Final

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

28 June 2006, 0930 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Managers (RPM) meeting held on 28 June 2006 at 0930 in the Base Civil Engineering Conference Room, Building 570, Travis AFB, California. Attendees included:

• Mark Smith	Travis AFB
• Glenn Anderson	Travis AFB
• Wilford Day	Travis AFB
• Tom Sreenivasan	Travis AFB
• Jose Salcedo	Department of Toxic Substances Control (DTSC)
• Adriana Constantinescu	California Regional Water Quality Control Board (CRWQCB)
• Carol Kontonickas	URS
• Adam Harvey	URS
• John McGuire	Shaw Engineering and Infrastructure (Shaw E&I)
• Mike Wray	CH2M Hill
• Allen Mason	EQM

Handouts distributed throughout the meeting included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting, Teleconference, and Document Schedules
• Attachment 3	SBBGWTP Monthly Data Sheet (May 2006)
• Attachment 4	CGWTP Monthly Data Sheet (May 2006)
• Attachment 5	NGWTP Monthly Data Sheet (May 2006)

1. ADMINISTRATIVE

A. Introduction

B. Previous Meeting Minutes

The May 2006 RPM meetings minutes were approved and finalized.

C. Master Meeting and Document Schedule

The revised Travis AFB Master Meeting, Teleconference, and Document Schedules were distributed (see Attachment 2).

Travis AFB Monthly Meeting Schedule

— Page 1, Monthly RPM Meetings scheduled for June and July were changed to 28 June 2006 and 26 July 2006.

— Additional changes were agreed upon. The new dates are as follows:

Suppliers Teleconference	RPM Meeting	RPM Teleconference
08-15-2006	08-16-2006	08-30-2006
09-26-2006	09-27-2006	09-13-2006
10-24-2006	10-25-2006	10-11-2006 @ 1:30 p.m.

Note: Ms. Constantinescu stated that she would not be available for 3 weeks in September 2006.

Travis AFB Master Document Schedule

— Page 3, the Remedial Designs schedules for SD001, SD033, FT003, FT004, FT005, and LF007 were established.

— Page 1, North, East, West Industrial Operable Unit (NEWIOU) Soil/Sediment/Surface Water Record of Decision (ROD) schedule was placed in the historical section.

2. OPERABLE UNIT UPDATE

A. NEWIOU Soil, Sediment, and Surface Water Record of Decision

1. ROD Status and Document Schedule

Mr. Anderson distributed the electronic copies of the Record of Decision to the agencies.

Draft Final FT003 Remedial Design Review

Mr. Anderson stated that the remedial design for FT003 (Fire Training Area 2) was developed and submitted as a draft final (September 2004). Mr. Anderson previously submitted an electronic copy of the draft final remedial design to the agencies for their review and concurrence. Mr. Anderson asked the agencies if they had had an opportunity to review the document.

Mr. Salcedo and Ms. Constantinescu stated that they will submit their feedback to Mr. Anderson.

3. CURRENT PROJECTS

A. South Base Boundary Groundwater Treatment Plant

Mr. Sreenivasan reported that the South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 99.9% uptime and 2.6 million gallons of groundwater was treated during the month of May 2006. The average flow rate for the SBBGWTP was 58.8 gallons per minute (gpm).The total mass of volatile organic compounds (VOCs) removed since the start up of the system is 290 pounds (see Attachment 3).

No optimization activities were planned or performed during May 2006.

B. Central Groundwater Treatment Plant

Mr. Sreenivasan reported that the Central Groundwater Treatment Plant (CGWTP) performed at 98.9% uptime with approximately 2.1 million gallons of groundwater extracted and treated during the month of May 2006. The average flow rate for the CGWTP was 70.7 gpm. Approximately 251 pounds of VOCs (of which 240 pounds were from vapor) were removed in May 2006. The total mass of VOCs removed since the start up of the system is 10,357 pounds. (see Attachment 4).

The thermal oxidation (Th/Ox) system continued to treat vapor from the 2-phase well as part of the SS016 focused vapor extraction activities.

No optimization activities were planned or performed during May 2006.

C. North Groundwater Treatment Plant

Mr. Sreenivasan reported that the North Groundwater Treatment Plant (NGWTP) performed at 82.4% uptime with approximately 600,000 gallons of groundwater extracted and treated during the month of May 2006. The average flow for the NGWTP was 16.4 gpm. Less than a pound of VOC was removed during May 2006. The total mass of VOCs removed since the start up of the system is 5,410 pounds (see Attachment 5).

No optimization activities were planned or performed during May 2006.

All the treated groundwater from the plant was sent to the duck pond for beneficial use.

D. Community Involvement Plan Update

Mr. Anderson stated that the Community Involvement Plan (CIP) has been updated and was to be reviewed by DTSC. Mr. Salcedo requested additional time for the review.

