Final

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

20 March 2013, 0930 Hours

Mr. Glenn Anderson, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 20 March 2013 at 0930 hours, at Travis AFB, California. Attendees included:

• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Gregory Parrott	Travis AFB
• Merrie Schilter-Lowe	Travis AFB
• Dezso Linbrunner	United States Army Corp of Engineers (USACE) Omaha District
• Adriana Constantinescu	California Regional Water Quality Control Board (RWQCB)
• Jose Salcedo (via phone)	California Department of Toxic Substances Control (DTSC)
• Nadia Hollan Burke	United States Environmental Protection Agency (USEPA)
• Sharon Halper	Techlaw, Inc
• Mike Wray	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 (February 2013)
• Attachment 4	CGWTP Monthly Data Sheet (February 2013)
• Attachment 5	ST018 Monthly Data Sheet (January and February 2013)
• Attachment 6	Presentation: Program Update: Activities Completed, In Progress and Upcoming

Introductions were made to welcome Ms. Halper with Techlaw who has replaced Ms. Snow with Techlaw.

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 20 February 2013 RPM meeting minutes were approved and finalized as written, with one minor correction, page two, second to last paragraph, change "Nadia" to "Ms. Burke".

B. Action Item Review.

Action items from February were reviewed.

Action item 1 still open: Travis AFB to research beneficial reuse of treated water. AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a "net-zero policy" for the Air Force. Update, 16 January 2013: Mr. Duke said that an Air Force energy reduction contractor is looking into the cost of installing a pipe to convey treated water from the central plant to the duck pond. Update, 20 March 2013: Mr. Duke said Travis AFB is looking into energy management projects with respect to ways of reducing water usage. Due date changed to TBD.

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 18 April 2013 at 1400 hours. Mr. Anderson offered to reserve the room earlier if there is a need for a ROD comment response meeting to be held before the April RPM meeting.

Travis AFB Master Document Schedule

— Groundwater Record of Decision (ROD): No change to the schedule. Ms. Burke requested, in writing, additional review time. The agency comments due date will be changed to 04 April 2013; the remaining due dates will be changed accordingly.

— 3rd Five-Year Review: The dates were revised based on the ROD review period and could possibly be pushed back again.

— Potrero Hills Annex: (FS, PP, and ROD): No new information and no change to the schedule.

— Old Skeet Range Action Memorandum: No change to the schedule. Mr. Anderson asked the agencies if they had a chance to review the document. Mr. Salcedo/DTSC and Ms. Burke/EPA have not reviewed the document and will do so when they have submitted their comments on the ROD. Ms. Constantinescu/RWQCB reviewed the document and asked if Travis AFB planned on conducting confirmatory sampling and if a plan for confirmatory sampling is forthcoming. Mr. Anderson agreed that this needs to be mentioned in this document, but indicated that the details of confirmatory sampling will be provided in the work plan. Mr. Anderson requested Ms. Constantinescu to submit her comments in writing.

— Quarterly Newsletter (April 2013): New dates were added to reflect the second quarterly newsletter. Mr. Anderson noted the schedule is compressed, because the newsletter supports the upcoming RAB meeting.

— Groundwater Remediation Implementation Status Report: No change to schedule. The draft to the agencies will be submitted by the end of April. This document is comprehensive and has a lot of information. Mr. Duke said the schedule can be pushed back a month or two if needed. Mr. Wray said the document should be finalized before the new PBC Request for Proposal (RFP) comes out. Ms. Burke suggested an overview so the bidding contractors know the issues.

— Kinder Morgan LF044 Land Use Control Report: New Document. Dates are TBD. Mr. Anderson said Travis AFB is still waiting for data from Kinder Morgan.

— 2012 CAMU Annual Report: New document. All new dates were added. This document will include the lysimeter removal.

— Vapor Intrusion Update Technical Memorandum: Moved to history.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status.

South Base Boundary Groundwater Treatment Plant (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 1.6 million gallons of groundwater were extracted and treated during the month of February 2013. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 44.7 gallons per minute (gpm). Electrical power usage was 1,584 kWh and approximately 2,171 pounds of CO_2 were created (based on DOE calculation). Approximately 0.67 pounds of volatile organic compounds (VOCs) were removed in February. The total mass of VOCs removed since startup of the system is 435 pounds.

Optimization Activities: No optimization activities are reported for the month of February.

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.3 million gallons of groundwater extracted and treated during the month of February 2013. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 36.3 gpm. Electrical power usage was 2,355 kWh for all equipment connected to the Central plant, and approximately 3,225 pounds of CO_2 were generated. Approximately 3.84 pounds of VOCs were removed from groundwater by the treatment plant in February. The total mass of VOCs removed since the startup of the system is 11,317 pounds.

Ms. Burke questioned the J-flag on the TCE, stating typically a J-flag is not used with higher concentrations. Mr. Wray said the J-flag is because the laboratory extracted the sample one day late. He also said that the system was not resampled because when we typically get these lab reports, it is almost time to do the next monthly sampling. Future monthly reports will explain anomalies like this.

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 February.

Optimization Activities for CGWTP: No optimization activities are reported for the month of February.

Site ST018 Groundwater (MTBE) Treatment Plant (see Attachment 5)

January: The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 161 thousand gallons of groundwater extracted and treated during the month of January 2013. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 3.5 gpm. Electrical power usage for the month was 116 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 159 pounds of CO_2. Approximately 0.94 pounds of BTEX, MTBE and TPH were removed from groundwater in January from the treatment plant. The total BTEX, MTBE and TPH mass removed since the startup of the system is 21.6 pounds.

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

Optimization Activities: The battery bank that powers the groundwater pump at EW2019x18 was upgraded with more efficient batteries in January 2013. In addition to the batteries a load controller was also installed within the EW2019x18 control panel to prevent the new batteries from being discharged too deeply, which will increase the battery service life. An hour meter was also installed to track pump run

times. The other two extraction wells will be upgraded, which is in progress. (see attachment 5 for more details)

February: The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 113 thousand gallons of groundwater extracted and treated during the month of February 2013. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 3.30 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 0.66 pounds of BTEX, MTBE and TPH were removed from groundwater in February from the treatment plant. The total BTEX, MTBE and TPH mass removed since the startup of the system is 22.3 pounds.

Note: Electrical power use is only 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 for ST018: No optimization activities are reported for the month of February.

Program Update: Activities Completed, In Progress and Upcoming (see Attachment 6)

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. Updates from the briefing this month included:

Completed Documents: Vapor Intrusion Assessment Update Technical Memorandum.

Completed Field Work: Replace electrical wiring for well field at Site SS030.

In-Progress Documents: Groundwater Record of Decision, Old Skeet Range Action Memorandum.

In-Progress Field Work: None.

Upcoming Documents: 3rd Five-Year Review, 2012 Annual Groundwater Remediation Implementation Status Report, 2012 CAMU Annual Report, Kinder Morgan LF044 Land Use Control Report.

Upcoming Fieldwork: Replace battery banks at ST018 Groundwater Treatment Plant, Annual Groundwater Remediation Implementation Program (GRIP) Sampling Event (April), Well Decommissioning.

Mr. Linbrunner explained that the well decommissioning is not under the current PBC contract, nor is the MMRP site work. The well decommissioning is being conducted under a separate Land Use Control (LUC) contract, and the MMRP work is being conducted independently from the ERP work. When the new PBR contract is awarded, everything will

be rolled into the one contract, including a small portion of the MMRP field work, because it will not be completed under the old contract. Ms. Halper asked when the new contract will be in effect. Mr. Linbrunner said sometime within the next six to seven months.

