

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

14 September 2005, 0930 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Managers (RPM) meeting held on 14 September 2005 at 0930 in the Base Civil Engineering Conference Room, Building 570, Travis AFB, California. Attendees included:

- Mark Smith Travis AFB
- Glenn Anderson Travis AFB
- Tom Sreenivasan Travis AFB
- Wilford Day Travis AFB
- Dale Malsberger Travis AFB
- John Lucey U.S. Environmental Protection Agency (U.S. EPA)
- Jose Salcedo Department of Toxic Substances Control (DTSC)
- John McGuire Shaw Engineering and Infrastructure (Shaw E&I)
- Mike Wray CH2M Hill
- Chuck Elliott CH2M Hill

Handouts distributed throughout the meeting included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting, Teleconference, and Document Schedules
- Attachment 3 SBBGWTP Monthly Data Sheet (August 2005)
- Attachment 4 CGWTP Monthly Data Sheet (August 2005)
- Attachment 5 NGWTP Monthly Data Sheet (August 2005)
- Attachment 6 URS Field Activities, Travis AFB (August 2005)

1. ADMINISTRATIVE

A. Introduction

B. Previous Meeting Minutes

The meeting minutes from the August 2005 RPM meeting were distributed for approval and finalization. Mr. Smith requested that comments be submitted via email.

C. Master Meeting and Document Schedule

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

Travis AFB Annual Meeting and Teleconference Schedule

— No Changes

Travis AFB Master Document Schedule

— Page 1, North, East, West Industrial Operable Unit (NEWIOU) Soil/Sediment/Surface Water Record of Decision (ROD) schedule established.

Mr. Lucey suggested separate line items be added to the schedule for the revised draft ROD, to show additional detail. Mr. Smith agreed to revise this schedule.

— Page 2, NEWIOU/West Annexes Basewide Operable Unit (WABOU) Basewide Groundwater ROD schedule was established. Mr. Lucey requested that a date be set for the TI waiver.

— Page 2, Potrero Hills No Further Action ROD schedule was established. Mr. Lucey stated that a date should be set for the Water Board Order rescission.

Mr. Lucey requested a detailed GANTT chart for Travis AFB remedial action efforts. Mr. Smith stated that he would submit the Master Document schedule in the form of a GANTT chart to Mr. Lucey.

— Page 3, Groundwater Sampling Analysis Program (GSAP) Annual Report schedule was established.

— Page 3, WABOU Phytostabilization Treatability Study Report schedule was established.

2. OPERABLE UNIT UPDATE

A. North, East, West, Industrial Operable Unit Ecological Technical Memorandum

Mr. Malsberger stated that the final Ecological Technical Memorandum will be submitted to the agencies via mail today.

B. NEWIOU Record of Decision

1. Response to Comments on Draft ROD

Mr. Malsberger stated that he has received U.S. EPA's response to comments to the Draft NEWIOU ROD; however, he did not receive a signed letter. Mr. Lucey stated that if there is a letter sent by email, he would sign a copy today.

Mr. Malsberger stated that all of the comments have been resolved between Travis AFB and the agencies.

Mr. Salcedo stated that DTSC is currently reviewing the legal response to comments (land use control). DTSC should complete its review by the end of the week.

Mr. Malsberger stated that Travis AFB will postpone submitting the ROD to AMC pending DTSC's determination that changes are necessary.

Mr. Lucey stated that he would like to review the paragraph concerning preliminary remediation goals (PRGs) prior the ROD being submitted.

2. Agreement on Selected Remedies

Mr. Malsberger stated that the Water Board and DTSC are in agreement with the selected remedies. Mr. Lucey stated that he has presented the selected remedies to his legal division and they are in agreement.

All agencies are in concurrence with the selected remedies and Travis AFB will proceed with the development of the fact sheet.

3. CURRENT PROJECTS

A. Corrective Action Management Unit (CAMU) Lysimeter Drain Repair

Mr. Malsberger stated that an email with photos of the CAMU lysimeter drain repair effort was submitted to the agencies. The CAMU lysimeter should now work as designed.

Mr. Malsberger stated that the data from last year indicated that all the water going through the cap was going to the lysimeter with no runoff, which was incorrect. Last year's data cannot be used to evaluate the effectiveness of the cap.

Travis AFB will continue to monitor the cap.

Mr. Lucey suggested that Travis AFB include observations regarding the cap in the annual CAMU summary report.

B. South Base Boundary Groundwater Treatment Plant

Mr. Sreenivasan reported that the South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime with approximately 5 million gallons of groundwater extracted and treated during the month of August 2005. The average flow rate for the SBBGWTP was 112 gallons per minute (gpm). Approximately 2.0 pounds of volatile organic compounds (VOCs) were removed during August 2005. The total mass of VOCs removed since startup of the system is approximately 285 pounds (see Attachment 3).

