Final

Travis Air Force Base
Environmental Restoration Program
Remedial Program Manager's
Meeting Minutes

22 February 2012, 0930 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 22 February 2012 at 0930 in the Main Conference Room, Building 570, Travis AFB, California. Attendees included:

• Mark Smith	Travis AFB
• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Merrie Schilter-Lowe	Travis AFB
• Dezso Linbrunner	USACE-Omaha
• Alan Friedman	California Regional Water Quality Control Board (RWQCB)
• Jose Salcedo	California Department of Toxic Substances Control (DTSC)
• Nadia Hollan Burke	United States Environmental Protection Agency (USEPA)
• Mary Snow	Techlaw, Inc
• Rachel Hess	ITSI
• Mike Wray	CH2M HILL
• Loren Krook	CH2M HILL
• Tony Chakurian	CH2M HILL

Handouts distributed at the meeting and presentations included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting and Document Schedule
• Attachment 3	SBBGWTP Monthly Data Sheet (January 2012)
• Attachment 4	CGWTP Monthly Data Sheet (January 2012)
• Attachment 5	NGWTP Monthly Data Sheet (January 2012)
• Attachment 6	Site ST018 Monthly Data Sheet (January 2012)
• Attachment 7	Presentation: Management Overview Briefing

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 18 January 2012 RPM meeting minutes were approved and finalized as written, with the following exceptions: 1) Mr. Anderson requested a correction be made on page one, attachment 8, "2011 Field Schedule" to "2012 Field Schedule", 2) Mr. Friedman requested a correction be made on page three, Potrero Hills Annex section, seventh sentence, "Mr. Friedman said you don't have authority but you have responsibility." to read "Mr. Friedman said you have the authority as well as the responsibility to assure that there is a cleanup.", and 3) Ms. Burke requested the following change be made on page twelve, first paragraph, sixth sentence, "Ms. Burke said you can't cleanup groundwater in nine years." to read "Ms. Burke said it is not likely to be able to cleanup groundwater in nine years."

B. Action Item Review.

Action items from January were reviewed.

Action item one still open. No change.

Action item two still open. No change.

Action item three is closed. Ms. Burke said EPA does not need closure reports for each site; EPA will need the closure report for the site FT005 Soil Remediation. Mr. Anderson said we can revisit site closure reports in the five-year reviews. Ms. Burke said EPA has updated the site closure guidance and will confirm if the changes affect Travis in next month's RPM meeting.

Master Meeting and Document Schedule Review (see Attachment 2)

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

Travis AFB Annual Meeting and Teleconference Schedule

— The next RPM meeting will be held on 21 March 2012.

Travis AFB Master Document Schedule

— Proposed Plan (PP): Draft to Agencies new date 07 March 2012. The draft PP is ready to be submitted to the agencies, however, the PP cannot be submitted for regulatory review until the TEFA is final. Currently Travis is looking into holding a Public Meeting separate from the April RAB meeting. Mr. Smith commented on a PP phone call discussion he had with Ms. Burke requesting a letter as to why the dates were pushed back on a primary document. It was

agreed that Mr. Smith would state in the letter that the PP dates have been pushed back due to the volume of preceding documents (specifically the Focused Feasibility Study), and requirement to prepare the TEFA.

— Groundwater Record of Decision (ROD): Pushed dates back for Predraft to AF/Service Center to 04 June 2012. The rest of the dates have changed accordingly.

— Potrero Hills Annex: (FS, PP, and ROD): No change. Mr. Anderson said he completed a review of a working copy of a report on the latest perchlorate assessment by the contractor "CDM Smith" at the Potrero Hills Annex and that a draft version of the document will be submitted to the RWQCB on 25 February 2012 for review. Mr. Anderson provided a brief summary of the latest field investigation that took place around the Assembly Building at the Annex. Four soil borings were drilled, soil samples were collected at every ten feet until groundwater was encountered, and then a groundwater grab sample was collected. The perchlorate plume has doubled in size and its concentrations are an order of magnitude greater than previously thought. Mr. Salcedo asked how deep the borings were. Mr. Anderson said around forty to sixty feet. Mr. Anderson stated that CDM Smith is working on a new work plan for further characterization.

— Work plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB: The Final Due date was changed to 24 February 2012 to reflect actual date when the document will go final.

— Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: No change. Dates are still TBD. Ms. Burke asked when the analysis results will be received. Mr. Wray said that they should be able to provide dates at the March RPM meeting.

— Work Plan for Remedial Process Optimization of Sites SS016 and SS029: New document, all new dates. The Draft to Agencies was handed out to the regulators in CD format during the RPM meeting today. Mr. Duke said he would like to start the field work sometime in May 2012, at the beginning of the dry season.

— RPO Baseline Implementation Report: The Response to Comments (RTC) due has been changed to 22 February 2012. A RTC Meeting will be held this afternoon after the RPM meeting to address EPA comments. Mr. Salcedo sent an email stating he had no comments. Mr. Friedman said he too had no comments. The rest of the dates have been changed accordingly.

— Technical and Economic Feasibility Analysis (TEFA): The Response to Comments Meeting date has been changed to TBD. Travis is in the process of incorporating the comments that Mr. Friedman provided after their discussion last month. Travis would like to schedule a teleconference with RWQCB before the next RPM meeting. Mr. Friedman asked if Travis is still planning on releasing the draft PP on 07 March 2012 in advance of the TEFA's final due date. Mr. Anderson said yes if the RWQCB is okay with the changes

made in the TEFA. Ms. Burke asked if the RTC is going to happen before the14 March 2012 date. Mr. Anderson said the RTC and final due are scheduled for the same date, adding that if Mr. Friedman approves the responses in the TEFA it is just a matter of incorporating and accepting all changes agreed to. Mr. Anderson said Travis has been asked not to release the draft PP until the TEFA is final, because the PP has a cleanup level table that is based on the TEFA's acceptance by the Water Board. Mr. Salcedo asked if AFCEE is okay with the PP otherwise. Mr. Anderson said yes, the AFCEE legal review of the PP has been completed and changes to the PP approved.

— Site LF007C Data Gaps Investigation Technical Memorandum: Dates are still TDB. No change.

— FT005 Remedial Action Completion Report: No change. Mr. Duke said the predraft is ready to be submitted. However, there is about 420 cubic yards of soil still in place that keeps Travis from meeting residential cleanup levels. Mr. Linbrunner said that the work to excavate this remaining volume of contaminated soil has been approved, and that Travis wanted to know if the agencies preferred to receive this report now with a later addendum, or wait to receive one report that includes the additional cleanup activities. Ms. Burke asked for a schedule for the new plan, saying it makes sense to hold off on this report to incorporate the last of the cleanup. Ms. Burke will confer with EPA for guidance regarding their metric for receiving this report and if she will need the final report this fiscal year. Mr. Salcedo asked if the actual fieldwork would take a week. Ms. Hess replied yes, once her field team has mobilized at the site.

— Quarterly Newsletter (April 2012): Draft to Agencies has been changed to 19 March 2012. The subsequent dates were changed accordingly. Mr. Anderson said that since the PP Public Meeting will not be held in April, there is little left to talk about in the newsletter. Mr. Smith added that what is in the Guardian is typically what is presented at the RAB meetings. Travis is soliciting ideas from the agencies on topics to write about in the Quarterly Newsletter. The RAB meeting presentations focus on what has been completed, not upcoming fieldwork. Mr. Friedman said since he will receive the TEFA soon and the draft PP is ready to go, he wouldn't suggest abandoning the discussion of the PP just yet. The Newsletter needs to be finalized by 09 April 2012.

— 2010/2011 GSAP: Response to Comments Meeting was changed to 22 February 2012. Travis is working on the agency comments. The subsequent dates were changed accordingly.

— 2011 Groundwater Treatment RPO Annual Report: New document. All new dates.

— Old Skeet Range Engineering Evaluation/Cost Analysis: Response to Comments Due was changed to TBD. Mr. Anderson asked Ms. Burke to let him know if she needs more than thirty days to review the responses to her comments on the draft EE/CA. Ms. Burke said she has her comments from

Techlaw. However, the problem is that a lot of the investigative work preceded her, and she doesn't have the historical knowledge of the site. EPA's Risk Assessor wants to understand the results, how the data was collected, the depth samples were collected, etc. Mr. Smith said the goal is to have this document finalized in order to get out in the field this year. Mr. Anderson will schedule a teleconference with Ms. Burke and EPA's Risk Assessor to discuss the historical background.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status.

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 4.5 million gallons of groundwater were extracted and treated during the month of January 2012. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 100 gallons per minute (gpm). Electrical power usage was 12,060 kWh and approximately 16,522 pounds of CO_2 were created (based on DOE calculation). Approximately 1.42 pounds of volatile organic compounds (VOCs) were removed in January. The total mass of VOCs removed since startup of the system is 415 pounds.

Optimization Activities: No optimization activities to report for the month of January.

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.7 million gallons of groundwater extracted and treated during the month of January 2012. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 34.4 gpm. Electrical power usage was 2,580 kWh for all equipment connected to the Central plant, and approximately 3,535 pounds of CO_2 were created. Approximately 4.53 pounds of VOCs were removed from groundwater in December. The total mass of VOCs removed since the startup of the system is 11,263 pounds.

Optimization Activities for WTTP: The WTTP remains off line since it was shut down in April 2010 for the ongoing rebound study. No additional optimization activities to report for the month of January.

Optimization Activities for CGWTP: No optimization activities to report for the month of January.