Ms. Halper asked how soon after the April/May groundwater sample collection is completed, will the next Groundwater Remediation Implementation Status Report (GRISR) be submitted for regulatory review. Mr. Wray said the report is annual and will also include data collected in the fourth quarter sampling event. The report will go out in draft format in April 2014. Ms. Burke asked when the agencies will be able to provide input on what wells are sampled based on data collected, because the report is published the following year. Mr. Wray explained that the annual sampling is base-wide, is programmatic, and is based mostly on the Decision Tree. However, the semiannual sampling (fourth quarter) is more selective.

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Mr. Linbrunner explained the process of selecting a new contractor for the upcoming performance-based contract. The original contract was competed and awarded to the current contractors. The new contract will be offered to five contractors who have competed and won the right to bid on the next task order under the Louisville ERS contract. They will have 45 days to respond to the RFP. The contractors have specific requirements to meet for all the sites in the program which are in various states of completion. The evaluation is determined on responses to the statement of objectives (SOO); the selection process will be "best value". Ms. Burke asked if the five contractors selected is public knowledge. Mr. Linbrunner said yes and the five selected were competitively awarded to: CH2M HILL, Tetratech, Parsons, URS, and Shaw.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Research beneficial reuse of treated water and give update. Update (13 June 2012): AFCEE is in agreement with treated water reuse using Defense	TBD	Open

		Environmental Restoration Account (DERA) funds under the authority of a "net-zero policy" for the Air Force. Update (15 August 2012): Mr. Duke reported that irrigation lines were destroyed by a communications contractor and not repaired because the system was inactive. Travis AFB will get the system design information to determine if the trunk line is still intact and repairs can be made to get the system running. Update, 16 January 2013: Mr. Duke said that an Air Force energy reduction contractor will look into the cost of installing a pipe to convey treated water from the central plant to the duck pond. Update, 20 March 2013: Mr. Duke said Travis AFB is looking into energy management projects with respect to ways of reducing water usage. Due date changed to TBD.		

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
BLDG 570, Main Conference Room
20 March 2013, 9:30 A.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)

3. PRESENTATION

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

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

NOTES: AFTER THE RPM MEETING WE WILL HOLD A SEPARATE MEETING TO DISCUSS REGULATORY COMMENTS ON THE DRAFT GROUNDWATER RECORD OF DECISION AND APPROACHES TO FACILITATE THEIR RESOLUTION. ALL PARTICIPANTS ARE WELCOME TO ATTEND.

Travis AFB Master Meeting and Document Schedule

(2013)
Annual Meeting and Teleconference Schedule

Monthly RPM Meeting[1] (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 10:00 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-16-13	—	—
02-20-13	—	—
03-20-13[2]	—	—
04-18-13 (Thur 2:00 PM)	—	04-18-13
05-22-13	—	—
06-19-13	—	—
07-17-13	—	—
08-21-13	—	—
09-18-13	—	—
10-17-13 (Thur 2:00 PM)	—	10-17-13
11-20-13	—	—
—	—	—

[1] Note: Meetings will be held the third Wednesday of each month unless otherwise noted.

[2] Note: Meetings will alternate between face to face and teleconferences after the GW ROD is final.

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS		
Life Cycle	**Groundwater Record of Decision** **Travis, Glenn Anderson** **CH2M HILL, Leah Waller**	**3rd Five-Year Review** **Travis AFB, Glenn Anderson** **J.C. Palomar, Chris Bason**
Scoping Meeting	**01-24-07 (11-30-11)**	**10-31-12**
Predraft to AF/Service Center	11-28-12	03-08-13
AF/Service Center Comments Due	12-12-12	03-27-13
Draft to Agencies	01-02-13	04-01-13
Draft to RAB	01-02-13	04-01-13
Agency Comments Due	03-03-13 (03-18-13)	05-01-13
Response to Comments Meeting	**03-20-13**	**05-22-13**
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	04-01-13	05-31-13
Draft Final Due	04-01-13	05-31-13
Final Due	05-01-13	07-03-13

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	**Potrero Hills Annex Travis, Glenn Anderson**		
	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	**MMRP** **Old Skeet Range Action Memorandum** **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**
Scoping Meeting	NA
Predraft to AF/Service Center	01-10-13
AF/Service Center Comments Due	01-28-13
Draft to Agencies	02-20-13
Draft to RAB	02-20-13
Agency Comments Due	03-22-13
Response to Comments Meeting	**04-18-13**
Response to Comments Due	04-30-13
Draft Final Due	**NA**
Final Due	04-30-13
Public Comment Period	NA
Public Meeting	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS				
Life Cycle	**Quarterly Newsletters (April 2013)** **Travis, Glenn Anderson**	**Groundwater Remediation Implementation Status Report** **Travis AFB, Lonnie Duke** **CH2M HILL, Royer/Berwick**	**Kinder Morgan LF044 Land Use Control Report** **Travis AFB, Glenn Anderson** **Kinder Morgan, Heidi Sickler**	**2012 CAMU Annual Report** **Travis AFB, Lonnie Duke** **ITSI, Rachel Hess**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	03-28-13	TBD	03-25-13
AF/Service Center Comments Due	NA	04-11-13	TBD	04-01-13
Draft to Agencies	03-25-13	04-27-13	TBD	04-15-13
Draft to RAB	NA	04-27-13	TBD	04-15-13
Agency Comments Due	04-08-13	05-27-13	TBD	05-15-13
Response to Comments Meeting	**TBD**	**06-19-13**	**TBD**	**05-22-13**
Response to Comments Due	04-11-13	06-27-13	TBD	05-31-13
Draft Final Due	NA	NA	NA	NA
Final Due	04-11-13	06-27-13	TBD	05-31-13
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

HISTORICAL	
Life Cycle	**Vapor Intrusion Update Technical Memorandum** **Travis AFB, Glenn Anderson** **CH2M HILL, Leslie Royer**
Scoping Meeting	**NA**
Predraft to AF/Service Center	08-14-12
AF/Service Center Comments Due	08-28-12
Draft to Agencies	9-20-12
Draft to RAB	9-20-12
Agency Comments Due	10-20-12 (12-14-12)
Response to Comments Meeting	**TBD**
Response to Comments Due	02-15-13
Draft Final Due	**NA**
Final Due	02-15-13
Public Comment Period	NA
Public Meeting	**NA**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 150 **Reporting Period: 31 January 2013 – 28 February 2013** **Date Submitted: 13 March 2013**

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 February 2013 reporting period.

Table 1 – Operations Summary – February 2013

Operating Time:	Percent Uptime:	Electrical Power Usage:
SBBGWTP: 672 hours	**SBBGWTP:** 100 %	**SBBGWTP:** 1,584 kWh (2,171 lbs CO_2 generated[a])[b]

Gallons Treated: **1.6 million gallons**

Gallons Treated Since July 1998: **814 million gallons**

Volume Discharged to Union Creek: **1.6 million gallons**

VOC Mass Removed: **0.67 lbs**[c]

VOC Mass Removed Since July 1998: **435 lbs**

Rolling 12-Month Cost per Pound of Mass Removed: $4,262[d]

Monthly Cost per Pound of Mass Removed: $13,190

lbs = pounds

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

[b] February 2013 power usage estimated based on usage rate from 2/8 – 2/26.

[c] Calculated using February 2013 EPA Method SW8260B analytical results.

[d] 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	2.3	EW01x30	12.1
EW02x05	2.0	EW737x05	Offline	EW02x29	Offline	EW02x30	5.1
EW03x05	Offline	EW742x05	Offline	EW03x29	3.3	EW03x30	2.2
EW731x05	Offline	EW743x05	Offline	EW04x29	Offline	EW04x30	24.1
EW732x05	Offline	EW744x05	Offline	EW05x29	8.6	EW05x30	Offline
EW733x05	Offline	EW745x05	Offline	EW06x29	14.7	EW06x30	Dry
EW734x05	Offline	EW746x05	Offline	EW07x29	Offline	EW711x30	18.2
EW735x05	Offline						
FT005 Total:	**2.0**			**SS029 Total:**	**28.9**	**SS030 Total:**	**61.7**
SBBGWTP Average Monthly Flow[c]: 44.7 gpm							

[a] Extraction well flow rates are based on end of the 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. 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	
SBBGWTP	None	NA			

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 13 February 2013. Sample results are presented in Table 4. The total VOC concentration (51 µg/L) in the influent sample has decreased since the January 2013 sample (108 µg /L) was collected. This decrease is attributed to the increase in extraction from the Site SS030. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

Concentrations of cis-1,2-DCE (3.6 J- µg/L) and TCE (46.9 J- µg/L) were detected at the influent sample location in February 2013. No contaminants were detected at the midpoint or effluent sampling locations.