There was no plant shutdown during the month of August 2005.

No construction water was processed through SBBGWTP during August 2005.

No optimization activities were planned or performed at the SBBGWTP during August 2005.

C. Central Groundwater Treatment Plant

Mr. Sreenivasan reported that the Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 3.5 million gallons of groundwater extracted and treated during the month of August 2005. The average flow rate for the CGWTP was 79.6 gpm. Approximately 86 pounds of VOCs (of which 69 pounds were from vapor) were removed during August 2005. The total mass of VOCs removed since startup of the system is 8,856 pounds (see Attachment 4).

Multiple shutdowns of the thermal oxidation (Th/Ox) system occurred during August 2005 due to alarm failures at the burner. A complete overhauling of the system took place by disassembling the system, conducting the repairs and reassembling the system, which resulted in longer downtime.

There were also power failures. The West Treatment Transfer Plant (WTTP) remained shutdown due to a leak at the eductor supply conveyance line repair that was struck and breached by another on site contractor on 1 August 2005. Several hours of downtime was experienced due to this accident.

The Th/Ox continued to treat soil vapor from the 2-phase well as part of the SS016 focused vapor extraction activities. Quarterly vapor samples collected in June 2005 indicated a decrease in TCE concentrations from 280 parts per million by volume (ppmv) in March 2005 to 78 ppmv in June 2005. Recent concentrations continue to indicate TCE in the vicinity of the 2-phase well. Therefore, focused extraction will continue at this well and samples will be collected in September 2005 as the quarterly sample.

The WTTP vacuum blowers remain off line during the rebound study. Recent samples indicate a decrease in TCE concentrations from 120 parts per billion by volume (ppbv) (9 September 2004) to 36 ppbv (March 2005). Previous samples collected during the rebound study have shown TCE concentrations to be at 39 ppbv (June 2003), 110 ppbv (September 2003), and 48 ppbv (March 2004). Due to very little changes in the contaminant concentrations in the vapor stream, the WTTP blowers will remain off line. The blowers will be properly maintained during this period for ready use as needed. The next semi annual sample will be collected and analyzed in September 2005.

Approximately 1.3 million gallons of treated water from this plant was used for irrigation and the rest was diverted to the storm drain.

No optimization activities were planned or performed at this plant during August 2005.

D. North Groundwater Treatment Plant

Mr. Sreenivasan reported that the North Groundwater Treatment Plant (NGWTP) performed at 84% uptime with approximately 1.1 million gallons of groundwater extracted and treated during the month of August 2005. The average flow for the NGWTP was 30 gpm. Approximately 3 pounds of VOC was removed during August 2005 which 2 pounds were from groundwater. There were some discrepancies concerning the first sample and it was resampled and analyzed. The total mass of VOCs removed since the startup of the system is 5,393 pounds (see Attachment 5).

There was one system failure which occurred due to failure of a fitting at extraction well EW623x04. The fitting was replaced, inspected and the system was restarted.

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

E. 3Q05 Groundwater Sampling and Analysis

The 3Q05 GSAP activity is in progress will be completed at the end of the week starting September 19, 2005.

F. SS041 No Further Remedial Actions Planned (NFRAP) Consensus Statement

Mr. Anderson asked if Mr. Lucey had an opportunity to review this document. Mr. Lucey stated that he has not reviewed this statement; however, he will review the report and send his comments to Mr. Anderson by next week.

G. SD042 Closeout Report

Mr. Anderson announced that the SD042 Closeout Report has been completed.

H. Phytostabilization Report Review

Mr. Anderson asked the agencies for their comments. Mr. Salcedo stated that he would be submitting his comments today. Mr. Lucey stated that the report looked like a good study and the results were valid. There were no further comments. Mr. Anderson asked Mr. Lucey to send his comments via email.

The agencies requested that the report be submitted electronically (CD-ROM).

I. DP039 Field Work

Mr. Anderson stated that currently Travis AFB is operating the dual phase well as a single phase well. Travis AFB will revert to dual phase status starting 26 September 2005.

The system will start up, and vapor samples will be collected for five days. The system will then be shut down for 30 days. The purpose of the sampling is to assist in making remedial decisions and to ensure that Travis AFB is not violating any airborne regulations.

Mr. Anderson stated that the heat exchanger will be replaced at the WTPP during the 30-day shutdown period.

4. PROGRAM ISSUES UPDATE

A. Regional Optimization Contract

Mr. Smith stated that the negotiations are currently taking place to determine whether 4PAE will not do optimization opportunities this year at all of the installations.

Mr. Smith stated that the ECOS contractor will be at the next RPM meeting and there will be an ECOS kick off meeting on 27 September 2005.

