

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

21 April 2016, 1400 Hours

Mr. Lonnie Duke, of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Team (IST) conducted the Restoration Program Manager's (RPM) meeting on 21 April 2016 at 1400 hours in Building 248 at Travis AFB, California. Attendees included:

- Glenn Anderson AFCEC/CZOW
- Lonnie Duke AFCEC/CZOW
- Angel Santiago Jr. AFCEC/CZOW
- Carol Gaudette AFCEC/CZOW
- William Hall AFCEC/CZRW
- Dezso Linbrunner USACE-Omaha
- Adriana Constantinescu California Regional Water Quality Control Board (RWQCB)
- Ben Fries California Department of Toxic Substances Control (DTSC)
- Indira Balkissoon Techlaw, Inc
- Meg Greenwald CAPE
- Mike Wray CH2M

Handouts distributed at the meeting, discussions and presentations included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting and Document Schedule
- Attachment 3 SBBGWTP Monthly Data Sheet (March 2016)
- Attachment 4 CGWTP Monthly Data Sheet (March 2016)
- Attachment 5 ST018 Monthly Data Sheet (March 2016)
- Attachment 6 Presentation: Program Update

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 16 March 2016 RPM meeting minutes were approved and finalized as written, with the following exception. Page 8, last paragraph under "ROD Amendment:" insert 'technical memorandum' in the following statement: "Ms.

Burke questioned if “technical memorandum”, should be considered a primary document, because it includes a risk assessment.”

B. Action Item Review.

Action items from March 2016 were reviewed.

Action item 1 is ongoing: Mr. Duke to provide updates on PFOS and PFOA as he becomes aware of them. 21 April 2016 update: Mr. Duke said he did get a chance to see a plan from the Air Force on how they are going to slowly move away from using PFOS and PFOA, however, it will take a couple of years to transition. Mr. Linbrunner said that AFCEC will be conducting sampling at fourteen bases for PFOS and PFOA.

C. 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 a teleconference meeting at Travis AFB, held on Wednesday, 18 May 2016, at 0930.

Travis AFB Master Document Schedule

- Community Involvement Plan: Draft to Agencies date changed to 31 May 2016, the rest of the dates were changed accordingly. Mr. Anderson said he suspects the dates will most likely be pushed back once more.
- Site SD031 Remedial Investigation Work Plan: Response to comments due date changed to 5 May 2016, the rest of the dates were changed accordingly. Travis AFB is working on response to comments (RTC).
- Action Memorandum Non-Time Critical Removal Action at Site TS060: Predraft to AF/Service Center was changed to 30 March 2016 to reflect the actual date, the rest of the dates were changed accordingly.
- Potrero Hills Annex (FS, PP, and ROD): No change to the schedule. The responsible parties are working on responses to comments (RTCs) from the Water Board on the Report of Findings document and the updated conceptual site model.
- Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046: No changes made to the schedule. EPA submitted comments and Travis AFB is working on RTCs.

- Corrective Action Plan for DERA-Funded Oil Water Separators (POCO): Draft to Agencies was changed to 6 April 2016 to reflect the actual date, the rest of the dates were changed accordingly.
- Site CG508 Well Decommissioning Work Plan Technical Memorandum: Final due date was changed to 8 April 2016 to reflect the actual date.
- Site SD034 Technology Demonstration Work Plan: Predraft to AF/Service Center was changed to 22 March 2016, the rest of the dates were changed accordingly.
- Site TS060 Removal Action Work Plan: Predraft to AF/Service Center was changed to 14 April 2016 to reflect the actual date, the rest of the dates were changed accordingly.
- Multi-Site Bioaugmentation Technology Demonstration Work Plan: Sites ST027 and SD036. Predraft to AF/Service Center was changed to 28 April 2016, the rest of the dates were changed accordingly. Travis AFB is coordinating the installation of new wells at ST027 during a time frame when Runway 21R will be closed for repairs.
- Site SS016 Soil Data Gap Investigation Work Plan: New document populated with all new dates.
- Site FT004 POCO Soil Data Gap Work Plan: New document, all dates are TBD.
- Quarterly Newsletter (April 2016): No change made to the schedule.
- 2015 Annual GRISR: No change made to the schedule.
- Site ST032 POCO Completion Report: Draft to Agencies was changed to 05 April 2016 to reflect the actual date, the rest of the dates were changed accordingly.
- Site FT004 Groundwater Technology Demonstration Construction Completion Report: No change made to the schedule. Ms. Burke from EPA submitted their comments. Mr. Fries will confirm if DTSC submitted comments. Ms. Constantinescu submitted RWQCB comments.
- Site ST028 POCO Completion Report: No change made to the schedule.
- 2015 Annual CAMU Monitoring Report: Draft to Agencies date was changed to 1 April 2016, and agency comments due date changed to 2 May 2016. No other changes were made to the schedule.
- Site FT005 Technology Demonstration Construction Completion Report: Predraft to AF/Service Center date was changed to 20 May 2016, the rest of the dates changed accordingly. Mr. Wray said that the delay is because the EVO injection is still on-going.
- Site DP039 Remedial Action Construction Completion Report: Predraft to AF/Service Center date was changed to 31 May 2016, the rest of the dates were changed accordingly. Mr. Wray said that the delay is because the EVO injection is still on-going.
- 2014 Annual GRISR: Moved to History.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, March 2016 (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 89.2% uptime, and 4.56 million gallons of groundwater were extracted and treated during the month of March 2016. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 95.5 gallons per minute (gpm). Electrical power usage was 21,000 kWh, and approximately 28,770 pounds of CO₂ were created (based on DOE calculation). Approximately 1.5 pounds of volatile organic compounds (VOCs) were removed in March. The total mass of VOCs removed since startup of the system is 474.8 pounds.

Optimization Activities for SBBGWTP: No optimization activities reported for the month of March 2016.

Central Groundwater Treatment Plant, March 2016 (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.5 million gallons of groundwater extracted and treated during the month of March 2016. All treated water was discharged to the storm drain. The average flow rate for the CGWTP was 31.0 gpm. Electrical power usage was 2,841 kWh for all equipment connected to the Central Plant, and approximately 3,892 pounds of CO₂ were generated. Approximately 3.18 pounds of VOCs were removed from groundwater by the treatment plant in March. The total mass of VOCs removed since the startup of the system is 11,429 pounds.

Optimization Activities for CGWTP: No optimization activities are reported for the month of March 2016.

LF007C Groundwater Treatment Plant

The LF007C Groundwater Treatment Plant was taken offline as of 24 December 2015, in accordance with the USFWS, due to the presence of standing water in the vernal pools.

ST018 Groundwater (MTBE) Treatment Plant, March 2016 (see Attachment 5)

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 66.8% uptime with approximately 209,600 gallons of groundwater extracted and treated during the month of March 2016. All treated water was diverted to the sanitary sewer. The

average flow rate for the ST018 GWTP was 6.2 gpm. Electrical power usage for the month was 144 kWh for all equipment connected to the ST018 GWTP, which equates to approximately 197 pounds of CO₂. Approximately 0.125 pounds of BTEX, MTBE and TPH was removed from groundwater in March by the treatment plant. Approximately 0.18 pounds of MTBE was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 36.5 pounds, and the total MTBE mass removed since startup of the system is 8.7 pounds.

Note: Electrical power use at the ST018 GWTP is only for the alarm system and a pump that pushes water through the GAC vessels for treatment. The extraction pumps in the system are all solar powered.

Optimization Activities for ST018GWTP: No optimization activities to report for the month of March 2016.

Presentations:

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:

Newly Completed Documents: Site CG508 Well Decommissioning Work Plan.

Newly Completed Field Work: None.

In-Progress Documents (CERCLA): Site SD031 Soil Remedial Investigation Work Plan; Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046; Site CG508 Well Decommissioning Work Plan; Site FT004 Technical Demonstration Completion Report, 2015 Annual CAMU Monitoring Report.

In-Progress Documents (POCO): Corrective Action Plan for DERA-Funded Oil Water Separators.

In-Progress Field Work: FT005 EVO Injection, DP039 EVO Injection.

