES

(Thursday, August 4, 2005)

1. OUTFALL 001 AND AST UPGRADE DISCUSSIONS

This portion of the meeting was conducted by Henry Dress and attended by Brian Vanderglas, Eric North, Chris Beal, Jeff Aston, Kyle Caskey, and Ely Wright. The Outfall 001 issues were discussed first. The main points that were covered during this discussion include:

- Eliminating the chlorine tank and going to another treatment alternative, such as ultraviolet (UV) light or bleach.
- Addition of a supplied-air breathing cylinder to the outfall housing.
- Addition of another ventilation fan to the outfall housing.
- Deciding what items to include in the AST upgrade rebid.
- Going with a 10,000-gallon diesel tank.

The main issues surrounding the chlorine gas tanks were safety-related. Due to the hazardous nature of the chlorine gas, several items were discussed to make operating and changing the tanks safer.

Ely stated that the outfall water was only requiring 1 to 2 pounds/day of chlorine and that a chlorine supply tank lasted about 3-4 months between change outs. Ely also said that the tank change out is somewhat of a guess because she doesn't have a sure way of knowing when a tank is completely empty. Possible ways to increase the safety of dealing with the chlorine tanks is to install a supplied-air breathing cylinder in the outfall housing for use during any activities that take place in the outfall housing. Additional safeguards that were discussed include installation of a gas detector and addition of a new ventilation fan.

The idea of replacing the chlorine tanks with a safer alternative was discussed, specifically UV light and bleach. Henry Dress explained that both could work, but UV light would require higher energy and maintenance costs, while bleach would require handling larger volumes of treatment materials and a system to mix the bleach with the effluent. It is likely that about 1 gallon/day of bleach would be necessary for treatment. CSSA requested that Parsons prepare an alternatives evaluation letter comparing commonly practiced disinfection technologies for the outfall.

AST upgrade issues composed a small portion of the discussions. Switching from a 2,000 gallon diesel tank to a 10,000-gallon tank was discussed, along with the issue of installing a vapor recovery system for the AST. Henry Dress explained that the initial bid produced no compliant bids and the one subcontractor that produced a bid was \$40K higher than our original estimate. He also mentioned that the bidders were concerned about the testing requirements for vapor recovery and the difficulty in successfully modifying the existing ASTs with a vapor recovery system.

2. DQOS

Brian Vanderglas took over at this point in the meeting to lead each of the DQO discussions. A brief introduction was presented on the project as a whole to explain how the SVE system, bioreactor, and Westbay wells function. Glare Sanchez and Joe Fernando attended the DQO discussions. Since Glare was unable to attend the AST/Outfall portion of the meeting, Brian gave a short summary of what was discussed. Glare Sanchez stated that the vapor recovery requirement should be removed from the design, and the AST upgrade should be recompleted. Parsons indicated that they would perform a search to identify at least two additional first to ensure that a compliant bid would be received.

SVE O&M

The SVE O&M discussion covered two slides of information. Brian discussed the SVE process as a whole and the status of the AOC-65 and B-3 systems. The AOC-65 system recovery rates have dropped to 25-30 pounds/year and the B-3 system is currently not operational.

Brian discussed the need to get back into Building 90 to check the AOC-65 system and the need to get the B-3 blower motor replaced. Brian also discussed the monitoring schedule for the SVE systems, including the sampling routine and methodology. CSSA did not raise any issues concerning the SVE sampling details.

SVE Expansion

The SVE expansion discussion covered seven slides of information. Topics discussed included:

- Types of data collected during project
- Reasoning for proposed well locations
- Current B-3 SVE setup and future location of bioreactor
- Well completion depths
- Sustainable rates and performance data for SVE system

CSSA did not raise any issues or objections to the information presented.

Enhanced Bio Treatability Study

The enhanced bio treatability study discussion covered eight slides of information. Gary Cobb led most of the discussions during this portion of the DQO meeting. Topics discussed included:

- Where the preliminary injection well location has moved and why
- Groundwater gradients in the area and their impact on proposed injection well location
- Desired injection interval is 20-30 ft in thickness
- Types of tracers that can be injected into the formation
- Indicator parameters that will show that the bioreactor is working

CSSA did not raise any issues or objections to the information presented. Ms. Sanchez and Chris Beal requested additional info on the breakdown processes that will occur in the bioreactor. Gary agreed to post two publications on CSSA's ftp site for review.