Work to reconnect the replacement wiring in the extraction well network at Site SS030 was completed on 11 February 2013. All of the monitoring wells are now online with the exception of EW05x30, which remained off line due to pump failure. The EW05x30 pump is scheduled to be replaced on March 7, 2013.

Three (3) of the Site SS029 extraction wells began experiencing malfunctions and were not operational during February 2013. Extraction wells EW02x29, EW04x29, and EW07x29 are all experiencing variably frequency drive (VFD) faults that prevent the pumps from running. These common faults may be due to power line shorts. Troubleshooting activities are currently ongoing to determine the cause of the electrical issues and to identify possible solutions.

Optimization Activities

No optimization activities were performed in February 2013.

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 2,171 pounds of GHG during February 2013. GHG production has decreased (from 3,452 pounds) since January 2013 due to decreased extraction well operations. 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 February 2013 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	13 February 2013 (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	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.50	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	3.6 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	0.20	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	46.9 J-	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	12 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 and Average Flowrate
Twelve Month History
Travis Air Force Base, California

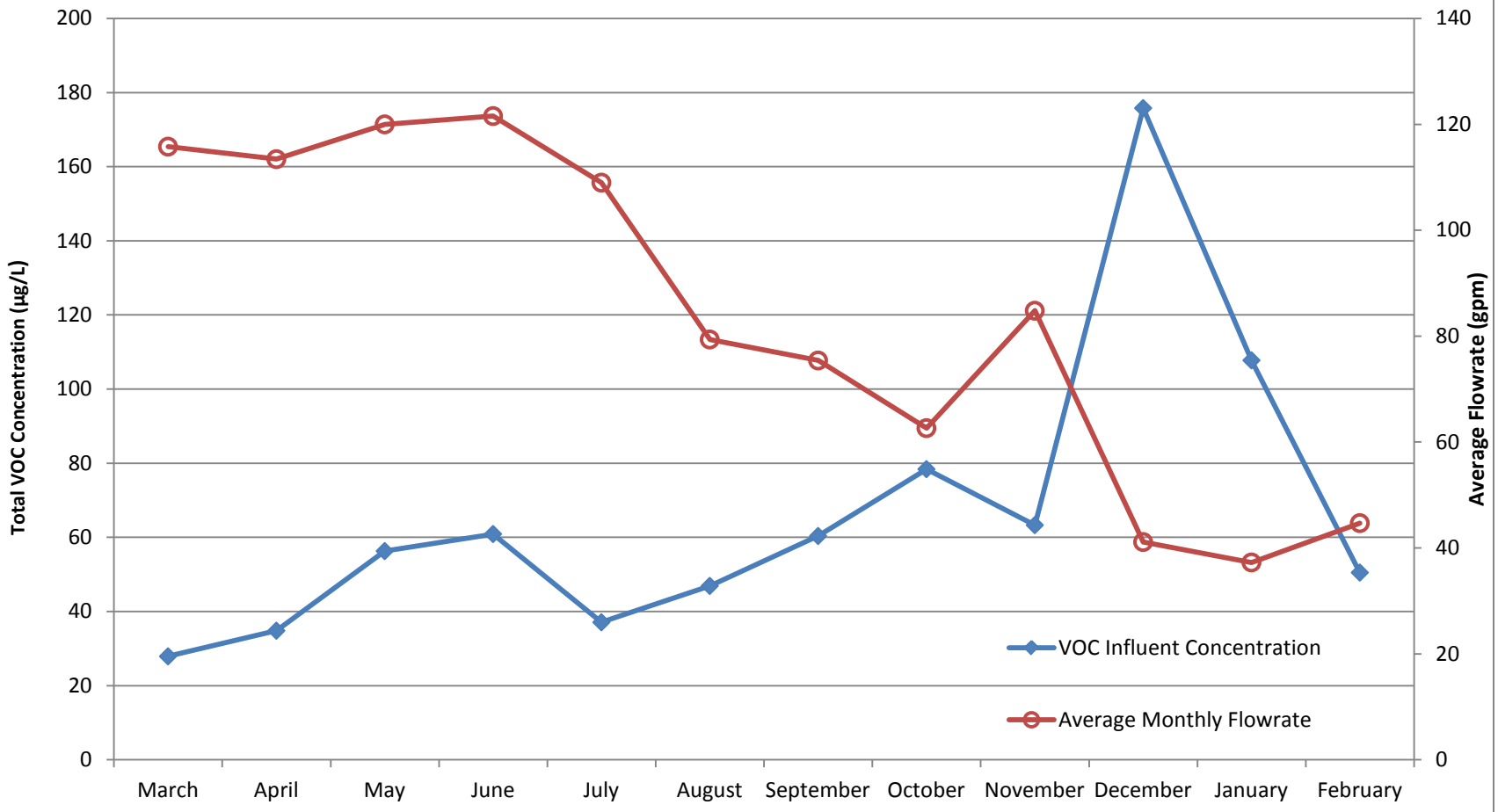
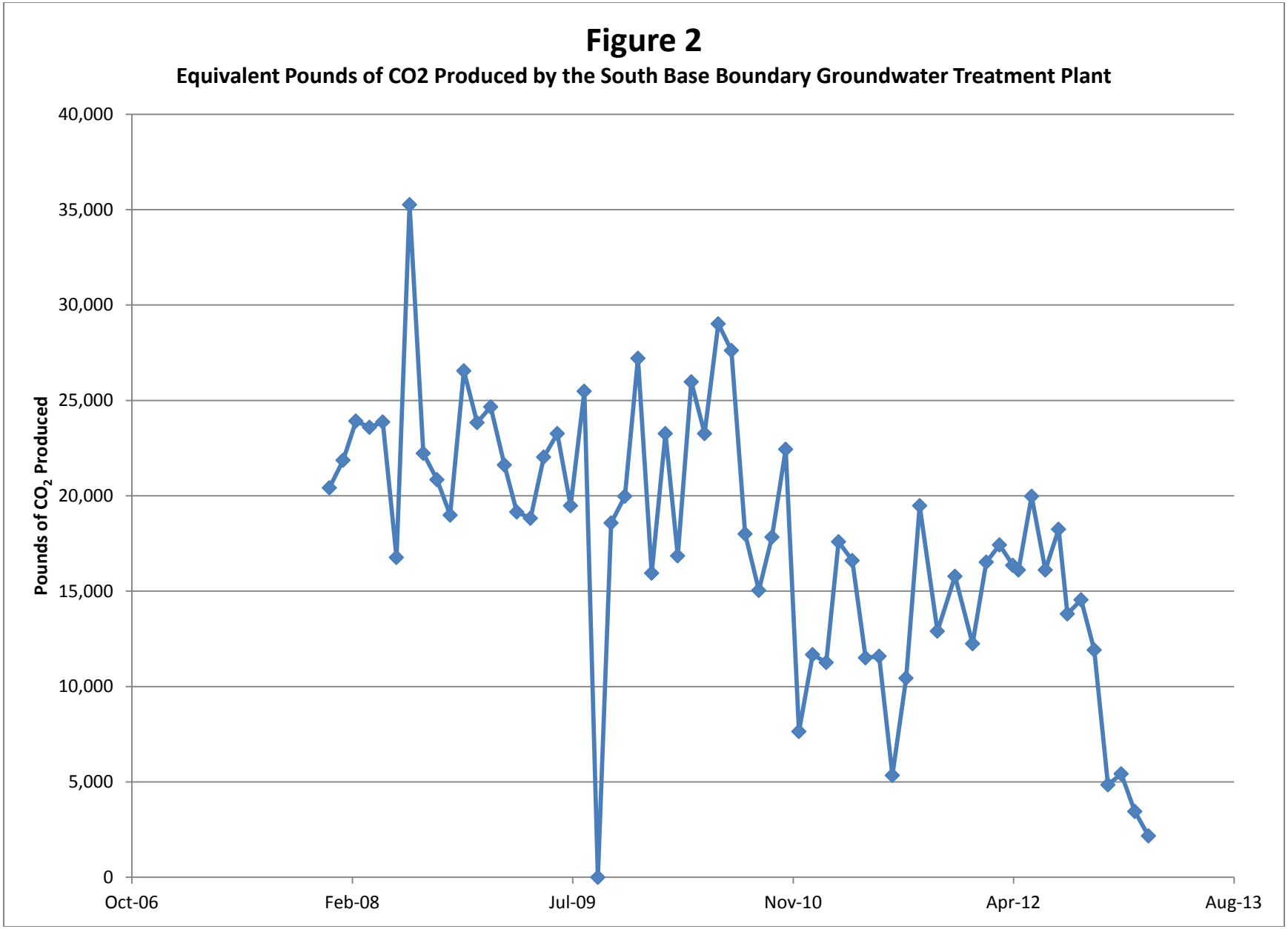