Upcoming Documents (CERCLA): Site TS060 Action Memorandum (April); Community Involvement Plan (May); Site SD034 Technology Demonstration Work Plan (May); Site TS060 Removal Action Work Plan (May); Multi-Site Bioaugmentation Technology Demonstration Work Plan (May); Site SS016 Data Gaps Investigation Work Plan (May); 2015 Annual GRISR (June); Site FT005 Technology Demonstration Construction Completion Report (June); Site DP039 RD/RA Construction Completion Report (June); Site FT004 POCO Soil Data Gaps Investigation Work Plan (TBD).

Upcoming Documents (POCO): Site ST032 POCO Completion Report (April); Site ST028 POCO Completion Report (April).

Field Work Planned (CERCLA): 2016 Q2 GRIP Sampling (April); SD031 Soil Remedial Investigation (May); SD034 Technology Demonstration Well Installation (July); TS060 Removal Action (July); Data Gap Investigation for Soil Sites (SD033, SD043, and SS046) (July); Site SD034 Technology Demonstration Bioreactor Installation (July); Multi-site Bioaugmentation Technology Demonstration Work Plan (July); and SS016 Soil Data Gaps Investigation (July).

Field Work Planned (POCO): Oil Water Separators Step Out Drilling (June); Oil Water Separators (12) Removal (June); CG508 Well Decommissioning (July); FT004 POCO Soil Data Gaps Investigation (July); and Site SS014 Bioreactor Installation (August).

Mr. Wray said a Biological Assessment to support field activities is being prepared for submittal to the USF&WS

Ms. Balkissoon asked about The Final Annual Report on the Status of Land Use Controls on Restoration Sites in 2015. Mr. Anderson said it went final and that it is not a reviewable document, however, they have received the regulators comments and The Annual Report will be voluntarily changed in the following years.

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Mr. Linbrunner announced on 6 May 2016 that he, Mr. Hall, and Mr. Wray will be attending a Program Management Review (PMR) at AFCEC and will address certain issues that have arisen, such as the biological assessment issues.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Lonnie Duke	Mr. Duke to provide updates on PFOS and PFOA as he becomes aware of them.	Ongoing	Open

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
RESTORATION PROGRAM MANAGER'S MEETING
BLDG 248 Conference Room
21 April 2016, 2:00 P.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

- A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE

3. PRESENTATIONS

- A. PROGRAM UPDATE:
DOCUMENTS & ACTIVITIES COMPLETED, IN PROGRESS AND PLANNED

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

- A. MEETING SCHEDULE

NOTES: AFTER THE RPM MEETING, BASED ON THE DISCUSSION DURING THE REVIEW OF THE MASTER MEETING AND DOCUMENT SCHEDULE, WE ALLOW TIME TO HOLD A SEPARATE SPLINTER MEETING TO DISCUSS RESPONSES TO AGENCY COMMENTS ON THOSE DOCUMENTS THAT ARE IN PROGRESS, OR OTHER ISSUES IF NEEDED. ALL PARTICIPANTS ARE WELCOME TO PARTICIPATE.

(2016)
Annual Meeting and Teleconference Schedule

Monthly RPM Meeting ¹ (Begins at time noted)	RPM Teleconference (Begins at time noted)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
—	01-20-16	—
02-17-16	—	—
—	03-16-16	—
04-21-16 (Thursday 2:00 PM)	—	04-21-16
—	05-18-16	—
06-15-16	—	—
—	07-20-16	—
08-17-16	—	—
—	09-21-16	—
10-20-16 (Thursday 2:00 PM)	—	10-20-16 ²
—	11-16-16	—
—	—	—

¹ Note: Meetings and teleconferences will be held at 09:30 AM on the third Wednesday of each month unless otherwise noted.

² Note: Tentative RAB tour date in lieu of RAB meeting.

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	Community Involvement Plan Travis AFB, Glenn Anderson CH2M HILL, Tricia Carter	Site SD031 Remedial Investigation Work Plan Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian	Action Memorandum Non-Time Critical Removal Action at Site TS060 Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	NA	01-13-16	03-30-16
AF/Service Center Comments Due	NA	01-28-16	04-13-16
Draft to Agencies	05-31-16	02-10-16	04-27-16
Draft to RAB	05-31-16	02-10-16	04-27-16
Agency Comments Due	06-30-16	03-14-16	05-27-16
Response to Comments Meeting	07-20-16	03-16-16	06-15-16
Agency Concurrence with Remedy	NA	NA	NA
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA
Response to Comments Due	08-05-16	05-05-16	06-30-16
Draft Final Due	08-05-16	05-05-16	06-30-16
Final Due	09-08-16	06-06-16	07-01-16

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	Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046 Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer	Corrective Action Plan for DERA-Funded Oil Water Separators Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick	Site CG508 Well Decommissioning Work Plan Technical Memorandum Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt	Site SD034 Technology Demonstration Work Plan Travis AFB, Glenn Anderson CH2M HILL, Levi Pratt
Scoping Meeting	NA	NA	NA	NA
Predraft to AF/Service Center	01-15-16	02-10-16	02-01-16	03-22-16
AF/Service Center Comments Due	02-01-16	02-25-16	02-16-16	04-05-16
Draft to Agencies	02-17-16	04-06-16	03-01-16	05-03-16
Draft to RAB	02-17-16	04-06-16	03-01-16	05-03-16
Agency Comments Due	03-18-16	05-06-16	03-31-16	06-03-16
Response to Comments Meeting	04-21-16	05-18-16	04-21-16	06-15-16
Response to Comments Due	05-06-16	06-01-16	05-09-16 (04-08-16)	06-29-16
Draft Final Due	NA	NA	NA	NA
Final Due	05-06-16	06-01-16	05-09-16 (04-08-16)	06-29-16
Public Comment Period	NA	NA	NA	NA
Public Meeting	NA	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS				
Life Cycle	Site TS060 Removal Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald	Multi-Site Bioaugmentation Technology Demonstration Work Plan Travis AFB, Glenn Anderson CH2M HILL, Levi Pratt	Site SS016 Soil Data Gap Investigation Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald	Site FT004 POCO Soil Data Gap Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald
Scoping Meeting	NA	NA	NA	NA
Predraft to AF/Service Center	04-14-16	04-28-16	03-24-16	TBD
AF/Service Center Comments Due	04-28-16	05-12-16	04-07-16	TBD
Draft to Agencies	05-13-16	05-26-16	05-04-16	TBD
Draft to RAB	05-13-16	05-26-16	05-04-16	TBD
Agency Comments Due	06-13-16	06-27-16	06-06-16	TBD
Response to Comments Meeting	07-20-16	07-20-16	06-15-16	TBD
Response to Comments Due	08-03-16	08-04-16	07-01-16	TBD
Draft Final Due	NA	NA	NA	NA
Final Due	08-03-16	08-04-16	07-01-16	TBD
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 2016) Travis, Glenn Anderson	2015 Annual GRISR Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer	Site ST032 POCO Completion Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick CAPE, Meg Greenwald
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	NA	04-26-16	01-25-16
AF/Service Center Comments Due	NA	05-26-16	02-08-16
Draft to Agencies	03-29-16	06-10-16	04-05-16
Draft to RAB	NA	06-10-16	04-05-16
Agency Comments Due	04-12-16	07-11-16	05-05-16
Response to Comments Meeting	TBD	07-20-16	05-18-16
Response to Comments Due	04-13-16	08-03-16	06-02-16
Draft Final Due	NA	NA	NA
Final Due	04-15-16	08-03-16	06-02-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	Site FT004 Groundwater Technology Demonstration Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Levi Pratt	Site ST028 POCO Completion Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick CAPE, Meg Greenwald	2015 Annual CAMU Monitoring Report Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	02-16-16	02-24-16	02-26-16
AF/Service Center Comments Due	03-01-16	03-09-16	03-11-16
Draft to Agencies	03-15-16	04-13-16	04-01-16
Draft to RAB	03-15-16	04-13-16	04-01-16
Agency Comments Due	04-14-16	05-13-16	05-02-16
Response to Comments Meeting	04-21-16	05-18-16	05-18-16
Response to Comments Due	05-10-16	06-07-16	06-01-16
Draft Final Due	NA	NA	NA
Final Due	05-10-16	06-07-16	06-01-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS		
Life Cycle	Site FT005 Technology Demonstration Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Levi Pratt	Site DP039 Remedial Action Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Levi Pratt
Scoping Meeting	NA	NA
Predraft to AF/Service Center	05-20-16	05-31-16
AF/Service Center Comments Due	06-06-16	06-14-16
Draft to Agencies	06-21-16	06-28-16
Draft to RAB	06-21-16	06-28-16
Agency Comments Due	07-22-16	07-29-16
Response to Comments Meeting	08-17-16	08-17-16
Response to Comments Due	08-31-16	09-07-16
Draft Final Due	NA	NA
Final Due	08-31-16	09-07-16
Public Comment Period	NA	NA
Public Meeting	NA	NA

Travis AFB Master Meeting and Document Schedule

HISTORY	
Life Cycle	2014 Annual GRISR Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer
Scoping Meeting	NA
Predraft to AF/Service Center	04-24-15
AF/Service Center Comments Due	05-22-15
Draft to Agencies	06-10-15
Draft to RAB	06-10-15
Agency Comments Due	09-08-15
Response to Comments Meeting	09-16-15
Response to Comments Due	09-30-15 (03-03-16)
Draft Final Due	NA
Final Due	09-30-15 (03-03-16)
Public Comment Period	NA
Public Meeting	NA

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 187

Reporting Period: 22 February 2016 – 30 March 2016

Date Submitted: 18 April 2016

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 operational data from the March 2016 reporting period.