ACTION ITEM LIST
(Action Items Opened)

AGENDA	RESPONSIBLE	ACTION ITEM	DUE DATE	STATUS
1.	Agencies	To provide comments on Basewide Groundwater ROD Schedule.		New Item
2.	Air Force	To update and revise NEWIOU ROD Schedule based on U.S. EPA's comments.		New Item
3.	Air Force	Email the NEWIOU ROD changes to the U.S. EPA.		New Item.
4.	Air Force	To provide a GANTT chart for current and outyear projects.		New Item.
5.	DTSC	To inform the Air Force of any additional legal comments to the NEWIOU ROD.	9/16/2005	New Item.
6.	U.S. EPA	To review paragraph in the NEWIOU ROD on PRGs		New Item.
7.	U.S. EPA	To review and provide comments to SS041 NFRAP report.		New Item.

ACTION ITEM LIST
(Action Items Opened)

AGENDA	RESPONSIBLE	ACTION ITEM	DUE DATE	STATUS
8.	U.S. EPA	To submit written comments on the Phytostabilization Report.		New Item.
9.	Water Board	To provide an update on the status of the Potrero Hills Water Board order.		New Item

ATTACHMENT 1

TRAVIS AIR FORCE BASE ERP
REMEDIAL PROGRAM MANAGER'S MEETING
14 September, 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 ECOLOGICAL TECH MEMO (DALE)
- B. NEWIOU ROD (DALE)
 - (1). RESPONSE TO COMMENTS ON DRAFT ROD
 - (2). AGREEMENT ON SELECTED REMEDIES
 - (3). SCHEDULE TO COMPLETE

3. CURRENT PROJECTS

- A. CAMU LYSIMETER DRAIN REPAIR (DALE)
- B. SOUTH BASE BOUNDARY GROUNDWATER TREATMENT PLANT
 - (1). OPERATIONAL STATUS (TOM)
- C. CENTRAL GROUNDWATER TREATMENT PLANT
 - (1). OPERATIONAL STATUS (TOM)
- D. NORTH GROUNDWATER TREATMENT PLANT
 - (1). OPERATIONAL STATUS (TOM)
- E. SS041 NFRAP CONSENSUS STATEMENT (GLENN, JOHN)
- F. PHYTOSTABILIZATION REPORT REVIEW (GLENN, JOHN, JOSE)
- G. DP039 FIELD WORK (GLENN)

4. PROGRAM ISSUES UPDATE

- A. REGIONAL OPTIMIZATION CONTRACT

5. NEW ACTION ITEM REVIEW

ATTACHMENT 2

Travis AFB Annual Meeting and Teleconference Schedule

Suppliers Teleconference ¹ (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.)
1-11-05	1-12-05	1-26-05	1-27-05
2-8-05	2-9-05	2-23-05 ²	—
3-8-05	3-9-05	3-23-05	—
4-12-05	4-13-05	4-27-05	4-28-05
5-10-05	5-11-05	5-25-05	—
6-7-05	6-8-05	6-22-05	—
³	³	7-20-05	— ⁴
8-9-05	8-10-05	8-24-05	—
9-13-05	9-14-05	9-28-05	—
10-11-05	10-12-05	10-26-05	10-27-05
—	—	11-16-05	—
12-13-05	12-14-05	—	—

¹ Formerly the Suppliers Meeting.

² This meeting was cancelled to allow for the Ecological Technical Memorandum Risk Assessor Meeting.

³ Changed to accommodate DTSC's schedule.

⁴ The RAB voted on revising the RAB meetings to April and October during the April RAB meeting.

Travis AFB Master Document Schedule

	PRIMARY DOCUMENTS
	NEWIOU Travis, Dale Malsberger; URS, Amir Matin
Life Cycle	Soil/Sediment/Surface Water ROD
Scoping Meeting	4-3-98
Predraft to AF/Service Center	9-1-98 10-04-04
AF/Service Center Comments Due	9-8-98 11-03-04
Draft to Agencies	12-3-03 3-16-05
Draft to RAB	12-3-03 3-16-05
Agency Comments Due	2-1-04 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	12-07-05
Revised Draft Due to Agencies	12-07-05
Agency Comment Period	12-07-05 to 01-24-06
Draft Fact Sheet to Agencies	09-28-05
Issue Fact Sheet	01-05-06
Public Comment Period	01-09-06 to 02-08-06
Public Meeting	01-26-06
Response to Revised Comments Due	02-21-06
Draft Final Due	02-21-06
Final Due	03-21-06