North Groundwater Treatment Plant (see Attachment 5)

The North Groundwater Treatment Plant (NGWTP) performed at 90.6% uptime with approximately 13,318 gallons of groundwater extracted and treated during the month

of January 2012. The average flow rate of the NGWTP, while operating, was 0.33 gpm and electrical power use was 441 kWh for all the equipment connected to the North plant. Approximately 604 pounds of CO_2 was created. Approximately 0 pounds of VOCs were removed from the groundwater in January. The total mass of VOCs removed since the startup of the system is 174.3 pounds.

Optimization Activities: No optimization activities to report for the month of January.

Site ST018 Groundwater (MTBE) Treatment Plant (see attachment 6)

The Site ST018 (MTBE) Treatment Plant (S18GWTP) performed at 100% uptime with approximately 112,000 gallons of groundwater extracted and treated during the month of January 2012. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 2.49 gpm. Electrical power usage for the month was 81 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 111 pounds of CO_2. Approximately 0.42 pounds of BTEX, MTBE and TPH were removed from groundwater in January. The total BTEX, MTBE and TPH mass removed since the startup of the system is 7.5 pounds.

Note: electrical power use is for the alarm system and a pump that pushes water through the GAC. The other pumps in the system are all solar powered.

Optimization Activities: No optimization activities to report for the month of January.

3. Presentations

Program Update: Activities Completed, In Progress and Upcoming (see Attachment 7)

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. See Attachment 7 for details.

Highlights included:

Completed Fieldwork includes the Performance Monitoring of the SS015 EVO injection (4th Quarterly event).

In-Progress Documents and Fieldwork include the Work Plan for RPO of Sites SS016 and SS029.

Field Work In Progress includes the Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb. 21-22)

Upcoming Field Work includes the SS029 System Optimization Analysis, and the 2012 Annual GSAP Sampling.

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Mr. Smith briefly mentioned his trip to San Antonio last month. The focus of the trip was on Accelerated Site Completion (ASC). ASC encompasses site closure within ten years, removal of land use control sites, technology evaluations, cost estimates and reduction of management and overhead costs.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Petition to have the Lysimeter removed.	TBD	Open
2.	Travis AFB	Research beneficial reuse of treated water and give update.	TBD	Open
3.	Travis AFB and EPA	Review past site closure completion reports to determine if future site closure reports are necessary.	N/A	Closed

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
BLDG 570, Main Conference Room
22 February 2012, 9:30 P.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)

3. PRESENTATIONS

   A. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

NOTE: WE HAVE ALSO SET ASIDE THE 12:30 TO 4 O'CLOCK TIMEFRAME AFTER THE RPM MEETING TO DISCUSS THE REMAINING RESPONSES TO EPA COMMENTS ON THE DRAFT BASELINE IMPLEMENTATION REPORT AND THE DRAFT GSAP ANNUAL REPORT.

Travis AFB Master Meeting and Document Schedule

(2012)
Annual Meeting and Teleconference Schedule

Monthly RPM Meeting (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-18-12	—	—
02-22-12	—	—
03-21-12	—	—
04-19-12 (1:00 PM)	—	04-19-12
05-16-12	—	—
06-20-12	—	—
07-18-12	—	—
08-15-12	—	—
09-19-12	—	—
10-18-12 (1:00 PM)	—	10-18-12
11-14-12	—	—
—	—	—

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS		
	Basewide Groundwater	
Life Cycle	Proposed Plan Travis, Glenn Anderson CH2M HILL, Loren Krook	Record of Decision Travis, Glenn Anderson CH2M HILL, Tony Jaegel
Scoping Meeting	**NA**	**01-24-07 (11-30-11)**
Predraft to AF/Service Center	10-06-11	06-04-12
AF/Service Center Comments Due	11-05-11	07-06-12
Draft to Agencies	03-07-12	08-03-12
Draft to RAB	03-07-12	08-03-12
Agency Comments Due	04-16-12	10-02-12
Response to Comments Meeting	**04-19-12**	**10-18-12**
Public Comment Period	06-08-12 to 07-09-12	NA
Public Meeting	**06-20-12**	**NA**
Response to Comments Due	05-02-12	11-02-12
Draft Final Due (CD)	05-02-12	11-02-12
Final Due	06-01-12	12-02-12

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
	Potrero Hills Annex Travis, Glenn Anderson		
Life Cycle	FS	**Proposed Plan**	**ROD**
Scoping Meeting	**180 days after Water Board Order Rescinded**	**+470 days**	**+735 days**
Predraft to AF/Service Center	+ 270 days	+530 days	+ 915 days
AF/Service Center Comments Due	+ 300 days	+560 days	+ 975 days
Draft to Agencies	+330 days	+590 days	+ 1035 days
Draft to RAB	+ 330 days	+590 days	+ 1035 days
Agency Comments Due	+390 days	+650 days	+ 1095 days
Response to Comments Meeting	**+ 405 days**	**+665 days**	**+ 1110 days**
Agency Concurrence with Remedy	NA	NA	+ 1130 days
Public Comment Period	NA	+735 to 765 days	NA
Public Meeting	**NA**	**+745 days**	**NA**
Response to Comments Due	+430 days	+695days	+ 1190 days
Draft Final Due	+430 days	+695 days	+ 1190 days
Final Due	+460 days	+725 days	+ 1250 days

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB** **Travis AFB, Glenn Anderson** **CH2M HILL, Leslie Royer**	**Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB** **Travis AFB, Glenn Anderson** **CH2M HILL, Leslie Royer**	**Work Plan for Remedial Process Optimization of Sites SS016 and SS029 at Travis AFB** **Travis AFB, Lonnie Duke** **Tri-Hydro, Glenn Leong**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	08-09-11	TBD	01-06-12
AF/Service Center Comments Due	08-19-11	TBD	01-20-12
Draft to Agencies	09-29-11	TBD	02-22-12
Draft to RAB	09-29-11	TBD	02-22-12
Agency Comments Due	11-14-11	TBD	04-0212
Response to Comments Meeting	**11-30-11**	**TBD**	**04-19-12**
Response to Comments Due	11-17-11	TBD	04-26-12
Draft Final Due	NA	NA	NA
Final Due	02-24-12	TBD	04-26-12
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS				
Life Cycle	RPO Baseline Implementation Report Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian	Technical and Economic Feasibility Analysis Travis AFB, Glenn Anderson CH2M HILL, Loren Krook	Site LF007C Data Gaps Investigation Technical Memorandum Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian	FT005 Remedial Action Completion Report Travis AFB, Lonnie Duke ITSI, Rachel Hess
Scoping Meeting	**NA**	**07-20-11**	**NA**	**NA**
Predraft to AF/Service Center	08-02-11	10-13-11	TBD	02-06-12
AF/Service Center Comments Due	08-16-11	10-31-11	TBD	02-21-12
Draft to Agencies	09-16-11	12-15-11	TBD	03-01-12
Draft to RAB	09-16-11	12-15-11	TBD	03-01-12
Agency Comments Due	10-31-11	01-30-12	TBD	04-02-12
Response to Comments Meeting	**02-22-12**	**TBD**	**TBD**	**04-19-12**
Response to Comments Due	02-29-12	03-14-12	TBD	04-26-12
Draft Final Due	NA	NA	NA	NA
Final Due	02-29-12	03-14-12	TBD	05-16-12
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	**Quarterly Newsletters (April 2012) Travis, Glenn Anderson**	**2010/2011 GSAP Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer**	**2011 Groundwater Treatment RPO Annual Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	10-20-11	02-22-12
AF/Service Center Comments Due	NA	10-30-11	03-05-12
Draft to Agencies	03-19-12	12-07-11	03-20-12
Draft to RAB	NA	12-07-11	03-20-12
Agency Comments Due	04-02-12	02-05-12	04-19-12
Response to Comments Meeting	**TBD**	**02-22-12**	**05-16-12**
Response to Comments Due	04-06-12	03-06-12	05-30-12
Draft Final Due	NA	NA	NA
Final Due	04-09-12	03-06-12	05-30-12
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS	
Life Cycle	**Old Skeet Range Engineering Evaluation/Cost Analysis** **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**
Scoping Meeting	**NA**
Predraft to AF/Service Center	07-18-11
AF/Service Center Comments Due	08-03-11
Draft to Agencies	09-29-11
Draft to RAB	09-29-11
Agency Comments Due	10-31-11
Response to Comments Meeting	**TBD (Teleconference)**
Agency Concurrence with Remedy	NA
Public Comment Period	TBD
Public Meeting	**NA**
Response to Comments Due	TBD
Draft Final Due	TBD
Final Due	**TBD**

Travis AFB Master Meeting and Document Schedule

HISTORICAL		
	Site ST027-Area B Human Health Risk Assessment **Travis AFB, Glenn Anderson** **CH2M HILL, Gavan Heinrich** ***Formerly included as Appendix G in the draft FFS**	**Site ST027-Area B Ecological Risk Assessment** **Travis AFB, Glenn Anderson** **CH2M HILL, Gavan Heinrich** ***Formerly included as Appendix G in the draft FFS**
Life Cycle	**Report**	**Report**
Scoping Meeting	**03-30-10**	**03-30-10**
Predraft to AF/Service Center	12-30-10	12-30-10
AF/Service Center Comments Due	01-13-11	01-13-11
Draft to Agencies	01-27-11 *	01-27-11 *
Draft to RAB	01-27-11	01-27-11
Agency Comments Due	03-31-11	03-31-11
Response to Comments Meeting	**08-17-11**	**08-17-11**
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	10-04-11	10-04-11
Draft Final Due	10-04-11 (CD)	10-04-11 (CD)
Final Due	**12-19-11**	**12-19-11**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 137 **Reporting Period: 31 Dec 2011 – 31 Jan 2012** **Date Submitted: 20 February 2012**

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP) and associated remedial process optimization (RPO) activities.

System Metrics

Table 1 presents operation data from the January 2012 reporting period.