Ms. Constantinescu stated that she would not be commenting on the CIP.

E. July Guardian Review

Mr. Anderson stated that the July Guardian was submitted last week for review. The main topic is on the Soil ROD.

Note: The next Restoration Advisory Board meeting will be on 26 October 2006.

F. DP039 Field Work

Mr. Anderson distributed a map of the DP039 site. He explained that the purpose of the DP039 field work is to optimize the existing dual phase extraction system. Additional characterization of the site will take place by installing a borehole to get the vertical profile.

The figure showed the cross section of the subsurface geology within the source area and the monitoring well located near the phytostabilization area. Travis AFB will determine if contamination is going across the root zone.

Ms. Constantinescu asked if the historical data will be used to produce the cross section. Mr. Anderson stated that the data from the WABOU remedial investigation is the starting point, which included two soil borings that went down to bedrock. Travis AFB plans to drill four additional soil borings to bedrock to add more detail to the cross section.

Ms. Constantinescu recommended that two separate figures be used with the same geological cross section and same data. However, one figure will show the historical data and one with the 2006 data. This will give all of the results.

Mr. Smith commented that this project is nearing the end of its period of performance and the Air Force is attempting to get the best use of the remaining funds. Timely regulatory input is crucial to the success of this project.

Ms. Constantinescu stated that Mr. Lucey also had commented (Comment #7) on having the Air Force conduct pulsed pumping and she concurs with that proposal – studies have indicated success.

Mr. Anderson stated that he is mainly concerned with comments that directly address the DP039 Soil Vapor Extraction System Evaluation report; however, he will also address Mr. Lucey's additional comments.

4. PROGRAM ISSUES UPDATE

A. Administrative

Mr. Smith stated that he attended a meeting at Scott AFB where discussions took place concerning programming and funding. Travis AFB's request for outyear funds was approved and the Travis AFB restoration program will be fully funded.

Mr. Salcedo asked if there has been any progression on the Marcus Johnson issue. Mr. Smith stated that there has been no more contact from Mr. Johnson since the

site visit. Mr. Smith stated that he has requested Mr. Stopher to monitor the west branch of Union Creek on a regular basis during the summer to see if water is present, indicating that the treatment plants are not the only source of water in the creek during the dry season.

ACTION ITEM LIST
(Action Items Opened)

AGENDA	RESPONSIBLE	ACTION ITEM	DUE DATE	STATUS
1.	Agencies	To provide comments on Basewide Groundwater ROD Schedule.	Ongoing.	
2.	U.S. EPA	To review the status of the Potrero Hills Water Board Order rescission date mentioned in a groundwater report from one of the responsible parties for comments.	Ongoing.	Mr. Lucey will send the coversheet of the questioned report to the Water Board representative for further investigation.

ATTACHMENT 1

TRAVIS AIR FORCE BASE ERP
REMEDIAL PROGRAM MANAGER'S MEETING
28 June, 9:30 A.M.
(Building 570, Main Conference Room)
AGENDA

1. ADMINISTRATIVE

   A. PREVIOUS MEETING MINUTES
   B. ACTION ITEM REVIEW (ALL)
   C. MEETING DATES AND MASTER DOCUMENT SCHEDULE REVIEW

2. OPERABLE UNIT UPDATE

   A. NEWIOU ROD (GLENN)
      (1). ROD STATUS AND DOCUMENT SCHEDULE
      (2). DRAFT FINAL FT003 REMEDIAL DESIGN REVIEW

3. CURRENT PROJECTS

   A. SOUTH BASE BOUNDARY GROUNDWATER TREATMENT PLANT
      (1). OPERATIONAL STATUS (TOM)
   B. CENTRAL GROUNDWATER TREATMENT PLANT
      (1). OPERATIONAL STATUS (TOM)
   C. NORTH GROUNDWATER TREATMENT PLANT
      (1). OPERATIONAL STATUS (TOM)
   D. COMMUNITY INVOLVEMENT PLAN UPDATE (GLENN)
   E. JULY GUARDIAN REVIEW
   F. DP039 FIELD WORK REPORT (GLENN)