At the conclusion of this section of the meeting, Joe Fernando had to leave. Therefore, a short discussion of screening versus definitive data was conducted before Joe exited the meeting. The discussion determined the following points:

- Definitive data should always follow CSSA QAPP
- Collect one or two duplicate samples during first round of phospholipids sampling since the test method is not routinely practiced, and
- Collect Westbay samples at the well-head

Pumping Test

The pumping test discussion covered one slide of information. Ms. Sanchez and Joe Fernando exited the meeting at this time and did not return. Scott Pearson led the discussion of the pumping test plans. The discussion was short, with the main topic concerning the usefulness of the data. Scott explained that this test will provide valuable data to understand the confining characteristics of the Bexar Shale. A slide was presented showing drawdown data from RFR-10 to help explain the type of data we are expecting to see from this pumping test.

Scott also explained how TSU is involved in the study and how they will provide numeric modeling of the data.

Parsons recommended that a pumping test also be performed on the Lower Glen Rose formation in addition to the Cow Creek Formation described in the technical approach to optimize the use of the pumping test equipment rentals and set up to obtain data that would be helpful in further defining the conceptual groundwater flow in the vicinity of SWMU B-3.

B-3 Removal Action and Construction

A short discussion of the SWMU B-3 removal action was led by Mr. Vanderglas and covered three slides of information. The main topic covered here was the reuse of the excavated overburden material. The conclusion was that the TCEQ and the EPA would ultimately be involved in deciding the sampling frequency and required analyses for reuse of the overburden material, but that Parsons would prepare recommendations for their consideration.

Bioreactor O&M

This short discussion was led by Mr. Vanderglas on the Bioreactor O&M wbs task. The topics covered included:

- Westbay measurements (pressure and bioindicator parameters)
- Piezometer data in bioreactor to monitor effectiveness
- Analytical data from Well 16 inflow

CSSA did not raise any issues or objections to the information presented.

FOLLOW-UP ISSUES AND ACTION ITEMS

- Add documents on enhanced anaerobic bioremediation to CSSA ftp site
- Contact the TCEQ and EPA concerning reuse of overburden material, prepare presentation material of all existing data and information for characterizing SWMU B-3, and
- Perform recomplete procurement for AST upgrade
- Prepare alternative evaluation letter for Outfall 01 reuse and determine most appropriate disinfection approach for the effluent.



DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, RRAD
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

***Agenda for DQO Meeting at CSSA
Construction of Outfall Reuse System, Aboveground Storage Tank
Relocation & Interim Remedial Actions at SWMU B-3 & AOC-65
AFCEE WERC, Task Order 06***

Time: Thursday, August 4, 2005; 8:30 am to 5:00 pm

Place: Camp Stanley Storage Activity, Boerne, Texas, Environmental Office

Proposed Order of Discussion

Date & Time	Topic
8:30 am– 9:45 am	AST Upgrade and Outfall 01 Design Issues <ul style="list-style-type: none">• AST Upgrade Issues• Outfall Design Modifications
9:45 am– 5:00 pm	Data Issues DQO Decision Topics <ul style="list-style-type: none">• SVE O&M• SVE Expansion• B-3 Monitoring Network• Enhanced Aerobic Biodegradation Pilot Test• Pump Test• B-3 Removal Action and Bioreactor Construction• Bioreactor O&M

TO-06 MEETING

Construction of Outfall Reuse System & Upgrade ASTs

Camp Stanley Storage Activity
Boerne, TX

04 August 2005

wbs 05000 –Upgrade ASTs

Background

- Motor Vehicle Fuel ASTs installed circa 1995
 - *10,000 gallon gasoline & 2,000 gallon diesel*
- Upgrade Initiated to Improve Usability, Safety, and Reliability
- Funded by AFCEE November 2004
- Scope review meeting 31 January 2005
- Design Work Plan
 - *Draft completed 21 Mar 2005*
 - *Final completed 17 May 2005*
- Design and engineering completed in June 2005

04 August 2005

wbs 05000 –Upgrade ASTs
Added Scope after Budget Cost Estimate

- Tank Tightness and Vapor Recovery Testing
- Fuel Management System
- Dispenser Upgrades, Gasoline Dispenser Relocation
- Diesel Tank Access Platform
- Bollards
- More than double paved area

04 August 2005

wbs 05000 –Upgrade ASTs
Procurement Results

- Procurement Process June/July 2005
 - *3 Bidders pre-qualified*
 - *2 Bidders attended pre-bid site meeting*
 - *1 Bid (non-compliant) received*
- Bid results
 - *Single bid received, \$40K over budget (\$109,893 vs. \$69,066)*

04 August 2005

wbs 05000 –Upgrade ASTs

Fuels Subcontractor Declined to Bid because of these Bid Req'ts.

