Final

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

18 June 2014, 0930 Hours

Mr. Mark Smith, of the Air Force Civil Engineer Center (AFCEC) Restoration Support Team, conducted the Restoration Program Manager's (RPM) meeting in Building 248, on 18 June 2014 at 0930 hours, at Travis AFB, California. Attendees included:

• Mark Smith	AFCEC/CZOW
• Glenn Anderson	AFCEC/CZOW
• Lonnie Duke	AFCEC/CZOW
• Erin Hernandez	Travis AFB 60 AMW/JA
• William Hall	AFCEC/CZRW
• Shannon Garcia	AFCEC/CZRW
• Dezso Linbrunner	USACE-Omaha
• Jennifer Musilek	USACE-Omaha
• Michelle Lordeman	USACE-Omaha
• Nadia Hollan Burke (via web-based application)	United States Environmental Protection Agency (USEPA)
• Adriana Constantinescu (via telephone)	California Regional Water Quality Control Board (RWQCB)
• John Hart (via telephone)	California Department of Toxic Substances Control (DTSC)
• Mike Wray	CH2M HILL

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This meeting also served as a test to see if the regulatory agencies could attend remotely by accessing a link using a web-based application: Defense Connect Online. This is a possible alternative when "face to face" meetings are not required/necessary. Ms. Constantinescu and Mr. Hart were not able to access the link due to proxy server issues. Ms. Burke was able to connect, however she was at a conference outside of the EPA office. Mr. Smith will investigate alternatives to allow all agency representatives to participate in future meetings.

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 (May 2014)
• Attachment 4	CGWTP Monthly Data Sheet (May 2014)

- Attachment 5 NGWTP Monthly Data Sheet (May 2014)
- Attachment 6 ST018 Monthly Data Sheet (May 2014)
- Attachment 7 Presentation: Program Update: Activities Completed, In Progress and Upcoming

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 14 May 2014 RPM meeting minutes were approved and finalized as written, with the following exceptions requested by Ms. Burke:

Page six, first paragraph, first sentence, insert: “goal” after “following”.

Page six, second paragraph, first sentence, change date from “15 June 2014 to 16 June 2014”. Second sentence, delete date (15 June 2014).

B. Action Item Review.

Action items from May were reviewed.

Action item 1 will remain open: AFCEC’s Travis Restoration Team and Travis AFB will continue to pursue opportunities for the beneficial reuse of treated water. AFCEC is in agreement with using Defense Environmental Restoration Account (DERA) funds under the authority of a “net-zero energy policy” for the Air Force for the beneficial reuse of treated groundwater. Current possibilities include: Rerouting treated water from the central plant to the duck pond or as irrigation as an energy reduction project with the intent of reducing on-base water usage. Due date will remain TBD to ensure this action item remains visible. 14 May 2014: No update.

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 23 July 2014.

Travis AFB Master Document Schedule

— Groundwater Record of Decision (ROD): No change to the schedule. The final due date will be changed to 18 June 2014 to reflect the actual date the ROD went final. All required signatures have been obtained.

— Travis Air Force Base Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP): No change to the schedule.

— Site SD037 GW Remedial Design/Remedial Action Work Plan: No change to the schedule; all dates are TBD. Dates will be populated by the next RPM meeting.

— Site SD036 Remedial Design/Remedial Action Work Plan: New document, all dates are TBD.

— Site SS015 GW Remedial Design/Remedial Action Work Plan: New document, all dates are TBD.

— Site SS016 GW Remedial Design/Remedial Action Work Plan: New document, all dates are TBD.

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

— Site CG508 POCO Work Plan: Response to Comments Meeting date was changed to 14 May 2014. RWQCB will respond to Travis AFB comments next week.

— Site FT004 Treatment Demonstration Work Plan: Draft to Agencies date was changed to 26 June 2014, the remaining due dates were changed accordingly.

— Site DP039 Lead Excavation Technical Memorandum: Dates were changed to allow Travis AFB additional time to pull the document together. This technical memorandum addresses the soil Land Use Controls (LUC) at the site. The groundwater LUCs will remain in place and are being addressed separately. This technical memorandum will document how the soil was excavated and disposed of, and will include laboratory reports. Mr. Smith stated that Travis AFB would like to remove the LUCs for soil contamination at this site, and asked the regulators to let Travis AFB know what their policies are to remove this site from their LUCs checklist. Ms. Burke said it depends on what the WABOU ROD says. She asked if Travis AFB is considering an ESD to document the removal of the soil LUCs at Site DP039. Mr. Anderson suggested EPA review the technical memorandum and, if needed, have a discussion at a later time.