Table 1 – Operations Summary – March 2016			
Initial Data Collection:	2/22/2016 11:10	Final Data Collection:	3/30/2016 14:55
Operating Time:	Percent Uptime:	Electrical Power Usage:	
SBBGWTP: 795 hours	SBBGWTP: 89.2%	SBBGWTP: 21,000 kWh (28,770 lbs CO₂ generated^a)	
Gallons Treated: 4.56 million gallons		Gallons Treated Since July 1998: 929 million gallons	
Volume Discharged to Union Creek: 4.56 million gallons		Gallons Treat From Other Sources: 0 gallons	
VOC Mass Removed: 1.5 lbs^b		VOC Mass Removed Since July 1998: 474.8 lbs	
Rolling 12-Month Cost per Pound of Mass Removed: \$3,634 ^c			
Monthly Cost per Pound of Mass Removed: \$7,106 ^c			
lbs = pounds			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Calculated using March 2016 EPA Method SW8260C 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 – March 2016							
FT005^b				SS029		SS030	
EW01x05	0.3	EW736x05	Offline	EW01x29	2.4	EW01x30	9.3
EW02x05	0.2	EW737x05	Offline	EW02x29	2.3	EW02x30	1.0
EW03x05	Offline	EW742x05	Offline	EW03x29	2.6	EW03x30	2.7
EW731x05	Offline	EW743x05	Offline	EW04x29	0.0 ^c	EW04x30	34.2
EW2291x05	Offline	EW744x05	Offline	EW05x29	8.4	EW05x30	0.7
EW733x05	Offline	EW745x05	Offline	EW06x29	4.5	EW2174x30	11.3
EW734x05	5.0 ^c	EW746x05	Offline	EW07x29	13.2	EW711x30	2.5
EW735x05	7.0 ^c						
FT005 Total:	12.5			SS029 Total:	33.4	SS030 Total:	61.7
SBBGWTP Average Monthly Flow^d: 95.5 gpm							
^a Flow rates presented are instantaneous measurements taken at the end of the reporting period. ^b Most extraction wells at FT005 were taken offline in accordance with the <i>2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant</i> . ^c The extraction well is operational but the flow rate is not registering on the SCADA. Flow rates represent estimated values. ^d The average SBBGWTP groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the total time in the reporting period.							
gpm – gallons per minute 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^a		Restart^a		Cause
	Date	Time	Date	Time	
SBBGWTP	17 March 2016	10:35	21 March 2016	11:02	Perform carbon change out on lead GAC vessel.
^a Shutdown and restart times estimated based on field notes. NA = not applicable SBBGWTP = South Base Boundary Groundwater Treatment Plant					

Summary of O&M Activities

Analytical data from the 7 March 2016 sampling event are presented in Table 4. The total VOC concentration (38.87 µg/L) in the influent sample has increased from the February 2016 sample results (33.74 µg/L). TCE (35.9 µg/L), cis-1,2-DCE (2.33 µg/L), 1,2-DCA (0.38 J µg/L), and chloromethane (0.26 J µg/L) were detected at the influent sampling location. TCE (11.0 µg/L), cis-1,2-DCE (3.24 µg/L), 1,2-DCA (0.48 J µg/L), chloromethane (0.26 J µg/L), and chloroform (0.18 J µg/L) were detected at the midpoint location. No VOC were detected at the effluent sampling location.

The SBBGWTP was shut down on 17 March 2016 in preparation for the carbon change out of the lead granular activated carbon (GAC) vessel. A total of 6,000 pounds of liquid-phase GAC was changed out in the lead carbon vessel. Once exchanged, the vessel was filled with water and left to soak for approximately four days. After soaking, the SBBGWTP was restarted on 21 March 2016 without issue.

In March, extraction wells EW03x29 and EW03x30 were off line for majority of the month because of pump failure. New pumps were installed on 23 March, and both pumps were restarted without issue.

Figure 1 presents a plot of influent concentrations and average flow at the SBBGWTP over the past twelve (12) months. An overall slight increase in the flow rate has been observed in the past twelve months. The average flow rate at the SBBGWTP decreased slightly in March 2016 to 95.5 gpm from the February 2016 flow rate of 96.2 gpm.

Optimization Activities

No optimization activities occurred at the SBBGWTP in March 2016.

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 taking extraction pumps off line that are no longer necessary for contaminant plume capture.

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 28,770 pounds of GHG during March 2016.

TABLE 4

Summary of Groundwater Analytical Data For March 2016 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	7 March 2016 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Carbon Tetrachloride	0.5	0.15	0	ND	ND	ND
Chloroform	5.0	0.15	0	ND	0.18 J	ND
Chloromethane	5.0	0.15	0	0.26 J	0.26 J	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.38 J	0.48 J	ND
1,1-Dichloroethene	5.0	0.15	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.15	0	2.33	3.24	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND	ND
Methylene Chloride	5.0	0.15	0	ND	ND	ND
Tetrachloroethene	5.0	0.15	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.15	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.15	0	ND	ND	ND
Trichloroethene	5.0	0.15	0	35.9	11.0	ND
Vinyl Chloride	0.5	0.15	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	1.0	0.15	0	ND	ND	ND
Ethylbenzene	5.0	0.15	0	ND	ND	ND
Toluene	5.0	0.15	0	ND	ND	ND
Xylenes	5.0	0.15 – 0.30	0	ND	ND	ND
Other						
Total Suspended Solids (mg/L)	NE	0.6	0	19.6	NM	NM
Total Dissolved Solids (mg/L)	NE	4.2	0	NM	NM	1,320
Total Petroleum	50	30	0	ND	NM	ND
Hydrocarbons – Gasoline						
Total Petroleum	50	29	0	ND	NM	ND
Hydrocarbons – Diesel						

* 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 due to a detected concentration value between the reporting limit and method detection limit for the contaminant