Table 1 – Operations Summary – January 2012

Operating Time:	Percent Uptime:	Electrical Power Usage:
SBBGWTP: 745 hours	**SBBGWTP:** 100 %	**SBBGWTP:** 12,060 kWh (16,522 lbs CO_2 generated[a])

Gallons Treated: **4.5 million gallons**

Gallons Treated Since July 1998: **768 million gallons**

Volume Discharged to Union Creek: **4.5 million gallons**

VOC Mass Removed: **1.42 lbs**[b]

VOC Mass Removed Since July 1998: **415 lbs**

Rolling 12-Month Cost per Pound of Mass Removed: $6,236[c]

Monthly Cost per Pound of Mass Removed: $8,086

lbs = pounds

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.

[b] Calculated using January 2012 EPA Method SW8260B analytical results.

[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.

Table 2 presents individual extraction well flow rates along with the average system flow during the monthly reporting period.

Table 2 – SBBGWTP Average Flow Rate (gpm)[a]

FT005[b]				SS029		SS030	
EW01x05	Offline	EW736x05	Offline	EW01x29	10.4	EW01x30	7.9
EW02x05	0.6	EW737x05	Offline	EW02x29	4.6	EW02x30	1.4
EW03x05	Offline	EW742x05	Offline	EW03x29	3.1	EW03x30	2.6
EW731x05	Offline	EW743x05	Offline	EW04x29	8.8	EW04x30	23.8
EW732x05	Offline	EW744x05	Offline	EW05x29	10.3	EW05x30	11.3
EW733x05	Offline	EW745x05	Offline	EW06x29	7.2	EW06x30	Dry
EW734x05	6.2	EW746x05	Offline	EW07x29	7.4	EW711x30	15.7
EW735x05	11.4						
FT005 Total:	**18.2**			**SS029 Total:**	**51.8**	**SS030 Total:**	**62.7**
SBBGWTP Average Monthly Flow[c]: 100 gpm							

[a] Extraction well flow rates are based on end-of-month readings.
[b] Most extraction wells at FT005 were taken offline in accordance with the *2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.*
[c] The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant. EW03x29 and EW05x30 were brought back on line at the end of the month so their gallons processed are not reflected in the SBBGWTP average monthly flow. Flow rates listed for each well are instantaneous flow rates and may differ from the average monthly flow due to well recharge.

gpm – gallons per minute
Recharge –not pumping while the well recharges.
SBBGWTP – South Base Boundary Groundwater Treatment Plant

Table 3 presents a summary of system shutdowns during the monthly reporting period.

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
	None		NA		NA

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 19 January 2012. Sample results are presented in Table 4. The total VOC concentration (38.0 µg/L) in the influent sample has decreased since the December 2011 sample (54.5 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

Concentrations of 1,2-DCA, TCE and cis-1,2-DCE were detected at concentrations of 0.44 J, 35.5, and 2.0 µg/L at the influent sample location in January 2012. While TCE was not detected in samples collected at the midpoint sampling location, 1,2-DCA and cis 1,2-DCE were both detected at concentrations of 0.43 J and 0.53 J µg/L. Additionally, chloroform was detected at a concentration of 0.17 J µg/L at the midpoint sample location. Midpoint concentrations of 1,2-DCA and cis-1-2-DCE were below effluent limitations along with chloroform. No contaminants were detected in the effluent process stream. Chloroform is not typically detected in any sample collected from the SBBGWTP. Travis AFB will continue to monitor for evidence of breakthrough of the primary carbon vessel, though the SBBGWTP did recently undergo a carbon change out of half (6,000 pounds) the GAC in the treatment stream.

In November 2011, the Site SS030 SCADA system reported a pump failure at EW05x30. Troubleshooting in December 2011 revealed a short to ground in the pump motor. On 5 January 2012 the EW05x30 pump was removed from the well. On 27 January 2012 a new pump was installed at EW05x30 and the extraction well was brought back on line.

Optimization Activities

Extraction well EW03x29 was brought back on line on 26 January 2012 to address consistent VOC concentrations in samples collected from that well in recent (2010 and 2011) GSAP sampling events. This well had been taken off line in February 2004 due to consistently low or non-detect concentrations of VOCs. To bring the well back on line, the pump was replaced and new communication equipment was installed so the well could be controlled by the SBBGWTP SCADA system.

Once on line, the extraction rate from this well equalized to approximately 3.1 gpm, as shown in Table 2.

No other optimization activities were performed in January 2012.

Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 16,522 pounds of GHG during January 2012. GHG production has increased (from 12,248 pounds) since December 2011 as a result of increased SBBGWTP operating time. The overall energy consumption levels remain consistent with the general decrease in energy demand since the air stripper was bypassed, and the GAC system was brought online.

TABLE 4
Summary of Groundwater Analytical Data for January 2012 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	19 January 2012 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Bromodichloromethane	5.0	0.15	0	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	0.17 J	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.44 J	0.43 J	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	2.0	0.53 J	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	35.3	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	1.0	0.17	0	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND
Other						
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	NM	ND
Total Suspended Solids (mg/L)	NE	1.0	0	17 J	NM	NM

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

Notes:

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

Figure 1
SBBGWTP Total VOC Influent Concentrations - Twelve Month History
Travis Air Force Base, California

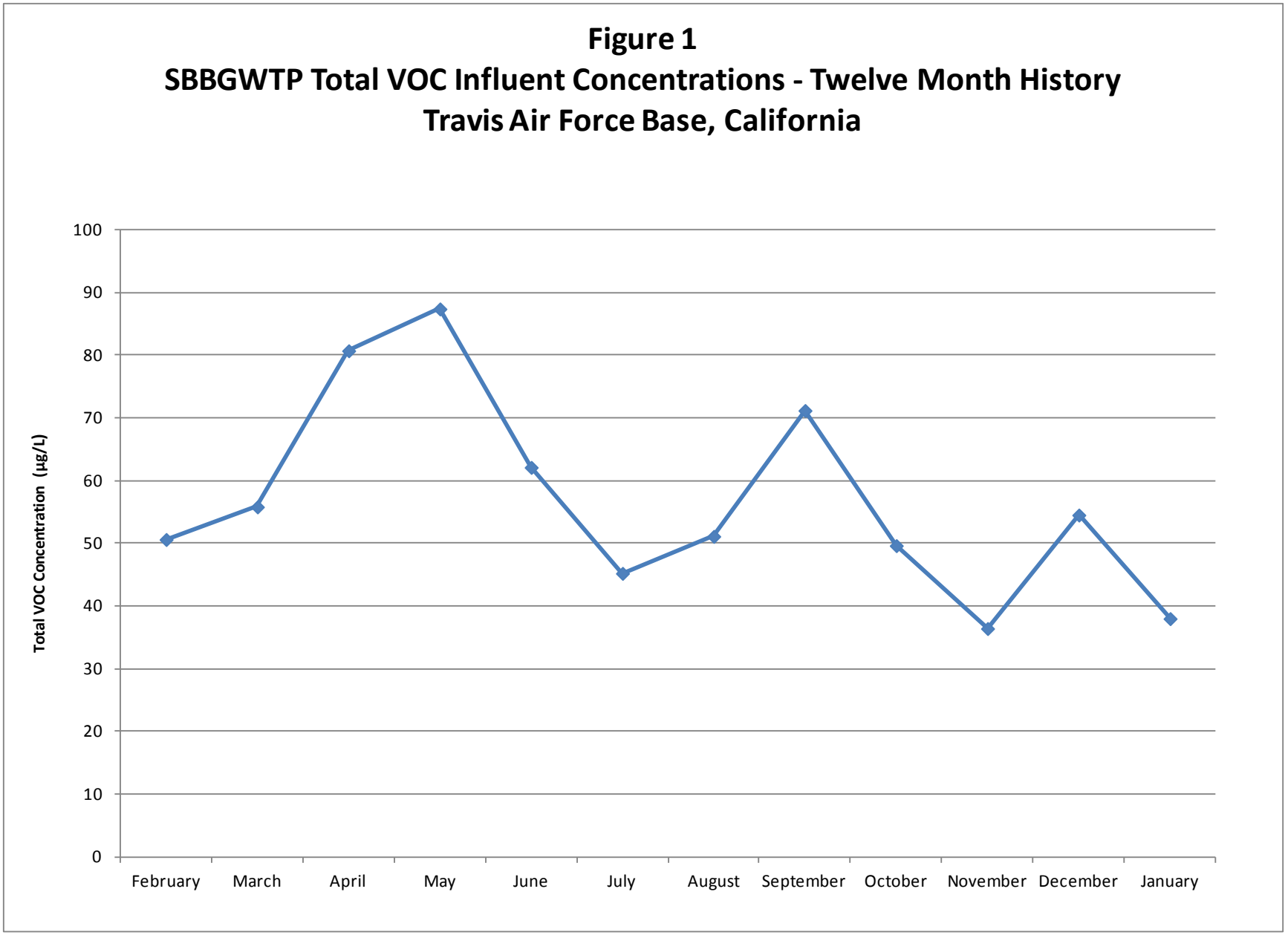
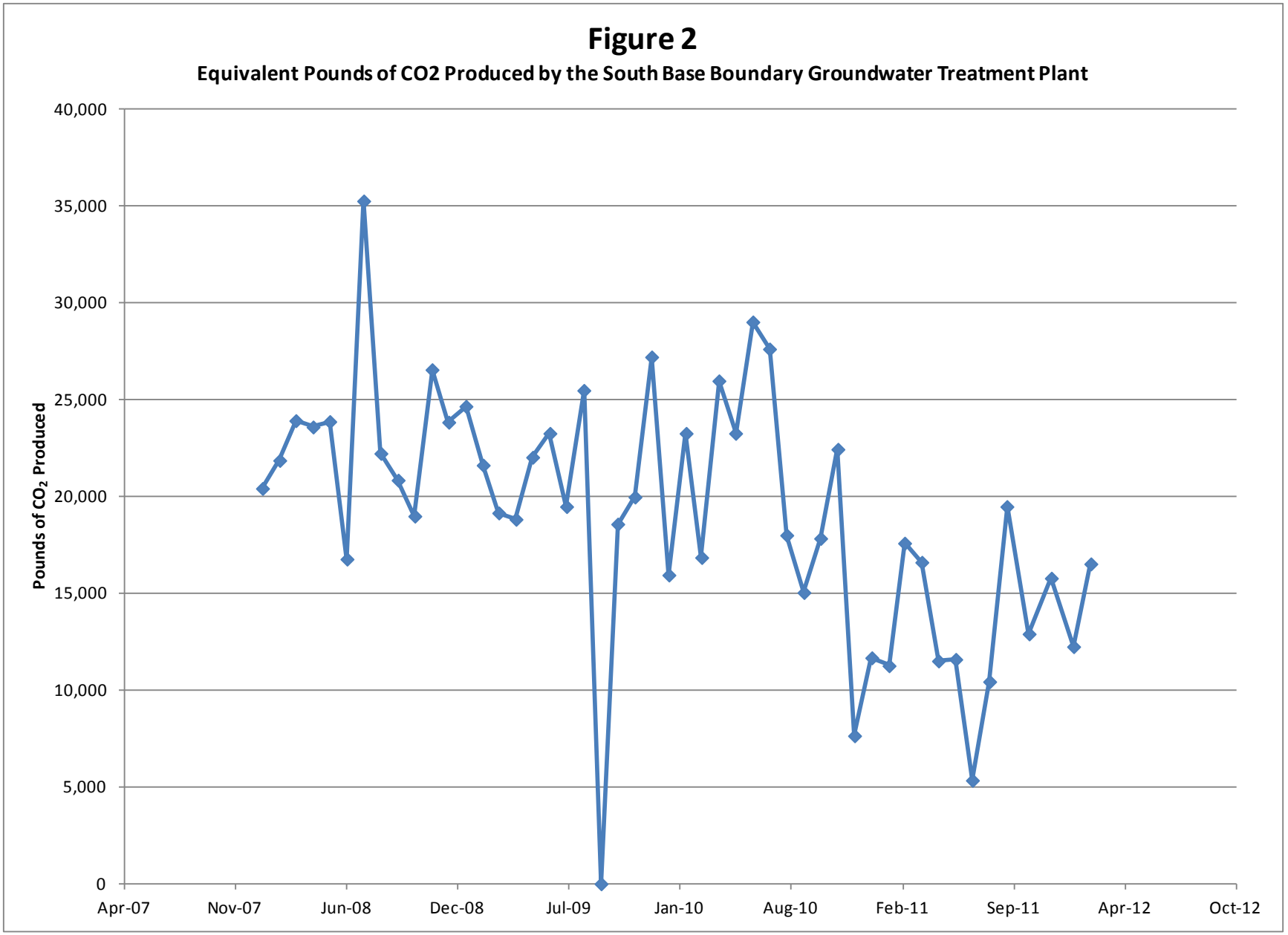


