Final

Travis Air Force Base
Environmental Management
Building 570, Travis AFB, California
Environmental Restoration Program
Remedial Program Manager's
Meeting Minutes

24 June 2009, 0930 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 24 June 2009 at 0930 in the Base Civil Engineer's Conference Room, Building 570, Travis AFB, California. Attendees included:

• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Mark Smith	Travis AFB
• Gregory Parrott	Travis AFB
• James Chang	U.S. Environmental Protection Agency (USEPA)
• Alan Friedman	California Regional Water Quality Control Board (CRWQCB)
• John Kaiser	Cal-EPA SFRWQCB
• Jose Salcedo	Department of Toxic Substances Control (DTSC)
• Dezso Linbrunner	USACE, Omaha District
• Kali Frey	USACE, Omaha District
• Jennifer Musilek	USACE, Omaha District
• Mike Wray	CH2M HILL
• Chuck Elliott	CH2M HILL
• Doug Berwick	CH2M HILL
• Rachel Hess	ITSI
• Mary Snow	TechLaw Inc.

Handouts distributed at the meeting and presentations included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting, Teleconference, and Document Schedules
• Attachment 3	SBBGWTP Monthly Data Sheet (May 2009)
• Attachment 4	CGWTP Monthly Data Sheet (May 2009)
• Attachment 5	Presentation: SS016 RPO Work Plan
• Attachment 6	Presentation: Program Update

1. ADMINISTRATIVE

Mr. Smith introduced of a few people at the RPM meeting. Doug Berwick of CH2M HILL, Greg Parrott of Travis and John Kaiser of the San Francisco Bay Regional Water Quality Control Board are not new to the project but not everyone present may know them. Also, Jennifer Muselik (geologist) and Kali Frey (chemist) of the USACE Omaha District were in attendance.

A. Previous Meeting Minutes

The 20 May 2009 RPM meeting minutes were approved and finalized as written.

B. Action Item Review

Action Items from May were reviewed.

Action items one and two are in progress; date due will be changed to July 2009. The completion of these items is dependent on the regulatory acceptance of the RD/RA QAPP update, which is also tied to the Model QAPP modification.

Action item three is unchanged. The paperwork needs to catch up to mobilization plans.

C. Master Meeting and Document Schedule Review

The Travis AFB Master Meeting and Document Schedule were discussed during this meeting (see Attachment 2).

Travis AFB Annual Meeting and Teleconference Schedule

— The next RPM meeting will be 22 July 2009. Mr. Smith asked how the dates of the remaining meetings work for everyone. No one brought up any issues.

Travis AFB Master Document Schedule

— Basewide GW ROD, Potrero Hills Annex ROD: No change.

— RD/RA QAPP Update: The actual dates of the draft and final have been updated. The July date for the final takes into account the thirty days between draft final and final.

— Comprehensive Site Evaluation Phase II Work Plan: The Response to Comments (RTC) meeting and subsequent dates have been put to TBD pending EPA review schedule.

— Focused Feasibility Study (FFS), Phases 1 & 2 Vapor Intrusion Report: No change.

— Phytostabilization Tech Memo: No change. EPA preliminary comments are final; DTSC has no comments and will send an email stating this. No more comments are expected; dates will be updated for next meeting. TAFB working on responses to comments. Parsons Engineering is conducting the field work.

— SS016 RPO Work Plan: Dates have been pushed back a bit. Old drawings were found which included needed information. Presentation will be given today.

— 2008 Annual GWTP RPO Report: Doug Berwick is the new POC for CH2M HILL. Final actually out on 22-June-2009.

— Field Sampling Plan: Draft will go out 25 June 2009; schedule will be revised to reflect actual date and allow for 30 day agency review.

— Natural Attenuation Assessment Report (NAAR): No change.

— Passive Diffusion Bag (PDB) Tech Memo: Dates have been updated to reflect actual dates. Move to historical.

— DP039 RPO Work Plan: No change.

— SD036/SD037 RPO Work Plan: Dates have been updated to reflect actual timeline.

— ST018 POCO Remedial Action (RA) Work Plan: Dates have been updated to reflect actual timeline.

— Site ST032 POCO Evaluation Work Plan, ST027B Site Characterization Report: No change.

— LF008 Rebound Test Tech Memo: Added to schedule. Samples were collected and data is in from the six month rebound study.

— Quarterly Newsletter (Guardian): Draft to agencies was out a little earlier than previously scheduled. Good comments were received from the new Public Affairs representative on base, who has lots of newspaper experience but is new to environmental. TAFB values her input.

Mr. Linbrunner asked if using the PDB samplers saved time. The PDBs definitely sped up the sampling process. Prior to using PDBs, it took a few hours per well and two people. Using PDBs a sample can be collected in a few minutes and only requires one person. The initial installation of the PDBs requires more work for setup than will be required during subsequent events.

2. CURRENT PROJECTS

A. Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the water treatment plant status.

South Base Boundary Groundwater Treatment Plant

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 3.3 million gallons of groundwater were extracted and treated during the month of May 2009. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 71.1 gallons per minute (gpm) and electrical power usage was 16,080 kWh; 22,030 pounds of CO2 was created (based on DOE calculation). Approximately 1.7 pounds of volatile organic compounds (VOCs) were removed in May. The total mass of VOCs removed since the startup of the system is 365 pounds (see Attachment 3).

No shutdowns or restarts occurred in May 2009. The total influent VOC concentrations were lower in May compared to April. Mr. Elliott stated that uptime has improved now that there isn't calcification in the pipes.

No optimization activities were conducted during May.

Central Groundwater Treatment Plant

The Central Groundwater Treatment Plant (CGWTP) performed at 97.0% uptime with approximately 2.7 million gallons of groundwater extracted and treated during the month of May 2009. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 63.0 gpm and electrical power usage was 31,031 kWh for all plants connected to Central; 42,512 pounds of CO2 was created. Natural gas usage for the ThOx was 2,268 therms. Approximately 9.2 pounds of VOCs were removed from groundwater, and 6.1 pounds from vapor, in May. The total mass of VOCs removed since the startup of the system is 11,073 pounds (see Attachment 4).

Two shutdowns occurred on 30 April and 17 May at WTTP due to power surges and voltage spikes. The frequency of these surges has decreased since April's report. The source of the power fluctuations remains unknown at this time but system is being monitored. Mr. Salcedo pointed out that the uptime at the Central Plant has improved. Mr. Duke agreed and stated that when the ThermOx switches to pulse mode the uptime should be even better.

The carbon change out occurred on 27 May 2009 and went well. All samples taken were reported as non-detect.

No optimization activities were conducted during May.

B. Field Work Update

Mr. Duke gave an update on the field work at TAFB. Field work will be occurring at ST027 over the July 4th weekend. Work should only take one day. Coordinates from the previous weeks work have been surveyed at ST027 and SS014. Dig permits for work to be done at the sediment sites have been submitted. Shallow and deep (down to bedrock) sampling will occur at SS030 this week.

C. Vapor Intrusion Assessment Status

Mr. Anderson gave an update on the VI Assessment status. Travis AFB and EPA coordinated the third and final phase of VI sampling via email. CH2M HILL expects to be out in the field during the second week of July to complete phase 3 sampling. The building custodians will be notified of the sampling in order to gain access to the buildings. EPA is scheduled to be on base on 8 July 2009 to conduct split air sampling on this project. Mr. Anderson will meet the EPA representative at the Visitors Center to get for him a two-day pass.

The vapor intrusion seminar that Mr. Anderson and Mr. Duke attended was very informational. They learned that there can be a lot of variability in field sampling. For example, wind that generates negative or positive pressure on a building can affect sample results.

Mr. Smith expressed his gratitude for EPA's help on this round of VI sampling. Mr. Elliott mentioned that a special valve allowing a simultaneous split sample makes the most sense. Mr. Anderson will coordinate with EPA chemist and CH2M HILL.