**Travis AFB Master Document Schedule
(Continued)**

	PRIMARY DOCUMENTS	
	NEWIOU/WABOU Travis, Glenn Anderson;	Potrero Hills Travis, Glenn Anderson;
Life Cycle	Basewide Groundwater ROD	No Further Action 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	GSAP Annual Report Travis, Tom Sreenivasan; URS, Amir Matin; CH2M Hill, Mike Wray	WABOU Phytostabilization Treatability Study Report Travis, Glenn Anderson; Parsons, Bill Plaehn
Scoping Meeting	NA	NA
Predraft to AF/Service Center	10-12-05	4-15-05
AF/Service Center Comments Due	11-02-05	5-16-05
Draft to Agencies	11-30-05	6-08-05
Draft to RAB	11-30-05	6-08-05
Agency Comments Due	1-10-06	9-14-05
Response to Comments Meeting	1-11-06	9-14-05
Response to Comments Due	1-27-06	9-30-05
Draft Final Due	NA	NA
Final Due	2-20-06	9-30-05
Public Comment Period	NA	NA
Public Meeting	NA	NA

**Travis AFB Master Document Schedule
(Continued)**

INFORMATIONAL DOCUMENTS	
Life Cycle	Quarterly Newsletters (for October 2005) Travis, Mark Smith
Scoping Meeting	NA
Predraft to AF/Service Center	9-09-05
AF/Service Center Comments Due	9-16-05
Draft to Agencies	9-30-05
Draft to RAB	9-30-05
Agency Comments Due	10-12-05
Response to Comments Meeting	NA
Response to Comments Due	NA
Draft Final Due	NA
Final Due	10-17-05
Public Meeting	10-27-05

**Travis AFB Master Document Schedule
(Continued)**

INFORMATIONAL DOCUMENTS				
Life Cycle	Travis, Tom Sreenivasan; URS, Amir Matin			
	Groundwater Treatment Plants Annual Reports Fiscal Year 2005	Groundwater Treatment Plants First Quarter Report Fiscal Year 2005	Groundwater Treatment Plants Second Quarter Report Fiscal Year 2005	Groundwater Treatment Plants Third Quarter Report Fiscal Year 2005
Scoping Meeting	NA	NA	NA	NA
Predraft to AF/Service Center	1-19-05	4-16-05	7-15-05	10-14-05
AF/Service Center Comments Due	1-23-05	4-23-05	7-22-05	10-21-05
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	1-28-05	4-29-05	7-29-05	10-28-05
Public Comment Period	NA	NA	NA	NA
Public Meeting	NA	NA	NA	NA

ATTACHMENT 3

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 86

Reporting Period: 1– 31 August 2005

Date Submitted: 9 September 2005

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 individual extraction wells; a brief description of any shutdowns or significant events related to the system; and a summary of analytical results for samples collected.

Operations Summary – August 2005

Operating Time: **744 hours**

Percent Uptime: **100%**

Gallons Treated: **4.98 million gallons**

Gallons Treated Since July 1998: **484.1 million gallons**

Volume Discharged to Union Creek: **4.98 million gallons**

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

Total VOC Mass Removed: **1.50 pounds^a**

VOC Mass Removed Since July 1998: **282.6 pounds**

Rolling 12-Month Cost per Pound of Mass Removed^b: **\$3,486**

Monthly Cost per Pound of Mass Removed^b: **\$5,178**

^a = Calculated using August 2005 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.

Flow Rates

Average Groundwater Total Flow Rate: **111.5 gpm**

Average Flow Rate (gpm)								
FT005				SS029		SS030		
EW01x05 ^a	Off line	EW736x05	2.9	EW01x29	0.1	EW01x30	10.1	
EW02x05	1.0	EW737x05	4.3	EW02x29	0.2	EW02x30	0.1	
EW03x05	4.1	EW742x05	6.2	EW03x29 ^c	Off line	EW03x30 ^c	Off line	
EW731x05 ^b	0.8	EW743x05	8.6	EW04x29	3.6	EW04x30 ^c	Off line	
EW732x05	1.5	EW744x05	4.6	EW05x29	11.4	EW05x30	21.2	
EW733x05	0.7	EW745x05	5.0	EW06x29	19.3	EW06x30 ^d	Off line	
EW734x05	3.5	EW746x05	1.2	EW07x29 ^c	Off line	EW711x30 ^c	Off line	
EW735x05	1.1							
FT005 Total:			45.5	SS029 Total:		34.6	SS030 Total	31.4

^a Extraction well EW01x05 went off line due to a pump failure. EW01x05 will be back on line in September.

^b Extraction well was brought back on line on 8 June 2005 in accordance with 1Q05 Quarterly Report recommendations. Value reflects average flow rate prior to shut down.

^c Extraction wells shut down on 18 February 2004 due to low TCE concentrations.