- Vapor Recovery Demonstration Testing – Fuels Subcontractor believes it very difficult to achieve on ASTs
- Welded Pipe-not standard for Fuels Subcontractor
- Concrete-Fuels Subcontractor did not believe bid would be competitive if concrete had to be subcontracted

04 August 2005

wbs 05000 –Upgrade ASTs

Potential Scope Changes for Re-bid

- Delete Stage II vapor recovery system (-\$15K)
- Delete paving (-\$20K)
- Delete fuel management system (-\$12K)
- Replace 2,000 gallon diesel tank with 10,000 gallon tank, (estimated cost change, + \$40K)

04 August 2005

wbs 03000 – Outfall 001 Reuse
Background

- Original concept to use wastewater as reclaimed water to irrigate ~ 5 acres of grass
- Funded by AFCEE in November 2004
- Scope review meeting held 31 January 2005
- Design Work Plan draft completed May 2005

Included:

- 5 acre sprinkler system
- large day tank
- high pressure pump

04 August 2005

wbs 03000 – Outfall 001 Reuse
Options

- Delete irrigation system (-\$XXk)
- Reuse effluent as chlorinator motive fluid by:
 - *Using submersible pump in existing wetwell with level instrumentation to shut down pump when no flow from wetwell, or by*
 - *Using sub. pump, and small tank and small pump to maintain continuous circulation of motive water to chlorinator with potable makeup to tank whenever there is no effluent flow.*

04 August 2005

Task Order 0006 Meeting #3

**8:30 am-9:45am: Construction of Outfall Reuse
System & AST Upgrades**

**10:00 am-5:00 pm: Data Quality Objective (DQO)
Decision Topics**

Camp Stanley Storage Activity
Boerne, TX

04 August 2005

**Construction of Outfall Reuse
System & AST Upgrades
8:30 am – 9:45 am**

04 August 2005

WBS 05000 –Upgrade ASTs

Background

- Motor Vehicle Fuel ASTs installed circa 1995
 - *10,000 gallon gasoline & 2,000 gallon diesel*
- Upgrade Initiated to Improve Usability, Safety, and Reliability
- Funded by AFCEE November 2004
- Scope review meeting 31 January 2005
- Design Work Plan
 - *Draft completed 21 Mar 2005*
 - *Final completed 17 May 2005*
- Design and engineering completed in June 2005

04 August 2005

WBS 05000 –Upgrade ASTs

Added Scope after Budget Cost Estimate

- Tank Tightness and Vapor Recovery Testing
- Fuel Management System
- Dispenser Upgrades, Gasoline Dispenser Relocation
- Diesel Tank Access Platform
- Bollards
- More than double paved area

04 August 2005

WBS 05000 –Upgrade ASTs

Procurement Results

- Procurement Process June/July 2005
 - *3 Bidders pre-qualified*
 - *2 Bidders attended pre-bid site meeting*
 - *1 Bid (non-compliant) received*
- Bid results
 - *Single bid received, \$40K over budget (\$109,893 vs. \$69,066)*

04 August 2005

WBS 05000 –Upgrade ASTs

Fuels Subcontractor Declined to Bid Due to Bid Requirements

- Vapor Recovery Demonstration Testing – Fuels Subcontractor believes it very difficult to achieve on ASTs
- Welded Pipe-not standard for Fuels Subcontractor
- Concrete-Fuels Subcontractor did not believe bid would be competitive if concrete had to be subcontracted

04 August 2005

WBS 05000 – Upgrade ASTs
Potential Scope Changes for Re-bid

- Delete Stage II vapor recovery system (-\$15K)
- Delete paving (-\$20K)
- Delete fuel management system (-\$12K)
- Replace 2,000 gallon diesel tank with 10,000 gallon tank, (estimated cost change, + \$40K)

04 August 2005

WBS 03000 – Outfall 001 Reuse
Background

- Original concept to use wastewater as reclaimed water to irrigate ~ 5 acres of grass
 - Funded by AFCEE in November 2004
 - Scope review meeting held 31 January 2005
 - Design Work Plan draft completed May 2005
- Included:
- 5 acre sprinkler system
 - large day tank
 - high pressure pump