4. PROGRAM/ISSUES/UPDATE
   A. RPM MEETING SCHEDULE

5. NEW ACTION ITEM REVIEW

Travis Air Force Base
Remedial Program Managers Meeting
Sign-In Sheet

Please initial or print name if necessary

June 28, ~~May 10~~, 2006

Initial	Name	Organization	Email Address	Telephone #
	Mark Smith	Travis AFB	marksmith2@travis.af.mil	(707) 424-3062
	Glenn Anderson	Travis AFB	glenn.anderson@travis.af.mil	(707) 424-4359
	Wilford Day	Travis AFB	wilford.day@travis.af.mil	(707) 424-0452
	~~Dale Malsberger~~	~~Travis AFB~~	~~dale.malsberger@travis.af.mil~~	~~(707) 424-7520~~
	Tom Sreenivasan	Travis AFB	tom.sreenivasan@travis.af.mil	(707) 424-3172
	Gregory Parrott	Travis AFB	gregory.parrott@travis.af.mil	(707) 424-1506
	John Lucey	U.S. EPA	lucey.john@epa.gov	(415) 972-3145
	Jose Salcedo	DTSC	jsalcedo@dtsc.ca.gov	(916) 255-3791
	Adriana Constantinescu	CRWQCB	aconstantinescu@waterboards.ca.gov	(510) 622-2353
	John McGuire	Shaw E&I	john.mcguire@shawgrp.com	(925) 288-2220
	Adam Harvey	URS	adam_harvey@urscorp.com	(916) 679-2002
	Mike Wray	CH2M Hill	mwray@ch2m.com	(916) 286-0243
	~~Steve Mitchell~~	~~EQM~~	~~smitchell@eqm.com~~	~~(530) 409-6218~~
	Carol Kontonickas	URS	Carol_Kontonickas@urscorp.com	(916) 679-2309
	Alan Mason	EQM	amason@eqm.com	(916) 203-2888

ATTACHMENT 2

Travis AFB Annual Meeting and Teleconference Schedule

Suppliers Teleconference (8:30 a.m. - 10:00 a.m.)	Monthly RPM Meeting (Begins at 9:30 a.m.)	Monthly RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 6:30 p.m.)
1-10-06	1-11-06	1-25-06	*01-26-06
2-7-06	2-8-06	2-22-06	—
~~3-7-06~~	**3-15-06	3-22-06	—
4-18-06	4-19-06	4-26-06	4-27-06
5-9-06	5-10-06	5-24-06	—
6-27-06	6-28-06	NA	—
7-25-06	7-26-06	NA	—
8-8-06	8-9-06	8-23-06	—
9-12-06	9-13-06	9-27-06	—
10-10-06	10-11-06	10-25-06	10-26-06
—	—	11-15-06	—
12-12-06	12-13-06	—	—

* Public Meeting for the NEWIOU Soil Record of Decision

** NEWIOU ROD Response to Comments Meeting (Actual date held was 3/22/06 with follow on comments from EPA on 3/27/06 and 3/30/06)

Travis AFB Master Document Schedule

	PRIMARY DOCUMENTS					
	Remedial Design Travis, Glenn Anderson; URS, Adam Harvey	**Remedial Design Travis, Glenn Anderson; URS, Adam Harvey**	**Remedial Design Travis, Glenn Anderson; URS, Adam Harvey**	**Remedial Design Travis, Glenn Anderson; URS, Adam Harvey**	**Remedial Design Travis, Glenn Anderson; URS, Adam Harvey**	**Remedial Design Travis, Glenn Anderson; CH2M Hill, Mike Wray**
Life Cycle	**SD001**	**SD033**	**FT003**	**FT004**	**FT005**	**LF007**
Scoping Meeting	**8-23-06**	**8-23-06**	**5-07-04**	**5-10-06**	**6-01-06**	**9-28-06**
Predraft to AF/Service Center	9-20-06	9-20-06	5-28-04	5-31-06	7-03-06	10-30-06
AF/Service Center Comments Due	10-18-06	10-18-06	6-25-04	6-20-06	7-31-06	11-27-06
Draft to Agencies	11-01-06	11-01-06	7-16-04	7-20-06	9-06-06	1-02-07
Draft to RAB	11-01-06	11-01-06	7-16-04	7-20-06	9-06-06	1-02-07
Agency Comments Due	12-06-06	12-06-06	8-16-04	8-18-06	10-06-06	2-01-07
Response to Comments Meeting	**12-13-06**	**12-13-06**	**8-23-04**	**8-23-06**	**10-18-06**	**2-7-07**
Response to Comments Due	01-24-07	01-24-07	9-29-04	9-18-06	11-03-06	2-23-07
Draft Final Due	01-24-07	01-24-07	9-29-04	9-18-06	11-03-06	2-23-07
Final Due	02-21-07	02-21-07	7-26-06*	10-18-06	12-06-06	3-23-07
Public Comment Period	NA	NA	NA	NA	NA	NA
Public Meeting	NA	NA	NA	NA	NA	NA

* The FT003 Soil Remedial Design Package was produced in 2004 and finalized after the NEWIOU Soil, Sediment and Surface Water ROD was signed.