^d Extraction well EW06x30 (interceptor trench sump) went off line 13 May 2005. Pump and motor failed and were replaced. Further troubleshooting indicated the low-level shutoff for the pump was not functioning properly. Replacement level transmitter ordered. Water level in the interceptor trench sump is below the level that the pump should start. This well should be back on line September 2005.

gpm = gallons per minute

Note: Flow rates are from flow meter readings from individual wells and/or SCADA readings or estimated based on historical data.

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP	NA	NA	NA	NA	No shutdowns during the month of August 2005.
NA = not applicable SBBGWTP = South Base Boundary Groundwater Treatment Plant					

Summary of O&M Activities

Monthly groundwater sampling at the SBBGWTP was performed on 9 August 2005. Sample results are summarized in Table 1.

Optimization Activities

The table below summarizes current optimization activities associated with the SBBGWTP.

Activity	Status	Comments
None to report.		

Table 1

Summary of Groundwater Analytical Data for August 2005 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum ^a (µg/L)	Detection Limit (µg/L)	N/C	9 August 2005 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Carbon Tetrachloride	0.5	0.17	0	ND	ND
Chloroform	5.0	0.12	0	ND	ND
1,1-Dichloroethane	5.0	0.12	0	ND	ND
1,2-Dichloroethane	0.5	0.17	0	ND	ND
1,1-Dichloroethene	5.0	0.15	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.13	0	1.5	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND
Methylene Chloride	5.0	0.12	0	ND	ND
Tetrachloroethene	5.0	0.18	0	ND	ND
1,1,1-Trichloroethane	5.0	0.13	0	ND	ND
1,1,2-Trichloroethane	5.0	0.23	0	ND	ND
Trichloroethene	5.0	0.15	0	34	ND
Vinyl Chloride	0.5	0.25	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.18	0	ND	ND
Ethylbenzene	5.0	0.11	0	ND	ND
Toluene	5.0	0.12	0	ND	ND
Xylenes	5.0	0.36	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	5	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	23	0	NM	ND ^b
Total Suspended Solids	NE	5,000	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).

^b There was no detectable diesel present based on the pattern of the TPH chromatogram. Trace amount of TPH in a non-diesel pattern was present in the diesel calibration range.

N/C = Number of samples out of compliance with discharge limits.

ND = not detected

NE = not established

NM = not measured

TPH = total petroleum hydrocarbons

µg/L = micrograms per liter

ATTACHMENT 4

Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 75

Reporting Period: 1 – 31 August 2005

Date Submitted: 9 September 2005

This data sheet includes the following: results for the operation of the Central Groundwater Treatment Plant (CGWTP), West Treatment and Transfer Plant (WTTTP), and thermal oxidation (ThOx) system (previously referred to as the two-phase extraction [TPE] system); a summary of flow rates for the CGWTP, WTTTP, 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 – August 2005

Operating Time:

CGWTP: 744 hours
WTTTP: Water: 627 hours Vapor: 0 hours^a
ThOx: 586 hours

Percent Uptime:

CGWTP: 100%
WTTTP: Water: 84.3% Vapor: 0%^a
ThOx: 78.7%

Gallons Treated: **3.5 million gallons**

Gallons Treated Since January 1996: **295.2 million gallons**

Percentage of Treated Water Discharged Used for Irrigation: **38.5%**

VOC Mass Removed:

17.1 lbs. (groundwater only)^b
68.7 lbs. (vapor only)^c

VOC Mass Removed Since January 1996:

1,976 lbs. from groundwater
6,880 lbs. from vapor

UV/Ox DRE^b: **99.8%**

ThOx DRE^c: **100%**

Rolling 12-Month Cost per Pound of Mass Removed^d: **\$186**

Monthly Cost per Pound of Mass Removed^d: **\$408**

^a = WTTTP SVE system off line since 11 February 2003.

^b = Calculated using August 2005 EPA Method SW8260B analytical results.

^c = Calculated using June 2005 EPA Method TO-14 analytical results.

^d = Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.

DRE = destruction removal efficiency

UV/Ox = ultraviolet oxidation

Flow Rates

Average Groundwater Total Flow Rate: **79.6 gpm**

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)
EW01x16	21.6	NA
EW02x16	11.9	NA
EW03x16 ^a	-	NA
EW605x16	10.7	NA
EW610x16	3.3	NA
WTTTP	28.6 ^b	0 ^c
ThOx	NA	65.6 ^d

^a = EW03x16 (water) was taken off line in September 2002 due to a significant decrease in flow rates.

^b = effluent groundwater pumped to CGWTP

^c = WTTTP SVE system off line since 11 February 2003.