Mr. Linbrunner added that USACE is performing a survey on vapor intrusion. Issues and questions are being put into a database for future cleanup requirements and policy. This action has been completed for TAFB.

Mr. Chang stated that the EPA sampling plan for the split sampling will be finalized and sent to Mr. Anderson.

D. Site Closure Documentation

Mr. Anderson spoke on the subject of site closure documentation. This has been a controversial subject in the past. The Air Force does not have a positive view of post-ROD documents, such as site closure reports. The WABOU Soil ROD includes a requirement for site closure reports, and the NEWIOU Soil, Sediment and Surface Water ROD doesn't.

The current approach is to finalize each site while all parties involved are still on the project. Two technical memoranda for the closure of RW013 and SD042 have been submitted and signed by the regulatory agencies. A tech memo for SD045 was submitted recently. SD045 has only soil as a medium of concern, and the Water Board has deferred signature authority to the DTSC. EPA questioned why a technical memo was written, as the ROD only requires one final closure report. Mr. Chang also asked if the memo should be a stand-alone document, with all relevant information enclosed in the report.

Mr. Anderson replied that no document truly stands alone, because almost all documents refer to other previously approved documents in some form. The use of technical memoranda avoids the need to write a site closure report years down the road when all current decision-makers are no longer involved with the project. The tech memos are written by the people who have done the work.

Mr. Chang pointed out that the Remedial Action report fulfills EPA requirements, and a separate closure report is not required in CERCLA. If TAFB insists on submitting a report, it needs more information to be considered complete. Mr. Smith stated this may need to be discussed more at a later time.

Mr. Kaiser added that in cases where references are made to previous documents, it is helpful to include a CD containing the referred documents. Mr. Salcedo agreed. The main issue is if the WABOU ROD requirements are being met. The closure report may be redundant in cases where there is an approved Remedial Action report. Mr. Chang suggested a letter of closure referring back to the RA report to fulfill the ROD requirement.

E. SD001 and SD033 Field Work

Ms. Hess reported on the status of sediment sites field work. Revisions have been made to the Final Work Plan (Shaw). The Coffer Dam design in Appendix H has been updated. The Safety Plan has been submitted to TAFB and USACE. A presentation on the Model QAPP revision will be on the July 2009 RPM meeting agenda.

The creek diversion is planned on mid to late August, dependent on the acceptance of the QAPP revisions.

The FT005 data gap investigation report will be reported to TAFB in August, and a work plan is scheduled to be presented in September. A wetland delineation study by a biologist will be included. This report will be added to the document schedule next month.

3. PRESENTATIONS

A. SS016 Remedial Process Optimization (RPO) Work Plan

Mr. Berwick gave a presentation on the SS016 RPO Work Plan (see Attachment 5). This is the Oil Spill Area (OSA). An overview of the report and what is coming was presented. A photo of the site showed the OSA in the northwest corner and the plume running south and east. The optimization focused on the OSA. The horizontal well runs through this site and is about 560 feet in length. Building 18 was a degreasing facility. Solvent tanks were present from the 1960s through the 1980s.

The initial objective of controlling the source has been successfully met; however the source is not being remediated. More research was done on the history of building 18. An oil/water separator (OWS) was removed in the mid-1990s. When the OWS was removed one corner was found to be eroded. Evidence of residual pure phase solvent was not present during the OWS removal. The chemical storage locations were difficult to pinpoint. A sump was located under the flooring of Building 18 and a catch basin was identified to the south. It was determined that the catch basin

existed before the sump was installed. It was tied to the storm drain and a high TCE concentration was discovered approximate 20 feet to the south.

The work plan approach and phases were presented. The injection of emulsified oil is aimed at reducing the source. The gray dots on the slide represent sample locations for the investigation. Locations are right up to the red line – restricted area – near the flight line. Not all locations are new sampling points; some existed before and were sampled during the current GSAP.

The draft is scheduled to be out in early July.

Mr. Anderson pointed out that the facility was very active in the past, but is now used for storage. Building 16 in the same area was the jet engine repair facility. It is now used for equipment parking and is considered the 'clean' facility. Mr. Kaiser asked if there were isoconcentration lines for the site. There aren't enough wells to establish those lines, but it is known that the plume moves to the south and east of the source. There is a bedrock ridge to the left (west) end.

B. Program Update, Management Overview Briefing

Mr. Wray gave an update on activities completed, in progress and upcoming (see Attachment 6). In keeping with the Triad approach to the project, this presentation is given to keep everyone informed on what's been done and what's upcoming. As stated before, the 'Completed' page is getting longer. For the next meeting the new documents will be in italics to distinguish what has been added.

The RDRA QAPP update and Phyto Tech Memo are very near final. Some of the documents in the Upcoming list are on the master document schedule. Field work at LF007C is slightly delayed while addressing the presence of the California tiger salamander. Field work at DP039 will be added to the list by the next RPM meeting.

Mr. Smith commented that the Action Plan is a good summary of work planned to be done; it is a good idea for everyone to keep this document and the FFS in preparation for the upcoming ROD.

4. NEW ACTION ITEM REVIEW

Dates in the Action Items will be updated to July.

Discussion of closure reports with EPA.

Addition of FT005 work plan to document schedule.

5. PROGRAM/ISSUES/UPDATE

A. Phytoremediation Tour

Mr. Anderson invited the group to tour the work currently being done at the phytoremediation area. The team from Utah State University is on base. They will be back when the water table drops more, possibly in August.

There may be a chance to see some of the off-base drilling occurring at SS030 after the meeting.

6. POTENTIAL RESPONSE TO COMMENTS (RTC) MEETINGS

A. Vapor Intrusion Phase 3 Field Effort

There was no need for an RTC meeting. EPA accepted TAFB's responses to Mr. Stralka's comments.

General Discussion

Mr. Chang sent an email concerning the Administrative Record and the location of final documents. Hard copies of final documents are stored on-base, and an electronic copy is on the Air Mobility Command (AMC) website. The best choice is the Travis AFB Information Storage Center; however the AMC website is definitely easier to access.

The online library is not searchable except by title or key words if they were entered. The documents are TIFs and not in OCR (Optical Character Recognition) format. Because AMC contracts out the conversion of Administrative Record documents into an electronic format, it can take up to four years for documents to become digitized.

Mr. Smith told the group to let him know of any documents they can't locate online. In addition, TAFB is conducting an inspection of its administrative record files to verify the accuracy of its database.

5. Action Items

ITEM	RESPONSIBLE	ACTION ITEM	DUE DATE	STATUS
1.	Air Force	Update document schedule to include dates for Work Plan for Sediment Sites	July 2009	**In progress**
2.	Air Force	Update document schedule to include dates for interim plans for FT005	July 2009	**In progress**
3.	Air Force	Coordinate site visit of sediment excavations with RAB members	TBD	**Open**

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
24 June 2009, 9:30 A.M.
AGENDA

1. ADMINISTRATIVE

   A. PREVIOUS MEETING MINUTES
   B. ACTION ITEM REVIEW
   C. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)
   B. FIELD WORK UPDATE (LONNIE)
   C. VAPOR INTRUSION ASSESSMENT STATUS (GLENN)
   D. SITE CLOSURE DOCUMENTATION (GLENN)
   E. SD001 AND SD033 FIELD WORK (ITSI)

3. PRESENTATIONS

   A. SS016 RPO WORK PLAN:
   B. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

   A. PHYTOREMEDIATION TOUR

6. POTENTIAL RESPONSE TO COMMENTS MEETING

   A. VAPOR INTRUSION PHASE 3 FIELD EFFORT

Travis AFB Master Document Schedule

Annual Meeting and Teleconference Schedule

Monthly RPM Meeting (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-28-09		—
02-25-09		—
03-25-09		—
04-22-09		04-23-09
05-20-09		—
06-24-09		—
07-22-09		—
08-26-09		—
09-23-09		—
10-21-09		10-22-09
—	11-16-09	—
12-09-09		—