— Site SD031 Treatment Demonstration Work Plan: New document. All new dates.

— Site SS014 Technology Demonstration Work Plan: New document. All dates are TBD.

— Site TA500 Investigation Work Plan: New document. All dates are TBD.

— Explanation of Significant Differences (ESD) to the NEWIOU Soil, Sediment, and Surface Water Record of Decision (ROD): Draft to Agencies date was changed to 9 July 2014, the remaining due dates were changed accordingly. Travis AFB requested more time to prepare this document.

— Explanation of Significant Differences to the Soil Record of Decision for the WABOU: Draft to Agencies date was changed to 2 July 2014, the remaining due dates were changed accordingly.

— Quarterly Newsletter (July 2014): The quarterly edition of the newsletter will advertise the ROD going final.

— 2013 Annual Groundwater Remediation Implementation Status Report (GRISR): Response to Comments Meeting date was changed to 18 June 2014; the follow-on dates were changed accordingly. Travis AFB is waiting for EPA's approval of the responses to comments. Ms. Burke said that she will address Travis AFB comments when she returns from her conference.

— Kinder Morgan LF044 Land Use Control Report: The response to comments meeting date was changed to 18 June 2014, the rest of the due dates were change accordingly. Travis AFB emailed responses to EPA's comments on 17 June 2014.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 2.6 million gallons of groundwater were extracted and treated during the month of May 2014. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 61.9 gallons per minute (gpm). Electrical power usage was 10,451 kWh and approximately 14,318 pounds of CO_2 were created (based on DOE calculation). Approximately 0.59 pounds of volatile organic compounds (VOCs) were removed in May. The total mass of VOCs removed since startup of the system is 447 pounds.

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

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.45 million gallons of groundwater extracted and treated during the month of May 2014. All treated water was discharged to the storm drain. The average flow rate for the CGWTP was 34.4 gpm. Electrical power usage was 2,624 kWh for all equipment connected to the Central Plant, and approximately 3,595 pounds of CO_2

were generated. Approximately 1.42 pounds of VOCs were removed from groundwater by the treatment plant in May. The total mass of VOCs removed since the startup of the system is 11,370 pounds.

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

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

North Groundwater Treatment Plant (see Attachment 5)

The treatment plant was brought back online on 12 May 2013 when the seasonal vernal pools at Site LF007C were observed to be dry.

The North Groundwater Treatment Plant (NGWTP) performed at 78% uptime with approximately 203,715 gallons of groundwater extracted and treated during the month of May 2014. The average flow rate at the NGWTP was 7.8 gpm, and electrical power use was 0 kWh for all the equipment connected to the North plant; and 0 pounds of CO_2 was generated; this system is 100 percent off of the power grid. Approximately $4.16x10^{-3}$ pounds of VOCs were removed from the groundwater in May. The total mass of VOCs removed since the startup of the system is 174.3 pounds.

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

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

The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 98% uptime with approximately 188,700 gallons of groundwater extracted and treated during the month of May 2014. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 4.59 gpm. Electrical power usage for the month was 125 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 171 pounds of CO_2. Approximately 1.64 pounds of BTEX, MTBE and TPH were removed from groundwater in May from the treatment plant. The total BTEX, MTBE and TPH mass removed since the startup of the system is 28.9 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 solar powered.

Optimization Activities for ST018: No optimization activities to report for the month of May.

Presentations:

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

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

Newly Completed Documents: No new completed documents.

Newly Completed Field Work: Biological Resource Assessment.

In-Progress Documents: Groundwater Record of Decision (ROD), Kinder Morgan LF044 Land Use Control Report, CG508 POCO Work Plan, 2013 Annual GRISR.

In-Progress Field Work: Site CG508 Site Investigation.

Upcoming Documents: FT004 Treatment Demonstration Work Plan, DP039 Lead Excavation Technical Memo, ESD to WABOU Soil ROD, ESD to NEWIOU Soil, Sediment, & Surface Water ROD, Travis AFB UFP-QAPP, SD031 Treatment Demonstration Work Plan, SS014 Technology Demonstration Work Plan, TA500 Investigation Work Plan, SS015 GW RD/RA Work Plan, SS016 GW RD/RA Work Plan, SD036 RD/RA Work Plan, SD037 GW RD/RA Work Plan.

