Final

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

23 April 2008, 0930 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 23 April 2008 at 0930 in the Environmental Flight Conference Room, Building 570, Travis AFB, California. Attendees included:

• Mark Smith	Travis AFB
• Lonnie Duke	Travis AFB
• Glenn Anderson	Travis AFB
• Greg Parrott	Travis AFB
• James Chang	U.S. Environmental Protection Agency (USEPA)
• Alan Friedman	California Regional Water Quality Control Board (CRWQCB)
• Jose Salcedo	Department of Toxic Substances Control (DTSC)
• Tom Barry	Shaw Engineering and Infrastructure (Shaw E&I)
• Mary Snow	TechLaw
• Mike Wray	CH2M Hill
• Linda Delgado	TEAM
• Suzan Hughes	Synectics

Handouts distributed via email prior to the start of the meeting included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting, Teleconference, and Document Schedules
• Attachment 3	SBBGWTP Monthly Data Sheet (March 2008)
• Attachment 4	CGWTP Monthly Data Sheet (March 2008)
• Attachment 5	NGWTP Monthly Data Sheet (March 2008)

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The March 2008 RPM meeting minutes were approved and finalized.

B. Action Item Review

No action items from March.

C. Meeting Dates and Master Document Schedule Review

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

Travis AFB Annual Meeting and Teleconference Schedule

— The next RPM meeting will be 21 May at Travis; the RAB meeting will be 24 April at the Northern Solano County Association of Realtors office. There is a new Board member from Travis Unified School District, Ms. Kate Wren Gavlak.

— Mr. Chang asked about landmarks or buildings around the Realtors Office. Mr. Smith offered his cell phone for anyone who gets lost.

— Mr. Smith may be out of town for the scheduled 18 June monthly meeting.

Travis AFB Master Document Schedule

— Five Year Review: Draft delivered to agencies on 10 April 2008. Schedule will be updated to allow agencies 60 days for review. Comments will be due around 10 June 2008. Mr. Anderson asked if EPA had received the CD of the draft review report; Mr. Chang responded yes.

— Soil Remedial Action Report: All dates in the schedule from 'Draft to Agencies' forward have been changed to TBD. When the document is printed and distributed, the schedule will be updated with accurate dates. There are four volumes in the report: the first is mainly the report and the other three contain data that supports the first volume. Mr. Smith verified that the hardcopies will be sent to the agency office mailing addresses, and asked if the first volume is available electronically. Mr. Anderson stated that no, the files are structured for publishing, not for review. However, the final will be available electronically. Also, the cover letter will reflect the accurate date of completion.

— Groundwater ROD Support Vapor Intrusion Screening Level Assessment Work Plan: Mr. Anderson thanked EPA for comments on this document. Draft responses should be out today; TAFB is in agreement with all comments. The Response to Comments meeting may have to take place

via phone or email. Field work will start two weeks after this document is final. Mr. Chang asked that EPA be informed when field work begins. Tentative field work schedule starts 23 June 2008. David Bell of the Air Force Institute of Operational Health (AFIOH) will be involved in the vapor intrusion study. Travis AFB will be a test platform for some of the scheduled work. Vapor intrusion has become a big issue and is significant factor for groundwater decision documents. Mr. Anderson acknowledged that Travis has benefited from working cooperatively with special groups in the past. DTSC and the Water Board are interested and would like to be copied on all correspondence.

— POCO MNA Evaluation Report: Mr. Duke asked that everyone notice the updated dates on the schedule which are more realistic. The previous tank pull reports were used to provide background information.

— Guardian quarterly newsletter: The e-Guardian has been sent out. The hardcopy mailings are out also.

— CAMU Monitoring and Maintenance Report: Methane sampling is being done. No significant rainwater to measure or collect.

2. CURRENT PROJECTS

A. Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the water treatment plant sites.

South Base Boundary Groundwater Treatment Plant

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 96.5% uptime, and 3.82 million gallons of groundwater were extracted and treated during the month of March 2008. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 88.6 gallons per minute (gpm). Approximately 3.3 pounds of volatile organic compounds (VOCs) was removed during March 2008. The total mass of VOCs removed since the startup of the system is 331.9 pounds (see Attachment 3).

One small shutdown in March 2008 occurred due to a basewide power outage for electrical system maintenance.

The decision was made to do mid-year sampling on the off-line extraction wells. No other optimization activities were conducted.

Central Groundwater Treatment Plant

The Central Groundwater Treatment Plant (CGWTP) performed at 96.5% uptime with approximately 3.4 million gallons of groundwater extracted and treated during the month of March 2008. All treated water was diverted to the storm drain. The

average flow rate for the CGWTP was 78.0 gpm. Approximately 12.4 pounds of VOCs were removed from groundwater, and 2.0 pounds from vapor, during March 2008. The total mass of VOCs removed since the startup of the system is 10,742 pounds. (see Attachment 4).

One small shutdown in March 2008 occurred due to a power outage for electrical system maintenance. Additionally, the WTTP vapor and groundwater systems were shut down on 2 March due to an electrical power surge/volt spike.