Travis AFB Master Document Schedule

PRIMARY DOCUMENTS				
	Basewide Groundwater Travis, Glenn Anderson		Potrero Hills Annex Travis, Glenn Anderson	RD/RA QAPP Update Travis, Glenn Anderson CH2M Hill, Mark Fesler
Life Cycle	**Proposed Plan**	**ROD**	**ROD**	**Plan**
Scoping Meeting	NA	**01-24-07**	**180 days after Water Board Order Rescinded**	**NA**
Predraft to AF/Service Center	04-14-10	07-21-10	+ 360 days	12-30-08
AF/Service Center Comments Due	04-28-10	08-04-10	+ 420 days	01-16-09
Draft to Agencies	05-12-10	08-18-10	+ 480 days	02-06-09
Draft to RAB	05-12-10	08-18-10	+ 480 days	02-06-09
Agency Comments Due	07-07-10	10-13-10	+ 540 days	04-10-09
Response to Comments Meeting	**TBD**	TBD	**+ 555 days**	**04-22-09**
Agency Concurrence with Remedy	TBD	NA	+ 570 days	NA
Public Comment Period	TBD	NA	+ 615 to 645 days	NA
Public Meeting	**TBD**	**NA**	**+ 625 days**	**NA**
Response to Comments Due	TBD	TBD	+ 640 days	04-29-09
Draft Final Due	08-04-10	11-10-10	+ 640 days	06-11-09
Final Due	09-01-10	12-08-10	+ 700 days	07-13-09

PRIMARY DOCUMENTS		
	Comprehensive Site Evaluation Phase II **Travis, Glenn Anderson** **Sky Research, Ian Roberts**	**Focused Feasibility Study** **Travis, Glenn Anderson** **CH2M Hill, Loren Krook**
Life Cycle	**Work Plan**	**FFS**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	01-15-09	09-17-09
AF/Service Center Comments Due	02-12-09	10-01-09
Draft to Agencies	04-29-09	10-15-09
Draft to RAB	04-29-09	10-15-09
Agency Comments Due	05-29-09	12-17-09
Response to Comments Meeting	**TBD**	**01-20-10**
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	TBD	02-17-10
Draft Final Due	TBD	02-17-10
Final Due	TBD	03-17-10

SECONDARY DOCUMENTS				
Life Cycle	**Phases 1 and 2 Vapor Intrusion Report Travis, Glenn Anderson CH2M HILL, Leslie Royer**	**Phytostabilization Tech Memo Travis, Glenn Anderson Parsons, Bill Plaehn**	**SS016 RPO Work Plan Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick**	**2008 Annual GWTP RPO Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick**
Scoping Meeting	**NA**	**10-09-08**	**NA**	**NA**
Predraft to AF/Service Center	12-08-08	02-09-09	06-11-09	03-27-09
AF/Service Center Comments Due	12-15-08	02-16-09	06-25-09	04-02-09
Draft to Agencies	01-12-09	04-29-09	07-02-09	04-1309
Draft to RAB	01-12-09	04-29-09	07-02-09	04-13-09
Agency Comments Due	02-17-09	05-29-09	08-03-09	05-13-09
Response to Comments Meeting	**02-25-09**	**06-10-09**	08-13-09	**05-20-09**
Response to Comments Due	TBD*	06-22-09	08-27-09	06-10-09
Draft Final Due	NA	NA	NA	NA
Final Due	TBD*	06-22-09	08-27-09	06-25-09
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

*The Vapor Intrusion report will be rescheduled to incorporate the Phase 3 data and evaluation per discussion with EPA on 30 March.

SECONDARY DOCUMENTS				
Life Cycle	**Field Sampling Plan Travis AFB, Glenn Anderson CH2M HILL, Loren Krook**	**Natural Attenuation Assessment Report Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer**	**Passive Diffusion Bag (PDB) Tech Memo Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer**	**DP039 RPO Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	04-28-09	07-07-09	04-01-09	07-14-09
AF/Service Center Comments Due	05-12-09	07-21-09	04-03-09	07-28-09
Draft to Agencies	06-23-09	08-07-09	04-07-09	08-05-09
Draft to RAB	06-23-09	08-07-09	04-07-09	08-05-09
Agency Comments Due	07-22-09	09-08-09	05-05-09	09-03-09
Response to Comments Meeting	**08-05-09**	**09-23-09**	**NA**	**09-23-09**
Response to Comments Due	08-13-09	10-06-09	05-18-09	10-08-09
Draft Final Due	NA	NA	NA	NA
Final Due	08-13-09	10-06-09	06-03-09	10-08-09
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

SECONDARY DOCUMENTS					
Life Cycle	**SD036/SD037 RPO Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Tony Chakurian**	**ST018 POCO Remedial Action Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Gavan Heinrich**	**SITE ST032 POCO Evaluation Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Gavan Heinrich**	**ST027B Site Characterization Report** **Travis AFB, Lonnie Duke** **CH2M HILL, Gavan Heinrich**	**LF008 Rebound Test Technical Memorandum** **Travis AFB, Glenn Anderson** **CH2M HILL, Doug Berwick**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	07-03-09	07-10-09	05-12-09	08-14-09	07-15-09
AF/Service Center Comments Due	07-17-09	07-24-09	05-26-09	08-28-09	07-29-09
Draft to Agencies	07-31-09	08-07-09	06-09-09	09-14-09	08-12-09
Draft to RAB	07-31-09	08-07-09	06-09-09	09-14-09	08-12-09
Agency Comments Due	08-31-09	09-04-09	07-07-09	10-16-09	09-11-09
Response to Comments Meeting	**09-23-09**	**09-23-09**	**07-14-09**	**10-21-09**	**09-23-09**
Response to Comments Due	10-02-09	10-09-09	07-21-09	11-04-09	10-07-09
Draft Final Due	NA	NA	NA	NA	NA
Final Due	10-02-09	10-09-09	07-21-09	11-04-09	10-07-09
Public Comment Period	NA	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**	**NA**

INFORMATIONAL DOCUMENTS	
Life Cycle	**Quarterly Newsletters (Jul 2009)** **Travis, Glenn Anderson**
Scoping Meeting	**NA**
Predraft to AF/Service Center	NA
AF/Service Center Comments Due	NA
Draft to Agencies	06-10-2009
Draft to RAB	NA
Agency Comments Due	07-02-2009
Response to Comments Meeting	**TBD**
Response to Comments Due	07-06-2009
Draft Final Due	NA
Final Due	07-13-2009
Public Comment Period	NA
Public Meeting	**NA**

HISTORICAL		
Life Cycle	**Action Plan Travis, Glenn Anderson CH2M HILL, Chuck Elliott**	**SS014 Tier 1 POCO Evaluation Work Plan Travis AFB, Lonnie Duke CH2M HILL, Gavan Heinrich**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	11-21-08	03-18-09
AF/Service Center Comments Due	01-09-09	03-25-09
Draft to Agencies	01-28-09	04-01-09
Draft to RAB	01-28-09	04-01-09
Agency Comments Due	03-26-09	04-29-09
Response to Comments Meeting	**04-09-09**	**05-04-09**
Response to Comments Due	05-04-09	05-12-09
Draft Final Due	NA	NA
Final Due	05-04-09	05-12-09
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

South Base Boundary Groundwater Treatment Plant
Monthly Data Sheet

Report Number: 106 **Reporting Period: 1 – 31 May 2009** **Date Submitted: 16 June 2009**

This data sheet includes the following: results for the operation of the South Base Boundary Groundwater Treatment Plant (SBBGWTP), a summary of flow rates for the individual extraction wells, a brief description of any shutdowns or significant events related to the system, and a summary of analytical results for selected samples collected.