^d = influent soil vapor from TPE-W well

CGWTP = Central Groundwater Treatment Plant

gpm = gallons per minute

NA = not applicable

scfm = standard cubic feet per minute

SVE = soil vapor extraction

ThOx = thermal oxidation system

WTTTP = West Treatment and Transfer Plant

Note: Flow rates are estimated based on flow meter readings from individual wells, the WTTTP, and/or SCADA readings, or estimated based on historical data.

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
WTTP (water)	1 Aug 2005	09:00	1 Aug 2005	15:00	During excavation activities associated with on-going infrastructure improvements at Ragsdale Street near Building 919, a track excavator operated by an Air Force Contractor, struck and breached the eductor supply conveyance pipeline. WTTP preventative measures followed to prevent additional unauthorized water release, turned off all pumps at the WTTP, plant influent and effluent control valves were secured in the "off" position, physical inspection of the plant conveyance line trench. Construction firm repaired WTTP's conveyance pipeline. Restarted system after confirmation of pipeline repair. Total downtime = 6 hours.
WTTP (water)	1 Aug 2005	17:00	2 Aug 2005	09:00	Power interruption. The WTTP remained off line overnight due to a potential leak at the WTTP eductor supply conveyance line repair performed earlier that day. The system was secured and left off line. The next day the WTTP was inspected, restarted and monitored. Total downtime = 16 hours.
WTTP (water)	19 Aug 2005	13:00	23 Aug 2005	12:00	Maintenance shutdown. URS made permanent repair on WTTP conveyance pipeline that was struck and breached on 1 August 2005. Restarted system. Total downtime = 95 hours.
ThOx	1 Aug 2005		19 Aug 2005		There were multiple shutdowns during this period due to burner failure alarms. Multiple shutdowns observed due to moisture present on the burner and vapor line. ThOx preventive maintenance, disassembled system, dried train, re-assembled system, replaced fire check screens, water/vacuum filters, and low pressure suction lines. Restarted system and monitored. Total downtime = 158.5 hours.
CGWTP = Central Groundwater Treatment Plant ThOx = thermal oxidation system VFD = variable frequency drive WTTP = West Treatment and Transfer Plan					

Summary of O&M Activities

Monthly groundwater sampling at the CGWTP was performed on 9 July 2005. Groundwater sample results are summarized in Table 1.

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 June 2005 indicate a decrease in TCE concentrations from 280 parts per million by volume (ppmv) (March 2005) to 78 ppmv (June 2005). TCE had been previously detected at concentrations as high as 340 ppmv during the rebound study (March 2004) but declined to 18 ppmv in June 2004. Recent vapor sample results continue to indicate TCE in the vicinity of the TPE-W. Therefore, focused extraction will continue at the TPE-W and samples will be collected quarterly.

The WTTP vacuum blowers remain off line due to low asymptotic vapor concentrations. Recent samples indicate a decrease in TCE concentrations from 120 parts per billion by volume (ppbv) (September 2004) to 36 ppbv (March 2005). Previous samples collected during the rebound study have shown TCE concentrations to be at 39 ppbv (June 2003), 110 ppbv (September 2003), and 48 ppbv (March 2004). Due to the little variance in contaminant concentrations in the vapor stream, the WTTP blowers will remain off line and rebound samples will be collected again in September 2005 (semiannually frequency).

Analytical results for groundwater samples continue to indicate that cis-1,2 dichloroethene (DCE) was present at low levels in all system groundwater samples downstream of the carbon vessels (the effluent and after-holding tank 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 has been detected in 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 at the system effluent and after-holding tank are estimated values (J- flag detections) as they are below 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 concentrations at all system groundwater samples at levels at or below 10% of the instantaneous discharge limits indicated in the *Central Groundwater Treatment Plant Operations and Maintenance Manual*. All chloroform concentrations are estimated values (J- flag detections) as they are below the reporting limit of 1.0 µg/L. Chloroform concentrations and system performance will continue to be monitored in the upcoming months.

Irrigation of Area 200 with treated water from the CGWTP resumed in June 2005. Approximately 1.3 million gallons of 3.5 million gallons of the treated water was used for irrigation this month. The remainder 2.2 million gallons was discharged to the storm drain.

During August 2005, there were two unauthorized releases of contaminated groundwater at Travis Air Force Base. The first incident occurred on 1 August 2005 where excavation activities related to the C-17 infrastructure improvement ruptured the WTTP's conveyance pipeline located on Ragsdale Street near Building 919. During excavation activities at Ragsdale Street, the operator of a track excavator, working for the construction firm of Hiede and Williams, struck and breached the eductor supply conveyance pipeline from the WTTP to EW511x37. Approximately 4,500 gallons of contaminated groundwater were collected and transported to the Central Groundwater Treatment Plant (CGWTP) for treatment. Additional details regarding the observations and protocols followed to control and remedy the release of contaminated can be found in the WTTP Release Technical Memorandum dated 2 August 2005.