Travis AFB Master Document Schedule
(Continued)

	PRIMARY DOCUMENTS	
	Basewide Travis, Glenn Anderson	**Potrero Hills Annex Travis, Glenn Anderson**
Life Cycle	**Groundwater ROD**	**Potrero Hills ROD**
Scoping Meeting	**1-30-07**	**180 days after Order Rescinded**
Predraft to AF/Service Center	2-01-09	+ 360 days
AF/Service Center Comments Due	4-01-09	+ 420 days
Draft to Agencies	6-15-09	+ 480 days
Draft to RAB	6-15-09	+ 480 days
Agency Comments Due	8-15-09	+ 540 days
Response to Comments Meeting	**9-01-09**	**+ 555 days**
Agency Concurrence with Remedy	9-15-09	+ 570 days
Draft Proposed Plan to Agencies	12-01-09	+ 600 days
Issue Proposed Plan	1-15-10	+ 615 days
Public Comment Period	1-15-10 to 2-15-10	+ 615 to 645 days
Public Meeting	**1-28-10**	**+ 625 days**
Response to Comments Due	3-01-10	+ 640 days
Draft Final Due	3-01-10	+ 640 days
Final Due	5-01-10	+ 700 days

Travis AFB Master Document Schedule
(Continued)

SECONDARY DOCUMENTS	
Life Cycle	**2006 GSAP Annual Report Travis, Tom Sreenivasan; CH2M Hill, Mike Wray**
Scoping Meeting	**NA**
Predraft to AF/Service Center	09-29-06
AF/Service Center Comments Due	10-30-06
Draft to Agencies	11-13-06
Draft to RAB	11-13-06
Agency Comments Due	01-15-07
Response to Comments Meeting	**02-14-07**
Response to Comments Due	02-28-07
Draft Final Due	02-28-07
Final Due	03-30-07
Public Comment Period	NA
Public Meeting	NA

Travis AFB Master Document Schedule
(Continued)

INFORMATIONAL DOCUMENTS		
Life Cycle	**Quarterly Newsletters (for the 27 July 2006 RAB) Travis, Mark Smith**	**DP039 Field Report Travis, Glenn Anderson CH2M Hill, Mike Wray**
Scoping Meeting	NA	NA
Predraft to AF/Service Center	NA	3-13-06
AF/Service Center Comments Due	NA	3-16-06
Draft to Agencies	6-14-06	3-20-06
Draft to RAB	NA	3-20-06
Agency Comments Due	6-28-06	4-07-06
Response to Comments Meeting	**TBD**	**TBD**
Response to Comments Due	7-11-06	4-14-06
Draft Final Due	TBD	NA
Final Due	7-11-06	4-14-06
Public Meeting	NA	NA

Travis AFB Master Document Schedule
(Continued)

INFORMATIONAL DOCUMENTS				
	Groundwater Treatment Plant O&M Reports **Travis, Tom Sreenivasan;** **CH2M Hill, Mike Wray**			
Life Cycle	**Groundwater Treatment Plants Annual Reports Fiscal Year 2005**	**Groundwater Treatment Plants First Quarter Report Fiscal Year 2006**	**Groundwater Treatment Plants Second Quarter Report Fiscal Year 2006**	**Groundwater Treatment Plants Third Quarter Report Fiscal Year 2006**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	1-16-06	4-14-06	7-14-06	10-13-06
AF/Service Center Comments Due	1-20-06	4-21-06	7-21-06	10-20-06
Draft to Agencies	NA	NA	NA	NA
Draft to RAB	NA	NA	NA	NA
Agency Comments Due	NA	NA	NA	NA
Response to Comments Meeting	**NA**	**NA**	**NA**	**NA**
Response to Comments Due	NA	NA	NA	NA
Draft Final Due	NA	NA	NA	NA
Final Due	1-27-06	4-28-06	7-28-06	10-27-06
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Document Schedule
(Continued)

2006 HISTORICAL DOCUMENT	
	NEWIOU **Travis, Dale Malsberger;** **URS, Amir Matin**
Life Cycle	**Soil/Sediment/Surface Water ROD**
Scoping Meeting	**4-3-98**
Predraft to AF/Service Center	10-04-04
AF/Service Center Comments Due	11-03-04
Draft to Agencies	3-16-05
Draft to RAB	3-16-05
Agency Comments Due	5-16-05
Response to Comments Meeting	**08-24-05**
Agency Concurrence with Remedy	09-01-05
Revised Draft at AMC for Review	09-21-05
Revised Draft at ILEVR Review	**10-24-05**
Response to Comments Due	01-13-06
Revised Draft to Agencies	01-13-06
Agency Comments Due	02-27-06
Response to Comments Meeting for Revised Draft	**03-15-06**
Draft Fact Sheet to Agencies	12-07-05
Agency Comments Due	12-23-05
Publish Fact Sheet	01-13-06
Public Comment Period	01-16-06 to 02-15-06
Public Meeting	**01-26-06**
Response to Revised Comments Due	03-21-06
Draft Final Due	04-24-06
Final Due	05-10-06