Operations Summary – May 2009

Operating Time: **696 hours** Percent Uptime: 100**%**

Electrical Power Usage: 16,080 kWh

Gallons Treated: **3.3 million gallons** Gallons Treated Since July 1998: **650 million gallons**

Volume Discharged to Union Creek: **3.3 million gallons**

VOC Mass Removed: **1.7 pounds**[a] VOC Mass Removed Since July 1998: **365 pounds**

Rolling 12-Month Cost per Pound of Mass Removed: $3,594[b]

Monthly Cost per Pound of Mass Removed: $3,184[bc]

[a] Calculated using May 2009 EPA Method SW8260B analytical results.
[b] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.
[c] Monthly cost per pound of mass removed has decreased due to a decrease in reporting costs.

Flow Rates

Average Groundwater Total Flow Rate: 71.1 gpm[a]

Average Flow Rate (gpm)[b]							
FT005				**SS029**		**SS030**	
EW01x05	3.0	EW736x05	3.9	EW01x29	1.0	EW01x30	6.5
EW02x05	2.1	EW737x05	Off line[c]	EW02x29	5.3	EW02x30	4.2
EW03x05	3.8	EW742x05	Off line[c]	EW03x29	Off line[d]	EW03x30	Off line[d]
EW731x05	Off line[c]	EW743x05	Off line[d]	EW04x29	8.8	EW04x30	Off line[e]
EW732x05	Off line[c]	EW744x05	Off line[c]	EW05x29	0.7	EW05x30	11.6
EW733x05	Off line[c]	EW745x05	Off line[c]	EW06x29	12.5	EW06x30	Dry[f]
EW734x05	Off line[e]	EW746x05	Off line[c]	EW07x29	17.5	EW711x30	Off line[e]
EW735x05	3.7						
FT005 Total:	**16.5**			**SS029 Total:**	**45.8**	**SS030 Total:**	**22.3**

[a] The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant.
[b] Extraction well flow rates are based on the average of the weekly readings.
[c] Extraction well was shut down for a rebound study in December 2007 based on the *Work Plan for RPO Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).
[d] Extraction well is off line due to low VOC concentrations.
[e] Extraction well was not operational during May 2009 due to malfunctioning equipment.
[f] Extraction well was not operational at time of measurement due to recharging well.

gpm—gallons per minute

Shutdown/Restart Summary

No shutdowns or restarts occurred in May 2009.

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 4 May 2009. Sample results are presented in Table 1. The total VOC concentration (62.8 µg/L) in the influent sample has decreased since the April 2009 sample (95.7 µg/L). TCE and cis-1,2-DCE were the only VOCs detected in the influent sample. 1,2-Dichloroethane, the indicator chemical for Site FT005, was not detected in the influent sample. VOCs were not detected in the effluent sample, indicating good treatment efficiency.

EW07x30 and EW04x30 were off line in May 2009 due to malfunctioning equipment. Both pumps exhibit symptoms typical of stripped splines (pumps have power but do not pump water). Solutions to get both pumps back online are currently being investigated. The pumps are expected to be back online in June 2009.

Optimization Activities

On 4 December 2007, nine extraction wells (EW731x05, EW732x05, EW733x05, EW737x05, and EW742x05 through EW746x05) were shut down for rebound testing in accordance with the *Work Plan for Remedial Process Optimization (RPO) Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007). These wells continue to remain off line.

No optimization activities were conducted in May 2009.

Table 1
Summary of Groundwater Analytical Data for May 2009 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	4 May 2009 (µg/L) Influent	4 May 2009 (µg/L) Effluent
Halogenated Volatile Organics					
Bromodichloromethane	5.0	0.17	0	ND	ND
Carbon Tetrachloride	0.5	0.18	0	ND	ND
Chloroform	5.0	0.17	0	ND	ND
Dibromochloromethane	5.0	0.17	0	ND	ND
1,1-Dichloroethane	5.0	0.24	0	ND	ND
1,2-Dichloroethane	0.5	0.22	0	ND	ND
1,1-Dichloroethene	5.0	0.24	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.23	0	3.8	ND
trans-1,2-Dichloroethene	5.0	0.54	0	ND	ND
Methylene Chloride	5.0	0.61	0	ND	ND
Tetrachloroethene	5.0	0.2	0	ND	ND
1,1,1-Trichloroethane	5.0	0.16	0	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND
Trichloroethene	5.0	1	0	59	ND
Vinyl Chloride	0.5	0.24	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.091	0	ND	ND
Ethylbenzene	5.0	0.15	0	ND	ND
Toluene	5.0	0.098	0	ND	ND
Xylenes	5.0	0.093 - 024	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	32	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	51.5	0	NM	ND
Total Suspended Solids (mg/L)	NE	2.5	0	3.5 J	NM

[a] In accordance with Appendix B of the *Travis AFB South Base Boundary Groundwater Treatment Plant Operations and Maintenance Manual* (CH2M HILL, 2004).

J = analyte concentration is considered an estimated value
mg/L = milligrams per liter
N/C = number of samples out of compliance with discharge limits
ND = not detected
NE = not established
NM = not measured
µg/L = micrograms per liter

Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 118 **Reporting Period: 1 – 31 May 2009** **Date Submitted: 16 June 2009**

This data sheet includes the following: results for the operation of the Central Groundwater Treatment Plant (CGWTP), West Treatment and Transfer Plant (WTTP), and thermal oxidation (ThOx) system (previously referred to as the two-phase extraction [TPE] system). A summary of flow rates for the CGWTP, WTTP, ThOx, and extraction wells EW01x16, EW02x16, EW03x16, EW605x16, and EW610x16; a brief description of any shutdowns or significant events related to the systems, and a summary of analytical results for selected samples collected are also included on this data sheet.

Operations Summary – May 2009

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	675 hours	**CGWTP:**	97.0%	**CGWTP:**	5,750 kWh
WTTP:	Water: 660 hours	**WTTP:**	Water: 94.8%	**WTTP:**	17,423 kWh
	Vapor: 617 hours		Vapor: 88.6%		
ThOx:	549 hours	**ThOx:**	78.9%	**ThOx:**	7,858 kWh

ThOx: Natural Gas Usage: 2,268 therms

Gallons Treated: **2.7 million gallons**

Gallons Treated Since January 1996: **413 million gallons**

VOC Mass Removed:

9.2 lbs (groundwater only)[a]

6.1 lbs (vapor only)[b]

VOC Mass Removed Since January 1996:

2,442 lbs from groundwater

8,631 lbs from vapor

UV/Ox DRE: 94.2%

ThOx DRE: 99.7%

Rolling 12-Month Cost per Pound of Mass Removed: $689[c]

Monthly Cost per Pound of Mass Removed: $735[cd]

[a] Calculated using May 2009 EPA Method SW8260B analytical results.
[b] Total VOC vapor mass removed was calculated using March 2009 EPA Method TO-14 analytical results for the ThOx system and March 2009 EPA Method TO-14 analytical results for the WTTP SVE system.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and electric and natural gas costs related to operation of the system.
[d] Lower monthly cost per pound of mass removed is due to a decrease in reporting labor.

DRE = destruction removal efficiency UV/Ox = ultraviolet oxidation

Flow Rates

Average Groundwater Flow Rate: **63.0 gpm**[a]

Location	Average Flow Rate	
	Groundwater (gpm)[b]	Soil Vapor (scfm)
EW01x16	23.7	NA
EW02x16	6.8	NA
EW03x16	0.9	NA[c]
EW605x16	13.1	NA[c]
EW610x16	2.5	NA[c]
TPE-W	NA	NA[c]
WTTP	19.6[d]	118
ThOx	0.8[d]	52.7

[a] as measured by the effluent discharge to the storm drain divided by the operating time during the month.
[b] as measured by extraction well totalizer divided by the operating time.
[c] soil vapor was extracted from this well; however, the flow rates are not measured at individual wells at SS016.
[d] as measured by the effluent groundwater pumped to the CGWTP divided by the operating time.

gpm = gallons per minute
NA = not applicable/not available
scfm = standard cubic feet per minute

Flow Rates

Average Flow Rate from the WIOU, DP039, and LF008 Extraction Wells (gpm)[a]							
SD037/ SD043				SD033/SD034/ DP039		LF008/SD036	
EW599x37	1.5	EW705x37	1.0	EW501x33	3.2	EW719x08	Off line[c]
EW700x37	4.6	EW706x37	4.1	EW503x33	0.9	EW720x08	Off line[c]
EW701x37	1.5	EW707x37	0.9	EW01x34	0.2	EW721x08	Off line[c]
EW702x37	0.5	EW510x37	4.1	EW03x34	0.3	EW593x36	2.4
EW703x37	0.4	EW511x37	1.9	EW563x39	Off line[b]	EW594x36	3.2
EW704x37	2.0	EW555x43	0.1	EW782x39	Off line[b]	EW595x36	0.5

gpm—gallons per minute

[a] Extraction well flow rates are based on the average of the weekly readings.
[b] Extraction wells were shut off to facilitate the Bioreactor Sustainability Study at Site DP039.
[c] Extraction wells were shut off to support a rebound study at Site LF008.