04 August 2005

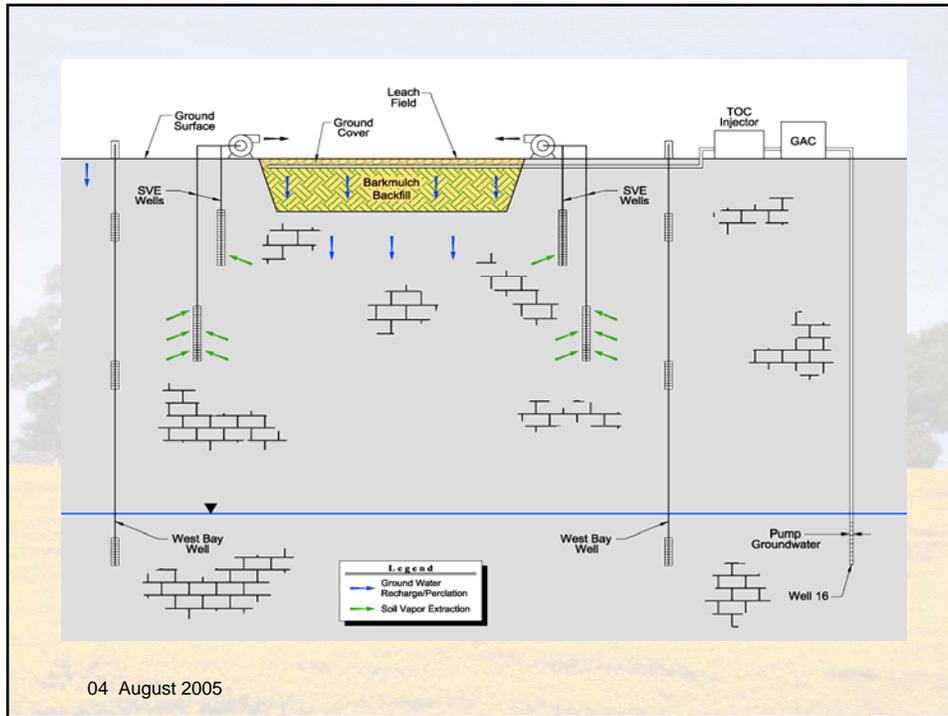
WBS 03000 – Outfall 001 Reuse Options

- Delete irrigation system (-\$70k)
- Reuse effluent as chlorinator motive fluid by:
 - *Using submersible pump in existing wetwell with level instrumentation to shut down pump when no flow from wetwell, or by*
 - *Using sub. pump, and small tank and small pump to maintain continuous circulation of motive water to chlorinator with potable makeup to tank whenever there is no effluent flow.*

04 August 2005

Data Quality Objective (DQO) Decision Topics 10:00 am – 5:00 pm

04 August 2005



SVE O&M Decisions

- Determine suitability of current O&M monitoring frequency
- Are emission controls in compliance with applicable requirements

04 August 2005

Determine Suitability of Current O&M Monitoring Frequency

Inputs

- Data collected on twice monthly basis to evaluate historical system operational performance (vacuum, water levels, etc.)
- Trends and variability of contaminant removal rate (field screening data, PID, for contaminant removal rate trends)
- Quarterly air emission samples (lab data)
- Baseline and periodic data from individual wells

04 August 2005

Are Emission Controls in Compliance with Applicable Requirements

Inputs

- Quarterly samples from the main exhaust (lab data)
- Flow rates of main exhaust

04 August 2005

SVE Expansion Decisions

- Determine number and locations for new VEWs to be added to the current SVE systems
- Determine most effective completion depths for VEWs for expanding and optimizing the SVE systems
- Determine effective sustainable rates of contaminant removal from individual extraction wells and/or the entire system
- Determine optimum system performance settings for a long-term vapor extraction system operation based on treatability study results