The second incident occurred between 2 and 3 August 2005 where an apparent failure of hardware installed to couple plumbing components to submersible pump discharge riser pipe allowed the unauthorized release of contaminated groundwater to the surface of the area 200 flight preparation apron and surrounding taxiway. Approximately 1,380 gallons of contaminated groundwater were released to the tarmac. This liquid evaporated on the tarmac due to the hot summer conditions (greater than 100 degrees Fahrenheit during the day). Additional details regarding the observations and protocols followed to control and remedy the release of contaminated can be found in the EW01x16 Release Technical Memorandum dated 3 August 2005.

Optimization Activities

The table below summarizes current optimization activities associated with the CGWTP.

Activity	Status	Comments
None to report.		

Table 1
Summary of Groundwater Analytical Data for August 2005 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum ^a (µg/L)	Detection Limit (µg/L)	N/C	9 August 2005 (µg/L)					
				Influent	After UV/OX	Lead Carbon Effluent	Lag Carbon Effluent	System Effluent	After Holding Tank
Halogenated Volatile Organics									
Carbon Tetrachloride	0.5	0.17	0	ND	ND	ND	ND	ND	ND
Chloroform	5.0	0.12	0	0.21 J	0.25 J	0.22 J	0.33 J	0.33 J	0.36 J
1,2-Dichlorobenzene	5.0	0.16	0	0.48 J	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.17	0	0.62	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.14	0	0.3 J	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	0.15	0	2.2	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.13 – 3.3 ^b	0	80	ND	ND	0.37 J	0.3 J	0.34 J
trans-1,2-Dichloroethene	5.0	0.15	0	2.2	ND	ND	ND	ND	ND
Methylene Chloride	5.0	0.12	0	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	0.18	0	0.95	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	0.15 – 3.9 ^c	0	490	ND	0.36 J	ND	ND	ND
Vinyl Chloride	0.5	0.25	0	0.53	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	0.24	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 3.3 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 0.13 µg/L.

^c The detection limit for TCE in the influent sample was elevated to 3.9 µg/L due to sample dilution to bring the TCE concentration within linear range. The detection limit for TCE in all other samples was 0.15 µg/L.

DCE = dichloroethene

J = Analyte concentration is considered an estimated value.

N/C = Number of samples out of compliance with discharge limits.

ND = not detected

TCE = trichloroethene

µg/L = micrograms per liter

ATTACHMENT 5

North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 63

Reporting Period: 1– 31 August 2005

Date Submitted: 9 September 2005

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 individual extraction wells; a brief description of any shutdowns or significant events related to the system; and a summary of analytical results for samples collected.

Operations Summary – August 2005

Operating Time: **Water: 620 hours**
Vapor: 226 hours^a

Percent Uptime: **Water: 83.3%**
Vapor: 64.2%^a

Gallons Treated: **1.12 million gallons**

Gallons Treated Since March 2000: **60.3 million gallons**

Volume Discharged to Storm Drain: **0 Gallons**

Volume Discharged to Duck Pond: **1.12 million gallons**

Percentage of Treated Water to Beneficial Use: **100%**

VOC Mass Removed:

0.65 lbs. (groundwater only)^b
2.2 lbs. (vapor only)^{a,c}

VOC Mass Removed Since March 2000:

167.1 lbs. from groundwater
5,240 lbs. from vapor^d

VGAC Removal Efficiency: **NA^a**

Rolling 12-Month Cost per Pound of Mass Removed^e: **\$680**

Monthly Cost per Pound of Mass Removed^e: **\$2,617**

^a = The SVE system was restarted on 17 August 2005.

^b = Calculated using August 2005 EPA Method SW8260B analytical results.

^c = Unable to use soil vapor analytical data collected in August 2005 to calculate VOC mass removed due to erroneous results; SVE system was resampled on 8 September 2005. VOC mass removed was calculated using December 2004 EPA Method TO-12 VOC analytical results

^d = Cumulative Total VOC vapor mass includes 4,860 pounds petroleum hydrocarbon VOC mass removed and treated by a portable catalytic oxidizer system between 15 July and 17 September 2003.

^e = Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.

Flow Rates

Average Groundwater Total Flow Rate: **30.1 gpm**

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)
EW565x31	3.0	Off line ^a
EW566x31	0.2	Off line ^b
EW567x31	2.4	NA
EW576x04	3.5	On Line ^a
EW577x04	2.0	On Line ^a
EW578x04	1.2	On Line ^a
EW579x04	3.0	NA
EW580x04	5.5	NA
EW621x04	4.3	NA
EW622x04	0.3	NA
EW623x04	3.2	NA
EW614x07	1.7 ^c	NA
EW615x07	1.8 ^c	NA
SVE System	NA	477 ^{a,d}

^a The SVE system was restarted 17 August 2005.