Figure 2

Equivalent Pounds of CO2 Produced by the South Base Boundary Groundwater Treatment Plant



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 150 **Reporting Period: 31 Dec 2011 – 31 Jan 2012** **Date Submitted: 20 February 2012**

This monthly data sheet presents information regarding all systems and associated remedial process optimization (RPO) activities to the Central Groundwater Treatment Plant (CGWTP). The West Transfer and Treatment Plant (WTTP) is also associated with the CGWTP. The RPOs related to the CGWTP network of treatment systems include various emulsified vegetable oil (EVO) injection sites, two (2) bioreactors, and various rebound studies.

System Metrics

Table 1 presents operational data from the January 2012 reporting period.

Table 1 – Operations Summary – January 2012

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	746 hours	**CGWTP:**	100%	**CGWTP:**	2,580 kWh (3,535 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP[b]:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.7 million gallons**

Gallons Treated Since January 1996: **456 million gallons**

VOC Mass Removed:

4.53 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,577 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,621[c]

Monthly Cost per Pound of Mass Removed: $820

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using January 2012 EPA Method SW8260B analytical results.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the CGWTP.

Table 2 presents individual extraction well flow rates during the monthly reporting period.

Table 2 – CGWTP Average Flow Rates[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm) [b]
EW01x16	19.6	Offline
EW02x16	7.3	Offline
EW03x16	1.5[c]	Offline
EW605x16	1.3	Offline
EW610x16	3.6	Offline
CGWTP	34.4	--
WTTP	Offline[b]	Offline

[a] All flow rates calculated by dividing total gallons processed by system operating time for the month.
[b] No vapor or groundwater was treated in January 2012.
[c] Water discharged to Site SS016 bioreactor – flow rate taken from wellhead Flow Totalizer divided by operating time during the month.
gpm = gallons per minute
-- = not applicable/not available
scfm = standard cubic feet per minute

Table 3 presents average flow rate values from the West Industrial Operable Unit (WIOU) extraction wells.

Table 3 – Average Flow Rate from the WIOU Extraction Wells[a] (gpm)

SD037/ SD043				SD033/SD034		SD036	
EW599x37	Offline	EW705x37	Offline	EW501x33	Offline	EW593x36	Offline
EW700x37	Offline	EW706x37	Offline	EW503x33	Offline	EW594x36	Offline
EW701x37	Offline	EW707x37	Offline	EW01x34	Offline	EW595x36	Offline
EW702x37	Offline	EW510x37	Offline	EW03x34	Offline	Ew2014x18	
EW703x37	Offline	EW511x37	Offline				
EW704x37	Offline	EW555x43	Offline				

[a] Extraction wells are offline due to the ongoing rebound study in the WIOU.
gpm—gallons per minute

Table 4 presents average a summary of shutdowns during the monthly reporting period.

Table 4 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
	None		NA		NA
WTTP					
	System down for rebound study		NA		NA

CGWTP = Central Groundwater Treatment Plant
WTTP = West Transfer Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 19 January 2012. Sample results are presented in Table 5. The total VOC concentration (324 µg/L) in the influent sample has increased slightly since the December 2011 sample (319 µg/L) was collected. Vinyl chloride and cis 1,2-DCE were detected at the influent sampling location and at the midpoint of the granular activated carbon (GAC) vessels sampling location. The primary GAC vessel reduced the cis 1,2-DCE concentration from 74.3 µg/L to 0.24 J µg/L. The cis 1,2-DCE concentration reported in the midpoint sample is less than the instantaneous maximum effluent limit (5.0 µg/L). The detected vinyl chloride concentrations at the influent sampling location (0.59 µg/L) and the midpoint of the GAC vessels sampling location (0.61 µg/L) were greater than the instantaneous maximum effluent limit (0.5 µg/L). No contaminants were detected in the effluent process stream. Travis Air Force Base will continue to monitor vinyl chloride and other contaminant concentrations at CGWTP for breakthrough in the primary vessel. Figure 1 presents a plot of influent concentrations (total VOCs) at the CGWTP versus time for the past twelve (12) months.

The Site DP039 bioreactor has transitioned to a "pulsed mode" operation in order to improve the rate of remediation and to preserve the small amounts of total organic carbon being produced within the bioreactor. On 30 December 2011, the extraction pump at well EW782x39 (the Site DP039 bioreactor recirculation well) was taken off line as part of the pulsed operation for a period of approximately three (3) weeks. The pump was brought back on line on 30 January 2012, and will continue to operate into February 2012. Pulsed operation consists of operating the pump for approximately two (2) weeks, then taking it off line for approximately four (4) weeks.

Table 5 presents the Site DP039 bioreactor recirculation well pulsing dates.

Table 5 – Summary of DP039 Bioreactor "Pulsed Mode" Operations

Location	Pulse On Start Date	Pulse Off Start Date
EW782x39	20 December 2011	30 December 2011
	30 January 2012	13 February 2012*

*Estimated date
CGWTP = Central Groundwater Treatment Plant
EW = Extraction Well

Optimization Activities

No optimization activities occurred at CGWTP in January 2012.

Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the systems associated with the CGWTP. The CGWTP produced approximately 3,535 pounds of GHG during January 2012. This is a increase from the amount produced in December 2011 (approximately 3,199 pounds). The increase in GHG is likely attributed to the increase in CGWTP monthly operating time and gallons treated.