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 163 **Reporting Period: 31 January 2013 – 28 February 2013** **Date Submitted: 13 March 2013**

This monthly data sheet presents information regarding the Central Groundwater Treatment Plant (CGWTP) and its associated technology demonstrations. The ongoing technology demonstrations related to the CGWTP include various emulsified vegetable oil (EVO) injections, two (2) bioreactor treatability studies, and various rebound studies.

System Metrics

Table 1 presents operational data from the February 2013 reporting period.

Table 1 – Operations Summary – February 2013

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	672 hours	**CGWTP:**	100%	**CGWTP:**	2,355 kWh (3,226 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.3 million gallons**

Gallons Treated Since January 1996: **475 million gallons**

VOC Mass Removed:

3.84 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,631 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,361[c]

Monthly Cost per Pound of Mass Removed: $650

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

[b] Calculated using February 2013 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. All WIOU extraction wells continue to remain off line for the WIOU rebound study.

Table 2 – CGWTP Average Flow Rates[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)[b]
EW01x16	22.4	Offline
EW02x16	7.4	Offline
EW03x16	0.2[c]	Offline
EW605x16	7.2	Offline
EW610x16	3.1	Offline
CGWTP	36.3	--
WTTP	--[b]	Offline

[a] Flow rates calculated by dividing total gallons processed by system operating time for the month.
[b] No vapor or groundwater was treated in February 2013.
[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 a summary of shutdowns during the monthly reporting period.

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
	None	NA			
WTTP					
	None	NA			

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

Summary of O&M Activities

Monthly groundwater samples were collected at the CGWTP on 13 February 2013. Sample results are presented in Table 4. The total VOC concentration (350 µg/L) in the influent sample has decreased since the January 2013 sample (415 µg/L) was collected. Concentrations of cis-1,2-DCE (78.8 µg/L), trans-1,2-Dichloroethene (3.2 µg/L), Tetrachloroethene (0.68 µg/L), and TCE (267 J- µg/L) were detected at the influent sampling location. Vinyl chloride was not detected in the influent stream.

No contaminants were detected at the effluent sampling location. Travis Air Force Base will continue to monitor contaminant concentrations at the 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 amount of total organic carbon being produced within the bioreactor. The "pulsed mode" operation continued on a two (2) week transition schedule in February 2013.

Optimization Activities

No optimization activities occurred at CGWTP in February 2013.

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 3,226 pounds of GHG during February 2013. This is an increase from the amount produced in January 2013 (approximately 2,882 pounds) and can be attributed to an increase in the number of gallons treated.

TABLE 4
Summary of Groundwater Analytical Data for February 2013 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	13 February 2013 (µg/L) Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
1,2-Dibromoethane	5.0	0.11	0	ND	ND	ND	ND
2-Hexanone	5.0	0.48	0	ND	ND	ND	ND
4-Methyl-2-Pentanone	5.0	1.0	0	ND	ND	ND	ND
Bromoform	5.0	0.19	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	ND	ND	ND	ND
Bromobenzene	5.0	0.21	0	ND	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.16	0	ND	ND	ND	ND
Chloroethane	5.0	0.72	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	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	78.8	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.2	ND	ND	ND
Bromomethane	5.0	0.43	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.68	ND	ND	ND
trans-1,3-Dichloropropene	5.0	0.3	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	0.19	0	267 J-	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	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	0.23 – 0.5	0	ND	ND	ND	ND
Other							
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	NM	NM

* 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
mg/L = milligrams per liter

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	20 February 2012
	20 March 2012	13 April 2012
	27 April 2012	11 May 2012
	11 June 2012	25 June 2012
	20 July 2012	3 August 2012
MW750x39	5 September 2012	16 September 2012
	28 September 2012	13 October 2012
	29 October 2012	9 November 2012
	21 November 2012	7 December 2012
	21 December 2012	4 January 2013
	18 January 2013	4 February 2013
	15 February 2013	