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater):					
CGWTP	6 May 2009	11:30	6 May 2009	15:30	CGWTP UV/Ox bypass installation
CGWTP	14 May 2009	08:30	14 May 2009	12:00	CGWTP UV/Ox bypass testing
CGWTP	27 May 2009	08:00			CGWTP carbon changeout
WTTP (Groundwater):					
WTTP	6 May 2009	11:30	6 May 2009	15:30	CGWTP UV/Ox bypass installation
WTTP	14 May 2009	08:30	14 May 2009	12:00	CGWTP UV/Ox bypass testing
WTTP	27 May 2009	08:00			CGWTP carbon changeout
WTTP (Vapor):					
WTTP	30 April 2009	15:00	1 May 2009	13:30	WTTP Power Surge/Voltage Spike
WTTP	6 May 2009	11:30	6 May 2009	15:30	CGWTP UV/Ox bypass installation
WTTP	14 May 2009	08:30	14 May 2009	12:00	CGWTP UV/Ox bypass testing
WTTP	17 May 2009	15:00	18 May 2009	08:30	WTTP Power Surge/Voltage Spike
WTTP	27 May 2009	08:00			CGWTP carbon changeout
ThOx (Vapor):					
ThOx	6 May 2009	11:30	6 May 2009	15:30	CGWTP UV/Ox bypass installation
ThOx	14 May 2009	08:30	14 May 2009	12:00	CGWTP UV/Ox bypass testing
ThOx	19 May 2009	04:30	19 May 2009	10:30	Natural Gas low pressure alarm
ThOx	NA	NA	26 May 2009	15:30	Burner flame out alarm

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
ThOx	26 May 2009	NA	Not restarted in May	NA	Burner flame out alarm
ThOx	27 May 2009	08:00	Not restarted in May	NA	CGWTP carbon changeout

CGWTP = Central Groundwater Treatment Plant
WTTP = West Treatment and Transfer Plant
ThOx = Thermal Oxidation System

NA = Not available/Not applicable

Summary of O&M Activities

Monthly groundwater sampling at the CGWTP was performed on 4 May 2009. Groundwater sample results are summarized in Table 1. The total VOC concentration (412.6 µg/L) in the May 2009 CGWTP influent groundwater sample has decreased slightly since the April 2009 event, but remains nearly double that of the influent sample collected in March 2009 (230 µg/L). TCE, cis-1,2-DCE, trans-1,2-DCE, PCE, 1,1-DCE, 1,3-dichlorobenzene (J flagged), and vinyl chloride (J-flagged) were detected in the system influent. Cis-1,2-DCE and TCE were detected after treatment by the UV/Ox portion of the treatment plant. These two chemicals were also detected in the system effluent groundwater samples following treatment by granular activated carbon (GAC) at concentrations less than their respective effluent limits. The detections in these samples may be attributed to desorption from the GAC.

The WTTP continued to experience system downtime due to power surges or temporary power losses, but the frequency of these power fluctuations appears to have largely subsided. System operation will continue to be monitored in the event of continued power fluctuations. Overall system stability and run time in May 2009 improved approximately 10% compared to April 2009.

Other maintenance activities performed in May 2009 included a carbon change out at the CGWTP. This change out involved replacing a total of 40,000 pounds of liquid-phase GAC. Upon completion of the change out, the CGWTP remained off line in order to let the fresh carbon soak and saturate. Both the WTTP and the ThOx systems were taken off line as a result of the CGWTP being off line. All three systems will be restarted in June 2009.

During carbon change out activities, a rupture occurred in part of the system piping used for backflushing the carbon. The location of the rupture was the access port of a swing check valve. Approximately thirty (30) to forty (40) gallons of clean, treated water were released prior to isolating the breach. All of the clean water from the spill was contained within the system containment berm. The valve had not been in use since the swing check fitting was not located inside the fitting. The damaged section of pipe was replaced with a straight section of 6” Sch. 80 PVC.

Optimization Activities

In conjunction with the carbon change out at the CGWTP, the UV/Ox portion of the treatment system was configured to be taken off line. Alterations to the SCADA were implemented in advance of the carbon change out in order to seamlessly bypass the UV/Ox system once the carbon had been changed out. When the CGWTP is brought back online in June 2009, the UV/Ox portion of the treatment system will be bypassed in accordance with the *Draft 2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant (April 2009)*.

In addition to the UV/Ox, the three (3) 2,000-pound liquid phase GAC vessels will also be bypassed as part of the CGWTP optimization effort. Once the CGWTP is brought back online in June 2009, all of the process water will be treated by only the two 20,000-pound GAC vessels.

Table 1
Summary of Groundwater Analytical Data for May 2009 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	4 May 2009 (µg/L) Influent	After UV/OX	After Carbon 1 Effluent	After Carbon 2 Effluent	After Carbon 3 Effluent	System Effluent
Halogenated Volatile Organics									
Bromodichloromethane	5.0	0.18 – 0.36	0	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.22 – 0.44	0	ND	ND	ND	ND	ND	ND
Chloroform	5.0	0.17 – 0.34	0	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.16 – 0.32	0	ND	ND	ND	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.13 – 0.26	0	0.22 J	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.10 – 0.20	0	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5.0	0.19 – 0.38	0	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.22 – 0.44	0	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.24 – 0.48	0	0.69	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.16 – 0.32	0	72.8	4.6	1.8	0.76 J	0.48 J	ND
trans-1,2-Dichloroethene	5.0	0.21 – 0.42	0	2.8	ND	ND	ND	ND	ND
Methylene Chloride	5.0	0.27 – 0.54	0	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	0.16 – 0.32	0	0.67	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.20 – 0.40	0	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.14 – 0.28	0	ND	ND	ND	ND	ND	ND
Trichloroethene	5.0	0.50 – 1.0	0	335	19.2	4	2	1.7	1.3
Vinyl Chloride	0.5	0.19 – 0.38	0	0.4 J	ND	ND	ND	ND	ND
Non-Halogenated Volatile Organics									
Benzene	1.0	0.12 – 0.24	0	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.0	0.10 – 0.20	0	ND	ND	ND	ND	ND	ND
Toluene	5.0	0.14 – 0.28	0	ND	ND	ND	ND	ND	ND
Total Xylenes	5.0	0.10 - 0.42	0	ND	ND	ND	ND	ND	ND

[a] In accordance with Appendix G of the *Travis AFB Central Groundwater Treatment Plant Operations and Maintenance Manual* (URS Group, Inc., 2002).