TABLE 5
Summary of Groundwater Analytical Data for January 2012 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	19 January 2012 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
Bromodichloromethane	5.0	0.15	0	ND	ND	ND	ND
Carbon Disulfide	1.0	0.19	0	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	0.73 J	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.25	0	0.45 J	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.15	0	0.54	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	0.34 J	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	0.81	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	74.3	0.24 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.5	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.63	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	0.19	0	239	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.59	0.61	ND	ND
Non-Halogenated Volatile Organics							
Benzene	1.0	0.17	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND	ND
Total Xylenes	5.0	0.5 – 0.23	0	ND	ND	ND	ND

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

Notes:

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

Figure 1
CGWTP Total VOC Influent Concentrations - Twelve Month History
Travis Air Force Base, California

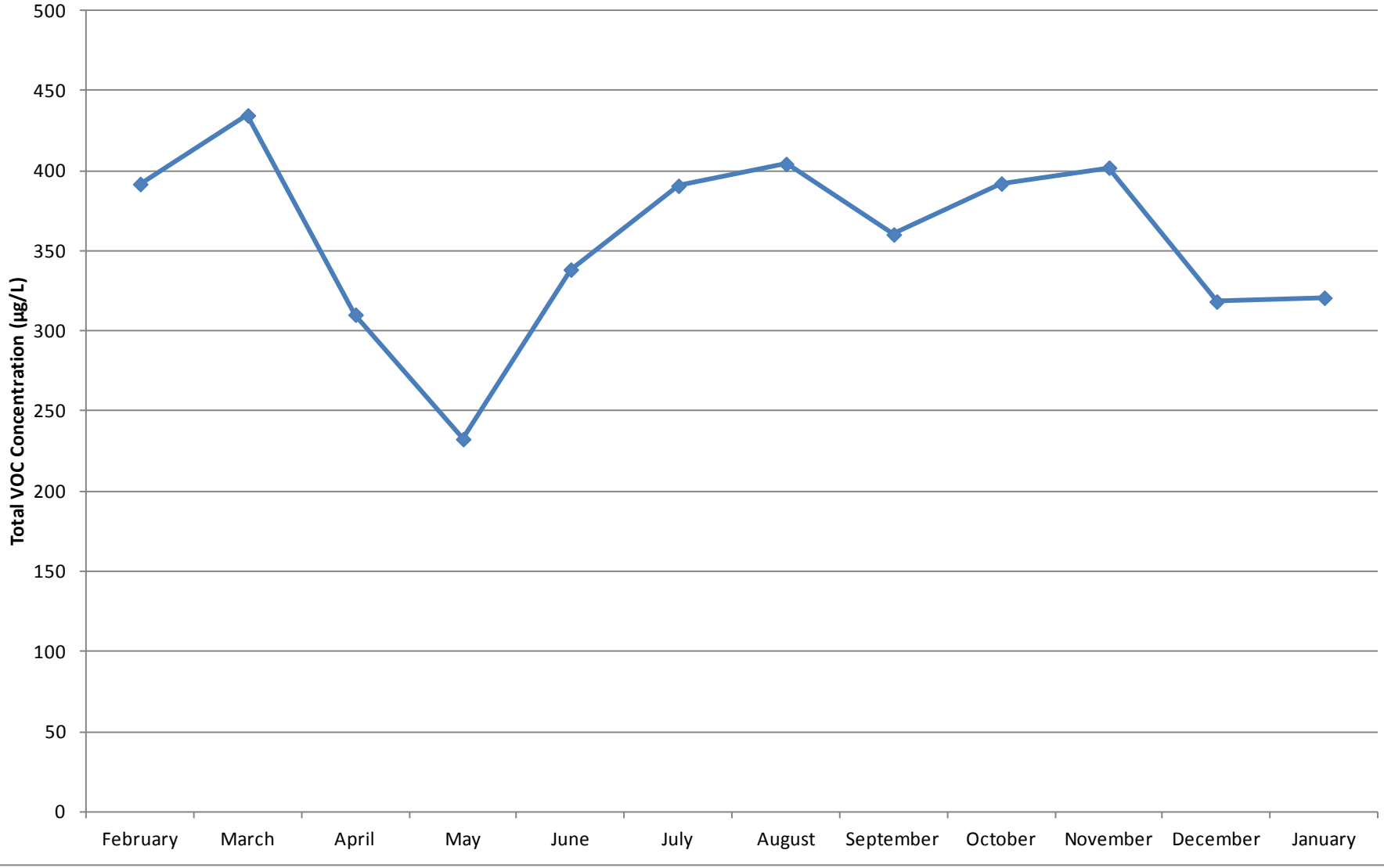
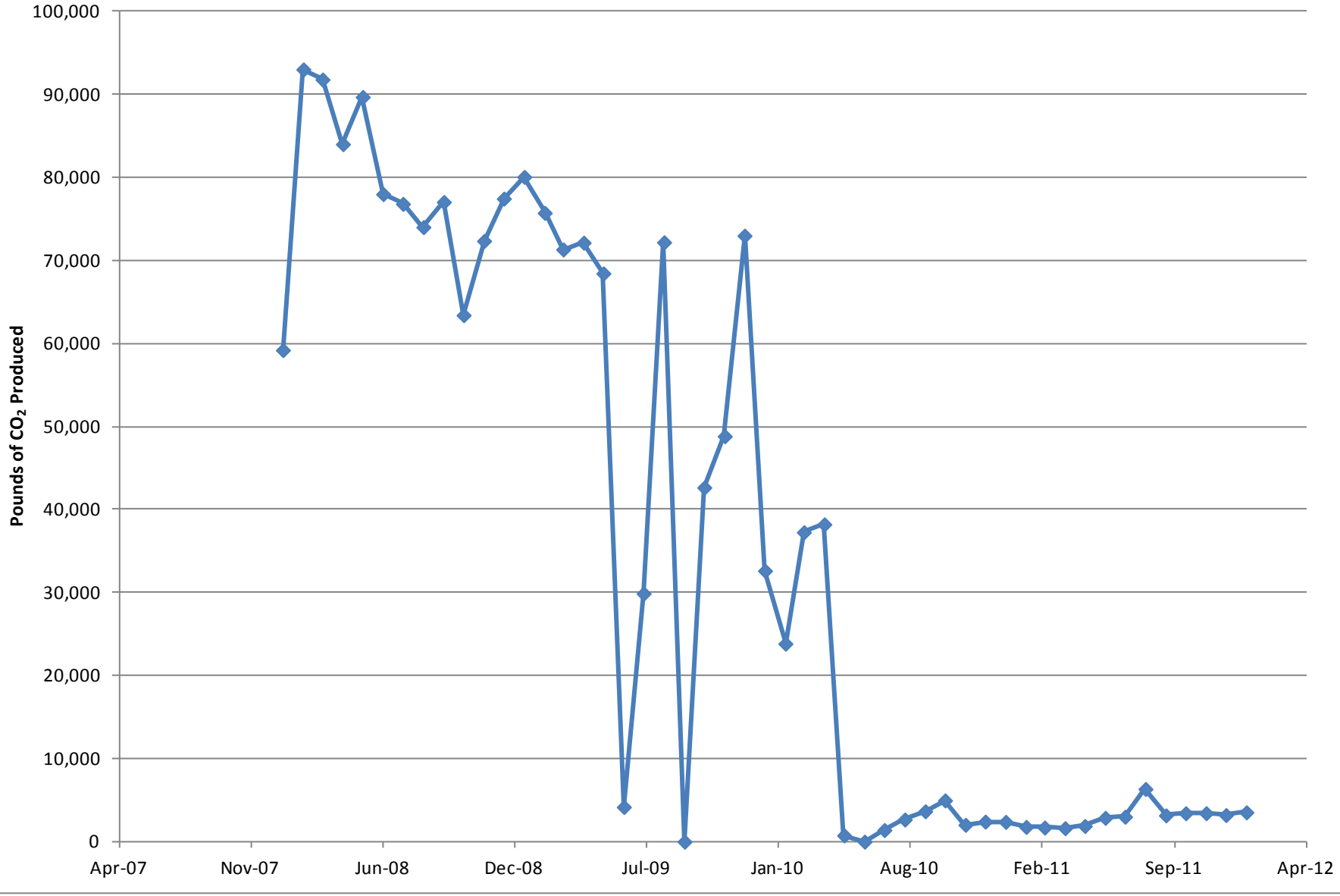


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 122 **Reporting Period: 31 Dec 2011 – 31 Jan 2012** **Date Submitted: 20 February 2012**

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities.

System Metrics

Table 1 presents operational data from the January 2012 reporting period:

Table 1 – Operations Summary – January 2012

Operating Time:	Percent Uptime:	Electrical Power Usage:
NGWTP: 675 hours	**NGWTP:** 90.6%	**NGWTP:** 441kWh (604 lbs CO_2 generated[a])

Gallons Treated: **13,318 gallons**

Gallons Treated Since March 2000: **82.6 million gallons**

Volume Discharged to Duck Pond **13,318 gallons**

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

VOC Mass Removed: **3.0×10^{-4} pounds**[b]

VOC Mass Removed Since March 2000: **174.3 pounds (Groundwater)**

Rolling 12-Month Cost per Pound of Mass Removed: **Not Measured**[c]

Monthly Cost per Pound of Mass Removed: **Not Measured**[d]

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] VOCs from January 2012 influent sample detected by EPA Method SW8260B.
[c] Value not calculated since measurement does not accurately represent the cost effectiveness of the system.
[d] Value not calculated since measurement does not accurately represent the potential effectiveness of the system. O&M costs are low, but very little contaminant mass is being treated.

Table 2 presents individual extraction well flow rates during the monthly reporting period.

Table 2 – NGWTP Average and Total Flow Rates – January 2012

Location	Average Flow Rate (gpm) [a]	Total Gallons Processed (gallons)
EW614x15	0.18	7,182
EW615x15	0.16	6,579
NGWTP	0.33	13,318

[a] Average flow rate calculated by dividing the total gallons processed collected from wellhead totalizers by the reporting period operating time. The total gallons processed are determined by readings collected at wellhead and system influent totalizers. The discrepancy between the sum of both wells and the NGWTP influent can be attributed to the piping between the wells and the NGWTP, which has to be filled before flow registers at the NGWTP.

gpm = gallons per minute

Table 3 presents average a summary of shutdowns during the monthly reporting period.

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP	13 January 2012	1430	16 January 2012	1200	HDPE pipeline repair

NGWTP = North Groundwater Treatment Plant
HDPE= High Density Polyethylene

Summary of O&M Activities

Analytical data from the 19 January 2012 sampling event are presented in Table 4. Concentrations of TCE (2.6 µg/L) and cis 1,2-DCE (0.27 J µg/L) were detected in the influent sample. While TCE has been detected in the influent sample for five (5) consecutive months, this is the first month since November 2011 that cis 1,2-DCE has been detected in the influent sample. As with data collected in 2011, contaminant concentrations detected in the influent process stream are less than their respective effluent limits (5.0 µg/L for each of these contaminants). Contaminant concentrations were not detected between the primary and secondary vessels or at the effluent sampling location.