The horizontal extraction well EW03x16 is back online. New pump was put in and is maintaining approximately one gpm. Still assessing the carbon filters. May need to repipe the flow and see how that affects the outcome. Mr. Friedman asked how the team figures out when to change out the carbon. Is it breakthrough only? Mr. Wray added that the decision to change out the carbon is not taken lightly – it hasn't been changed in ten years and costs $30,000. Some breakthrough has been observed but isn't significant (less than 10 percent). Mr. Smith stated that there may be funds to do a change out this year.

North Groundwater Treatment Plant

The North Groundwater Treatment Plant (NGWTP) performed at 96.5% uptime with approximately 340,000 gallons of groundwater extracted and treated during the month of March 2008. All treated water was discharged to the duck pond. The average flow for the NGWTP was 7.9 gpm. Less than an ounce of VOCs was removed during March 2008. The total mass of VOCs removed since the startup of the system is 5,414 pounds (see Attachment 5).

One small shutdown in March 2008 occurred due to a power outage for electrical system maintenance. Mr. Smith asked Mr. Duke to verify the 'Cost per Pound' amount in the monthly report for February and March. When the remedial process optimization team is on-base this plant will most likely be looked at very closely. This plant supports two wells at LF007; the battery upgrade for the solar wells should be completed today.

The decision was made to do mid-year sampling on the off-line extraction wells. No other optimization activities were conducted.

B. Petroleum Only Contamination (POCO) Status

Mr. Duke gave an update on the Petroleum Only Contamination (POCO) status.

There is nothing new to report. The document is on schedule.

C. Five Year Review

Mr. Anderson gave an update on the Five Year Review status. Mr. Cooper provided a template for public notice; a draft has been sent to him but Mr. Anderson hasn't received a reply. Time is needed to incorporate any changes Mr. Cooper may have.

Mr. Chang suggested giving a deadline when making requests, as it helps prioritize what needs to be done. Mr. Cooper will be at the April 2008 RAB meeting.

D. Vapor Intrusion Work Plan

Mr. Anderson gave an update on the Vapor Intrusion status. The status was covered rather well in the above discussion on the document schedule.

E. Remedial Action Completion Report

Mr. Anderson gave an update on the RACR status. The status was covered rather well in the above discussion on the document schedule. The data quality material will be delivered on CD as it was too voluminous to print.

3. NEW ACTION ITEMS

Mr. Chang asked about groundwater Interim Remedial Action start dates for several projects. He was not sure which action applied to each date. Some of the actions may have already been signed off as completed and closed. Mr. Anderson will review the dates with EPA after the meeting, and try to match them up with previous or current remedial actions.

The regulatory agencies will be notified when the vapor intrusion field work commences, and when the AFIOH people are on base.

4. PROGRAM/ISSUES/UPDATE

Mr. Smith reported that the PBC is continuing. Changes were made to the Statements of Objectives (SOOs) and now the Corps of Engineers (COE) has the SOO for action. The Request For Proposal (RFP) is scheduled to hit the street in mid-May.

The Air Force centralization of the program management office is happening fairly smoothly. Mr. Wilkson has been involved and is absorbing MAJCOM duties. The centralization of the PMO should streamline what MAJCOM was doing for the base: funding of work and prioritization of projects.

Mr. Chang asked if there is also a transition of management for the closed bases. The Real Estate office (AFRPA) is in charge of environmental projects. Mr. Smith stated that AMC and Air Staff are still involved in decision documents, and the PMO handles other administrative duties. There is no change in the ROD signature circuit.

Ms. Snow asked about the trichloroethene (TCE) reported at Site 27 and if it is going to be a CERCLA site. No decision has been made, but a portion of that site does have TCE. Mr. Smith is leaning towards taking that portion out of POCO and putting it under CERCLA. The data is going through the review process at

the Water Board, and the base will need concurrence to make this change. AMC has not been informed of this suggestion. As this is speculation, it will not be mentioned during the RAB meeting tomorrow.

5. Action Items

ITEM	RESPONSIBLE	ACTION ITEM	DUE DATE	STATUS
1.	Air Force	Interim Remedial Action start dates to EPA.	--	**Open**
2.	Air Force	Notify regulatory agencies when the Vapor Intrusion field work commences	June 2008	**Open**

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
23 April 2008, 9:30 A.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)
   B. PETROLEUM ONLY CONTAMINATION (POCO) STATUS (LONNIE)
   C. EPA 5 YEAR REVIEW (GLENN)
   D. VAPOR INTRUSION WORK PLAN (GLENN)
   E. REMEDIAL ACTION COMPLETION REPORT (GLENN)

3. NEW ACTION ITEM REVIEW

4. PROGRAM/ISSUES/UPDATE

Travis AFB Master Meeting and Document Schedule

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 7:00 p.m.) (Poster Session at 6:30 p.m.)
1-22-08	1-23-08	1-7-08*	—
2-26-08	2-27-08	2-4-08	—
3-18-08	3-19-08 #	—	—
4-22-08	4-23-08	4-7-08	4-24-08
5-20-08	5-21-08	5-5-08	—
6-17-08	6-18-08	6-2-08	—
7-22-08	7-23-08	7-7-08**	—
8-26-08	8-27-08	8-11-08	—
9-23-08	9-24-08	9-8-08	—
10-21-08	10-22-08	10-6-08	10-23-08
—	—	11-10-08	—
12-09-08	12-10-08	—	—

*During the 7 Jan teleconference an additional meeting with EPA was scheduled for 9-10 Jan to discuss past GSAP issues in preparation for moving ahead with the current GSAP and the upcoming Groundwater Performance Based Contract (PBC).