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

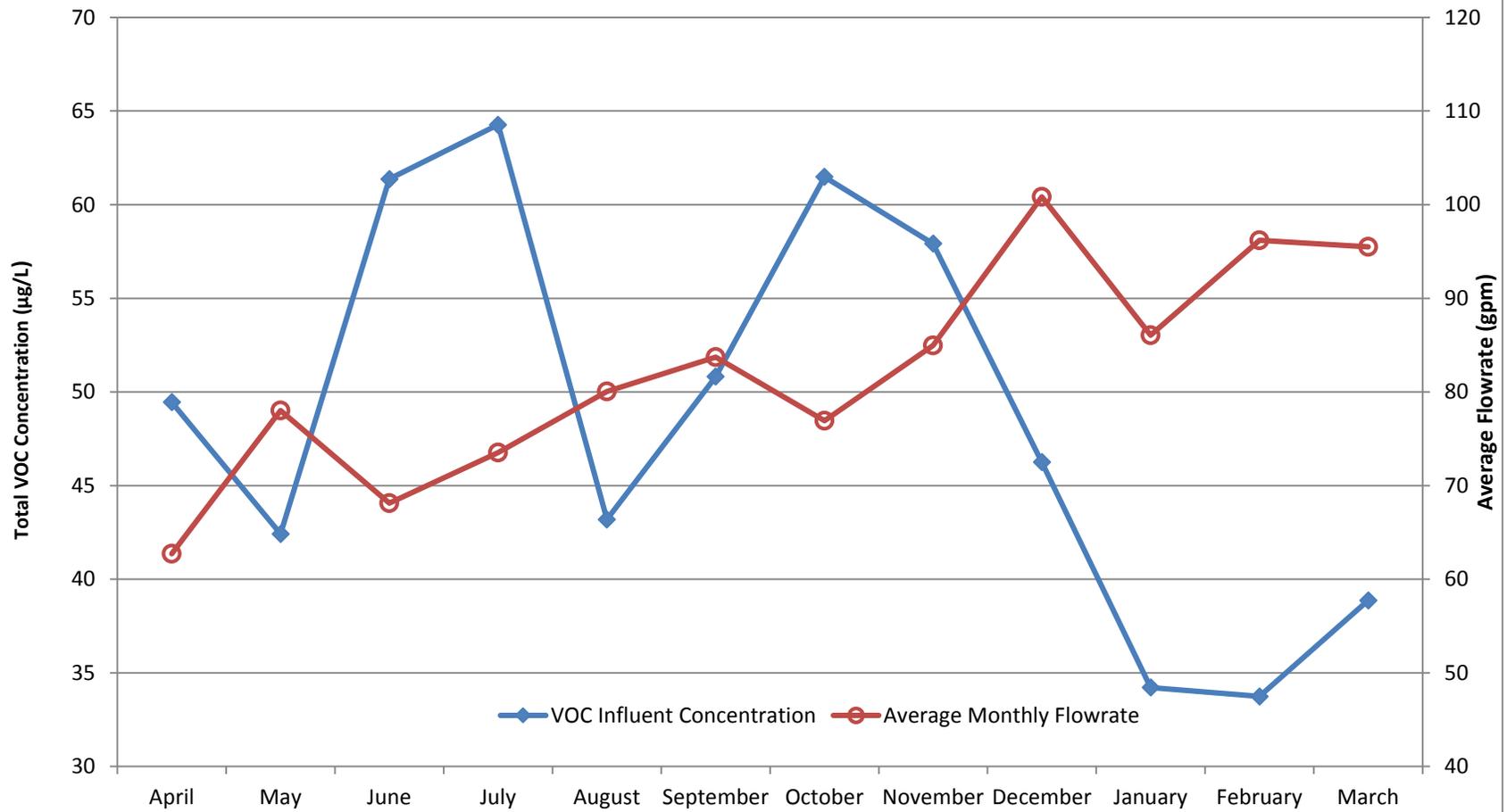
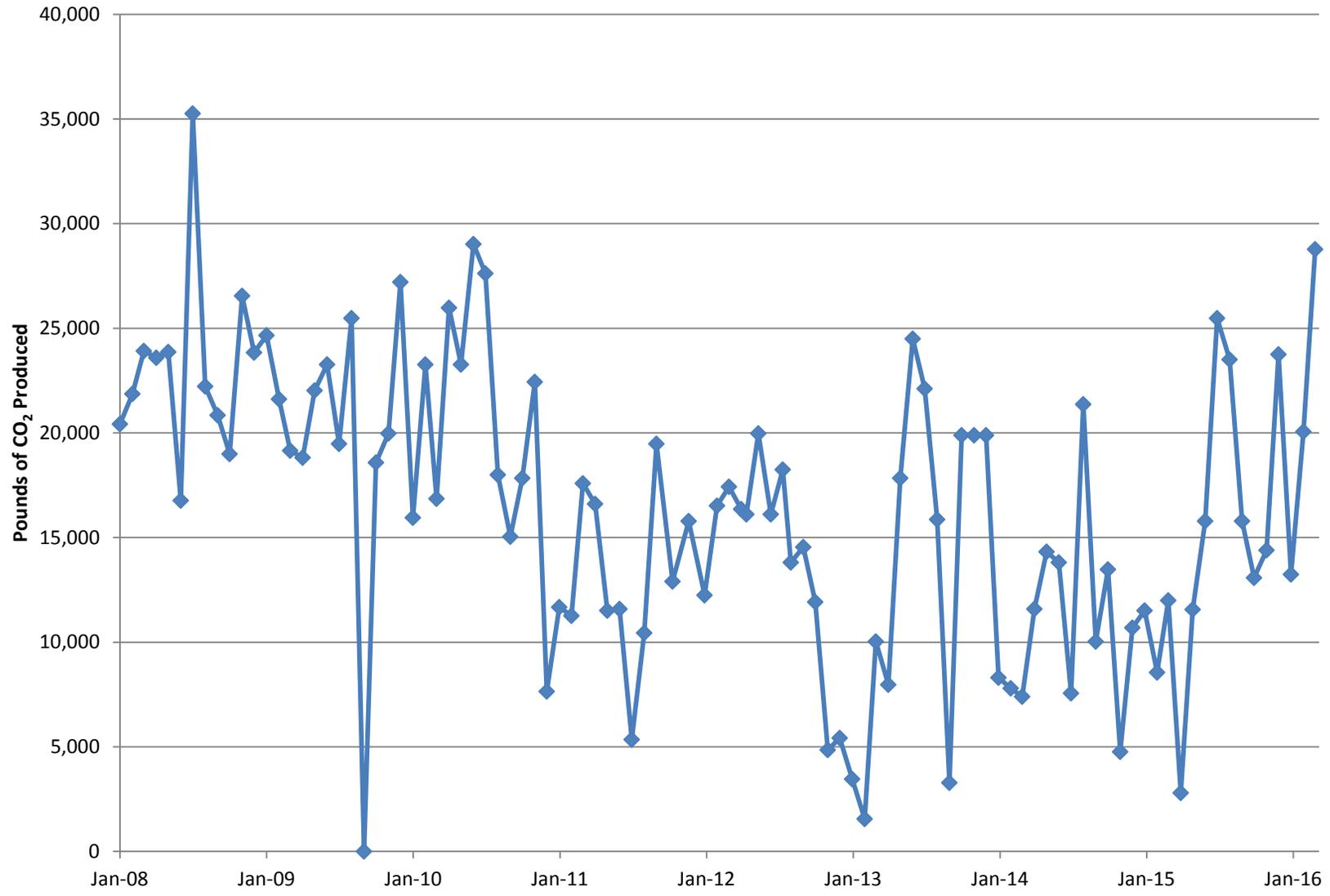


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 200

Reporting Period: 26 February 2016 – 30 March 2016

Date Submitted: 18 April 2016

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 and two (2) bioreactor treatability studies.

System Metrics

Table 1 presents operational data from the March 2016 reporting period.

Table 1 – Operations Summary – March 2016			
Initial Data Collection:	2/26/2016 13:30	Final Data Collection:	3/30/2016 13:30
Operating Time:		Percent Uptime:	Electrical Power Usage:
CGWTP:	792 hours	CGWTP:	100%
		CGWTP:	2,841 kWh (3,892 lbs CO ₂ generated ^a)
Gallons Treated: 1,472,400 gallons		Gallons Treated Since January 1996: 523.6 million gallons	
VOC Mass Removed from groundwater:		VOC Mass Removed Since January 1996:	
3.18 lbs^b		2,743 lbs from groundwater	
		8,686 lbs from vapor	
Rolling 12-Month Cost per Pound of Mass Removed: \$1,737 ^c			
Monthly Cost per Pound of Mass Removed: \$2,899 ^c			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Calculated using March 2016 EPA Method SW8260C 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 during the monthly reporting period.

Table 2 – CGWTP Average Flow Rates ^a – March 2016	
Location	Average Flow Rate Groundwater (gpm)
EW001x16	14.2
EW002x16	6.8
EW003x16	0.2
EW605x16	6.9
EW610x16	3.3
CGWTP	31.0

^a Flow rates calculated by dividing total gallons processed by system operating time for the month or the average of the instantaneous readings.
gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown ^a		Restart ^a		Cause
	Date	Time	Date	Time	
CGWTP	None.	--		--	None.