Toluene was not detected during the January 2012 sampling event. The only time toluene was detected at the NGWTP in 2011 was in December 2011, when was detected in influent (0.68 µg/L) and effluent (0.21 J µg/L) process streams. The discharge limit for toluene is 5.0 µg/L.

Figure 1 presents a chart of influent concentrations (total VOCs) at the NGWTP versus time for the past twelve (12) months. As required by US Fish and Wildlife Service (USFWS), the NGWTP is taken off line ("System Shutdown") when vernal pools are present at Site LF007C. To date, the vernal pools at LF007C do not show ponded water. Therefore the extraction system continues to operate.

On 6 December 2011 a pipe leak was discovered in the NGWTP conveyance line. The NGWTP was immediately taken off line, and the pipe leak was sealed on 9 December 2011. Further details regarding the leak are presented in the Pipe Leak, Site LF007C technical memorandum, which was submitted to the Agencies on 15 December 2011. On 13 January 2012 both LF007 extraction wells (EW614x07 and EW615x07) were taken off line to allow the conveyance line to NGWTP to drain for permanent pipe repair using welded HDPE. On 16 January 2012 a ten (10) inch section of conveyance line was replaced where the original pipe leak occurred. The new section was fused (electrically welded) to the main line with 1-inch couplings. After the pipe replacement, the system was successfully pressure tested and the wells were brought back on line. In accordance with the Pipe Leak, Site LF007C technical memorandum, groundwater volumes (total gallons processed) for each Site LF007C extraction well are collected from wellhead flow totalizers on a weekly basis. The monthly accumulation of these data are presented in Table 2.

In October 2011, one (1) of the three (3) granular activated carbon (GAC) drums was taken off line due to a leak caused by corrosion on the lower half of the vessel (55-gallon drum). The system is currently operating with two GAC drum in series. Analytical data (Table 4) continue to indicate effective treatment of the influent process stream with only two (2) operating GAC drums online. A spare GAC drum is available if analytical data indicate a third GAC drum should be brought back on line.

Optimization Activities

No optimization activities occurred in January 2012.

Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as the solar arrays employed to power the system.

Figure 2 presents the historical GHG production from the systems associated with the NGWTP. The NGWTP is off line ("System Shutdown") when vernal pools are present at Site LF007C. The NGWTP used 441 kWh which calculates to approximately 604 pounds of GHG generation during January 2012. This is an increase from December 2011 when the NGWTP used 393 kWh of electricity. The increase of electricity usage can be attributed to an increase in monthly operation time and gallons treated. The overall GHG generation remains considerably lower than traditional GWTPs since the system is predominantly powered by solar arrays.

TABLE 4
Summary of Groundwater Analytical Data for January 2012 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (μg/L)	Detection Limit (μg/L)	N/C	19 January 2012 (μg/L)		
				Influent	After Carbon 1	Effluent
Halogenated Volatile Organics						
Bromodichloromethane	5.0	0.15	0	ND	ND	ND
Bromoform	5.0	0.19	0	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	0.27 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	2.6	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	1.0	0.17	0	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND
Other						
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	NM	ND

* 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).

Notes:

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

Figure 1
NGWTP Total VOC Influent Concentrations - Twelve Month History
Travis Air Force Base, California

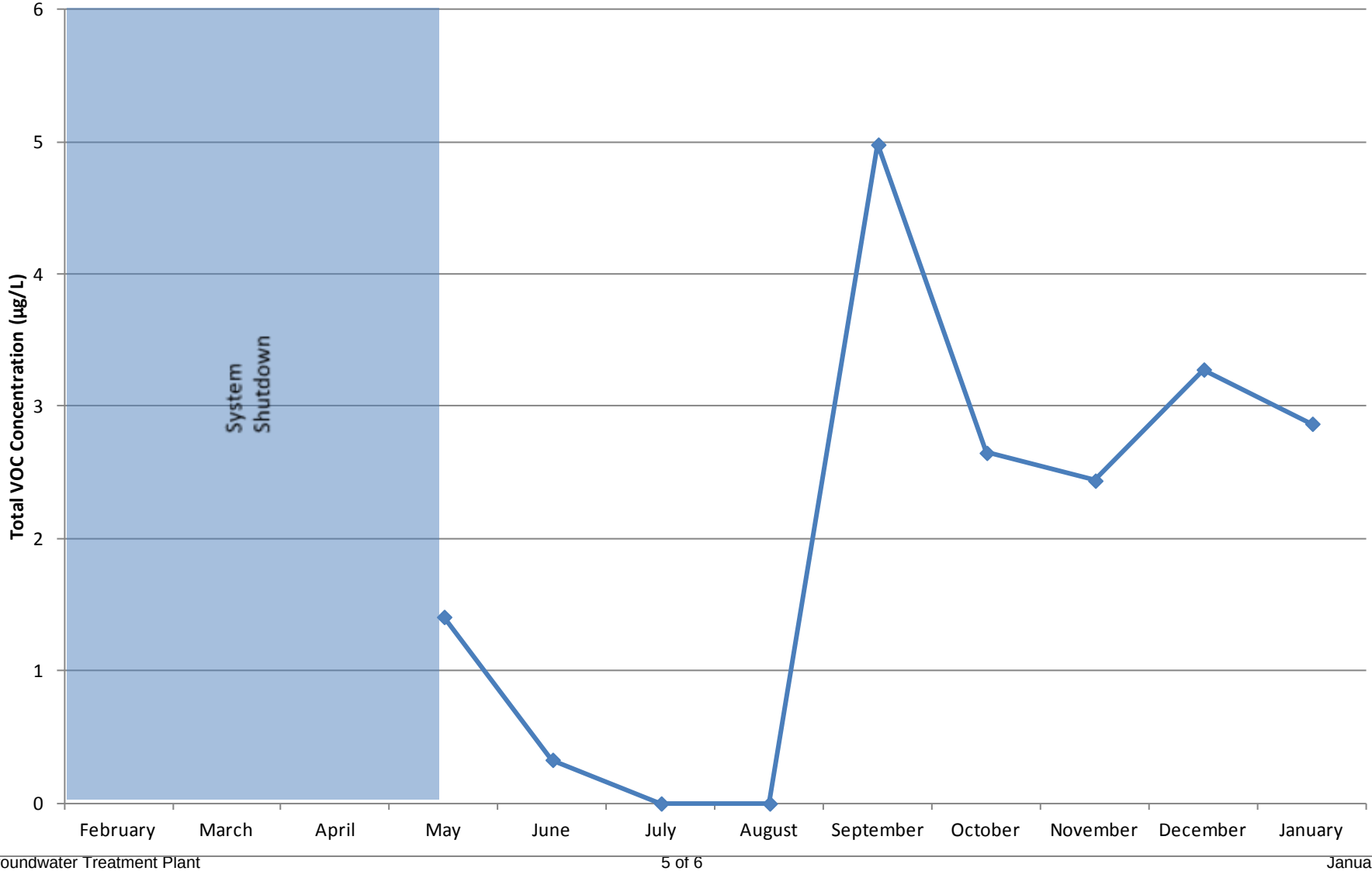
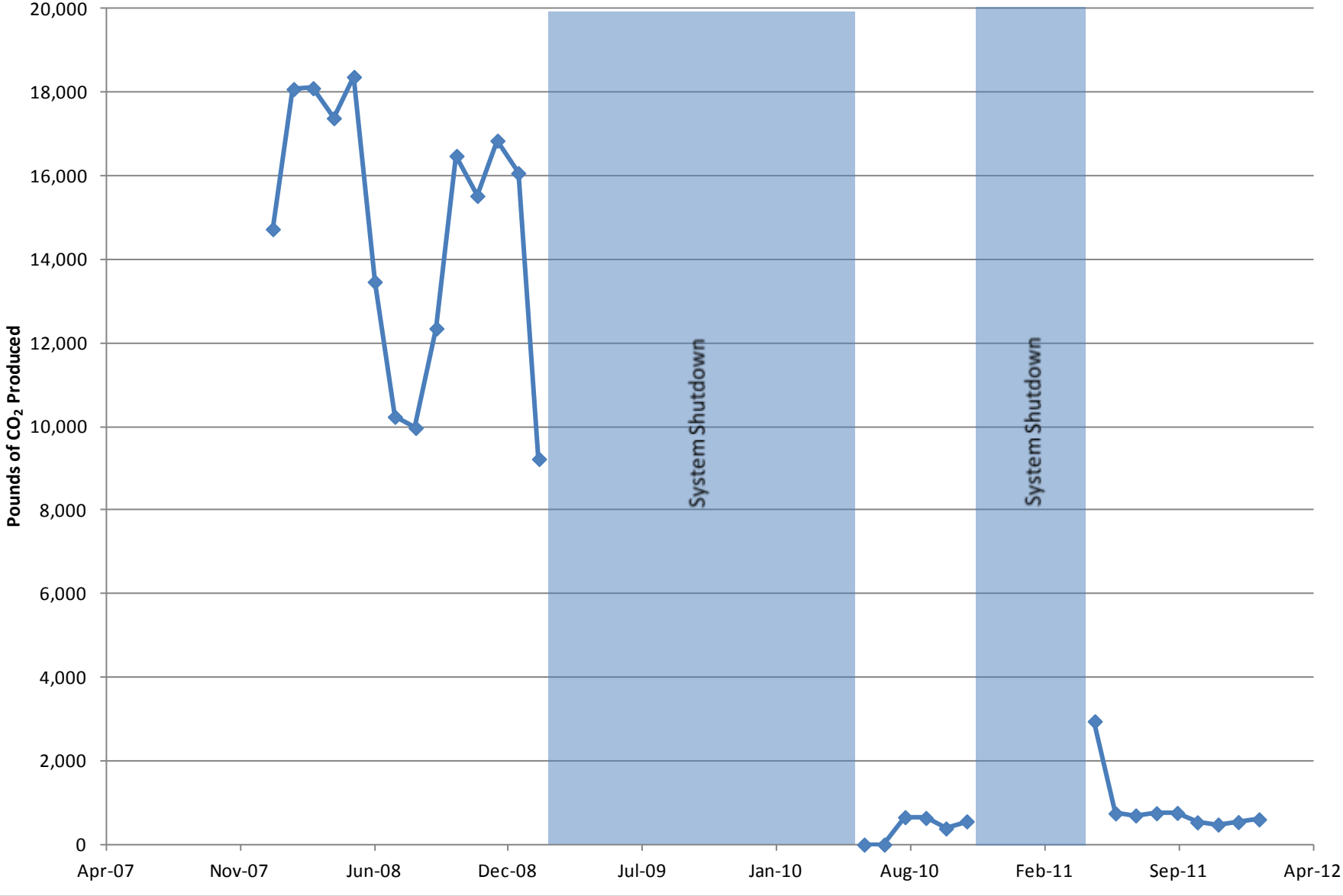