**Holiday Weekend

Teleconference for the 3/19/08 meeting at **0800**

as of April 2008

Travis AFB Master Document Schedule
(continued)

	PRIMARY DOCUMENTS			
	Basewide **Travis, Glenn Anderson**	**Potrero Hills Annex** **Travis, Glenn Anderson**	**Five Year Review** **Travis, Glenn Anderson**	**Soil Remedial Action Report** **Travis, Glenn Anderson**
Life Cycle	**Groundwater ROD**	**Potrero Hills ROD**		**FT003, FT004, LF007E, SD045**
Scoping Meeting	**1-24-07**	**180 days after Water Board Order Rescinded**	**01-23-08**	**NA**
Predraft to AF/Service Center	2-01-09	+ 360 days	03-11-08	01-29-08
AF/Service Center Comments Due	4-01-09	+ 420 days	03-26-08	02-13-08
Draft to Agencies	6-15-09	+ 480 days	04-10-08	TBD
Draft to RAB	6-15-09	+ 480 days	04-10-08	TBD
Agency Comments Due	8-15-09	+ 540 days	05-15-08	TBD
Response to Comments Meeting	**9-01-09**	**+ 555 days**	**05-21-08**	**TBD**
Agency Concurrence with Remedy	9-15-09	+ 570 days	NA	NA
Draft Proposed Plan to Agencies	12-01-09	+ 600 days	NA	NA
Issue Proposed Plan	1-15-10	+ 615 days	NA	NA
Public Comment Period	1-15-10 to 2-15-10	+ 615 to 645 days	NA	NA
Public Meeting	**1-28-10**	**+ 625 days**	**NA**	**NA**
Response to Comments Due	3-01-10	+ 640 days	06-18-08	TBD
Draft Final Due	3-01-10	+ 640 days	07-28-08	TBD
Final Due	5-01-10	+ 700 days	08-27-08	TBD

as of April 2008

Travis AFB Master Document Schedule
(Continued)

SECONDARY DOCUMENTS		
Life Cycle	**GW ROD Support Vapor Intrusion Screening Level Assessment Travis, Glenn Anderson; CH2M Hill, Mike Wray**	**POCO Evaluation of Monitored Natural Attenuation Travis, Lonnie Duke; CH2M Hill, Mike Wray**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	01-18-08	05-23-08
AF/Service Center Comments Due	02-08-07	06-06-08
Draft to Agencies	02-15-08	06-20-08
Draft to RAB	02-15-08	06-20-08
Agency Comments Due	03-14-08 *	07-18-08
Response to Comments Meeting	**04-23-08**	**08-01-08**
Response to Comments Due	06-06-08	08-22-08
Draft Final Due	NA	NA
Final Due	06-06-08	08-22-08
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

* received comments on 4/14/08

Travis AFB Master Document Schedule
(Continued)

INFORMATIONAL DOCUMENTS		
Life Cycle	**Quarterly Newsletters (April 2008) Travis, Mark Smith**	**CAMU Monitoring & Maintenance Report Travis, Lonnie Duke**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	NA	08-15-08
AF/Service Center Comments Due	NA	08-30-08
Draft to Agencies	3-19-2008	NA
Draft to RAB	NA	NA
Agency Comments Due	4-04-2008	NA
Response to Comments Meeting	**TBD**	**NA**
Response to Comments Due	4-11-2008	NA
Draft Final Due	TBD	NA
Final Due	4-17-2008	09-12-08
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

Travis AFB Master Document Schedule
(Continued)

HISTORICAL DOCUMENTS	
Life Cycle	**2007 GSAP Annual Report** **Travis, Lonnie Duke;** **CH2M Hill, Mike Wray**
Scoping Meeting	**NA**
Predraft to AF/Service Center	10-19-07
AF/Service Center Comments Due	11-02-07
Draft to Agencies	11-16-07
Draft to RAB	11-16-07
Agency Comments Due	01-18-08
Response to Comments Meeting	**02-27-08**
Response to Comments Due	03-19-08
Draft Final Due	NA
Final Due	03-19-08
Public Comment Period	NA
Public Meeting	**NA**

South Base Boundary Groundwater Treatment Plant
Monthly Data Sheet

Report Number: 92 **Reporting Period: 1 – 31 March 2008** **Date Submitted: 10 April 2008**

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 – March 2008

Operating Time: **718 hours** Percent Uptime: 96.5**%**

Electrical Power Usage: 17,460 kWh

Gallons Treated: **3.82 million gallons** Gallons Treated Since July 1998: **599.6 million gallons**

Volume Discharged to Union Creek: **3.82 million gallons**

Volume Used for Dust Suppression: **0 gallons**

VOC Mass Removed: **3.3 pounds**[a] VOC Mass Removed Since July 1998: **331.9 pounds**

Rolling 12-Month Cost per Pound of Mass Removed: $3,738[b]

Monthly Cost per Pound of Mass Removed: $2,678[b]

[a] Calculated using March 2008 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.