-- = Time not recorded
^a Shutdown and restart times estimated based on field notes
CGWTP = Central Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples were collected at the CGWTP on 7 March 2016. Sample results are presented in Table 4. The total VOC concentration (259.4 µg/L) in the March 2016 influent sample has decreased slightly from the February 2016 sample (261.9 µg/L). TCE was detected in the influent sample at a concentration of 219 µg/L. TPH-g was also detected in the influent sample at a concentration of 103 µg/L. Vinyl chloride was detected at a trace concentration in the after carbon 1 effluent sample. Chloromethane was detected at trace concentrations in the after carbon 2 effluent and system effluent samples, but not in the influent sample. Chloromethane is not typically detected in the influent or effluent sampling locations, and does not have an associated effluent limit or trigger value. Travis AFB will continue to monitor influent, midpoint, and effluent concentrations at the CGWTP for carbon breakthrough, though the carbon treatment remained effective in February 2016.

TPH-mo was detected in the effluent sample at a concentration of 38.2 J µg/L, which is below the trigger value of 50 µg/L. TPH-mo is not typically detected in the influent or effluent sampling location. TPH-g and TPH-d were not detected in the effluent sample.

Figure 1 presents a plot of influent concentrations (total VOCs) and the influent flow rate at the CGWTP versus time for the past twelve (12) months. The influent concentration has been gradually increasing since August 2015. The overall flow rate through the treatment plant has decreased slightly over the past 12 months. A slow and steady decrease in the EW001x16 flow rate has been observed.

There were no shutdowns reported in March 2016.

The Site DP039 bioreactor continues to operate in a “pulsed mode” 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 March 2016. The bioreactor was brought back on line on 11 March and taken off line on 28 March. The bioreactor is scheduled to continue the 2-week operating schedule.

Optimization Activities

No optimization activities occurred at the CGWTP in March 2016.

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 3,892 pounds of GHG during February 2016. This is an increase from the February 2016 amount of 2,251 pounds.

TABLE 4

Summary of Groundwater Analytical Data for March 2016 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	7 March 2016 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
Carbon Tetrachloride	0.5	0.15	0	ND	ND	ND	ND
Chloroform	5.0	0.15	0	ND	ND	ND	ND
Chloromethane	5.0	0.15	0	ND	ND	0.27 J	0.30 J
cis-1,2-Dichloroethene	5.0	0.15	0	36.3	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.15	0	0.35 J	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	0.28 J	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	0.16 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	0.15	0	0.62	ND	ND	ND
Methylene Chloride	5.0	0.15	0	ND	ND	ND	ND
Methyl tert-Butyl Ether	1.0	0.15	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.15	0	0.50 J	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.15	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.15	0	ND	ND	ND	ND
Trichloroethene	5.0	0.15 – 1.5	0	219	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.15	0	2.2	ND	ND	ND
Vinyl Chloride	0.5	0.15	0	ND	0.23 J	ND	ND
Non-Halogenated Volatile Organics							
Benzene	1.0	0.15	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.15	0	ND	ND	ND	ND
Toluene	5.0	0.15	0	ND	ND	ND	ND
Total Xylenes	5.0	0.15 – 0.30	0	ND	ND	ND	ND
Other							
Total Suspended Solids (mg/L)	NA	0.6	0	0.6 J	NM	NM	NM
Total Dissolved Solids (mg/L)	NA	0.24	0				766
Total Petroleum Hydrocarbons – Gasoline	50	30	0	103	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	29	0	ND	NM	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	50 (trigger)	25	0	27 J	NM	NM	38.2 J

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

Notes:

J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant

NA = not applicable

NM = not measured

N/C = number of samples out of compliance with discharge limits

µg/L = micrograms per liter

ND = not detected

mg/L = milligrams per liter

Table 5 presents a twelve month summary of 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
MW750x39	10 April 2015	24 April 2015
	8 May 2015	22 May 2015
	5 June 2015	19 June 2015
	3 July 2015	17 July 2015
	31 July 2015	14 August 2015
	28 August 2015	11 September 2015
	1 October 2015	9 October 2015
	23 October 2015	6 November 2015
	20 November 2015	8 December 2015
	21 December 2015	31 December 2015
	15 January 2016	1 February 2016
	12 February 2016	26 February 2016
	11 March 2016	28 March 2016

MW = Monitoring Well

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

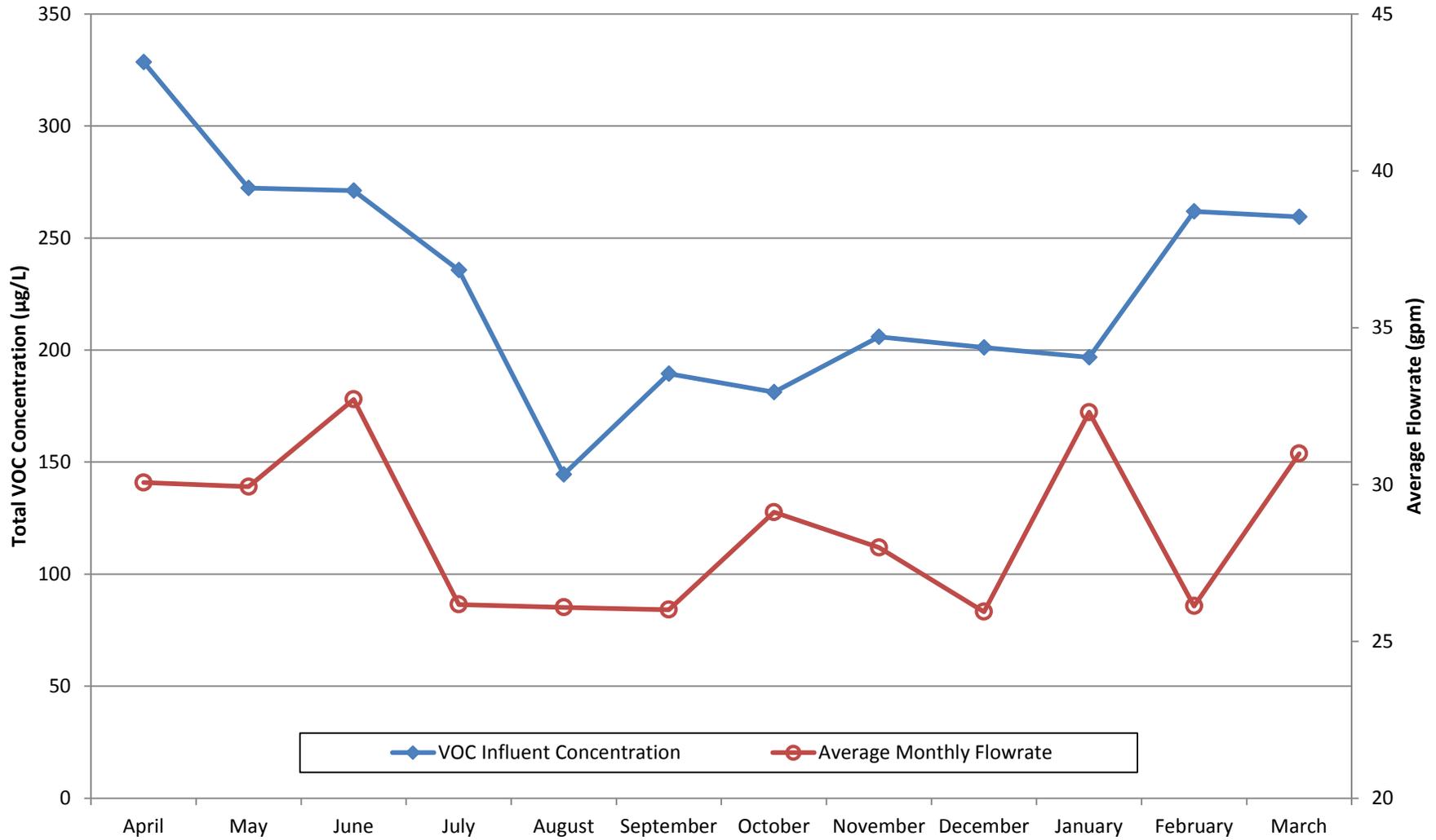
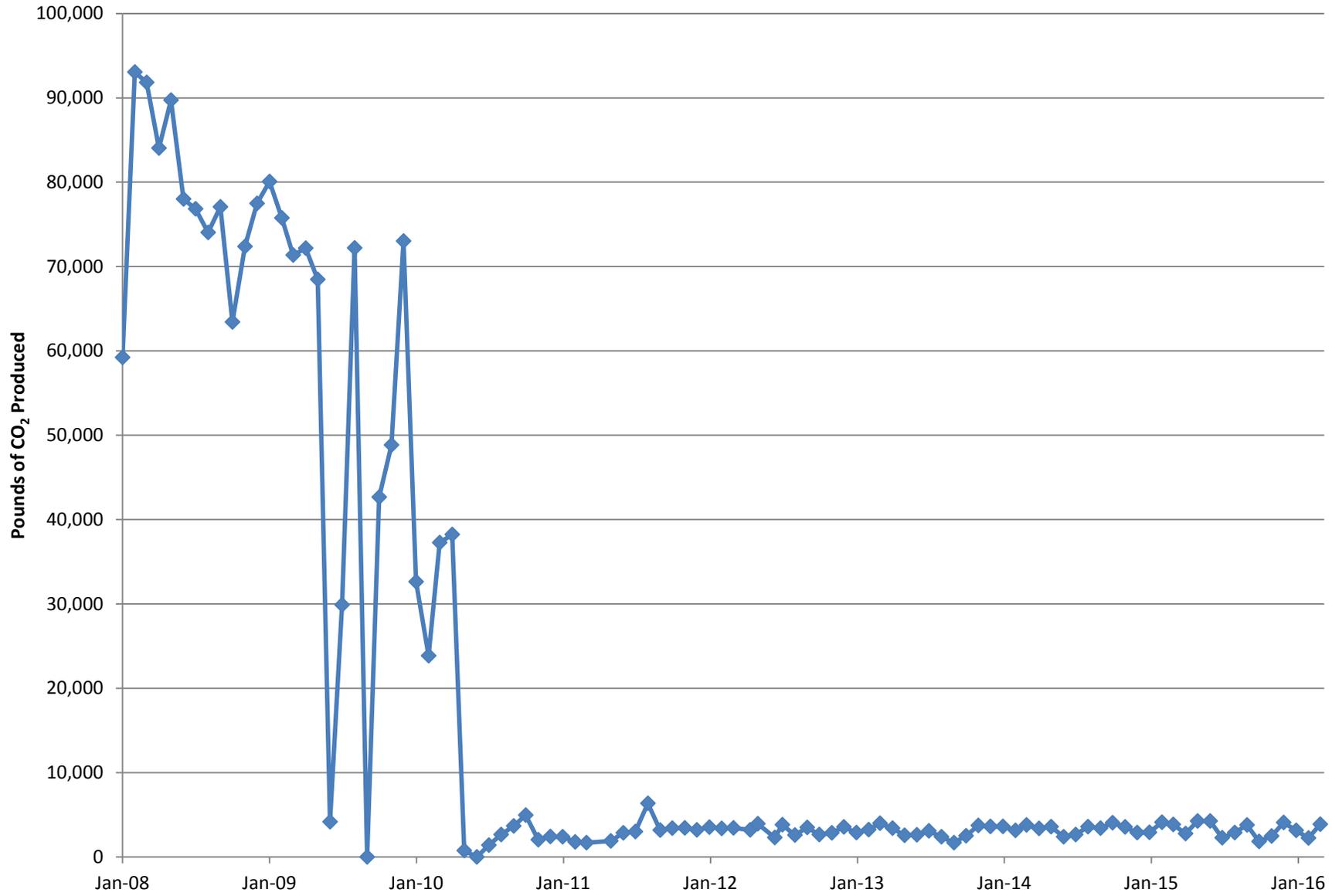