J = analyte concentration is considered an estimated value
N/C = number of samples out of compliance with discharge limits
ND = not detected
µg/L = micrograms per liter

Site SS016 Work Plan

Oil Spill Area (OSA) Investigation and Remedial Process Optimization

Travis Air Force Base, California

Site SS016 OSA Description

- OSA located in the northwest corner of Site SS016
- Contaminant plume of trichloroethene (TCE) begins in OSA and travels southeast beneath active runway
- Existing remedial processes in the area include both groundwater and soil vapor extraction and treatment

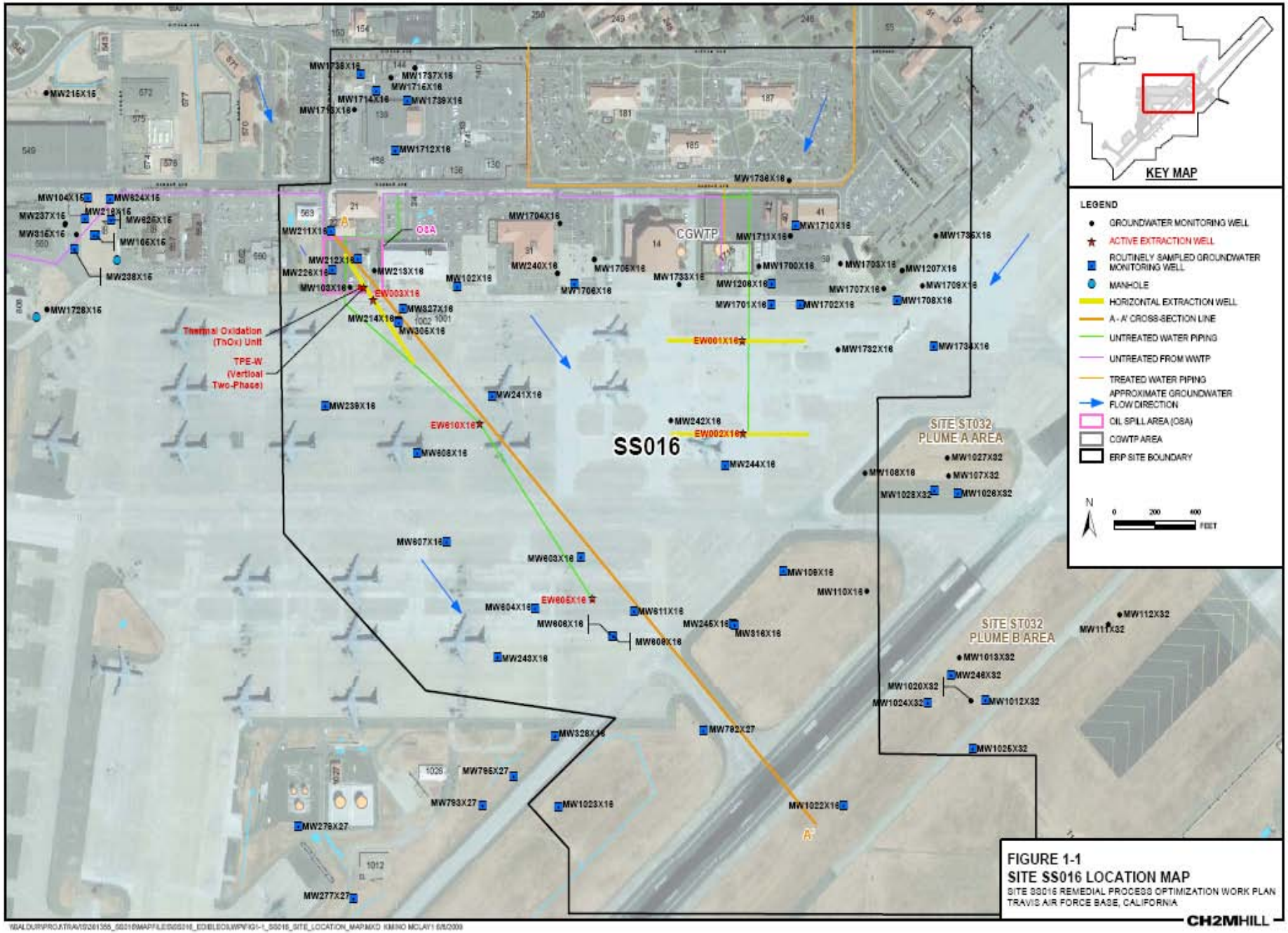

FIGURE 1-1
SITE SS016 LOCATION MAP
SITE SS016 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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Existing Remediation in the OSA

- Groundwater extraction from EW003x16 treated at Central Groundwater Treatment Plant (CGWTP)
- Soil vapor extraction from EW003x16 and Two Phase Extraction Well (TPE-W) treated at Thermal Oxidation (ThOx) unit

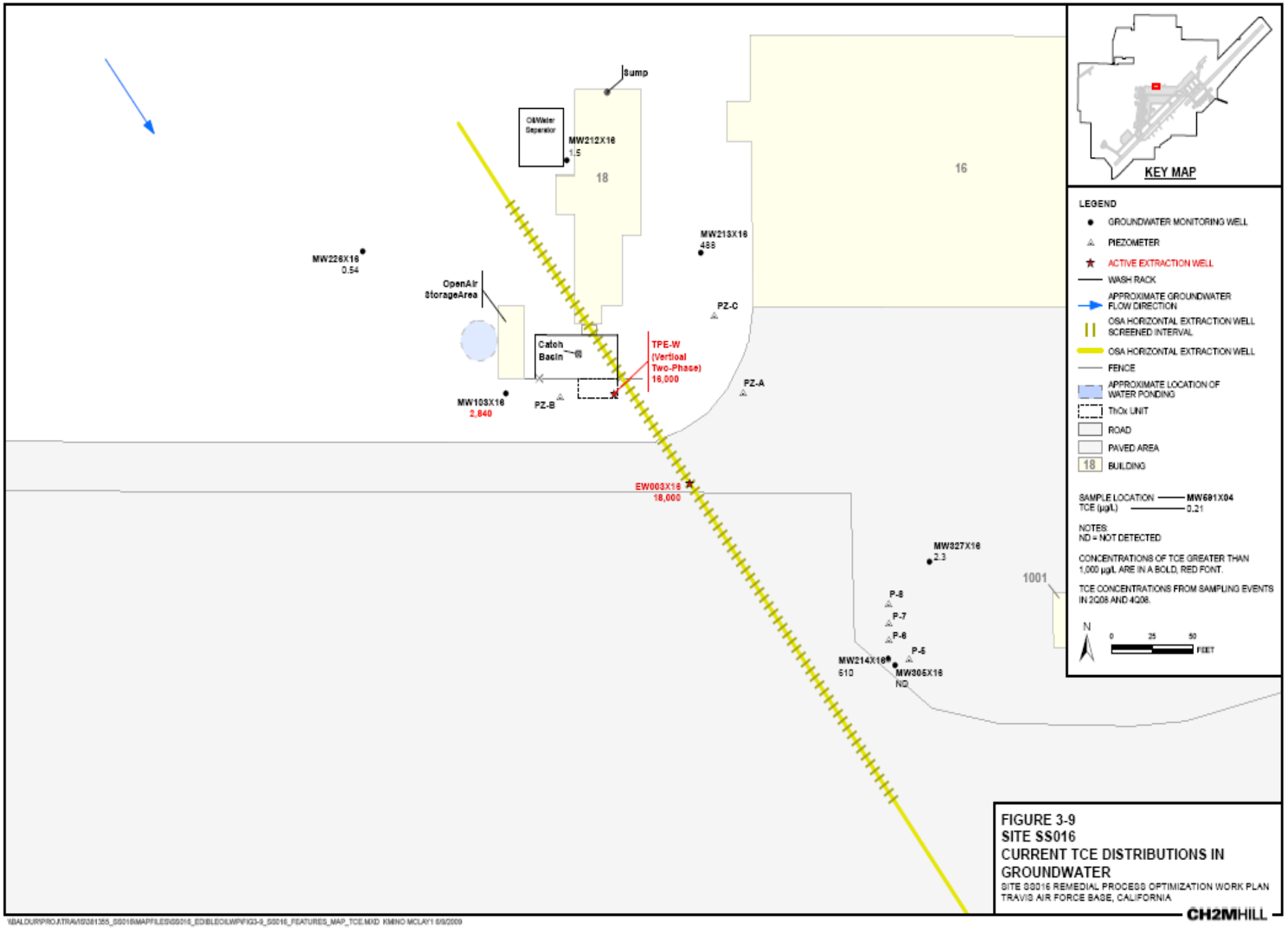

FIGURE 3-9
SITE SS016
CURRENT TCE DISTRIBUTIONS IN GROUNDWATER
SITE SS016 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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Effectiveness of Current Remediation Efforts