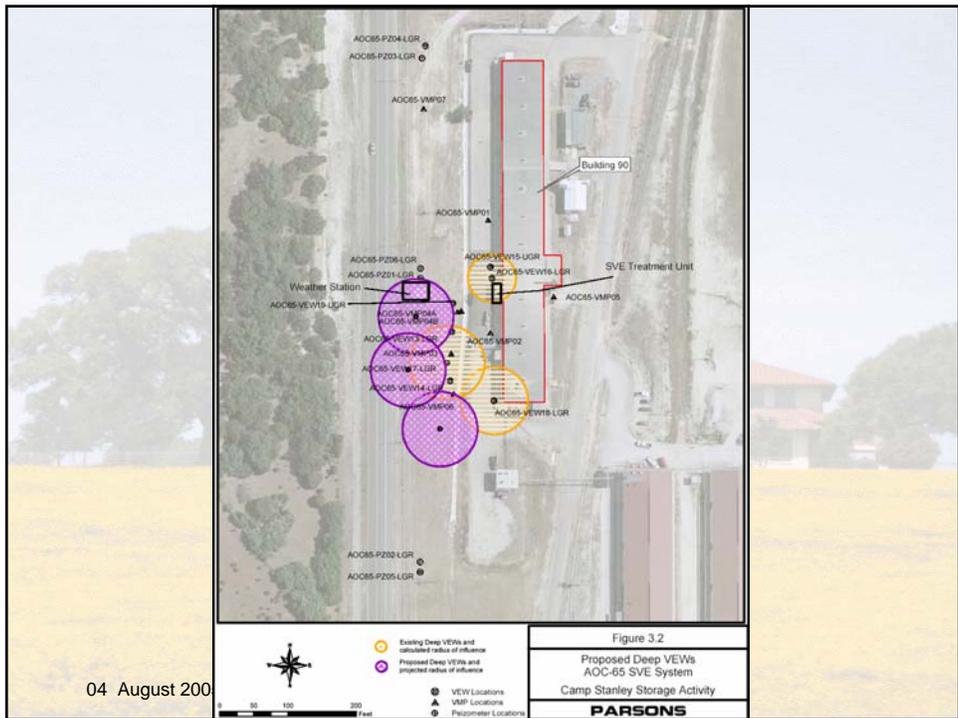
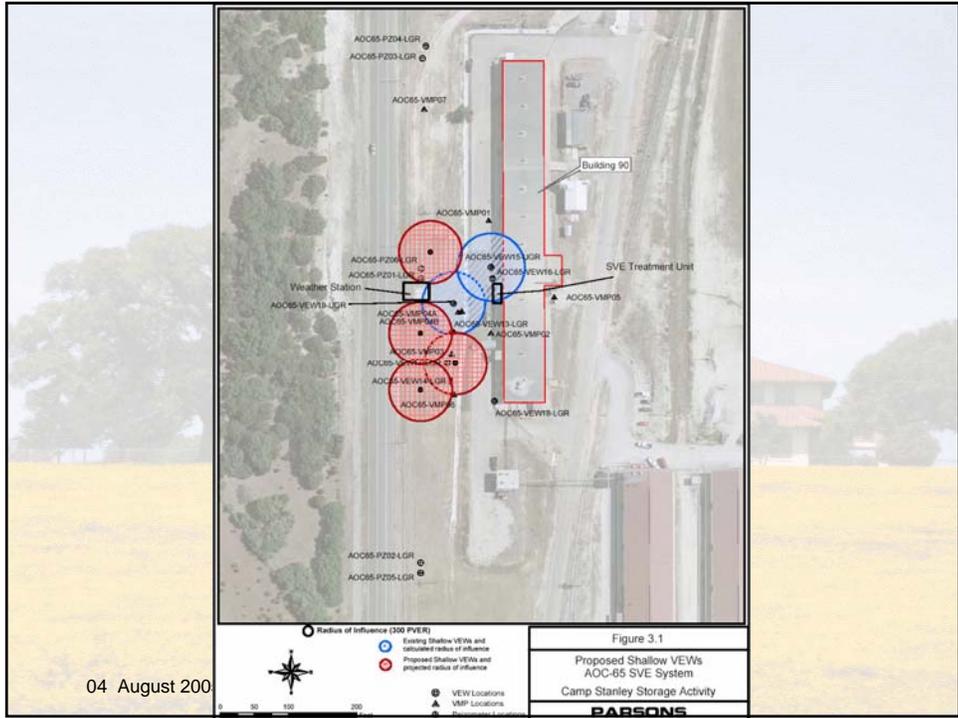
04 August 2005

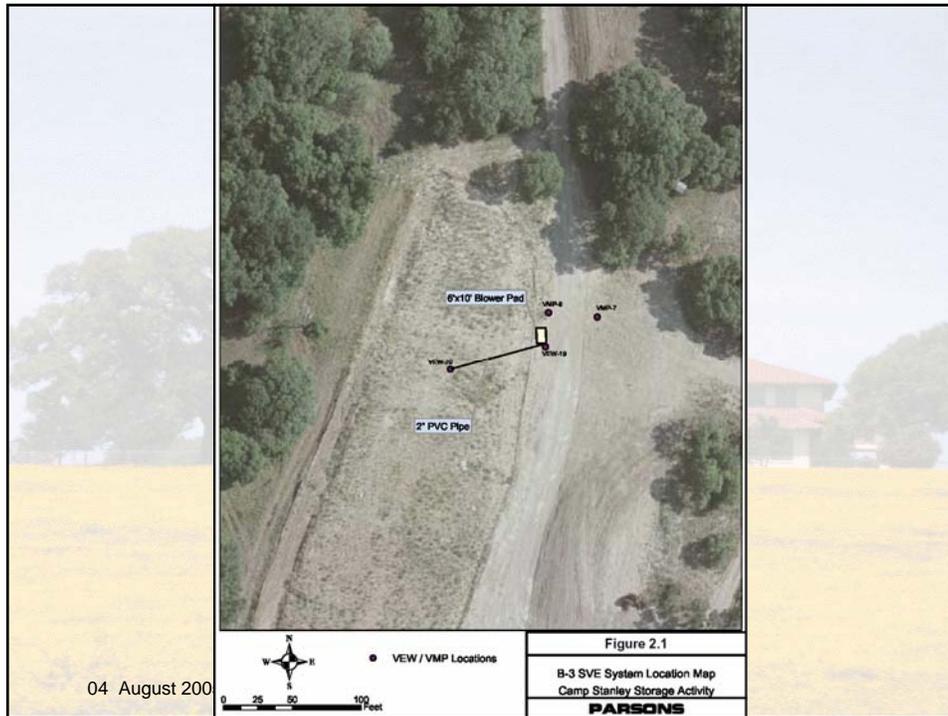
Determine Number and Locations for New VEWs to be Added to the Current SVE Systems