Flow Rates

Average Groundwater Total Flow Rate: **88.6**[a]

Average Flow Rate (gpm)[b]							
FT005				**SS029**		**SS030**	
EW01x05	1.9	EW736x05	3.5	EW01x29	5.5	EW01x30	4.5
EW02x05	2.8	EW737x05	Off line[c]	EW02x29	10.0	EW02x30	1.2
EW03x05	3.9	EW742x05	Off line[c]	EW03x29	Off line[e]	EW03x30	Off line[e]
EW731x05	Off line[c]	EW743x05	Off line[c]	EW04x29	11.9	EW04x30	19.9
EW732x05	Off line[c]	EW744x05	Off line[c]	EW05x29	4.3	EW05x30	12.1
EW733x05	Off line[c]	EW745x05	Off line[c]	EW06x29	2.4[d]	EW06x30	0.0[f]
EW734x05	13.2[d]	EW746x05	Off line[c]	EW07x29	6.5	EW711x30	3.5
EW735x05	4.3						
FT005 Total:	**29.6**			**SS029 Total:**	**40.6**	**SS030 Total:**	**41.2**

[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] Average extraction well flow rates measured by each extraction well totalizer divided by the well's operating time.
[c] Extraction well was shutdown for a one-year 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 was pumping for less than 10% of the operating time.
[e] Extraction well was off line due to low VOC concentrations.
[f] Extraction well was not operational during March 2008.

gpm—gallons per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP (water)	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater sampling at the SBBGWTP was performed on 3 March 2008. Sample results are presented in Table 1. The total VOC concentration (104.3 µg/L) in the influent sample has increased since the February 2008 sample (72.1 µg/L). The total influent VOC concentrations have generally been increasing since 2006. VOCs were not detected in the effluent sample.

The check valve on the discharge pipe for EW07x29 was replaced and the flow meter wiring was repaired. EW07x29 was restarted on 29 February 2008.

The pump motor for EW02x30 was malfunctioning. A replacement motor was installed on 10 March 2008, and the well was restarted on 11 March 2008.

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 extraction wells will remain off-line for one year. These extraction wells will remain off-line for one year. These wells will be sampled at the mid-year point in the rebound period as part of the annual GSAP event in May 2008. At the end of the rebound period, in December 2008, the groundwater extraction wells will be sampled to assess rebound and plume stability. No other optimization activities were conducted in March 2008.

Table 1
Summary of Groundwater Analytical Data for March 2008 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	3 March 2008 (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	0.16	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	0.38 J	ND
1,1-Dichloroethene	5	0.14	0	ND	ND
cis-1,2-Dichloroethene	5	0.15	0	6.9	ND
trans-1,2-Dichloroethene	5	0.15	0	ND	ND
Methylene Chloride	5	0.32	0	ND	ND
Tetrachloroethene	5	0.20	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 – 0.64	0	97	ND
Vinyl Chloride	0.5	0.40	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	4.9	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	33	0	NM	ND
Total Suspended Solids (mg/L)	NE	1.1	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
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: 104 **Reporting Period: 1 – 31 March 2008** **Date Submitted: 10 April 2008**

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 – March 2008

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	718 hours	**CGWTP:**	96.5%	**CGWTP:**	8,080 kWh
WTTP:	Water: 694 hours	**WTTP:**	Water: 93.3%	**WTTP:**	22,889 kWh
	Vapor: 62.5 hours		Vapor: 83.9%		
ThOx:	718 hours	**ThOx:**	96.5%	**ThOx:**	14,883 kWh

Gallons Treated: **3.4 million gallons**

Gallons Treated Since January 1996: **376.6 million gallons**

VOC Mass Removed:

12.4 lbs (groundwater only)[a]

2.0 lbs (vapor only)[b]

VOC Mass Removed Since January 1996:

2,280 lbs from groundwater

8,462 lbs from vapor

UV/Ox DRE: 100%

ThOx DRE: 92.4 %

Rolling 12-Month Cost per Pound of Mass Removed: $839[c]

Monthly Cost per Pound of Mass Removed: $1,361[c]

[a] Calculated using March 2008 EPA Method SW8260B analytical results.
[b] Total VOC vapor mass removed was calculated using March 2008 EPA Method TO-14 analytical results for the WTTP system, WTTP extraction wells, and the ThOx system.
[c] 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 Flow Rate: **78.0 gpm**[a]

Location	Average Flow Rate	
	Groundwater (gpm)[b]	Soil Vapor (scfm)
EW01x16	23.8	NA
EW02x16	6.0[c]	NA
EW03x16	1.0[d]	NA
EW605x16	12.2	NA
EW610x16	3.7	NA
WTTP	36.4[e]	141
ThOx	NA	55.1

[a] as measured by the effluent discharge to the storm drain divided by the operating time.
[b] as measured by extraction well totalizer divided by the operating time.
[c] EW02x16 (water) was restarted on 21 June 2007.
[d] EW03x16 (water) was restarted on 19 March 2008.
[e] as measured by the effluent groundwater pumped to the CGWTP divided by the operating time.