^b EW566x31 (vapor) was taken off line in August 2003 due to high petroleum concentrations.

^c The LF007C extraction wells were brought on line 21 June 2005. These wells only operate during daylight hours.

^d influent soil vapor

gpm = gallons per minute

NA = not applicable (no vapor extraction, groundwater extraction only)

scfm = standard cubic feet per minute

SVE = soil vapor extraction

Note: Flow rates are from flow meter readings from individual wells and/or SCADA readings or estimated based on historical data.

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP (Water and SVE)	26 Aug 2005	09:00	31 Aug 2005	13:00	System failure. Critical fitting failed at extraction well EW623x04; extraction well released approximately 110 gallons of contaminated groundwater into EW622x04 and EW623x04 vaults via existing electrical conduit. Water was extracted from the vaults and transferred to NGWTP for treatment. Replaced fitting and inspected NGWTP. System was restarted and observed for proper operation. Total Downtime = 124 hours.
NA = not applicable NGWTP = North Groundwater Treatment Plant					

Summary of O&M Activities

Monthly groundwater sampling at the NGWTP was performed on 9 August 2005. Sample results are summarized in Table 1.

The SVE system was restarted on 17 August 2005.

Optimization Activities

The table below summarizes current optimization activities associated with the NGWTP.

Activity	Status	Comments
None to report.		

Table 1

Summary of Groundwater Analytical Data for August 2005 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum ^a (µg/L)	Detection Limit (µg/L)	N/C	11 August 2005 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Carbon Tetrachloride	0.5	0.17	0	ND	ND
Chloroform	5.0	0.12	0	ND	ND
1,1-Dichloroethane	5.0	0.12	0	ND	ND
1,2-Dichloroethane	0.5	0.17	0	ND	ND
1,1-Dichloroethene	5.0	0.15	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.13	0	0.47 J	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND
Freon 113	5.0	0.20	0	ND	ND
Methylene Chloride	5.0	0.12	0	ND	ND
Tetrachloroethene	5.0	0.18	0	ND	ND
1,1,1-Trichloroethane	5.0	0.13	0	ND	ND
1,1,2-Trichloroethane	5.0	0.23	0	ND	ND
Trichloroethene	5.0	0.15 – 1.5 ^b	0	70	ND
Vinyl Chloride	0.5	0.25	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.18	0	ND	ND
Ethylbenzene	5.0	0.11	0	ND	ND
Toluene	5.0	0.12	0	ND	ND
Xylenes	5.0	0.36	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	5	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	23	0	NM	ND

^a In accordance with Appendix G of the *Travis AFB North Groundwater Treatment Plant Operations and Maintenance Manual* (Groundwater Technology, Inc., 2002).

^b The detection limit for TCE in the influent sample was elevated to 1.5 µg/L due to sample dilution to bring the TCE concentration within linear range. The detection limit for TCE in the effluent sample was 0.15 µg/L.

J = Analyte concentration is considered an estimated value.

N/C = Number of samples out of compliance with discharge limits.

ND = not detected

NM = not measured

TPH = total petroleum hydrocarbons

µg/L = micrograms per liter

ATTACHMENT 6

**URS FIELD ACTIVITIES
TRAVIS AFB
August2005**

Week of 1 August(8/1-7/05)

- Performed standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Recorded operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Release of contaminated groundwater from WTP's conveyance pipeline. Contacted Travis Environmental Management personnel regarding breach to pipeline. Collected and transported contaminated groundwater to CGWTP for treatment.
- Release of contaminated groundwater from Extraction Well EW01x16.

Week of 8 August (8/8-14/05)

- Performed standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Recorded operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Collected monthly treatment system samples at CGWTP, NGWTP, and SBBGWTP.
- Changed eductor supply bag filters at NGWTP.

Week of 15 August (8/15-21/05)

- Performed standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Recorded operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Changed bag filters at NGWTP.
- Restarted NGWTP SVE system.

Week of 22 August (8/22-28/05)

- Performed standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Recorded operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Start of 3Q05 GSAP Sampling.

Week of 29 August (8/29-31/05)

- Performed standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Recorded operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Continued with 3Q05 GSAP Sampling.

Week of 1 September (9/1-4/05)

- Perform standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Record operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Continue with 3Q05 GSAP Sampling.

Week of 5 September (9/5-11/05)

- Perform standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Record operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Collect monthly treatment system samples at CGWTP, NGWTP, and SBBGWTP.

Week of 12 September (9/12-18/05)

- Perform standard weekly maintenance at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.
- Record operating parameters at CGWTP, WTP, ThOx, NGWTP, and SBBGWTP.