Inputs

- Soil gas packer data
- Flow rates at each well and changes in soil gas chemistry for calculating effective radiuses of influence
- Vacuum pressure from soil gas data
- Boring logs from nearby wells

04 August 2005





Determine Most Effective Completion Depths for VEWs for Expanding and Optimizing the SVE Systems

Inputs

- Performance of existing systems as measured by ongoing O&M
- Drilling/installation observations and testing (VEW and nearby boreholes)

04 August 2005

Determine Effective Sustainable Contaminant Removal Rates from Individual Extraction Wells and/or the Entire System

Inputs

- Soil gas concentration from VEWs and from system
- Air flow rates from individual VEWs and entire system
- Operational running history

04 August 2005

Determine Optimum System Performance settings for Long-Term Operation Based on Treatability Study Results

Inputs

- Sustainable blower vacuum levels
- Soil gas concentration from VEWs and from system
- Air flow rates from individual VEWs and entire system

04 August 2005

Enhanced Bio Treatability Study Decisions

- Determine optimum injection well location
- Determine optimum injection depth interval
- Evaluation of tracer injection
- Determine optimum substrate material, mixing proportions, and volumes
- Determine effectiveness of enhanced bio at SWMU B-3

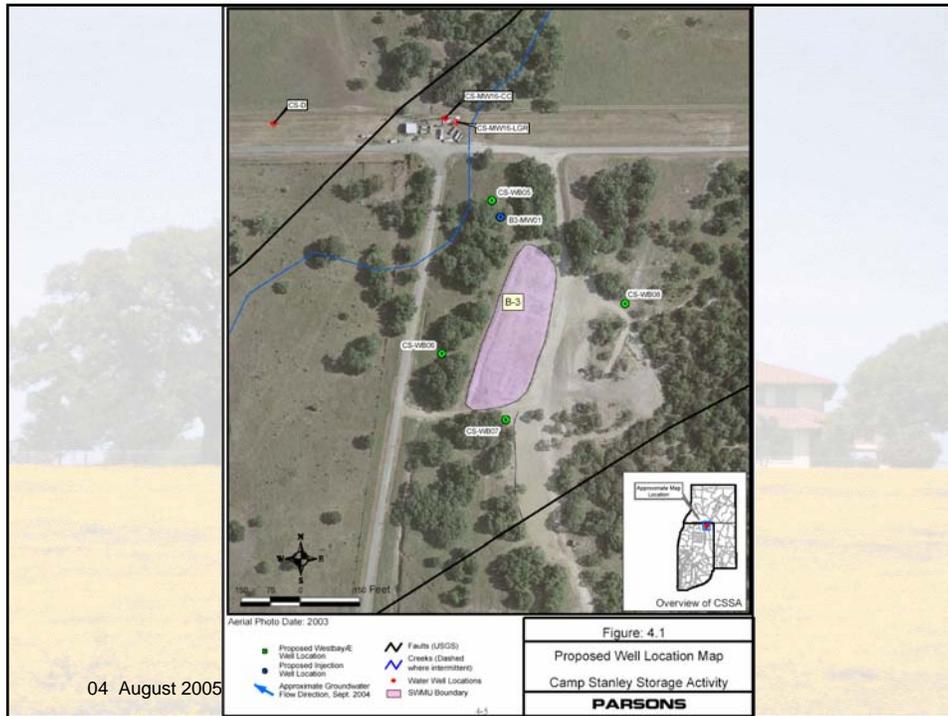
04 August 2005

Determine Optimum Injection Well Location

Inputs

- Groundwater packer data
- Groundwater flow direction
- Borehole geophysical data from Westbays
- Injection packer data from Westbay 05

04 August 2005



Determine Optimum Injection Depth Interval

Inputs

- Thickness of interval
- Groundwater packer data
- Hydraulic properties of interval
- Relationship to water table elevation and seasonal water table fluctuation
- Historical water level data

04 August 2005

Evaluation of Tracer Injection

Inputs

- Concentrations in injection wells and monitoring wells (Westbay ports)
- Injection packer test data