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

Flow Rates

Flow Rate from the WIOU and DP039 Extraction Wells on 3 March 2008 (gpm)							
SD037/SS041/SD043				**LF008/SD033/SD034**		**SD036/ DP039**	
EW599x37	7.9	EW706x37	0.4	EW719x08	3.7	EW593x36	3.1
EW700x37	0.0[a]	EW707x37	0.6	EW720x08	3.1	EW594x36	1.1
EW701x37	0.0[a]	EW510x37	4.1	EW721x08	1.2	EW595x36	1.1
EW702x37	2.7	EW511x37	1.6	EW501x33	1.0	EW563x39	1.3
EW703x37	2.3	EW542x41	Off line	EW503x33	0.1	EW782x39	1.7
EW704x37	0.2	EW555x43	0.9	EW01x34	0.0[a]		
EW705x37	3.1			EW02x34	0.0[a]		

gpm—gallons per minute

[a] Flow meters were malfunctions and may need to be repaired/replaced.

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	**Time**	**Date**	**Time**	
CGWTP (Groundwater):					
CGWTP	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.
WTTP (Groundwater):					
WTTP	2 March 2008	11:00	3 March 2008	11:00	Electrical power surge/volt spike.
WTTP	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.
WTTP (Vapor):					
WTTP	2 March 2008	11:00	3 March 2008	13:30	Electrical power surge/volt spike.
WTTP	15 March 2008	16:30	18 March 2008	11:30	Electrical power outage.
WTTP	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.
ThOx (vapor):					
ThOx	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.

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 and quarterly groundwater sampling at the ThOx and WTTP were performed on 3-4 March 2008. Groundwater sample results are summarized in Table 1. A groundwater sample was collected from EW03x16 on 25 February 2008, and the results are presented in Table 2. Vapor samples were collected from EW605x16 and EW610x16 on 4 March 2008. In addition, quarterly vapor samples were collected at the ThOx unit and the WTTP SVE system on 4 March 2008. Vapor results are presented in Tables 3 through 5, respectively. Vapor samples were also collected from the three influent vapor lines (V-202, V-203, and V-204) prior to entering the manifold at the WTTP SVE system. The V-202 line collects vapors from EW563x39 and EW782x39; V-203 collects vapors from EW593x36, EW594x36, EW595x36, EW510x37, and EW700x37; and V-204 collects vapors from EW599x37, EW704x37, and EW707x37. The analytical results are presented in Table 6.

The total VOC concentration (443.3 µg/L) in the March 2008 CGWTP influent groundwater sample has increased since the January 2008 sampling (354.9 µg/L). Chloroform, cis-1,2-dichloroethene (DCE), and trichloroethene (TCE) were present in the groundwater samples from the granular activated carbon (GAC) sample points. The VOCs were also detected in the system effluent, but at trace concentrations, and less than their respective effluent limits. The detections in these samples may be attributed to desorption from the GAC. The lead carbon was taken off-line and bypassed in July 2007 due to erratic performance. In October 2007, a hole was discovered near the bottom of the lead carbon unit. The hole was likely created by corrosion. On 29 February 2008, the lead 20,000-lb carbon unit was repaired. The tank was filled with water on 3 March 2008 and brought on line on 4 March 2008.

EW03x16 was taken off line in September 2002 due to a significant decrease in flow rates. The extraction well pump for EW03x16 was replaced in January 2008, and in February 2008, the sample port, pressure gauge, and other hardware were installed at the well. A grab groundwater sample from the well was collected on 25 February 2008. Cis-1,2-DCE, TCE, vinyl chloride, and 1,2-dichlorobenzene were detected at concentrations of 940 µg/L, 890 µg/L, 150 µg/L, and 130 µg/L, respectively. Several other VOCs were detected lower concentrations. In March 2008, a globe valve was installed at EW03x16 to allow more flexibility in adjusting the flow rate for the well. EW03x16 was restarted on 19 March 2008 and the flow rate was initially set at 1.6 gpm. Because the well cycled on/off frequently, the flow rate was decreased to approximately 1.0 gpm on 21 March 2008.

The ThOx system continues to treat soil vapor from the 2-Phase® well (TPE-W) as part of SS016 focused vapor extraction activities. Since the ThOx system was restarted in September 2007, influent vapor concentrations have steadily decreased from 75,250 ppbv in September 2007 to 1,729 ppbv in March 2007. Influent concentrations will continue to be monitored. Soil vapor samples were also collected from EW605x16 and EW610x16 to assess whether to bring these wells back on line for vapor treatment. Total VOC concentrations for these wells were 940 ppbv and 190 ppbv, respectively. Vapor results are shown in Tables 3 and 4.

The WTTP SVE system continued to treat soil vapor from Site DP039 and the WIOU. Influent VOC vapor concentrations have remained steady during the past three quarters from 455 ppbv in September 2007 to 400 ppbv in December 2007 to 495 ppbv in March 2008. The highest VOC concentrations were reported in V-202 (Site DP039). Vapor results are shown in Tables 5 and 6. On 28 March 2008, vapor extraction from 8 WIOU wells (EW593x36, EW594x36, EW595x36, EW599x37, EW700x37, EW704x37, EW707x37, and EW510x37) was turned off to facilitate the collection of representative soil gas samples.

At the WIOU, the groundwater eductor flow meters at EW501x33 (supply), EW700x37 (discharge), EW705x37 (supply), and EW707x37 (supply) were replaced. The flow meters for EW501x33 (discharge), EW595x36 (discharge), and EW707x37 (discharge) will be replaced.