Figure 2

Equivalent Pounds of CO2 Produced by the North Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 010 **Reporting Period: 1 Jan – 31 Jan 2012** **Date Submitted: 21 February 2012**

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP). The January operation period accounts for operation from 1 January through 31 January, 2012.

System Metrics

Table 1 presents operation data from the January 2012 reporting period.

Table 1 – Operations Summary – January 2012

Operating Time:		Percent Uptime:		Electrical Power Usage:	
S18GWTP:	751 hours	**S18GWTP:**	100%	**S18GWTP:**	81 kWh (111 lbs CO_2 generated[a])

Gallons Treated: **112 thousand gallons** Gallons Treated Since March 2011: **1.35 million gallons**

Volume Discharged to Union Creek: **112 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.42 lbs**[b] BTEX, MTBE, TPH Mass Removed Since March 2011: **7.5 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $8,063 [c]

Monthly Cost per Pound of Mass Removed: $16,672[d]

Lbs = pounds

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.

[b] Calculated using January 2012 (influent) and January 2012 (effluent) EPA Method SW8260B analytical results. Influent samples are collected on a quarterly basis.

[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system; however the system is only in its tenth month of operation.

[d] This decreased monthly cost per pound of mass removed (compared with December 2011) is due to lower expenses, and the increased amount of total mass removed (0.42 pounds up from 0.20 pounds in December 2011).

Table 2 presents individual extraction well flow rates along with the average system flow during the monthly reporting period.

Table 2 – S18GWTP Average Flow Rates[a]

Location	Average Flow Rate Groundwater (gpm)
EW2014x18	0.73
EW2016x18	0.61
EW2019x18	1.13
Site ST018 GWTP	2.49

[a] All flow rates calculated by dividing total gallons processed by system operating time for the month.

gpm = gallons per minute
S18GWTP = Site ST018 Groundwater Treatment Plant

Table 3 presents a summary of system shutdowns during the monthly reporting period.

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
S18GWTP	None				

S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 24 January 2012. The January 2012 sampling event was the annual sampling event and included analysis of the influent, midpoint, and effluent samples. Sample results for the full list of annual event analytes will be presented in the February 2012 Site ST018 Groundwater Treatment Plant Monthly Data Sheet. Sample results from the January sampling event for BTEX, MTBE, and TPH are presented in Table 4.

No contaminant concentrations were detected in the effluent sample. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (1Q12) influent sample was 455 µg/L, which is a significant increase of the previous (4Q11) influent concentration of 179 µg/L. This increase is likely due to more consistent operation of extraction well EW2014x18, located immediately behind the Base Exchange Service Station. The Site ST018 GWTP was primarily installed to address MTBE contamination at Site ST018, so Figure 1 presents a plot of influent quarterly total VOC and MTBE concentrations at the S18GWTP versus time.

Due to the amount of heavier (TPH-diesel) hydrocarbons in the influent process stream, the primary GAC vessel will be changed out from coconut-based carbon, which is primarily used to extract smaller compounds, such as MTBE, to coal-based carbon. The final two GAC vessels in series will remain coconut-based for lighter VOC and BTEX contaminants, including MTBE. The GAC vessel change out is scheduled to occur in February 2012.

A new pump was ordered and installed in December 2011 at EW2014x18 in an effort to increase the extraction rate from this well. The total flow from EW2014x18 during November (17,770 gallons) and December (28,522 gallons) were lower over the course of their respective monthly monitoring periods than in the past (e.g.,

52,287 in July 2011), and lower than the total gallons processed by wells EW2016x18 (34,154 gallons) and EW2019x18 (70,887 gallons) during the December 2011 monitoring period. In January 2012 the total flow was 27,606 gallons, which is an increase from the November 2011 reporting period. This total is also an increase from the December 2011 total when accounting for the fact that the December 2011 monitoring period consisted of 936 hours of operation compared to 751 hours in January 2012.

Travis AFB will continue to monitor and optimize flow rate production from this new pump, in addition to the other two (2) extraction well pumps at Site ST108.

Optimization Activities

No optimization activities occurred at S18GWTP in January 2012.

Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as the solar arrays employed to power the system.

As a result of the solar arrays at S18GWTP, the system produced approximately 126 pounds of GHG from 22 November to 31 December 2011. This is an increase from November 2011 (74 pounds) which is primarily due to the increase in operation hours. The overall GHG generation remains considerably lower than traditional GWTPs since the system is predominantly powered by solar arrays.

TABLE 4
Summary of Groundwater Analytical Data for January 2012 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	24 January 2012 (µg/L)		
				Influent[b]	After Carbon 2	System Effluent
Fuel Related Constituents						
MTBE	5	0.5	0	189	ND	ND
Benzene	5	0.17	0	10.7	ND	ND
Ethylbenzene	5	0.22	0	6.7	ND	ND
Toluene	5	0.14	0	0.86	ND	ND
Total Xylenes	5	0.73	0	10.4	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	170	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	67	ND	ND
Total Petroleum Hydrocarbons – Motor Oil	--	56	0	ND	ND	ND

[a] In accordance with the National Pollutant Discharge Elimination System (NPDES) Effluent Limitations

[b] Values taken from January 2012 (1Q12) sample data. Influent sampling is conducted on a quarterly basis.

Notes:

µg/L = micrograms per liter
ND = not detected above method detection limit
NM = not measured this month

Figure 1
S18GWTP Total VOC and MTBE Influent Concentrations
(Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, TPH)
Travis Air Force Base, California