- Interim Remedial Action Objective (IRAO) identified as source control
- Groundwater extraction system designed to capture volatile organic compound (VOC) concentrations greater than 1,000 µg/L
- 5-year reviews in both 2003 and 2008 concluded that the source control objective for Site SS016 was being met
- TCE concentrations in the OSA remain as high as 18,000 µg/L in groundwater (fourth quarter 2008)

Historical Investigations

- Building 18 identified as former Cleaning and Degreasing Shop
- Historical investigations identified possible sources
  - Oil water separator (OWS) on northwest corner of Building 18
  - Runoff collection point near southwest corner of Building 18
  - Chemical storage locations in the northern and northeastern parts of Building 18

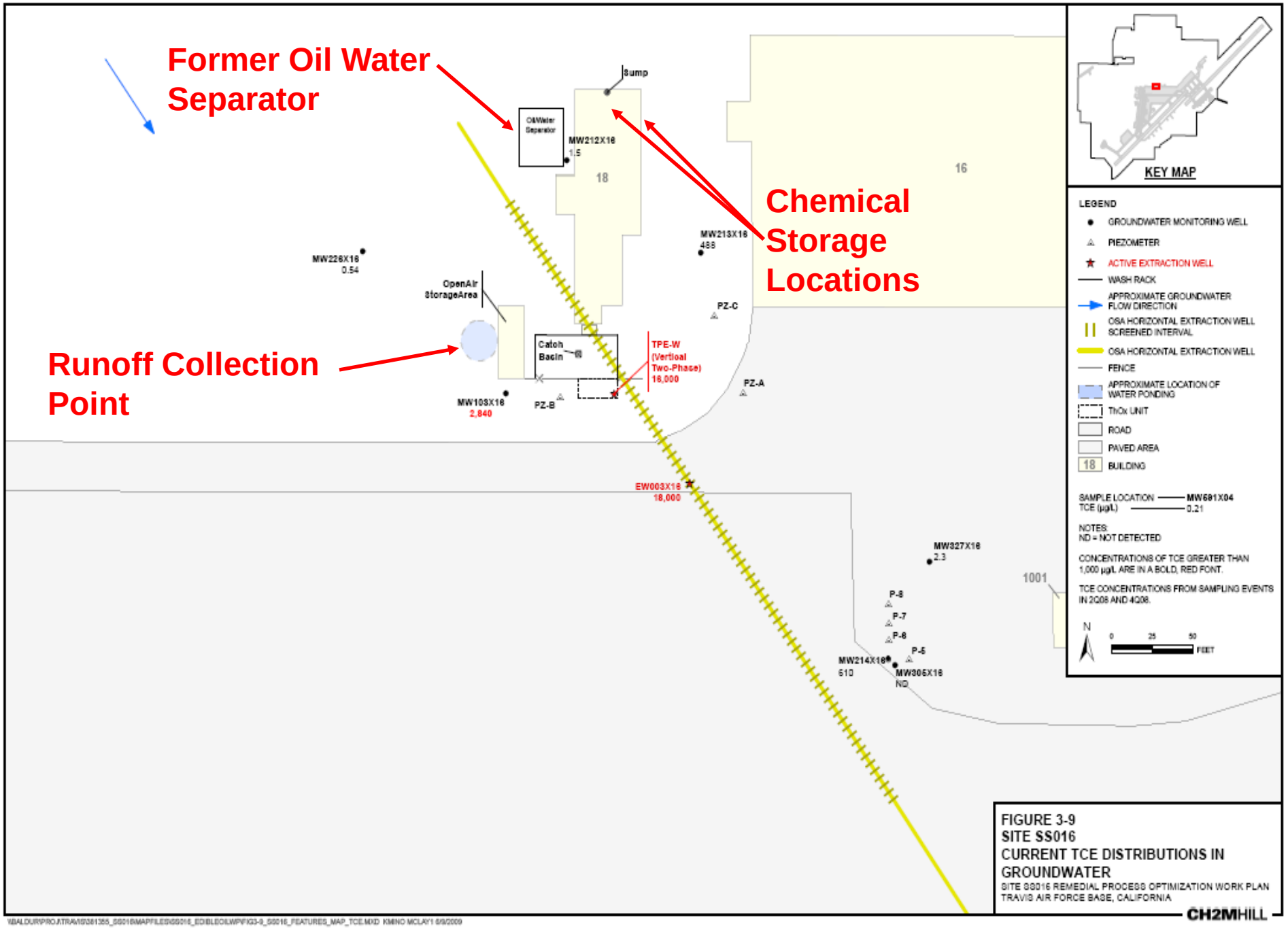

FIGURE 3-9
SITE SS016
CURRENT TCE DISTRIBUTIONS IN GROUNDWATER
SITE SS016 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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Contamination Profile

- Two more possible source areas discovered during work plan investigation
  - Sump located underneath false floor in north part of Building 18
  - Catch Basin south of Building 18 where wash rack currently stands