04 August 2005

Determine Optimum Substrate Material, Mixing Proportions, and Volumes

Inputs

- Injection zone hydraulics (thickness, porosity, groundwater velocity)
- Initial redox and geochemical conditions
- Groundwater contaminant concentrations

04 August 2005

Determine Effectiveness of Enhanced Bio at SWMU B-3

Inputs

- Pre and post injection contaminant levels
- Pre and post geochemical data (iron, etc.)
- Injection efficiency measurement
- Determine substrate delivery process

04 August 2005

B-3 Monitoring Network

- Install 4 West bay multi-port wells
 - Determine optimal sampling port and packer locations using
 - **BOREHOLE GEOPHYSICS**
 - **Gamma/Resistivity/SP:** Used for determining stratigraphy of borehole and consistent correlation between boreholes with geophysical results.
 - **Caliper:** Determines borehole diameter at a given depth. Useful for determining zones of washout, large karst (caverns) or even large fractures.
 - **Optical Televiewer:** Digital video logging process which creates a continuous, 360° digital image of the entire length of the borehole. Cost-effective alternative to coring.
 - **Analog Video:** Used to visually document the condition of the borehole wall prior to the installation of the Westbay wells.

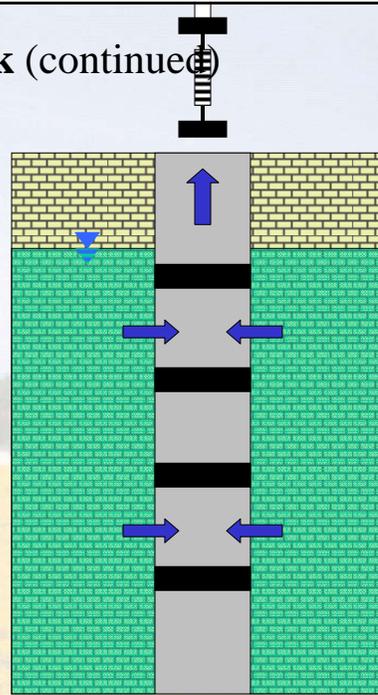
04 August 2005



B-3 Monitoring Network (continued)

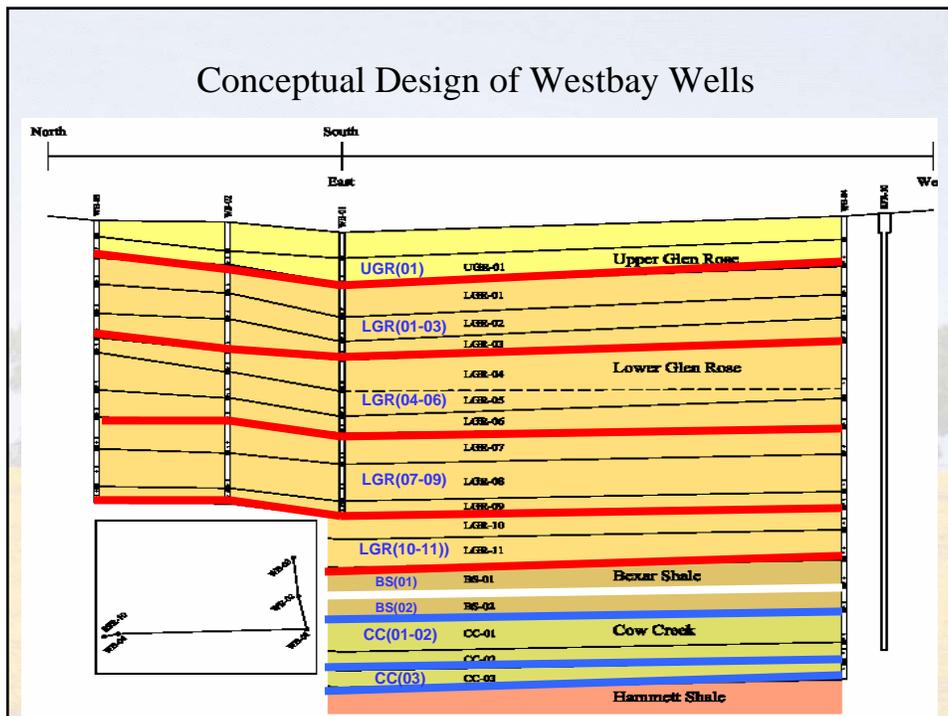
- **WIRESLINE STRADDLE PACKERS**

- **Discrete-Interval Sampling:** A submersible pump placed between two hydraulic packers is used to collect discrete hydrologic zones identified by the geophysical methods. The results are reviewed and incorporated into the individual design of each Westbay well for packer and sampling port placement.
- **Injection Packer Tests:** Used to determine and characterize permeable intervals of the bedrock that will be suitable for designing the injection well.