Figure 2

Equivalent Pounds of CO₂ Produced by the Central Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 061

Reporting Period: 26 February 2016 – 1 April 2016

Date Submitted: 18 April 2016

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (ST018GWTP).

System Metrics

Table 1 presents operation data from the March 2016 reporting period.

Table 1 – Operations Summary – March 2016			
Initial Data Collection:	2/26/2016 14:00	Final Data Collection:	4/1/2016 12:20
Operating Time:		Percent Uptime:	Electrical Power Usage:
ST018GWTP: 560 hours		ST018GWTP: 66.8%	ST018GWTP: 144 kWh (197 lbs CO₂ generated^a)
Gallons Treated: 209,600 gallons		Gallons Treated Since March 2011: 9.45 million gallons	
Volume Discharged to Sanitary Sewer: 209,600 gallons		Final Totalizer Reading: 9,452,089 gallons	
Cumulative Volume Discharged to Sanitary Sewer since 1 November 2014: 2,955,915 gallons			
MTBE, BTEX, VOC, TPH Mass Removed: 1.25 lbs^b		MTBE, BTEX, VOC, TPH Mass Removed Since March 2011: 36.5 lbs	
MTBE (Only) Removed: 0.18 lbs^b		MTBE (Only) Mass Removed Since March 2011: 8.7 lbs	
Rolling 12-Month Cost per Total Pounds of Mass Removed: \$9,113 ^{bc}			
Monthly Cost per Pound of Mass Removed: \$7,223 ^{bc}			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Calculated using March 2016 EPA Method SW8260C and SW8015B analytical results.			
^c Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.			
kWh = kilowatt hour			
lbs = pounds			

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

Table 2 – ST018GWTP Average Flow Rates – March 2016		
Location	Average Flow Rate Groundwater (gpm)^a	Hours of Operation
EW2014x18	1.3	560
EW2016x18	1.3	560
EW2019x18	1.5	510
EW2333x18	1.8	560
Site ST018 GWTP	6.2	560

^a Flow rates calculated by dividing total gallons processed by amount of operating time of the pump/system.
gpm = gallons per minute
ST018GWTP = Site ST018 Groundwater Treatment Plant

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown^a		Restart^a		Cause
	Date	Time	Date	Time	
ST018GWTP	7 March 2016	13:30	8 March 2016	12:00	Transfer pump did not activate. Tank Hi alarm.
ST018GWTP	8 March 2016	--	10 March 2016	10:12	Transfer pump did not activate. Tank Hi alarm.
ST018GWTP	17 March 2016	14:20	22 March 2016	10:55	Faulty relay.
ST018GWTP	26 March 2016	11:00	29 March 2016	15:50	Broken nipple at the base of the middle GAC vessel. Pad flooded and tank Hi alarm.
ST018GWTP	31 March 2016	15:30			Cycling transfer pump. System remained off line through the end of the reporting period.

-- = Time not recorded
^a Shutdown and restart times estimated based on field notes
ST018GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the ST018GWTP on 8 March 2016. Results are presented in Table 4. The complete March 2016 laboratory data report is available upon request.

The influent concentration for MTBE during the March 2016 sampling event was 105 µg/L, which is a slight increase from the February 2016 sample result of 102 µg/L. TPH-g (499 µg/L), TPH-d (54.9 µg/L), TPH-mo (42.7 µg/L) and benzene (5.08 µg/L) were also detected in the influent sample. No TPH contaminant concentrations were detected after the first carbon vessel. MTBE was detected after the second carbon vessel at a concentration of 5.07 µg/L. No contaminant concentrations were detected at the system effluent sampling location, except for chloromethane (0.26 µg/L). All detected concentrations of TPH are well below the Fairfield-Suisun Sewer District effluent limitation for TPH of 50,000 µg/L. Travis AFB will continue to monitor effluent contaminant concentrations and evaluate the condition of the carbon filter beds.

Figure 1 presents plots of the flow rate and influent total contaminant (TPH-g, TPH-d, MTBE, BTEX, and VOCs) and MTBE concentrations at the ST018GWTP over the past twelve (12) months. As shown on Figure 1, the total influent and MTBE concentrations have varied considerably throughout the past twelve months; however, overall concentrations have increased slightly. The average flow rate through the ST018GWTP has been seasonally variable with a relatively stable trend. The March 2016 flow rate of 6.2 gpm has increased slightly since the February 2016 flow rate of 5.8 gpm.

There were several shutdowns throughout March 2016 at the ST018GWTP. Between 7 and 10 March, there were two shutdowns because the transfer pump did not activate, which caused influent tank Hi alarms. After further investigation, the root cause of the alarms was because of a faulty relay in the transfer pump. A new relay was installed on 22 March, and the system restarted without issue. On 26 March, the nipple at the base of the middle GAC vessel broke and flooded the pad and caused a tank Hi alarm. On 29 March, the middle vessel was isolated, and the system was restarted and operated with only two GAC vessels. On 31 March, the system was shut down again because the transfer pump was rapidly cycling. The ST018GWTP remained off line through the end of the reporting period while troubleshooting. The ST018GWTP will be brought back on line in early April 2016.