Optimization Activities

Well EW03X16 was re-started on 19 March 2008, and the extracted groundwater is added to the flow through the CGWTP. This optimization will increase source removal at the Site SS016 OSA plume.

Table 1
Summary of Groundwater Analytical Data for March 2008 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit[b] (µg/L)	N/C	3 March 2008 (µg/L) WTTP Effluent	TPE Effluent	Influent	After UV/OX	After Carbon 1 Effluent[c]	After Carbon 2 Effluent	After Carbon 3 Effluent	System Effluent
Halogenated Volatile Organics											
Bromodichloromethane	5.0	0.17 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.19 – 1.3	0	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5.0	0.17 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	5.0	0.16 – 1.1	0	0.25 J	ND	ND	ND	0.30 J	0.22 J	0.22 J	0.17 J
Dibromochloromethane	5.0	0.17 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.13 – 0.87	0	ND	1.5 J	0.25 J	ND	ND	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.16 – 1.1	0	ND	1.2 J	0.17 J	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.16 – 1.1	0	ND	1.1 J	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5.0	0.16 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.13 – 0.87	0	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.14 – 0.93	0	3.1	ND	1.4	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.15 – 1.0	0	8.3	240	49	ND	1.6	0.39 J	0.54	0.39 J
trans-1,2-Dichloroethene	5.0	0.15 – 1.0	0	0.89	ND	1.9	ND	0.22 J	ND	ND	ND
Methylene Chloride	5.0	0.32 – 2.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0	0.20 – 1.3	0	0.56	2.0 J	0.58	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.16 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.32 – 2.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5.0	0.16 – 11	0	210	2,300	390	ND	4.0	2.6	1.7	1.3
Vinyl Chloride	0.5	0.17 – 2.7	0	ND	ND	ND	ND	ND	ND	ND	ND
Non-Halogenated Volatile Organics											
Benzene	1.0	0.16 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5.0	0.16 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5.0	0.17 – 1.1	0	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	5.0	0.19 – 2.3	0	ND	ND	ND	ND	ND	ND	ND	ND
Other											
Total Dissolved Solids (mg/L)	NE	4.7	0	NM	NM	NM	NM	NM	NM	860	NM

[a] In accordance with Appendix G of the *Travis AFB Central Groundwater Treatment Plant Operations and Maintenance Manual* (URS Group, Inc., 2002).
[b] The higher detection limits were used for the TPE effluent sample; all other samples used lower detection limits.
[c] The After Carbon 1 Effluent sample was collected on 4 March 2008 after the T-502 GAC vessel was repaired and back on line.

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

TABLE 2
Summary of Groundwater Analytical Data for February 2008 – EW03x16

Constituent	25 February 2007 (ppbv) EW03x16
Halogenated Volatile Organics	
Bromodichloromethane	ND
Carbon Tetrachloride	ND
Chlorobenzene	1.9
Chloroform	ND
Dibromochloromethane	ND
1,2-Dichlorobenzene	130
1.3-Dichlorobenzene	8.5
1,4-Dichlorobenzene	24
1,1-Dichloroethane	3.8
1,2-Dichloroethane	ND
1,1-Dichloroethene	3.4
cis-1,2-Dichloroethene	940
trans-1,2-Dichloroethene	9.1
Methylene Chloride	ND
Methyl Ethyl Ketone (2-Butanone)	4.1 J
Tetrachloroethene	1.0
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethene	890
Vinyl Chloride	150
Non-Halogenated Volatile Organics	
Benzene	ND
Ethylbenzene	ND
Toluene	ND
Total Xylenes	ND

J = analyte concentration is considered an estimated value
ND = not detected
µg/l = micrograms per liter

TABLE 3
Soil Vapor Analytical Data for March 2008 – EW605x16 and EW610x16

Constituent	4 March 2008 (ppbv)	
	EW605x16	**EW610x16**
Volatile Organics		
Benzene	ND (1.1)	0.32 J
Carbon Tetrachloride	ND (0.72)	ND (0.19)
Chloromethane	ND (3.0)	1.4 J
cis-1,2-Dichloroethene	260	13
1,2-Dichlorobenzene	ND (1.3)	ND (0.35)
1,3-Dichlorobenzene	ND (1.2)	ND (0.33)
1,4-Dichlorobenzene	ND (1.2)	ND (0.32)
1,2-Dichloroethane	ND (0.89)	ND (0.24)
1,1-Dichloroethene	2.8 J	ND (0.16)
Ethylbenzene	ND (1.3)	ND (0.34)
Freon 11	ND (0.45)	0.26 J
Freon 12	ND (1.3)	ND (0.58 J)
Freon 113	ND (0.58)	ND (0.16)
Methylene Chloride	1.4 J	ND (0.23)
Methyl Ethyl Ketone (2-Butanone)	ND (3.8)	1.7 J
Tetrachloroethene	ND (0.75)	0.59 J
Toluene	ND (1.0)	3.4
trans-1,2-Dichloroethene	3.0 J	0.51 J
1,1,1-Trichloroethane	ND (0.57)	2.0
1,2,4-Trimethylbenzene	ND (1.2)	ND (0.32)
1,3,5-Trimethylbenzene	ND (1.2)	ND (0.33)
Trichloroethene	670	150
Vinyl Chloride	2.5 J	ND (0.36)
Xylenes, m,p-	ND (2.3)	ND (0.60)
Xylene, o-	ND (1.1)	ND (0.31)