ATTACHMENT 3

South Base Boundary Groundwater Treatment Plant
Monthly Data Sheet

Report Number: 71 **Reporting Period: 1 – 31 May 2006** **Date Submitted: 8 June 2006**

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 2006

Operating Time: **743 hours**

Percent Uptime: **99.9%**

Gallons Treated: **2.6 million gallons**

Gallons Treated Since July 1998: **519 million gallons**

Volume Discharged to Union Creek: **2.6 million gallons**

Percentage of Treated Water to Beneficial Use: **0%**

VOC Mass Removed: **0.31 pounds**[a]

VOC Mass Removed Since July 1998: **289.7 pounds**

Rolling 12-Month Cost per Pound of Mass Removed: **$25,681**[b]

Monthly Cost per Pound of Mass Removed: **$39,127**[b]

[a] Calculated using May 2006 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. High costs are due to low influent concentrations and low flow rate.

Flow Rates

Average Groundwater Total Flow Rate: **58.8**[a]

Average Flow Rate from SCADA (gpm)							
FT005				**SS029**		**SS030**	
EW01x05[b]	0.0	EW736x05	1.2	EW01x29	0.1	EW01x30	10.9
EW02x05	0.4	EW737x05	0.1	EW02x29	0.2	EW02x30[b]	0.0
EW03x05[b]	0.0	EW742x05	Off line	EW03x29	Off line	EW03x30[c]	Off line
EW731x05	Off line	EW743x05	5.0	EW04x29	0.7	EW04x30	0.1
EW732x05	1.3	EW744x05	1.2	EW05x29	11.1	EW05x30	18.2
EW733x05	Off line	EW745x05	0.2	EW06x29	Off line	EW06x30	0.1
EW734x05[b]	0.0	EW746x05[b]	0.0	EW07x29[c]	Off line	EW711x30	6.2
EW735x05[b]	0.1						
		FT005 Total:	9.5	SS029 Total:	12.1	SS030 Total:	35.5

[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 pumps or SCADA may be malfunctioning.
[c] Extraction wells shut down on 18 February 2004 due to low TCE concentrations.

gpm—gallons per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP (water)	7 May 2006	12:08	7 May 2006	13:30	SBBGWTP was shutdown due to a power outage on Base.

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater sampling at the SBBGWTP was performed on 4 May 2006. Sample results are presented in Table 1. The total VOC concentration (14.00 µg/L) in the influent sample has increased since the April and March 2006 samples (11.89 µg/L and 11.62 µg/L, respectively).

The SCADA system was back online at the end of February 2006. Individual extraction well flow rates will be able to be measured remotely for SS029, SS030, FT005 wells. However, the SCADA is not yet recording the total gallons removed from the FT005 wells and readings will need to be measured from the individual wellheads.

Optimization Activities

There were no optimization activities associated with SBBGWTP during April 2006.

Table 1.
Summary of Groundwater Analytical Data for May 2006 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	4 May 2006 (µg/L) Influent	4 May 2006 (µg/L) Effluent
Halogenated Volatile Organics					
Bromodichloromethane	0.5	0.17	0	ND	ND
Carbon Tetrachloride	0.5	0.19	0	ND	ND
Chloroform	5	0.16	0	ND	ND
Dibromochloromethane	0.5	0.17	0	ND	ND
1,1-Dichloroethane	5	0.16	0	ND	ND
1,2-Dichloroethane	0.5	0.13	0	0.39 J	ND
1,1-Dichloroethene	5	0.14	0	ND	ND
cis-1,2-Dichloroethene	5	0.15	0	0.61	0.32 J
trans-1,2-Dichloroethene	5	0.15	0	ND	ND
Methylene Chloride	5	0.32	0	ND	ND
Tetrachloroethene	5	0.2	0	ND	ND
1,1,1-Trichloroethane	5	0.16	0	ND	ND
1,1,2-Trichloroethane	5	0.32	0	ND	ND
Trichloroethene	5	0.16	0	13	3.3
Vinyl Chloride	0.5	0.38	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.16	0	ND	ND
Ethylbenzene	5.0	0.16	0	ND	ND
Toluene	5.0	0.17	0	ND	ND
Xylenes	5.0	0.34	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	5.2	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	52	0	NM	ND
Total Suspended Solids	NE	1,100	0	ND	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.
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

ATTACHMENT 4

Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 83 **Reporting Period: 1 – 31 May 2006** **Date Submitted: 8 June 2006**

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.