Optimization Activities

No optimization activities occurred at the ST018GWTP in March 2016.

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 ST018GWTP system.

The ST018GWTP produced 197 pounds of GHG during March 2016 and treated 209,600 gallons of water, which was a slight increase from the amount of GHG produced during February 2016 (188 pounds, treating 219,100 gallons). Figure 2 presents the historical GHG production from the ST018GWTP. The overall GHG generation has been decreasing since a 2012 peak, and remains considerably lower than traditional GWTPs since the system is predominantly powered by solar arrays. The previous increasing GHG production reflected an inverse relationship between solar exposure in the fall and winter relative to GHG production.

TABLE 4

Summary Of Groundwater Analytical Data for March 2016 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	8 March 2016 (µg/L)			
				Influent	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
Methyl tert-Butyl Ether	6,400	0.15	0	105	NM	5.07	ND
Benzene	25,000 ^a	0.15	0	5.08	NM	ND	ND
Ethylbenzene	25,000 ^a	0.15	0	2.39	NM	ND	ND
Toluene	25,000 ^a	0.15	0	0.33 J	NM	ND	ND
Total Xylenes	25,000 ^a	0.15 – 0.30	0	1.74	NM	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50,000 ^b	30	0	499	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50,000 ^b	28.3	0	54.9 J	ND	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	100,000	29	0	42.7 J	ND	NM	ND
Other							
Chloromethane	5.0	0.15	0	0.25 J	NM	ND	0.26 J
1,2-Dichloroethane	0.5	0.15	0	1.31	NM	ND	ND
Vinyl acetate	5.0	0.15	0	3.24	NM	ND	ND

* In accordance with the Fairfield-Suisun Sewer District Effluent Limitations Laboratory data available on request.

a – The limit of 25,000 µg/L is a combined limit for BTEX.

b – The limit of 50,000 µg/L is a combined limit for TPH-g and TPH-d

µg/L = micrograms per liter

J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant

N/C = number of samples out of compliance with discharge limits

ND = not detected above method detection limit

NM = not measured this month

Figure 1
ST018GWTP Total VOC and MTBE Influent Concentrations
and Average Flowrate Twelve Month History
Travis Air Force Base, California

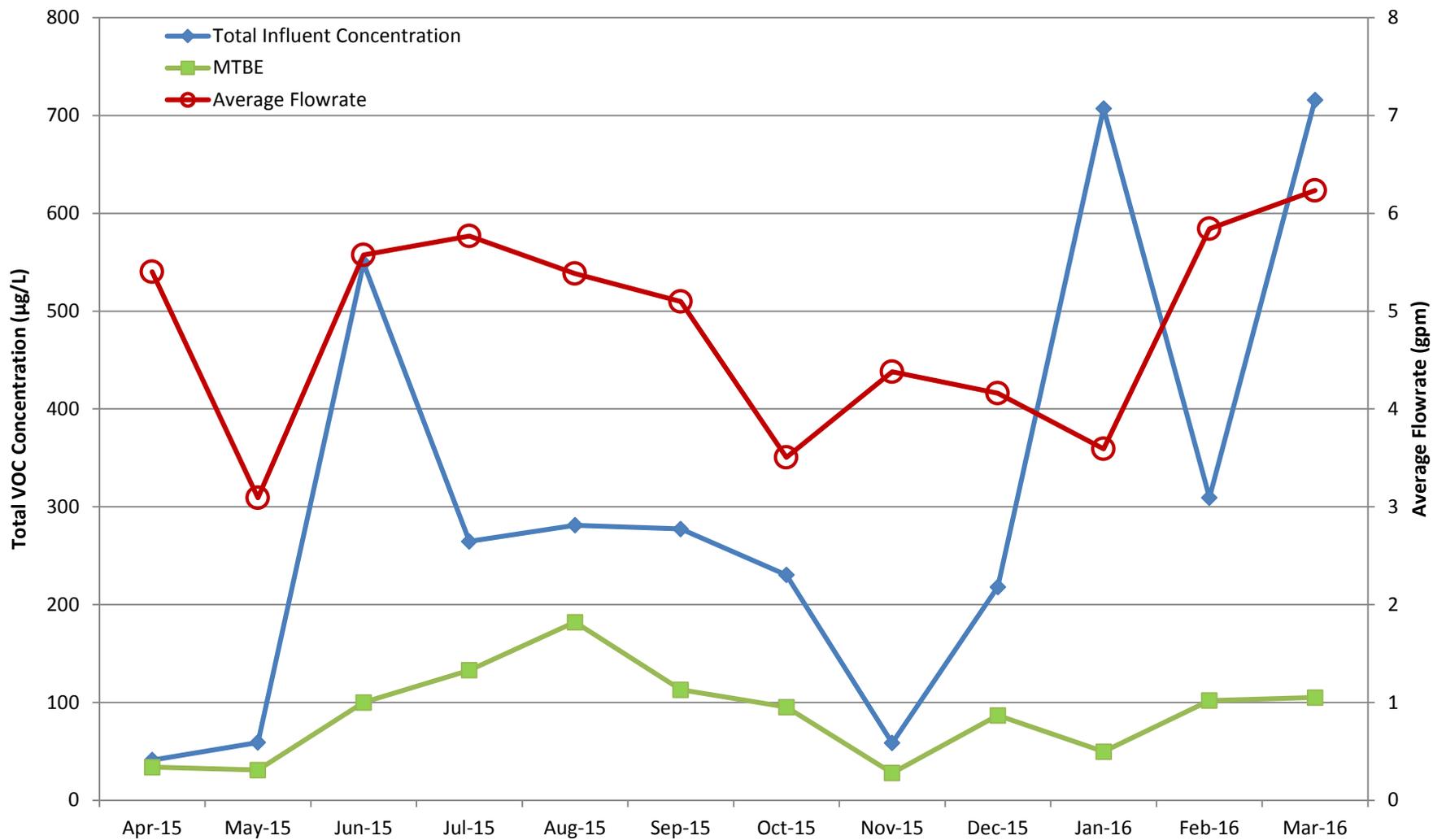
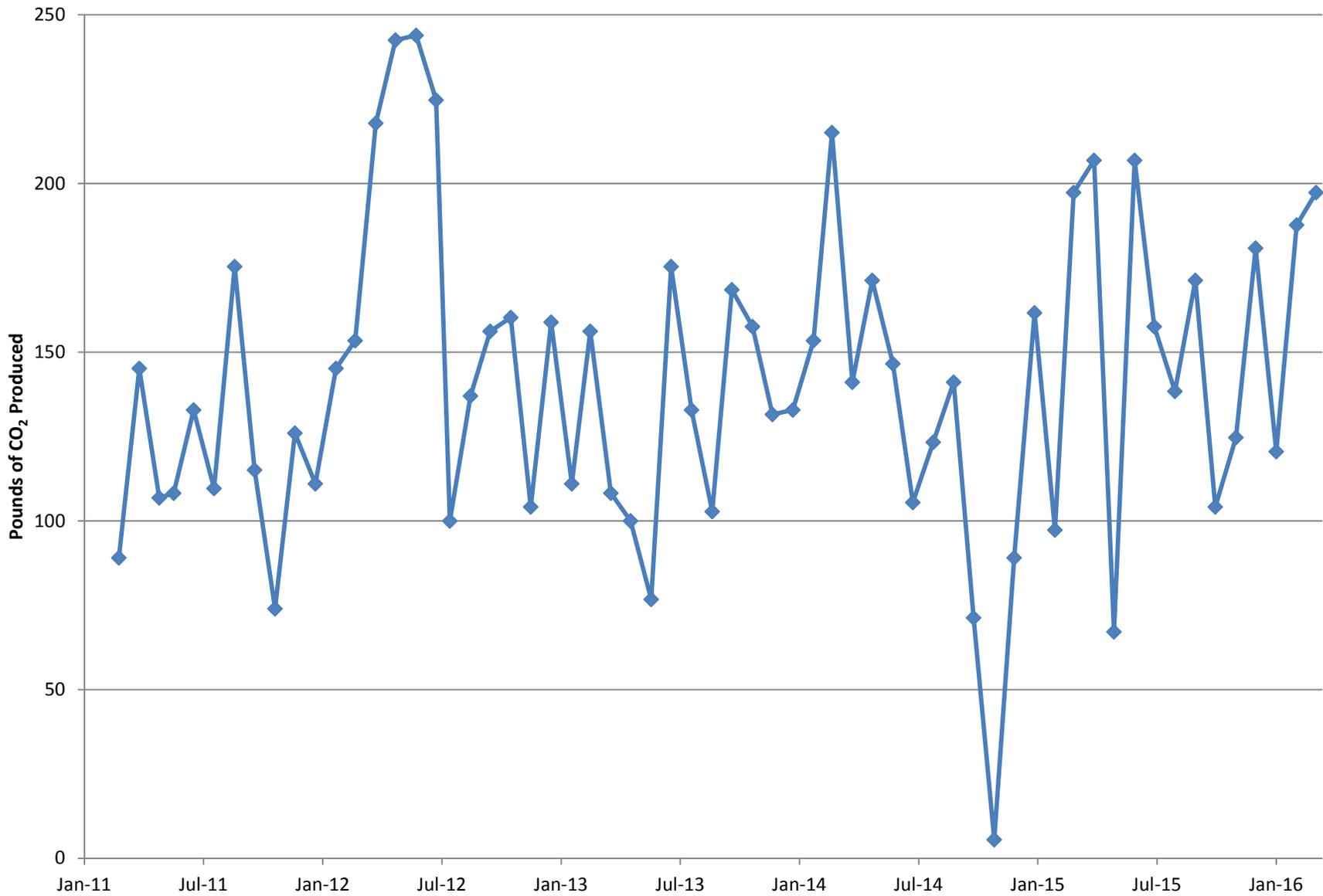