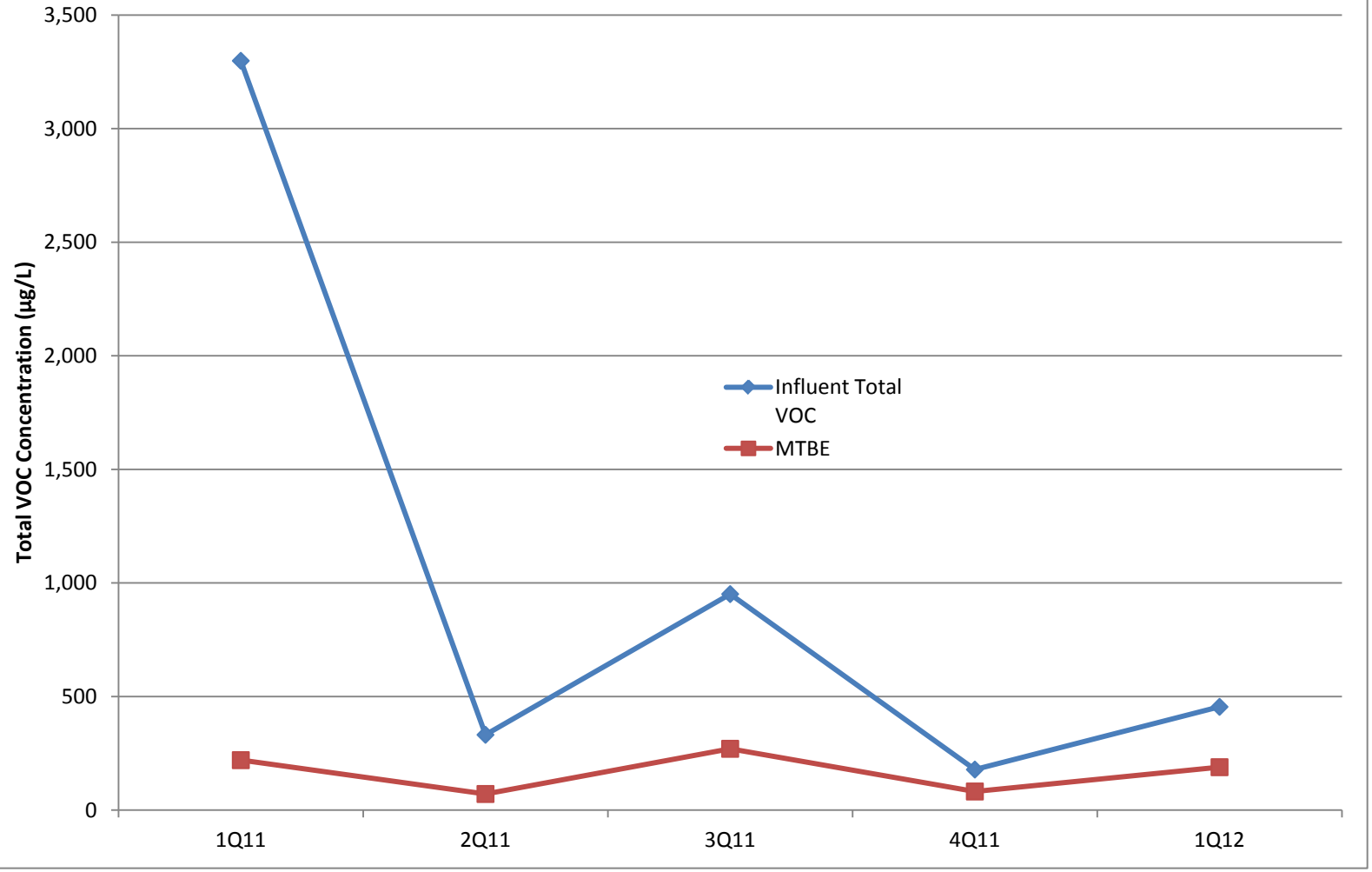
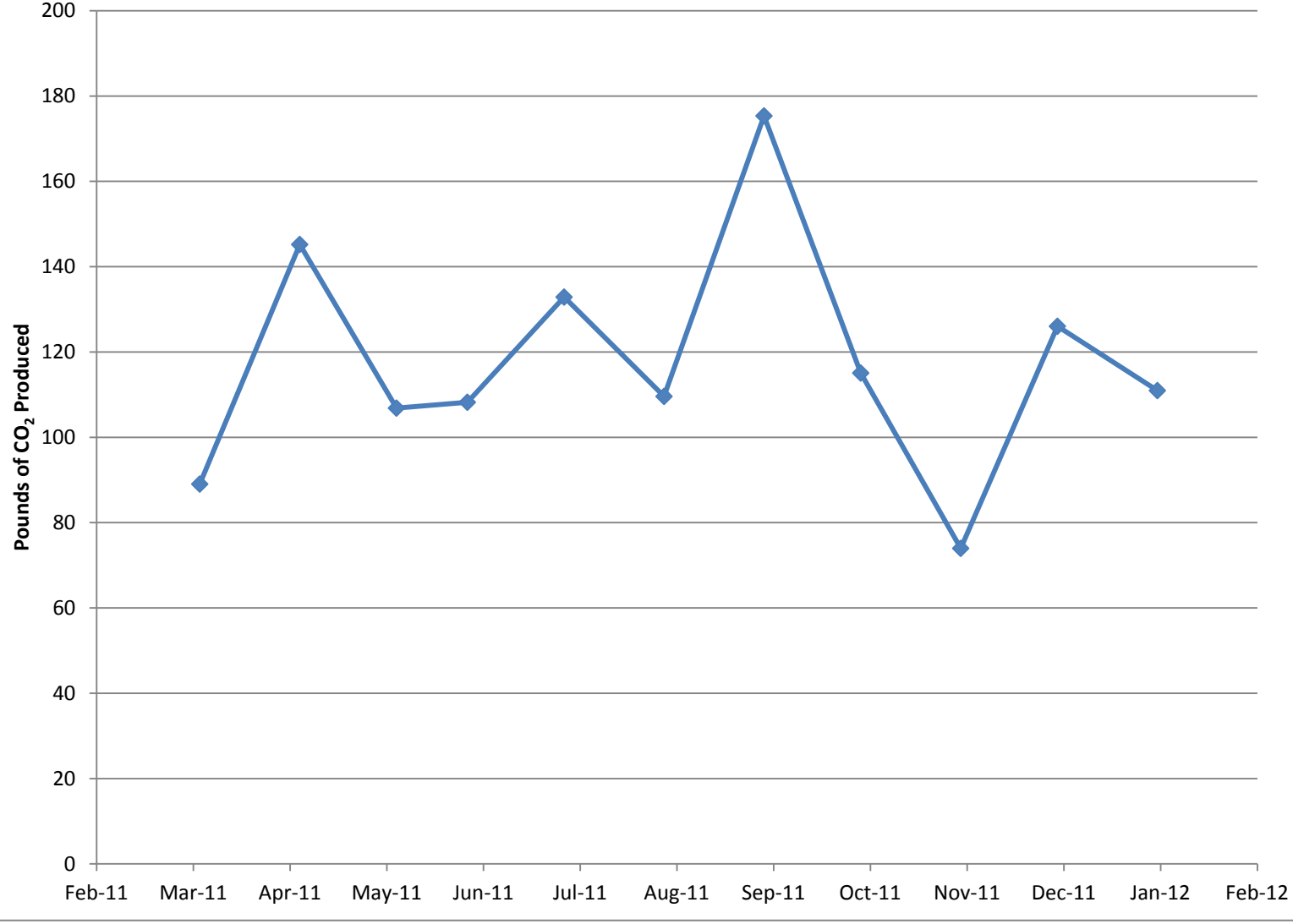


Figure 2

Equivalent Pounds of CO2 Produced by the Site ST018 Groundwater Treatment Plant



Travis AFB
Restoration Program

Management Overview Briefing

RPM Meeting

February 22, 2012

Completed Documents

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation Work Plan
- ST027B Site Characterization Work Plan
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo
- RD/RA QAPP Update
- ST032 Tier 1 POCO Evaluation Work Plan
- Phytostabilization Demonstration Technical Memo
- Model QAPP
- LF008 Rebound Test Technical Memo
- Comprehensive Site Evaluation Phase II Work Plan
- Field Sampling Plan (FSP)
- SS016 RPO Work Plan
- ST018 POCO RA Work Plan
- Vapor Intrusion Assessment Report
- GSAP 2008/2009 Annual Report
- FT005 Data Gap Work Plan
- First, Second , & Third Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- SD036/SD037 RPO Work Plan

Completed Documents (cont'd)

- ST027B Site Characterization Report
- 2009 GWTP RPO Annual Report Natural Attenuation Assessment Report (NAAR)
- Union Creek Sites SD001 & SD033 Remedial Action Report
- CAMU 2008-2009 Monitoring Annual Report
- Phytostabilization Study Report
- 2009/2010 Annual GSAP Report
- SS015 Remedy Optimization Field Implementation Plan
- Sites SS014 and ST032 Tier 1 POCO Evaluation Report
- SD036 Remedy Optimization Field Implementation Plan
- 2010 Annual CAMU Inspection Report
- Site ST018 POCO Baseline Implementation Report
- FT005 Data Gaps Investigation Report
- Comprehensive Site Evaluation Phase II Report
- 2010 Groundwater RPO Annual Report
- Focused Feasibility Study (FFS)
- Site ST027-Area B Human Health Risk Assessment
- Site ST027-Area B Ecological Risk Assessment

Completed Field Work

- ST027B Gore Sorber Survey – Phase 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization
- LF008 Rebound Study
- GSAP Annual Sampling Event - 2009
- SS030 Site Characterization – Phase 1
- ST027 Site Characterization - Phase 3
- ST014 Monitor Well Install - Subsite 3
- SD001/SD033 Sediment RA
- SS016 Site Characterization (OSA source area)
- ST018 Site Characterization
- SS030 Site Characterization (Off-base VOC Plume)
- DP039 Site Characterization (for Biobarrier Placement)
- SS014 & ST032 Q1 2010 MNA Sampling (2nd of 4 quarterly events)
- SD036 Additional Site Characterization (north & east)
- Therm/Ox System Removal
- SS016 Monitoring Well Installation
- SD037 EVO Injection Well Installation
- DP039 Monitoring Well & Injection Well Installation
- DP039 EVO Injection
- SD037 Monitoring Well Installation
- GSAP 2010 Annual Sampling Event
- SD037 EVO Injection

Completed Field Work (cont'd)

- SS015 Site Characterization
- South Plant GAC Change-out
- FT005 Data Gap Investigation
- SS016 Position Survey of EW03
- SS016 Bioreactor Installation
- SS016 Bioreactor Baseline Sampling
- DP039 Biobarrier Quarterly Performance Sampling
- DP039 Bioreactor Quarterly Performance Sampling
- SD037 EVO Quarterly Performance Sampling
- SS015 EVO Baseline Sampling
- SD036 EVO Baseline Sampling
- SS016 Bioreactor Startup
- SD036 Injection Wells Installation
- SS015 Injection Wells Installation
- ST018 GETS Installation
- SD036 EVO Injection
- 2010 Semiannual GSAP
- SS015 EVO Injection
- Quarterly RPO Performance Monitoring (Feb 2011)
- ST018 GETS Startup
- Quarterly RPO Performance Monitoring (May 2011)
- 2011 Annual GSAP Sampling
- SS029 GET Shutdown Test (System Optimization analysis)
- Quarterly RPO Performance Monitoring (Aug 2011)
- Quarterly RPO Performance Monitoring (Nov 2011)
- 2011 Semiannual GSAP Sampling
- LF007C Site Characterization (Wetlands)
- FT005 Soil Remedial Action
- ***Performance Monitoring SS015 (4^{th} Quarterly event)***

In-Progress Documents & Field Work

Documents

- Baseline Implementation Report – BIR (Sites SS015, SS016, SD036, SD037, and DP039)
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- Technical and Economic Feasibility Analysis (TEFA)
- 2010/2011 Annual GSAP Report
- Old Skeet Range Engineering Evaluation/Cost Analysis
- ***Work Plan for RPO of Sites SS016 and SS029***

Field Work

- ***Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)***

Upcoming Documents

• Proposed Plan (PP)	March
• 2011 Groundwater Treatment RPO Annual Report	March
• FT005 Remedial Action Completion Report	March
• Site LF007C Data Gaps Investigation Technical Memorandum	TBD
• Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes	TBD

Upcoming Field Work

- SS029 System Optimization Analysis — Summer 2012
- 2012 Annual GSAP Sampling — April

Note: Travis will try to notify regulatory agencies via email approximately one week in advance of planned field work