J = analyte concentration is considered an estimated value
ND = not detected
ppbv = parts per billion by volume
ThOx = thermal oxidation system
( ) = detection limit

TABLE 4
Soil Vapor Analytical Data for March 2008 – Central Groundwater Treatment Plant

Constituent	4 March 2008 (ppbv)	
	ThOx Influent	**ThOx Effluent**
Volatile Organics		
Benzene	ND (1.6)	0.02 J
Carbon Tetrachloride	ND (1.1)	ND (0.076)
Chloromethane	ND (4.6)	0.74 J
cis-1,2-Dichloroethene	450	0.20 J
1,2-Dichlorobenzene	14	ND (0.14)
1,3-Dichlorobenzene	2.5 J	ND (0.13)
1,4-Dichlorobenzene	4.3 J	ND (0.13)
1,2-Dichloroethane	ND (1.4)	ND (0.094)
1,1-Dichloroethene	2.6 J	ND (0.064)
Ethylbenzene	ND (2.0)	ND (0.14)
Freon 11	ND (0.70)	ND (0.048)
Freon 12	ND (2.0)	ND (0.14)
Freon 113	ND (0.90)	ND (0.062)
Methylene Chloride	2.2 J	ND (0.090)
Methyl Ethyl Ketone (2-Butanone)	ND (5.8)	5.1
Tetrachloroethene	2.0 J	ND (0.080)
Toluene	1.8 J	0.18 J
trans-1,2-Dichloroethene	2.2 J	ND (0.10)
1,2,4-Trimethylbenzene	ND (1.8)	ND (0.13)
1,3,5-Trimethylbenzene	ND (1.9)	ND (0.13)
Trichloroethene	1,100	0.42 J
Vinyl Chloride	45	ND (0.14)
Xylenes, m,p-	ND (3.5)	ND (0.24)
Xylene, o-	ND (18)	ND (0.12)

J = analyte concentration is considered an estimated value
ND = not detected
ppbv = parts per billion by volume
ThOx = thermal oxidation system
( ) = detection limit

Table 5
Soil Vapor Analytical Data for March 2008 – West Transfer and Treatment Plant

Constituent	4 March 2008 (ppbv)		
	SVE Influent	SVE Mid-Treatment	SVE Effluent
Volatile Organics			
Benzene	0.46 J	ND (0.056)	0.16 J
Carbon Tetrachloride	ND (0.27)	0.096 J	0.14 J
Chloroethane	ND (0.25)	ND (0.035)	ND (0.070)
Chloroform	1.4	0.21	0.72
Chloromethane	ND (1.1)	0.60	0.58 J
cis-1,2-Dichloroethene	54	9.8	9.1
trans-1,2-Dichloroethene	1.5	0.19 J	0.32 J
1,1-Dichloroethane	1.5	0.32	0.59
1,2-Dichloroethane	0.63 J	0.083 J	ND (0.094)
1,1-Dichloroethene	59	8.5	24
Ethylbenzene	ND (0.48)	ND (0.068)	ND (0.14)
Freon 11	0.26 J	0.069 J	0.32 J
Freon 12	0.53 J	0.55	0.66
Freon 22	ND (0.26)	0.35	0.35 J
Freon 113	ND (0.22)	ND (0.031)	0.12
Methylene Chloride	ND (0.32)	ND (0.045)	ND (0.090)
Methyl Ethyl Ketone (2-Butanone)	ND (1.4)	1.6	0.55 J
Tetrachloroethene	0.45 J	ND (0.040)	ND (0.080)
Toluene	ND (0.38)	ND (0.054)	0.16 J
1,1,1-Trichloroethane	1.4	0.73	2.1
1,1,2-Trichloroethane	0.45 J	0.054	0.11
Trichloroethene	360	5.8	0.079 J
Vinyl Chloride	0.57 J	ND (0.071)	ND (0.14)
Xylenes, m,p-	ND (0.84)	ND (0.12)	ND (0.24)
Xylene, o-	ND (0.43)	ND (0.061)	ND (0.12)

J = analyte concentration is considered an estimated value
ND = not detected
ppbv = parts per billion by volume
SVE = soil vapor extraction
( ) = detection limit

Table 6
Soil Vapor Analytical Data for March 2008 – West Transfer and Treatment Plant