Operations Summary – May 2006

Operating Time:

CGWTP:	735 hours	
WTTP:	Water: 695 hours	Vapor: 395 hours
ThOx:	718 hours	

Percent Uptime:

CGWTP:	98.8%	
WTTP:	Water: 93.4%	Vapor: 53.1%
ThOx:	96.5%	

Gallons Treated: 3.2 million gallons

Gallons Treated Since January 1996: 318.6 million gallons

VOC Mass Removed:

11.0 lbs (groundwater only)[a]

239.8 lbs (vapor only)[b,c]

VOC Mass Removed Since January 1996:

2,075 lbs from groundwater

8,282 lbs from vapor

UV/Ox DRE: 99.9%

ThOx DRE: 99.7%[b]

Rolling 12-Month Cost per Pound of Mass Removed: $221[d]

Monthly Cost per Pound of Mass Removed: $97[d]

[a] Calculated using May 2006 EPA Method SW8260B analytical results.
[b] Total VOC vapor mass removed was calculated using January 2006 EPA Method TO-14 analytical results.
[c] The flow rate for the WTTP SVE based on 19 May 2006 measurement.
[d] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. Costs per unit mass do not take into account the vapor VOC mass removed from the WTTP SVE system.

DRE = destruction removal efficiency UV/Ox = ultraviolet oxidation

Flow Rates

Average Groundwater Flow Rate: **70.7 gpm**[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)
EW01x16	33.1	NA
EW02x16	--[b]	NA
EW03x16	Off line[c]	NA
EW605x16	15.4	NA
EW610x16	--[b]	NA
WTTP	26.4[d]	139.7[e]
ThOx	NA	78.50[f]

[a] as measured by the effluent discharge to the storm drain divided by the operating time.
[b] the totalizer is not working and the flow rate is unknown.
[c] EW03x16 (water) was taken off line in September 2002 due to a significant decrease in flow rates.
[d] as measured by the effluent groundwater pumped to the CGWTP divided by the operating time.
[e] based on 19 May 2006 measurement.
[f] effluent flow meter from the TPE-W well.

gpm = gallons per minute
scfm = standard cubic feet per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
WTTP	7 May 2006	12:08	7 May 2006	14:00	WTTP system was shutdown--power outage.
WTTP	9 May 2006	12:40	10 May 2006	8:30	WTTP system was shutdown to replicate and replace the plant's computer (C.P.U).
CGWTP (water)	11 May 2006	10:30	11 May 2006	14:00	Lamps #1 and #2 were removed and a temperature bypass was fabricated and installed.
CGWTP (water)	12 May 2006	10:30	12 May 2006	14:10	UV-Ox lamps were disassembled and inspected.
ThOx (vapor)	13 May 2006	11:10	13 May 2006	14:30	Burner flame was out.
WTTP	13 May 2006	11:15	13 May 2006	14:00	WTTP system was shutdown--power outage.
WTTP	13 May 2006	18:00	13 May 2006	21:30	WTTP system was down--communication failure.
ThOx (vapor)	13 May 2006	20:30	13 May 2006	21:45	ThOx system was shutdown because the burner flame was out.
ThOx (vapor)	14 May 2006	4:15	14 May 2006	8:00	(Same Problem)
WTTP (vapor)	14 May 2006	0:00	17 May 2006	7:30	WTTP SVE system was down due to a communication failure.
CGWTP (water)	17 May 2006	12:30	17 May 2006	14:45	CGWTP was shutdown to restore the UV-Ox supply piping to the original configuration.
WTTP	17 May 2006	12:30	17 May 2006	14:45	WTTP system was shutdown because CGWTP was down.
ThOx (vapor)	18 May 2006	20:45	19 May 2006	10:15	ThOx system was shutdown possibly due to moisture in the burner.
WTTP	18 May 2006	21:30	19 May 2006	8:00	WTTP system was down due to a communication failure.
WTTP	21 May 2006	15:30	21 May 2006	16:45	WTTP system was down due to a communication failure.
ThOx (vapor)	22 May 2006	5:30	22 May 2006	11:00	ThOx system was shutdown because the burner flame was out. Approximately 75% of the burner was clogged with debris.
WTTP (water)	22 May 2006	7:40	22 May 2006	19.40	WTTP system was down due to a communication failure.
WTTP (water)	22 May 2006	7:40	1 June 2006	0:00	(Same Problem)

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

Summary of O&M Activities

Monthly groundwater sampling at the CGWTP was performed on 3 May 2006. Groundwater sample results are summarized in Table 1. Vapor sampling at the ThOx unit was not performed in May 2006; therefore, mass calculations are based on January 2006 sample results. The WTTP SVE system was restarted in January 2006.

The ThOx system continues to treat soil vapor from the 2-Phase® well (TPE-W) as part of SS016 focused vapor extraction activities. Quarterly vapor samples collected in January 2006 indicated an increase in TCE concentrations from 85 ppmv in September 2005 to 190 ppmv in January 2006.