Upcoming Field Work: Old Skeet Range Characterization Sampling, SD031 Technology Demonstration.

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Mr. Linbrunner announced that the FY08 PBC contracts with ITSI and CH2M HILL are coming to a close and will be finalized on 30 July 2014. The FY13 PBC was awarded to CH2M HILL on 30 September 2013, with a stringent annual funding schedule. Mr. Linbrunner offered accolades to Mr. Hall for his efforts in obtaining accelerated funding to help Travis AFB/CH2M HILL with their scheduled site closeouts and field investigations. This accelerated funding supports all involved parties to meet the Statement of Objectives (SOO) deadlines.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	AFCEC's Travis Restoration Team and Travis AFB will continue to pursue opportunities for the beneficial reuse of treated water. AFCEC is in agreement with using Defense Environmental Restoration Account (DERA) funds under the authority of a "net-zero energy policy" for the Air Force for the beneficial reuse of treated groundwater. Current possibilities include: Rerouting treated water from the central plant to the duck pond or as irrigation as an energy reduction project with the intent of reducing on-base water usage. Due date will remain TBD to ensure this action item remains visible.	TBD	Open

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
RESTORATION PROGRAM MANAGER'S MEETING
BLDG 248 Conference Room
18 June 2014, 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

3. DISCUSSION

   A. REVISED DRAFT FINAL SIGNATURE PAGE ROUTING

4. PRESENTATION

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

5. NEW ACTION ITEM REVIEW

6. PROGRAM/ISSUES/UPDATE

NOTES: THIS RPM MEETING WILL BE CONDUCTED WITH THE REGULATORY AGENCIES OVER THE INTERNET, USING A WEB-BASED APPLICATION. ALL THAT IS NEEDED IS A PHONE, A COMPUTER WITH A BROWSER, AND A PUBLIC INTERNET CONNECTION OR ONE THAT DOES NOT USE A PROXY SERVER. THE LINK TO ACCESS THE ON-LINE MEETING IS HTTPS://CONNECT.DCO.DOD.MIL/R5QBCY536H7/. THE PHONE NUMBER THAT SUPPORTS THE ON-LINE MEETING IS (707) 424-8811 (DSN 837-8811 IF USING A MILITARY CONNECTION). PLEASE CALL ABOUT FIVE (5) MINUTES PRIOR TO THE START OF THE MEETING'S START TIME.

(2014)

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.)
01-22-14	—	—
02-19-14	—	—
03-19-14	—	—
04-16-14	—	04-17-14[2]
05-14-14	—	—
06-18-14	—	—
07-23-14	—	—
08-20-14	—	—
09-17-14	—	—
10-23-14 (Thur 2:00 PM)	—	10-23-14
11-19-14	—	—
—	—	—

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

[2] Note: Postponed until ROD signed

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	**Groundwater Record of Decision Travis, Glenn Anderson CH2M HILL, Leah Waller**	**Travis Air Force Base Uniform Federal Policy-Quality Assurance Project Plan Travis, Glenn Anderson CH2M HILL, Bernice Kidd**	**Site SD037 GW Remedial Design/Remedial Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**
Scoping Meeting	**01-24-07 (11-30-11)**	**NA**	**NA**
Predraft to AF/Service Center	11-28-12	**05-30-14**	TBD
AF/Service Center Comments Due	12-12-12	06-13-14	TBD
Draft to Agencies	01-02-13[1]	07-01-14	TBD
Draft to RAB	01-02-13[1]	07-01-14	TBD
Agency Comments Due	03-03-13 (04-05-13)	07-30-14	TBD
Response to Comments Meeting	**11-20-13**	**08-11-14**	**TBD**
Public Comment Period	NA	NA	**NA**
Public Meeting	**NA**	**NA**	**NA**
Response to Comments Due	02-19-14	08-25-14	TBD
Draft Final Due	02-19-14	08-25-14	TBD
Final Due	06-23-14	09-25-14	**TBD**

[1]Sent Appendix A to agencies for review on 07-31-13

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	**Site SD036 Remedial Design/Remedial Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site SS015 GW Remedial Design/Remedial Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site SS016 GW Remedial Design/Remedial Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	TBD	TBD	TBD
AF/Service Center Comments Due	TBD	TBD	TBD
Draft to Agencies	TBD	TBD	TBD
Draft to RAB	TBD	TBD	TBD
Agency Comments Due	TBD	TBD	TBD
Response to Comments Meeting	**TBD**	**TBD**	**TBD**
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA
Response to Comments Due	TBD	TBD	TBD
Draft Final Due	TBD	TBD	TBD
Final Due	**TBD**	**TBD**	**TBD**