04 August 2005

Conceptual Design of Westbay Wells

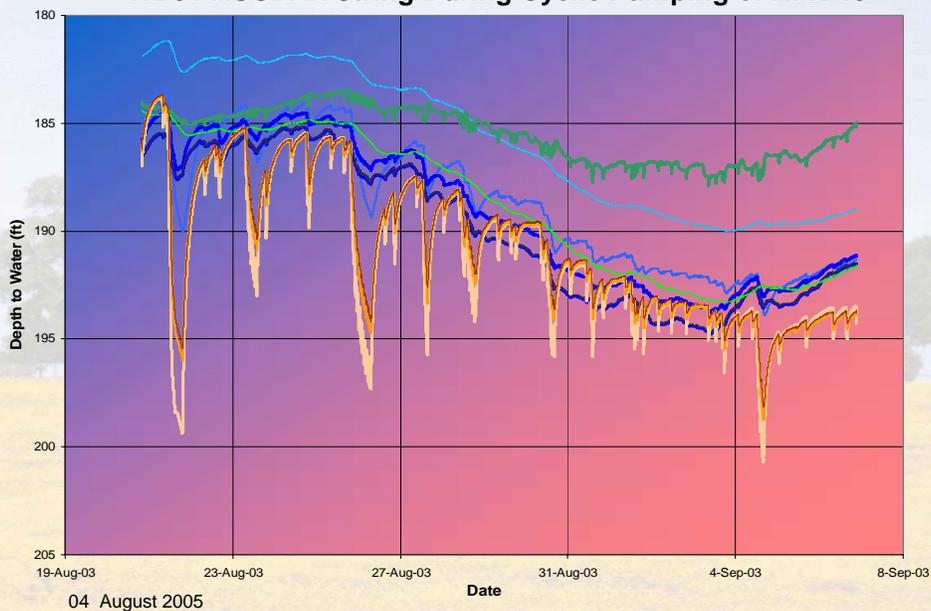


Well CS-MW16-CC Pumping Test

- Determine hydraulic characteristics of subsurface in SWMU B-3 vicinity and determine if the Bexar Shale is a leaking aquitard
 - **Pump Cow Creek Formation at 25 gallons per minute (gpm)**
 - Remove existing pump from CS-MW16-CC and install new 25 gpm pump
 - **Determine Radius of Influence**
 - Install hydraulic pressure datalogging string into a B-3 Westbay well to monitor drawdown and hand measure nearby wells during pumping
 - **Calculate Hydraulic Characteristics and State Conclusions**
 - Amend existing CS-16 pumping test report with drawdown data to assess confining properties of Bexar Shale and the relation to the interconnectivity of the Lower Glen Rose and Cow Creek aquifers
 - Perform numerical modeling of pumping test activities by a Texas State University graduate student

04 August 2005

Example of Pumping Test Data WB04 MOSDAX String During Cyclic Pumping of RFR-10



04 August 2005

B-3 Removal Action and Bioreactor Construction

Inputs

- Determine whether overburden material can be reused at site as backfill overlay material
- Determine waste classification
- Determine appropriate level of confirmation samples

04 August 2005

Determine Whether Overburden Material can be Reused at Site as Backfill Overlay Material

Inputs

- Soil data at acceptable frequency
- Testing for VOCs, metals only

04 August 2005

Determine Waste Classification

Inputs

- TCLP metals
- TCLP VOCs
- Total TPH

04 August 2005

Determine Appropriate Level of Confirmation Samples

- Not appropriate

04 August 2005

Bioreactor O&M

- Measure migration from bioreactor to aquifer
- Measure biological activity within bioreactor
- Monitor effectiveness of bioreactor in aquifer

04 August 2005

Measure Migration from Bioreactor to Aquifer

Inputs

- VOC and bioindicator parameters in Westbays
- Pressure head measurements from Westbays

04 August 2005

Measure Biological Activity Within Bioreactor

Inputs

- Periodic data collection from bioreactor piezometers
- Hand measured water level data from piezometers
- Analytical data from bioreactor inflow from Well 16

04 August 2005

Monitor Effectiveness of Bioreactor in Aquifer

Inputs

- Analytical data from Westbays and nearby monitoring wells
- Geochemical data from nearby wells

04 August 2005

Screening Data Versus Definitive

- Definitive
 - Overburden reuse and SVE air emissions
- Screening
 - Bioreactor and pre/post treatment data
 - Waste classification data
 - SVE O&M data
 - Groundwater packer data
 - Borehole geophysics
 - Tracer data
 - IDW

04 August 2005