Analytical results for treated groundwater samples continue to indicate that cis-1,2-dichloroethene (DCE) was present at low levels in groundwater samples downstream of the lag granular activated carbon vessel (all samples are below 10% of the instantaneous discharge limits indicated in the *Central Groundwater Treatment Plant Operations and Maintenance Manual*). The detection in these samples is likely attributed to desorption of cis-1,2-DCE into the water stream from the granular activated carbon as the influent concentrations vary slightly and as contaminants with higher adsorption affinity are adsorbed over time. Cis-1,2-DCE has been historically detected in the "Lead Carbon Effluent" samples and the "Lag Carbon Effluent" sample since March 2004 at concentrations near the levels detected this month. It should also be noted that the cis-1,2-DCE detections in samples downstream of the lag granular activated carbon vessel are estimated values (J-flag detections), as they are detected at concentrations less than the reporting limit of 0.5 µg/L. Cis-1,2-DCE concentrations and system performance will continue to be monitored.

Chloroform continues to be present at estimated (J-flagged) concentrations at all system treated water samples at levels below 10% of the instantaneous discharge limits indicated in the *Central Groundwater Treatment Plant Operations and Maintenance Manual*. The chloroform concentrations and system performance will continue to be monitored in the upcoming months.

Optimization Activities

There were no optimization activities associated with CGWTP during May 2006.

Table 1.
Summary of Groundwater Analytical Data for May 2006 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	3 May 2006 (µg/L) Influent	After UV/OX	Lead Carbon Effluent	Lag Carbon Effluent	System Effluent	After Holding Tank
Halogenated Volatile Organics									
Bromodichloromethane	5.0	0.15	0	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.17	0	ND	ND	ND	ND	ND	ND
Chloroform	5.0	0.16	0	0.28 J	0.22J	0.26 J	0.3 J	0.3 J	0.29 J
Dibromochloromethane	5.0	0.19	0	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.13	0	0.25 J	ND	ND	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.16	0	0.17 J	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.14	0	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5.0	0.12	0	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.17	0	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.14	0	3.6	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.15 – 1.5[b]	0	66	ND	ND	0.32 J	0.32 J	0.29 J
trans-1,2-Dichloroethene	5.0	0.15	0	2.5 J	ND	ND	ND	ND	ND
Methylene Chloride	5.0	0.12	0	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	0.20	0	0.7	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.13	0	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.23	0	ND	ND	ND	ND	ND	ND
Trichloroethene	5.0	0.16 – 1.6[c]	0	350	0.21 J	0.38 J	0.19 J	ND	ND
Vinyl Chloride	0.5	0.17	0	ND	ND	ND	ND	ND	ND
Non-Halogenated Volatile Organics									
Benzene	1.0	0.18	0	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.0	0.11	0	ND	ND	ND	ND	ND	ND
Toluene	5.0	0.12	0	ND	ND	ND	ND	ND	ND
Total Xylenes	5.0	0.36	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).

[b] The detection limit for cis-1,2-DCE in the influent sample was elevated to 1.5 µg/L due to sample dilution to bring cis-1,2-DCE concentration within linear range. The detection limit for cis-1,2-DCE in all other samples was 0.15 µg/L.

[c] The detection limit for TCE in the influent sample was elevated to 1.6 µg/L due to sample dilution to bring the TCE concentration within linear range. The detection limit for TCE in all other samples was 0.16 µg/L.

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

ATTACHMENT 5

North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 72 **Reporting Period: 1 – 31 May 2006** **Date Submitted: 8 June 2006**

This data sheet includes the following: results for the operation of the groundwater extraction and soil vapor extraction (SVE) systems; a summary of flow rates for the individual extraction wells; a brief description of any shutdowns or significant events related to the systems: and a summary of analytical results for selected samples collected.

Operations Summary – May 2006

Operating Time: **Water:** 658 hours
Vapor: Off line[a]

Percent Uptime: **Water:** 88.4%
Vapor: Off line[a]

Gallons Treated: 0.61 million gallons

Gallons Treated Since March 2000: 66.0 million gallons

Volume Discharged to Storm Drain: 0 gallons

Volume Discharged to Duck Pond: 0.61 million gallons

Percentage of Treated Water to Beneficial Use: 100%

VOC Mass Removed:
0.38 lbs (groundwater only)[b]
0 lbs (vapor only)[a]

VOC Mass Removed Since March 2000:
169.9 lbs from groundwater
5,240 lbs from vapor[c]

VGAC Removal Efficiency: **NA**[a]

Rolling 12-Month Cost per Pound of Mass Removed[d]: $63,490

Monthly Cost per Pound of Mass Removed: $24,955

[a] The SVE system was off line throughout the month of May 2006 due to high water table.
[b] Calculated using May 2006 EPA Method SW8260B analytical results.
[c] Cumulative total VOC vapor mass removed includes 4,860 pounds of petroleum hydrocarbon VOC mass removed and treated by a portable catalytic oxidizer system between 15 July and 17 September 2003.
[d] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. High costs are due to low uptime, low influent concentration, low flow rate, and lack of vapor mass removal.