CGWTP = Central Groundwater Treatment Plant
EW = Extraction Well

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

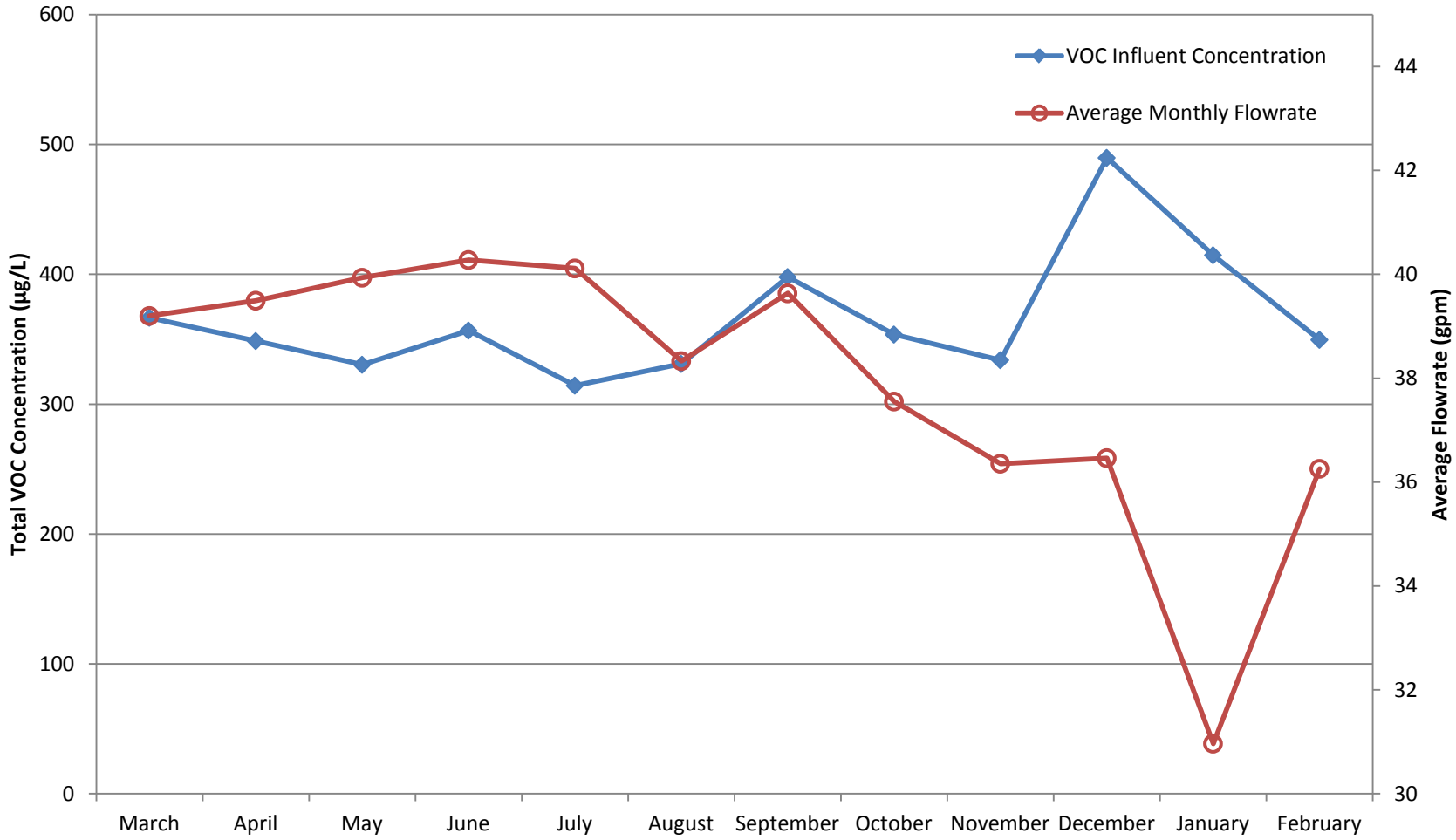
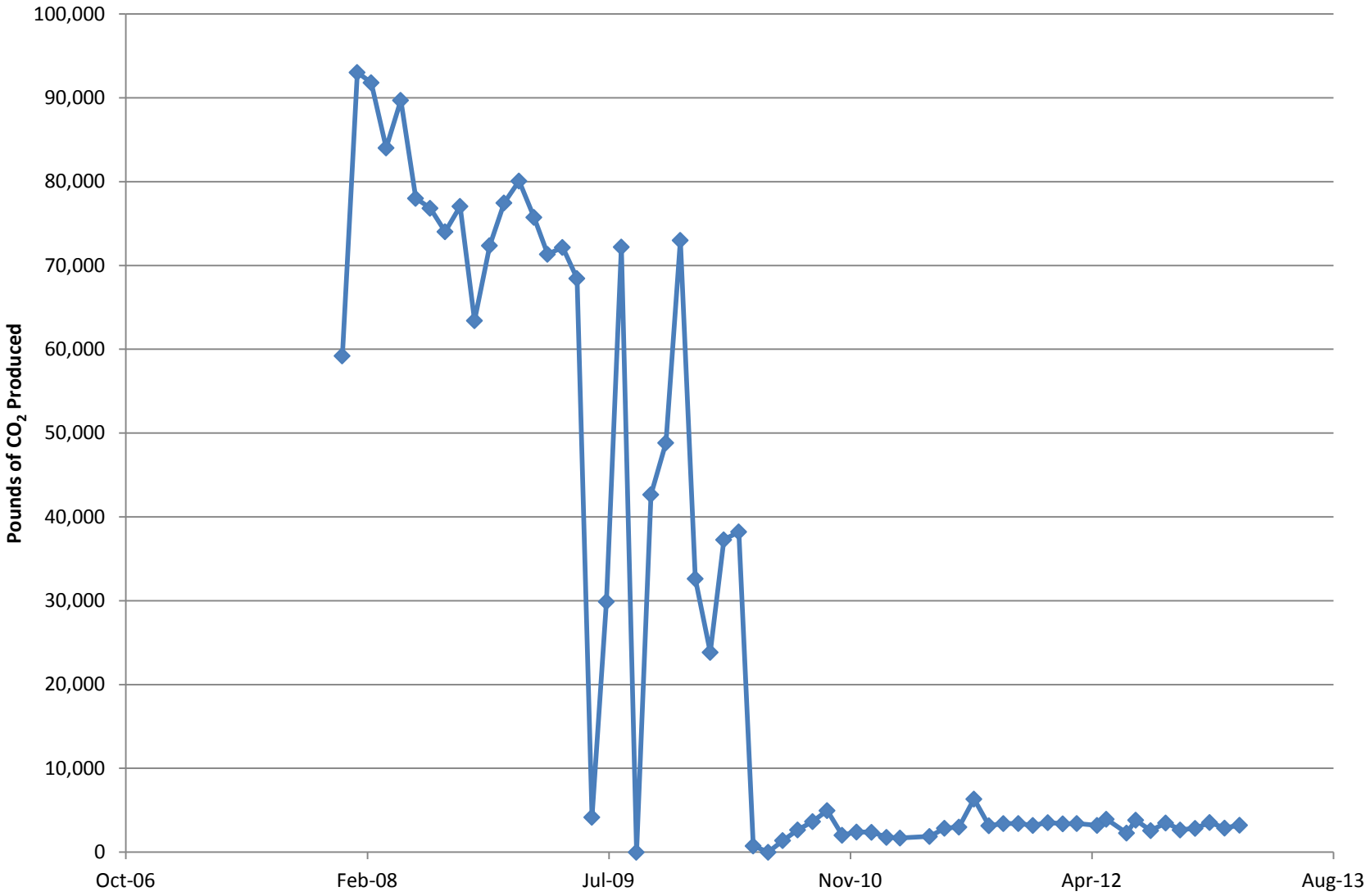


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 023 **Reporting Period: 31 December 2012 – 31 January 2013** **Date Submitted: 6 March 2013**

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP).

System Metrics

Table 1 presents operation data from the January 2013 reporting period.

Table 1 – Operations Summary – January 2013

Operating Time:	Percent Uptime:	Electrical Power Usage:
S18GWTP: 772 hours	**S18GWTP:** 100%	**S18GWTP:** 116 kWh (159 lbs CO_2 generated[a])

Gallons Treated: **161 thousand gallons** Gallons Treated Since March 2011: **3.39 million gallons**

Volume Discharged to Union Creek: **161 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.94 lbs**[b] BTEX, MTBE, TPH Mass Removed Since March 2011: **21.6 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $5,987 [c]

Monthly Cost per Pound of Mass Removed: $4,276

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG. Total energy usage for January 2013 estimated based on rate of usage from 1/18 – 2/8.

[b] Calculated using January 2013 (influent) and January 2013 (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.

lbs = pounds

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	1.0
EW2016x18	0.9
EW2019x18	1.8
Site ST018 GWTP	3.5

[a] Flow rates calculated by dividing total gallons processed, from the totalizer at each location, 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	
	None	NA			

[a]Shutdown times are estimated based on the start of the day.
S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 10 January 2013. Sample results from the January sampling event are presented in Table 4. No contaminant concentrations were measured at the effluent sampling location in January 2013.

The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (1Q13) influent sample was 699 µg/L, which is an increase from the previous (4Q12) influent concentration of 406 µg/L. Figure 1 presents a plot of influent quarterly total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the S18GWTP versus time.

A trigger study began in January 2013 in response to trigger exceedances of benzo(a)pyrene and ideno(1,2,3-cd)pyrene in the system effluent during the November 2012 sampling event. The results are presented in Table 5. No trigger exceedances occurred in January 2013. The benzo(a)pyrene and ideno (1,2,3-cd)pyrene trigger study sampling will continue for two (2) more months until March 2013.

Optimization Activities

The battery bank that powers the groundwater pump at EW2019x18 was upgraded with more efficient batteries in January 2013. The existing four (4) 12-volt batteries were replaced with eight (8) 6-volt batteries in order to increase the run-time of the EW2019x18 groundwater extraction pump. In addition to the batteries, a load controller was installed within the EW2019x18 control panel to prevent the new batteries from being discharged too deeply, which will increase the battery service life as compared to the previous configuration. An hour meter was also installed to track pump run times. The new batteries were installed only at EW2019x18 so that improved extraction well performance could be observed before upgrading the other extraction wells (EW2014x18 and EW2016x18).