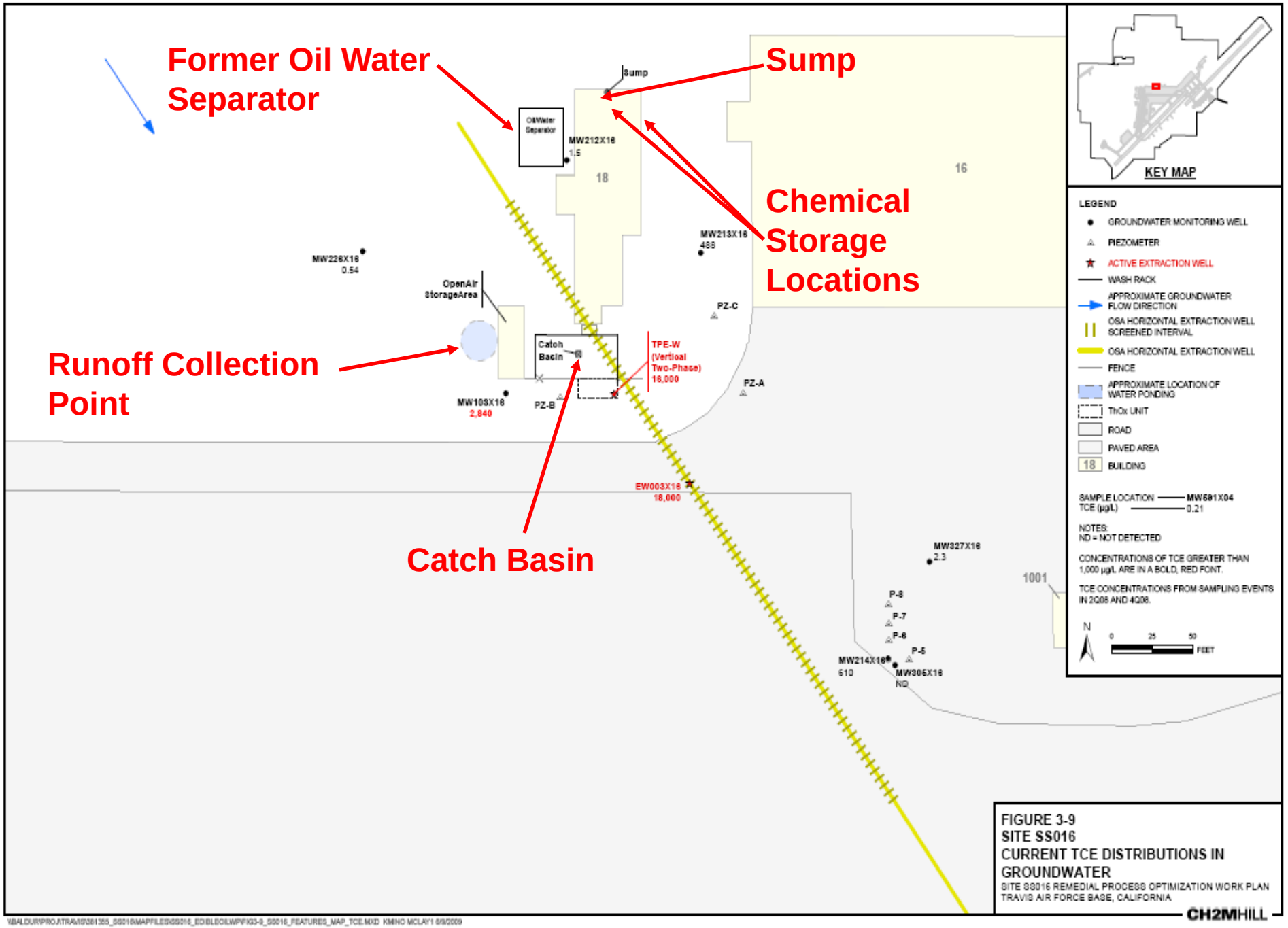

FIGURE 3-9
SITE SS016
CURRENT TCE DISTRIBUTIONS IN GROUNDWATER
SITE SS016 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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CLOSED

Work Plan Phased Approach

- Phase 1 – Site characterization and plume delineation
  - Define the TCE plume to 1,000 µg/L
  - Confirm source areas
- Phase 2 – Remediation Optimization
  - Utilize findings during characterization activities to better optimize existing remediation efforts

Emulsified Vegetable Oil Injection

- Emulsified vegetable oil enhances reductive dechlorination by stimulating anaerobic bacterial growth
- Relatively long lasting; estimated 5-year life from one injection event
- Direct remediation aimed at reducing source mass

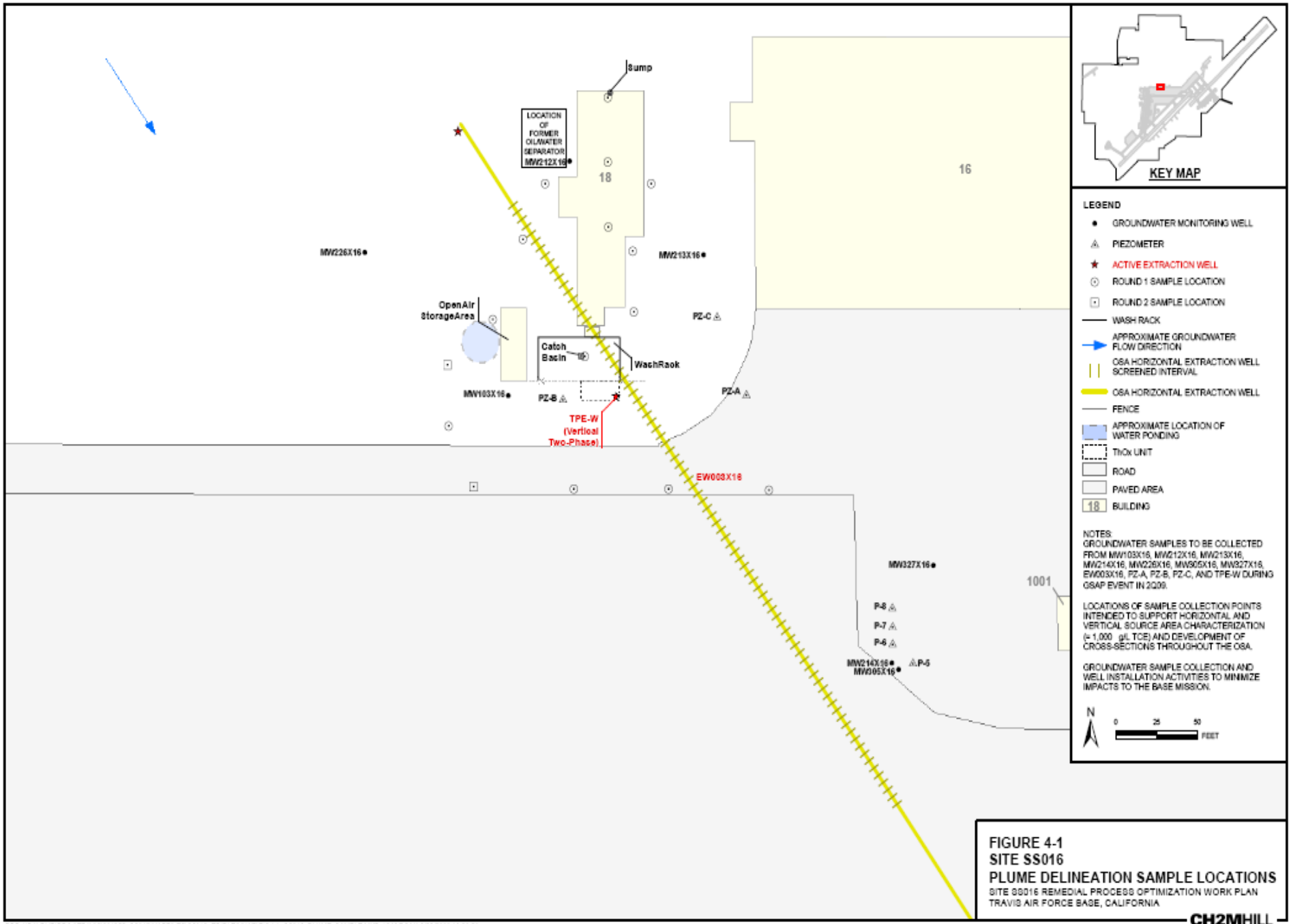

FIGURE 4-1
SITE SS016
PLUME DELINEATION SAMPLE LOCATIONS
SITE SS016 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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RDD \\BALDURPROJ\TRAV\69381305_SS016\MAPFILES\SS016_EDI\BLD\MXD\FIG4-1_SS016_PLUME_SAMPLE.MXD KMORGAN 6/22/2009 10:38:29

Optimization Implementation and Reporting

- Triad Process (Continual input from Triad team at crucial points during both phases)
- Technical memo identifying locations of EVO injection points and monitoring wells
- EVO injection completion report
- System performance monitoring in GSAP reports

Travis AFB
Groundwater Program

Management Overview Briefing

RPM Meeting

June 24, 2009

Completed Documents & Field Work

Documents

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation WP
- ST027B Site Characterization WP
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo

Field Work

- ST027B Gore Sorber Survey – Phase 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization

In-Progress Documents & Field Work

Documents

- RD/RA QAPP Update (Draft-Final)
- Phytostabilization Demonstration Tech Memo (Draft)
- Comprehensive Site Evaluation Phase II (Draft)
- Field Sampling Plan (FSP) (Pre-Draft)
- ST032 POCO Evaluation Work Plan (Draft)
- SS016 RPO Work Plan (Pre-Draft)

Field Work

- LF008 Rebound Study
- GSAP Annual Sampling Event
- SS030 Site Characterization

Upcoming Documents & Field Work

Documents

• SD036/SD037 RPO Work Plan	July
• ST018 RA Work Plan	August
• Natural Attenuation Assessment Report (NAAR)	August
• DP039 RPO Work Plan	August
• Model QAPP Update	July/August
• ST027B Site Characterization Report	Sept
• Focused Feasibility Study	Oct
• Phases 1, 2 and 3 Vapor Intrusion Report	TBD

Field Work

• ST032 POCO Sampling	July
• SS016 Site Characterization	July
• LF007C Site Characterization	TBD
• SD036/SD037 Site Characterization	August
• SD001/SD033 Sediment Remedial Actions	August