Flow Rates

Average Groundwater Total Flow Rate: **15.4 gpm**[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)
EW565x31	--[b]	Off line[c]
EW566x31	--[b]	Off line[c]
EW567x31	Off line	NA
EW576x04	Off line	Off line[c]
EW577x04	Off line	Off line[c]
EW578x04	Off line	Off line[c]
EW579x04	Off line	NA
EW580x04	--[b]	NA
EW621x04	--[b]	NA
EW622x04	--[b]	NA
EW623x04	--[b]	NA
EW614x07	1.1[d]	NA
EW615x07	1.1[d]	NA
SVE System	NA	Off line[c]

[a] The flow rate was calculated using the effluent discharge totalizer divided by the operating time of the plant.
[b] SCADA system malfunctioning during May 2006. Extraction well flow rates were not measured from the individual wellheads.
[c] SVE system off line at the NGWTP during May 2006 due to high water table.
[d] LF007 wells were turned on for the season on May 12, 2006.

gpm—gallons per minute
scfm—standard cubic feet per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP (water)	1 May 2006	8:00	3 May 2006	10:30	NGWTP was shutdown because an isolated leak was found at the EW-565x31 vault behind Building 1205.
NGWTP (water)	10 May 2006	11:57	11 May 2006	15:10	NGWTP was shutdown to acid wash the air stripper and the system piping.
NGWTP (water)	11 May 2006	16:17	11 May 2006	18:00	NGWTP was shutdown because the bag filters were clogged up and restricted flow.
NGWTP (water)	18 May 2006	13:45	18 May 2006	14:30	NGWTP was shutdown due to high water level in the wet well.
NGWTP (water)	21 May 2006	14:15	21 May 2006	16:00	(Same Problem)
NGWTP (water)	22 May 2006	11:30	22 May 2006	12:30	(Same Problem)
NGWTP (water)	30 May 2006	9:15	30 May 2006	12:45	NGWTP was shutdown to install sight glass on air stripper and vacuum inside the sump.
NGWTP (water)	31 May 2006	10:00	31 May 2006	10:20	NGWTP was shutdown due to high water level in the wet well.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater sampling at the NGWTP was performed on 4 May 2006. Sample results are presented in Table 1. The total VOC concentration (75.55 µg/L) in the influent sample has increased since the April 2006 sample (47.16 µg/L). VOC results were non-detect for effluent samples.

The SVE blower was replaced on 8-9 March 2006. The SVE system is ready for operation; however, the system remained off line in May 2006 due to the rainy season and high water table.

The LF007 extraction wells were turned on for the season on May 12, 2006.

Optimization Activities

There were no optimization activities associated with the NGWTP during May 2006.

Table 1.
Summary of Groundwater Analytical Data for May 2006 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	4 May 2006 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Bromodichloromethane	0.5	0.17	0	ND	ND
Carbon Tetrachloride	0.5	0.19	0	ND	ND
Chloroform	5.0	0.16	0	ND	ND
Dibromochloromethane	0.5	0.17	0	ND	ND
1,1-Dichloroethane	5.0	0.16	0	ND	ND
1,2-Dichloroethane	0.5	0.13	0	ND	ND
1,1-Dichloroethene	5.0	0.14	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.15	0	0.55	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND
Methylene Chloride	5.0	0.32	0	ND	ND
Tetrachloroethene	5.0	0.20	0	ND	ND
1,1,1-Trichloroethane	5.0	0.16	0	ND	ND
1,1,2-Trichloroethane	5.0	0.32	0	ND	ND
Trichloroethene	5.0	0.32	0	75	ND
Vinyl Chloride	0.5	0.38	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.16	0	ND	ND
Ethylbenzene	5.0	0.16	0	ND	ND
Toluene	5.0	0.17	0	ND	ND
Xylenes	5.0	0.34	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	5.2	0	NM	14 J
Total Petroleum Hydrocarbons – Diesel	50	32	0	NM	ND

[a] In accordance with Appendix G of the *Travis AFB North Groundwater Treatment Plant Operations and Maintenance Manual*, Sites FT004, SD031, and LF007 Area C (URS Group, Inc., 2005).

N/C = number of samples out of compliance with discharge limits.
ND = not detected
NM = not measured
µg/L = micrograms per liter