Figure 2
Equivalent Pounds of CO₂ Produced by the Site ST018 Groundwater Treatment Plant



Travis AFB Restoration Program

Program Update

RPM Meeting
April 21, 2016

Completed Documents

- Vapor Intrusion Assessment Update Technical Memorandum
- 2012 CAMU Annual Report
- Old Skeet Range Action Memorandum
- 3rd Five-Year Review
- 2012 Annual Groundwater Remediation Implementation Status Report (GRISR)
- Subarea LF007C and Site SS030 Remedial Process Optimization Work Plan
- Pre-Design Site Characterization of SS029 Report
- Old Skeet Range Removal Action Work Plan
- 2013 CAMU Inspection Annual Report
- Groundwater Record of Decision (ROD)
- CG508 POCO Work Plan
- 2013 Annual GRISR
- FT004 Technology Demonstration Work Plan
- Kinder Morgan LF044 Land Use Control Report
- SD031 Technology Demonstration Work Plan
- TA500 Data Gap Investigation Work Plan
- ST018 POCO Work Plan Addendum
- SD037 GW RD/RA Work Plan
- Travis AFB UFP-QAPP
- DP039 Lead Excavation Technical Memo

Completed Documents (cont'd)

- Proposed Plan for ROD Amendment to WABOU Soil ROD
- Proposed Plan for ROD Amendment to NEWIOU Soil, Sediment, & Surface Water ROD
- SD034 Data Gap Investigation Work Plan
- POCO Investigation Work Plan for Oil-Water Separators
- ST032 POCO Soil Excavation Work Plan
- SD036 GW RD/RA Work Plan
- SS016 GW RD/RA Work Plan
- SS015 GW RD/RA Work Plan
- FT005 Technology Demonstration Work Plan
- 2014 Annual CAMU Monitoring Report
- Old Skeet Range PAH Delineation Report
- ST028 POCO Work Plan
- SS014 POCO TD Work Plan
- CG508 Site Investigation/Site Closure Request Report
- 2014 Annual CAMU Monitoring Report
- DP039 GW RD/RA Work Plan
- SD031 TDCCR
- ST018 POCO CCR
- Site SS030 Groundwater RA CCR
- Sites SD036 and SD037 Groundwater RACCR
- Site SS016 Groundwater RACCR
- Site SS015 Groundwater RACCR
- 2014 Annual GRISR
- ***Site CG508 Well Decommissioning Work Plan***

Completed Field Work

- Replace battery banks at ST018 Groundwater Treatment Plant
- Annual Groundwater Remediation Implementation Program (GRIP) Sampling event
- Well Decommissioning (9 Wells)
- Electrical repairs to FT005 extraction system (well EW01x05)
- Electrical repairs to Site SS029 extraction system
- Site ST018 carbon vessels upgrade
- 2014 GRIP Semiannual Sampling Event
- Pump repairs to Site SS016 well (EW610x16)
- Subsite LF007C optimization upgrades
- 2014 Annual GRIP Sampling Event
- Biological Resource Assessment
- Site CG508 Site Investigation
- Old Skeet Range Characterization Sampling
- 4Q Semiannual GRIP Sampling Event
- SD031 Technology Demonstration Well Installation
- SD037 Well Installation
- SD031 Trench/Conveyance/Power Installation
- SD031 EVO Injection
- ST018 Well Installation
- SS015 Well Installation
- SS016 Well Installation
- Well Development (SD036, SD037)
- ST018 Trench/Conveyance/Power Installation
- SD036 EVO Injection
- Well Development (SS015, SS016)
- Baseline Sampling (SS015, SS016)
- SS014 Data Gap Investigation
- SS016 EVO Injection
- TA500 Data Gaps Investigation

Completed Field Work

- 2015 Annual GRIP Sampling
- SD037 EVO Injection
- SD034 Data Gaps Investigation
- SS015 EVO Injection
- FT005 Injection Well Installation
- OWS 47, 48, 49 Site Investigations
- SS030 Trench/Conveyance/Power Installation
- FT005 Trench Installation
- FT005 Well Development
- FT004 Well Installation, Well Development, Baseline Sampling
- FT005 Baseline Sampling
- DP039 Well Installation, Well Development, Baseline Sampling
- FT004 EVO Injection
- FT004 Trench/Conveyance/Power Installation
- DP039 Infiltration Trench Installation
- TA500 Groundwater Sampling

Documents In-Progress

CERCLA

- Site SD031 Soil Remedial Investigation Work Plan
- Data Gap Investigation TM for Soil Sites SD033, SD043, & SS046
- Site FT004 TD Construction Completion Report
- ***2015 Annual CAMU Monitoring Report***

Documents In-Progress

POCO

- Corrective Action Plan for DERA-Funded Oil Water Separators

Field Work In-Progress

- FT005 EVO Injection
- DP039 EVO Injection

Documents Planned

CERCLA

- Site TS060 Action Memorandum Apr
- Community Involvement Plan May
- Site SD034 Technology Demonstration Work Plan May
- Site TS060 Removal Action Work Plan May
- Multi-Site Bioaugmentation Technology Demonstration Work Plan May
- Site SS016 Soil Data Gaps Investigation Work Plan May
- 2015 Annual GRISR Jun
- Site FT005 Technology Demonstration Construction Completion Report Jun
- Site DP039 RD/RA Construction Completion Report Jun
- ***Site FT004 POCO Soil Data Gaps Investigation Work Plan*** ***TBD***

Documents Planned

POCO

- Site ST032 POCO Completion Report Apr
- Site ST028 POCO Completion Report Apr

Field Work Planned

CERCLA

- **2016 Q2 GRIP Sampling** **Apr**
- SD031 Soil Remedial Investigation **May**
- SD034 Technology Demonstration Well Installation **Jul**
- TS060 Removal Action **Jul**
- Data Gap Inv. for Soil Sites (SD033, SD043, SS046) **Jul**
- SD034 Technology Demonstration Bioreactor Installation **Jul**
- **Multi-site Bioaugmentation Technology Demonstration Work Plan** **Jul**
- **SS016 Soil Data Gaps Investigation** **Jul**

Note: Contact Lonnie Duke if you would like to observe planned field work events

Field Work Planned

POCO

- Oil Water Separators Step-out Drilling Jun
- Oil Water Separators (12) Removal Jun
- CG508 Well Decommissioning Jul
- ***FT004 POCO Soil Data Gaps Investigation*** ***Jul***
- SS014 Bioreactor Installation Aug

Note: Contact Lonnie Duke if you would like to observe planned field work events

Completed Documents (Historical1)

- 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 (Historical 2)

- 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 Memorandum¹⁴

Completed Field Work (Historical1)

- 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 (Historical 2)

- 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 (4th 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