Hour meters and load controllers were also installed at wells EW2014x18 and EW2016x18 in order to compare run times with original battery banks to EW2019x18, which had an upgraded battery bank.

The hour meters, load controllers, and EW2019x18's upgraded battery bank were brought on line on 6 February 2013. The hour meters on all three (3) extraction wells will be monitored throughout February 2013 to determine how effective the new battery bank at EW2019x18 is at increasing the run time of its associated extraction pump.

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.

The S18GWTP produced approximately 159 pounds of GHG during January 2013. This is an increase from December 2012 (104 pounds). This is due to an increased number of gallons treated in January 2013 compared to December 2012. Figure 2 presents the historical GHG production from the S18GWTP. 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 2013 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	10 January 2013 (µg/L) Influent[b]	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
MTBE	5	0.5	0	135	27.8	ND	ND
Benzene	5	0.17	0	17.9	ND	ND	ND
Ethylbenzene	5	0.22	0	26	ND	ND	ND
Toluene	5	0.14	0	1.7	ND	ND	ND
Total Xylenes	5	0.23 – 0.5	0	38.2	ND	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	480	22 J	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	ND	ND	ND	ND
Total Petroleum Hydrocarbons – Motor Oil	--	160	--	ND	ND	ND	ND

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

[b] Values taken from January 2013 (1Q13) sample data. Influent sampling is conducted on a quarterly basis.

µg/L = micrograms per liter

ND = not detected above method detection limit
NM = not measured this month

Table 5
Summary of Quarterly Trigger Study Analytical Data – Site ST018 Groundwater Treatment Plant

Constituent	Trigger Limit[a] (µg/L)	10 January 2013 (µg/L) Influent	Effluent
Benzo(a)pyrene	0.0044	ND	ND
Indeno(1,2,3-c,d)pyrene	0.0044	ND	ND

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

Notes:

µg/L = micrograms per liter
ND = not detected above method detection limit

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

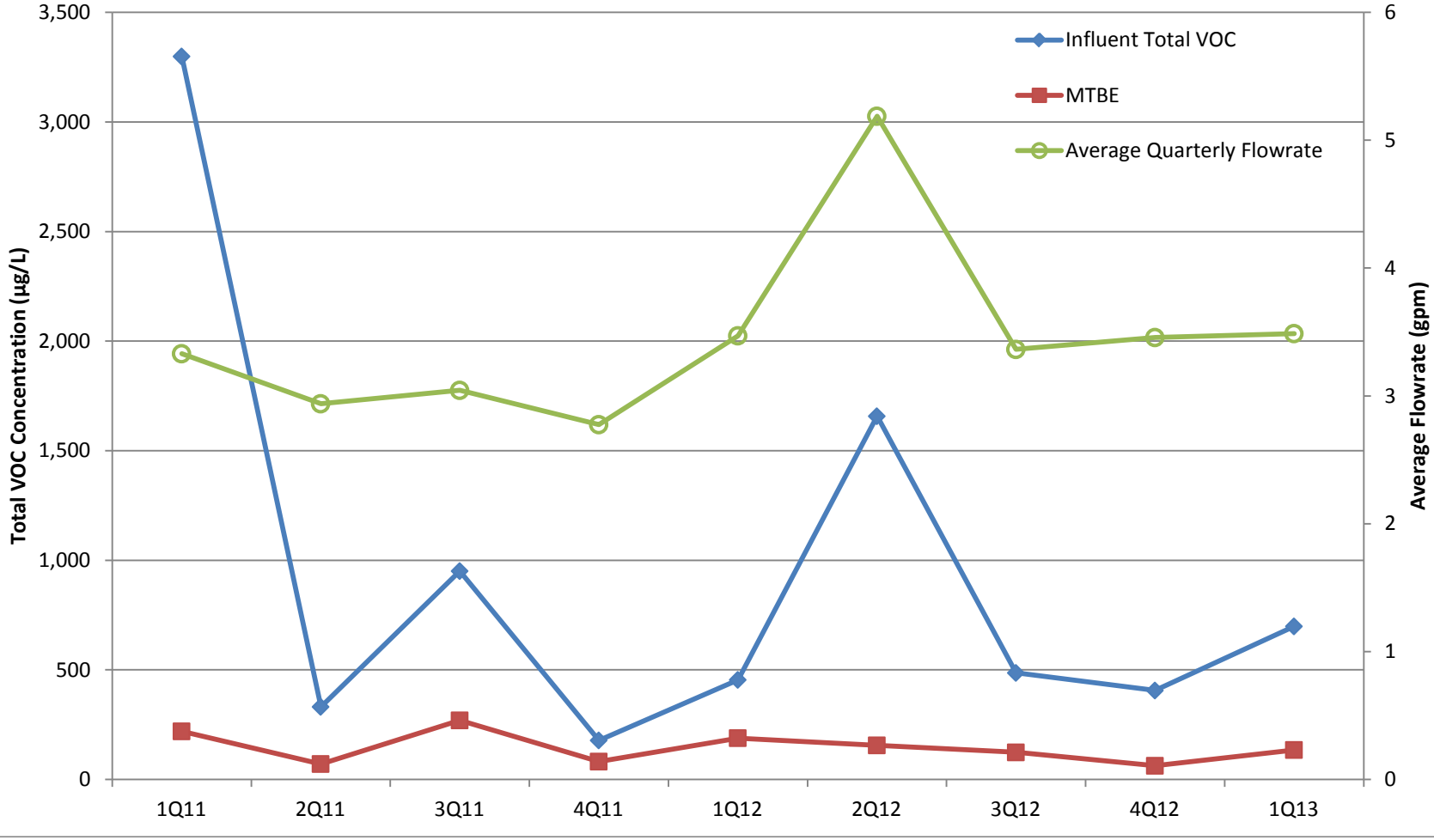
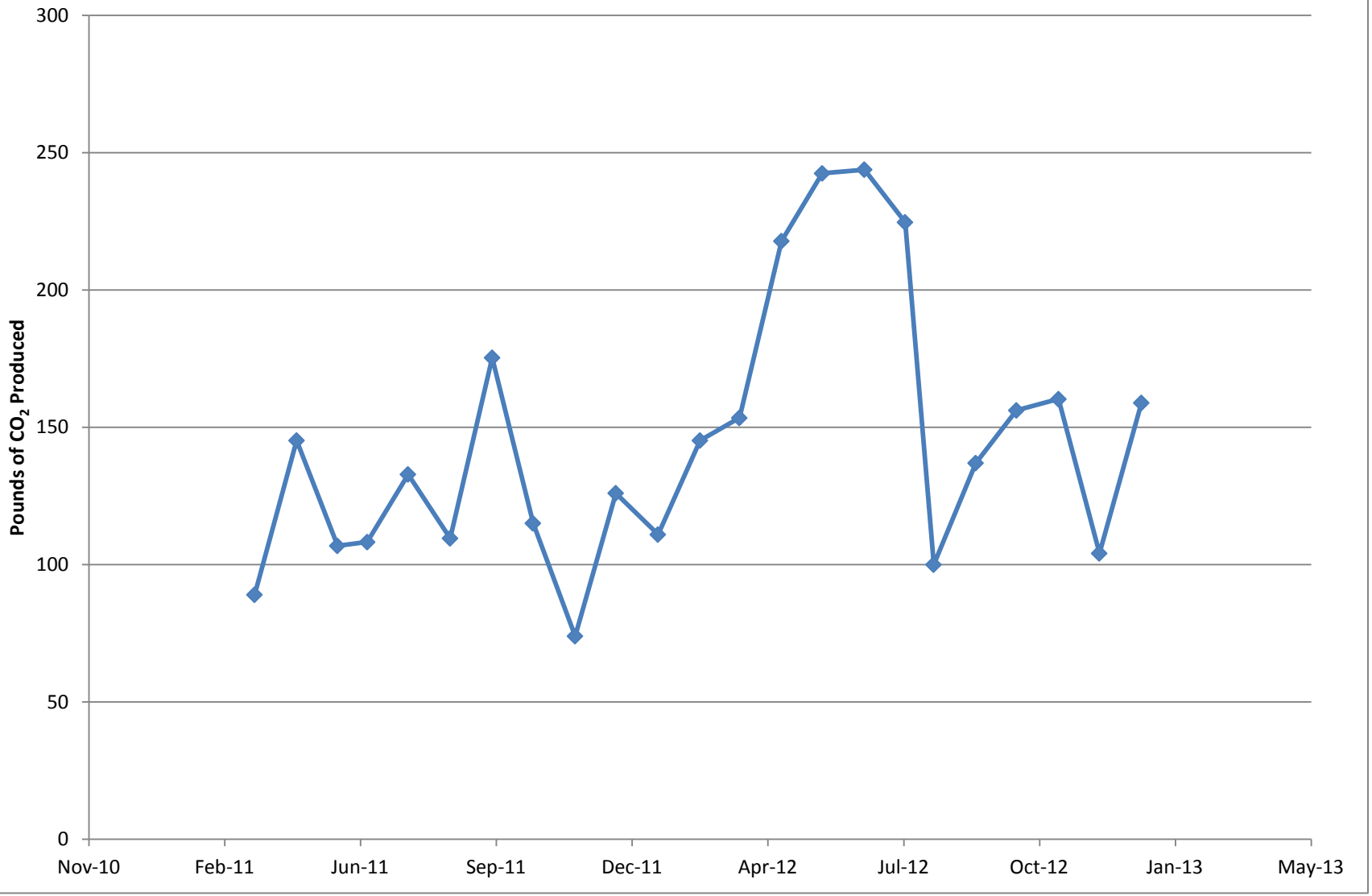