Constituent	4 March 2008 (ppbv)		
	WTTPV-202	WTTPV-203	WTTPV-204
Volatile Organics			
Benzene	ND (3.5)	ND (0.57)	ND (0.56)
Carbon Tetrachloride	ND (2.3)	ND (0.38)	0.90 J
Chloroform	2.5 J	1.2 J	3.9
Chloromethane	ND (9.9)	ND (1.6)	ND (1.6)
cis-1,2-Dichloroethene	270	13	17
trans-1,2-Dichloroethene	ND (3.1)	1.7 J	3.9
1,1-Dichloroethane	9.2 J	ND (0.26)	ND (0.26)
1,2-Dichloroethane	ND (2.9)	ND (0.48)	ND (0.47)
1,1-Dichloroethene	490	1.4 J	1.1 J
Ethylbenzene	ND (4.2)	ND (0.69)	ND (0.68)
Freon 11	ND (1.5)	ND (0.24)	0.35 J
Freon 12	ND (4.2)	ND (0.69)	0.69 J
Freon 22	ND (2.3)	0.94 J	1.1 J
Freon 113	ND (1.9)	ND (0.31)	ND (0.31)
Methylene Chloride	5.8 J	ND (0.46)	0.84 J
Methyl Ethyl Ketone (2-Butanone)	ND (12)	3.4 J	ND (2.0)
Tetrachloroethene	ND (2.5)	1.6 J	1.2 J
Toluene	ND (3.3)	ND (0.55)	ND (0.54)
1,1,1-Trichloroethane	18	ND (0.30)	ND (0.30)
1,1,2-Trichloroethane	ND (3.3)	ND (0.55)	ND (0.54)
Trichloroethene	1,300	170	270
1,2,4-Trimethylbenzene	ND (3.9)	ND (0.64)	ND (0.63)
Vinyl Chloride	ND (4.4)	ND (0.72)	ND (0.71)
Xylenes, m,p-	ND (7.4)	ND (1.2)	ND (1.2)
Xylene, o-	ND (3.8)	ND (0.62)	ND (0.61)

J = analyte concentration is considered an estimated value
ND = not detected
ppbv = parts per billion by volume
( ) = detection limit

North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 94 **Reporting Period: 1 – 31 March 2008** **Date Submitted: 10 April 2008**

This data sheet includes the following: results for the operation of the groundwater extraction 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 – March 2008

Operating Time: **Water:** 718 hours

Percent Uptime: **Water:** 96.5%

Electrical Power Usage: **13,212 kWh**

Gallons Treated: **0.34 million gallons**

Gallons Treated Since March 2000: **78.9 million gallons**

Volume Discharged to Duck Pond: **0.34 million gallons**

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

Percentage of Treated Water to Beneficial Use: 100%

VOC Mass Removed:

0.02 lbs (groundwater only)[a]

0 lbs (vapor only)[b]

VOC Mass Removed Since March 2000:

173.7 lbs from groundwater

5,240 lbs from vapor[c]

Rolling 12-Month Cost per Pound of Mass Removed: $71,396[de]

Monthly Cost per Pound of Mass Removed: $312,887[d]

[a] Calculated using March 2008 EPA Method SW8260B analytical results.
[b] The SVE system was shut down in December 2007 in accordance with the *Work Plan for Remedial Process Optimization (RPO) Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).
[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 influent groundwater concentrations and low flow rates.
[e] The rolling 12-month cost per pound of mass removed is calculated by the sum of the monthly cost over the past 12 months divided by the sum of pounds removed during the same period.

Flow Rates

Average Groundwater Total Flow Rate: **7.9 gpm** [a]

Location	Groundwater Flow Rate on 31 March 2008 (gpm)
EW565x31	Off line[b]
EW566x31	Off line[b]
EW567x31	Off line[b]
EW576x04	1.7
EW577x04	1.1
EW578x04	Off line[b]
EW579x04	Off line[b]
EW580x04	Off line[b]
EW621x04	3.1
EW622x04	1.5
EW623x04	1.4
EW614x07	Off line[c]
EW615x07	Off line[c]

[a] The flow rate was calculated using the effluent discharge totalizer divided by the operating time of the plant.
[b] Extraction well was shutdown for a one-year rebound study in December 2007 based on the *Work Plan for RPO Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).
[c] LF007 wells were turned off for the wet winter season on 10 January 2008.

gpm = gallons per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP (water)	18 March 2008	12:30	19 March 2008	14:30	Scheduled Base power outage for electrical system maintenance.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater sampling at the NGWTP was performed on 3 March 2008. Sample results are presented in Table 1. The total VOC concentration (8.0 µg/L) in the influent sample has increased slightly since the February 2008 sample (2.3 µg/L). TCE and cis-1,2-DCE were the only VOCs detected in the influent sample. Since the SD031 extraction wells were shut down, the indicator chemical for the site, 1,1-DCE, was not detected in the system influent. There were no detections of VOCs in the effluent sample.

On 10 March 2008, the eductor pumps for EW576x04 and EW577x04 were backflushed. The eductor pump for EW577x04 may need to be replaced because the flow rate did not increase after the backflushing. Well EW577x04 will continue to be monitored.

Optimization Activities

On 4 December 2007, the six extraction wells (EW565x31, EW566x31, EW567x31, EW578x04, EW579x04, and EW580x04) were shut down for rebound testing. These extraction wells will remain off-line for one year. These wells will be sampled at the mid-year point in the rebound period as part of the annual GSAP event in May 2008. At the end of the rebound period, in December 2008, the groundwater extraction wells will be sampled to assess rebound and plume stability. No other optimization activities were conducted in March 2008.

Table 1
Summary of Groundwater Analytical Data for March 2008 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	3 March 2008 (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	0.2 J	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	0.16	0	7.8	ND
Vinyl Chloride	0.5	0.40	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	0.19 – 0.34	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	4.9	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	32	0	NM	ND
Total Dissolved Solids (mg/L)	NE	9.4	0	NM	2,200

[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).

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