Figure 2

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



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 024 **Reporting Period: 31 January 2013 – 28 February 2013** **Date Submitted: 13 March 2013**

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP).

System Metrics

Table 1 presents operation data from the February 2013 reporting period.

Table 1 – Operations Summary – February 2013

Operating Time:	Percent Uptime:	Electrical Power Usage:
S18GWTP: 672 hours	**S18GWTP:** 100%	**S18GWTP:** 81 kWh (111 lbs CO_2 generated[a])

Gallons Treated: **113 thousand gallons** Gallons Treated Since March 2011: **3.50 million gallons**

Volume Discharged to Union Creek: **113 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.66 lbs**[b] BTEX, MTBE, TPH Mass Removed Since March 2011: **22.3 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $5,007 [c]

Monthly Cost per Pound of Mass Removed: $2,370

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

[b] Calculated using January 2013 (influent) and February 2013 (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.

lbs = pounds

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	0.62
EW2016x18	0.76
EW2019x18	1.85
Site ST018 GWTP	3.30

[a] Flow rates calculated by dividing total gallons processed, from the totalizer at each location, 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	
	None	NA			

[a]Shutdown times are estimated based on the start of the day.
S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 13 February 2013. Sample results from the February sampling event are presented in Table 4. No contaminant concentrations were measured at the effluent sampling location in February 2013.

The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (1Q13) influent sample was 699 µg/L, which is an increase from the previous (4Q12) influent concentration of 406 µg/L. Figure 1 presents a plot of influent quarterly total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the S18GWTP versus time.

A trigger study began in January 2013 in response to trigger exceedances of benzo(a)pyrene and ideno(1,2,3-cd)pyrene in the system effluent during the November 2012 sampling event. The trigger studies are mandated by NPDES permit No. CAG912002. The results of the study are presented in Table 5. No trigger exceedances occurred in February 2013. The benzo(a)pyrene and ideno (1,2,3-cd)pyrene trigger study sampling will continue for one (1) more month, until March 2013.

Optimization Activities

Hour meter readings collected on 25 February 2013 indicated that between 6 February and 25 February 2013, EW2014x18 and EW2016x18 had run approximately 38 percent and 40 percent of the time, while EW2019x18 had been able to run for 100 percent of the time. Based on the increased run time associated with an upgraded battery bank, both the EW2014x18 and EW2016x18 battery banks will be upgraded with the same batteries as EW2019x18. The new batteries are currently being procured and installation is expected to occur in late March or early April 2013.

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.

The S18GWTP produced approximately 111 pounds of GHG during February 2013. This is a decrease from January 2013 (159 pounds). This is due to a decreased number of gallons treated in February 2013 compared to January 2013. Figure 2 presents the historical GHG production from the S18GWTP. 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 February 2013 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	13 February 2013 (µg/L)			
				Influent[b]	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
MTBE	5	0.5	0	135	NM	ND	ND
Benzene	5	0.17	0	17.9	NM	ND	ND
Ethylbenzene	5	0.22	0	26	NM	ND	ND
Toluene	5	0.14	0	1.7	NM	ND	ND
Total Xylenes	5	0.23 – 0.5	0	38.2	NM	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	480	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	ND	52 J	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	--	160	--	ND	ND	NM	ND

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

[b] Values taken from January 2013 (1Q13) sample data. Influent sampling is conducted on a quarterly basis.

µg/L = micrograms per liter
J = analyte concentration is considered an estimated value
ND = not detected above method detection limit
NM = not measured this month

Table 5
Summary of Quarterly Trigger Study Analytical Data – Site ST018 Groundwater Treatment Plant

Constituent	Trigger Limit[a] (µg/L)	10 January 2013 (µg/L)		13 February 2013 (µg/L)	
		Influent	Effluent	Influent	Effluent
Benzo(a)pyrene	0.0044	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	0.0044	ND	ND	ND	ND

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

Notes:

µg/L = micrograms per liter
ND = not detected above method detection limit

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

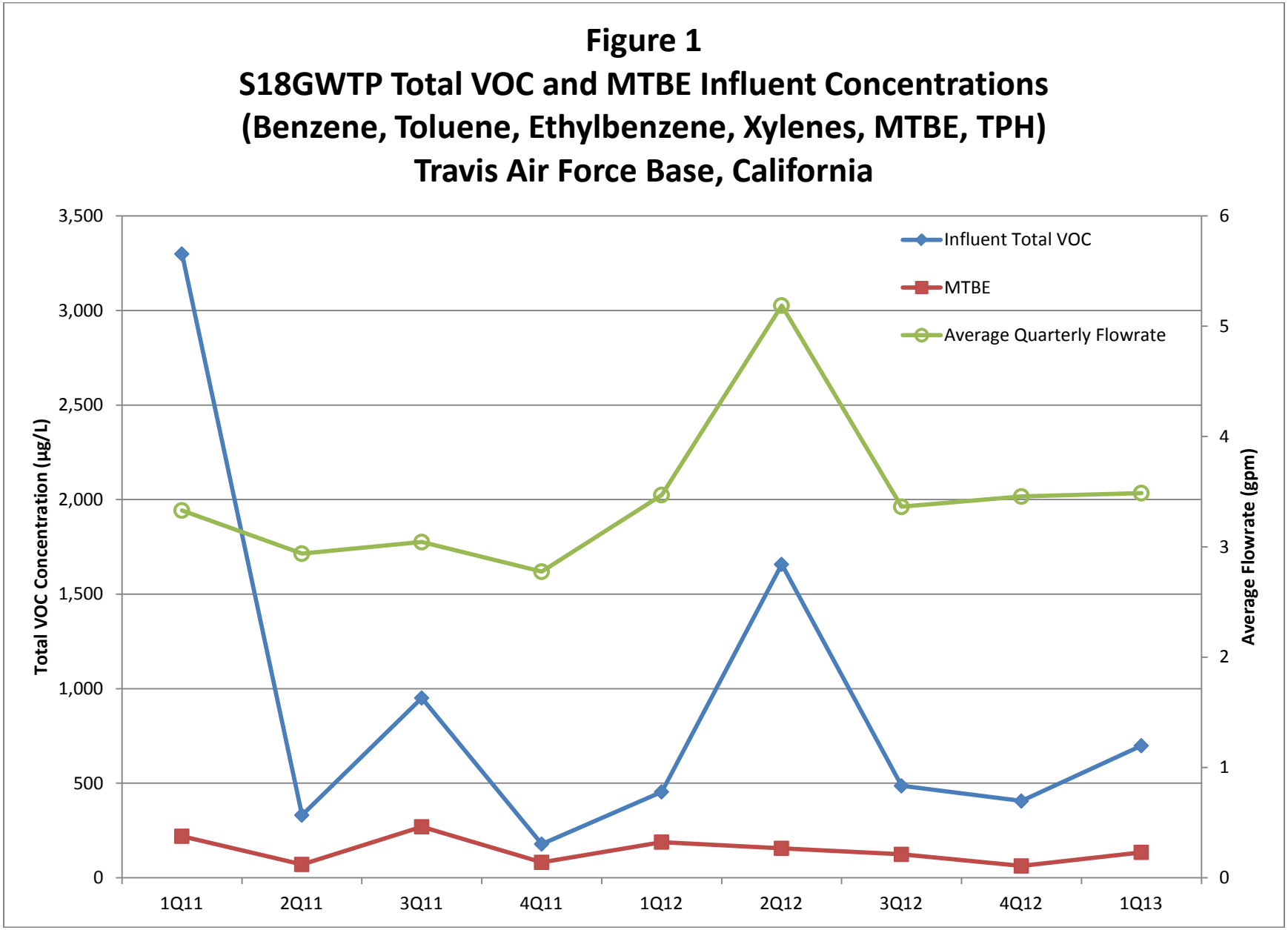
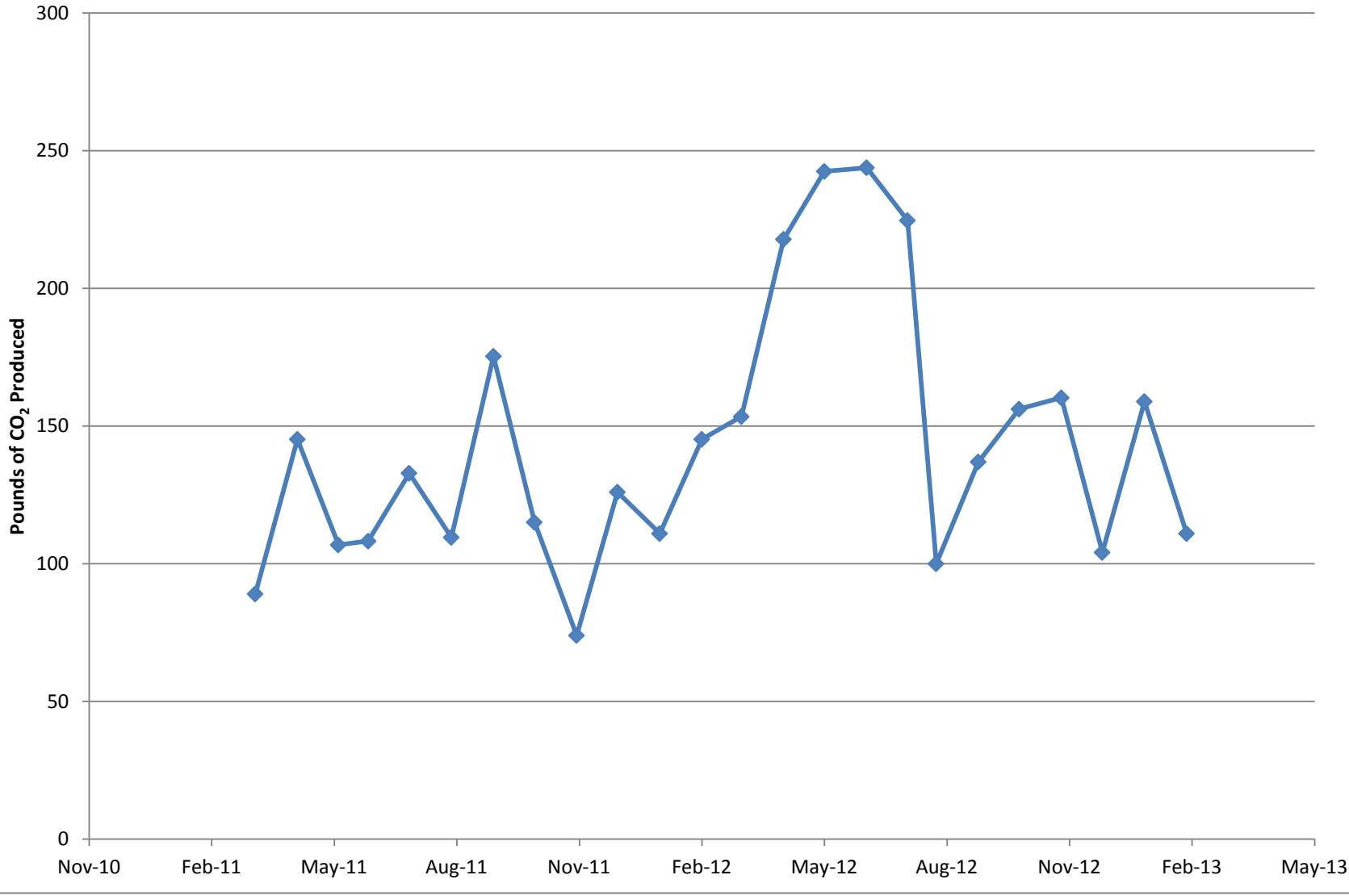


Figure 2

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



Travis AFB
Restoration Program

Program Overview

RPM Meeting

March 20, 2013

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
- 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

Completed Documents (cont'd)

- 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
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- 2010/2011 Annual GSAP Report
- Baseline Implementation Report (Sites SS015, SS016, SD036, SD037, and DP039)
- 2011 CAMU Annual Report
- Technical and Economic Feasibility Analysis (TEFA)
- Work Plan for RPO of Sites SS016 and SS029
- Site LF007C Data Gaps Investigation Technical Memorandum
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- Old Skeet Range Engineering Evaluation/Cost Analysis
- 2011 Groundwater Treatment RPO Annual Report
- Groundwater Proposed Plan (PP)
- FT005 Remedial Action Completion Report
- 2012 GSAP Technical Memorandum

Completed Documents (cont'd)

- Vapor Intrusion Assessment Update Technical Memorandum

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
- 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

Completed Field Work (cont'd)

- 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)
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)
- 2012 Annual GSAP Sampling
- CAMU Lysimeter Removal
- LF007C GET System Optimization
- SS029/SS016 System Optimization Analysis
- GSAP Semiannual Sampling Event
- Replace electrical wiring for well field at Site SS030

In-Progress Documents & Field Work

Documents

- Groundwater Record of Decision (ROD)
- Old Skeet Range Action Memorandum

Field Work

- None

Upcoming Documents & Field Work

Documents

- 3rd Five-Year Review — Apr
- 2012 Annual Groundwater Remediation Implementation Status Report (GRISR) — Apr
- 2012 CAMU Annual Report — Apr
- Kinder Morgan LF044 Land Use Control Report — TBD

Field Work

- Replace battery banks at ST018 Groundwater Treatment Plant — Apr
- Annual Groundwater Remediation Implementation Program (GRIP) Sampling event — Apr
- Well Decommissioning — May

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