Travis AFB Master Meeting and Document Schedule

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

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**Site CG508 POCO Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site FT004 Treatment Demonstration Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site DP039 Lead Excavation Technical Memorandum Travis AFB, Glenn Anderson CH2M HILL, Loren Krook**
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	02-25-14	04-21-14	06-02-14
AF/Service Center Comments Due	03-11-14	05-21-14	06-16-14
Draft to Agencies	03-26-14	06-26-14	06-30-14
Draft to RAB	03-26-14	06-26-14	06-30-14
Agency Comments Due	04-27-14	07-28-14	07-30-14
Response to Comments Meeting	**05-14-14**	**08-11-14**	**08-13-14**
Response to Comments Due	06-25-14	08-25-14	08-27-14
Draft Final Due	NA	NA	NA
Final Due	06-25-14	08-25-14	08-27-14
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	NA	NA

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**Site SD031 Technology Demonstration Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site SS014 Technology Demonstration Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**	**Site TA500 Investigation Work Plan Travis AFB, Glenn Anderson CH2M HILL, Tony Chakurian**
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	07-01-14	TBD	TBD
AF/Service Center Comments Due	07-15-14	TBD	TBD
Draft to Agencies	07-29-14	TBD	TBD
Draft to RAB	07-29-14	TBD	TBD
Agency Comments Due	08-28-14	TBD	TBD
Response to Comments Meeting	**09-11-14**	TBD	TBD
Response to Comments Due	09-25-14	TBD	TBD
Draft Final Due	NA	NA	NA
Final Due	09-25-14	TBD	TBD
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS		
Life Cycle	**Explanation of Significant Differences to the NEWIOU Soil, Sediment, and Surface Water Record of Decision** **Travis AFB, Glenn Anderson** **CH2M HILL, Loren Krook**	**Explanation of Significant Differences to the Soil Record of Decision for the WABOU** **Travis AFB, Glenn Anderson** **CH2M HILL, Loren Krook**
Scoping Meeting	NA	NA
Predraft to AF/Service Center	04-23-14	04-23-14
AF/Service Center Comments Due	05-07-14	05-07-14
Draft to Agencies	07-09-14	07-02-14
Draft to RAB	07-09-14	07-02-14
Agency Comments Due	08-08-14	08-01-14
Response to Comments Meeting	**08-20-14**	**08-15-14**
Response to Comments Due	09-03-14	08-22-14
Draft Final Due	NA	NA
Final Due	09-03-14	08-22-14
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	**Quarterly Newsletters (July 2014)** **Travis, Glenn Anderson**	**2013 Annual Groundwater Remediation Implementation Status Report** **Travis AFB, Lonnie Duke** **CH2M HILL, Royer/Berwick**	**Kinder Morgan Site LF044 Land Use Control Report** **Travis AFB, Glenn Anderson** **AMEC, Nick Ricono**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	03-24-14	NA
AF/Service Center Comments Due	NA	04-10-14	NA
Draft to Agencies	06-25-14	04-25-14	09-18-13
Draft to RAB	NA	04-25-14	09-18-13
Agency Comments Due	07-09-14	05-26-14	10-18-13
Response to Comments Meeting	**TBD**	**06-18-14**	**06-18-14**
Response to Comments Due	07-11-14	06-26-14	06-25-14
Draft Final Due	NA	NA	NA
Final Due	07-11-14	06-26-14	06-25-14
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 165 **Reporting Period: 30 April 2014 – 29 May 2014** **Date Submitted: 13 June 2014**

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 May 2014 reporting period.

Table 1 – Operations Summary – May 2014

Initial Data Collection:	4/30/2014 11:00	**Final Data Collection:**	5/29/2014 17:30
Operating Time:		Percent Uptime:	
SBBGWTP:	702 hours	**SBBGWTP:**	100%
Electrical Power Usage:			
SBBGWTP:	10,451 kWh (14,318 lbs CO_2 generated[a])		
Gallons Treated: **2.6 million gallons**		Gallons Treated Since July 1998: **857 million gallons**	
Volume Discharged to Union Creek: **2.6 million gallons**			
VOC Mass Removed: **0.59 lbs**[b]		VOC Mass Removed Since July 1998: **447 lbs**	
Rolling 12-Month Cost per Pound of Mass Removed: $12,709[c]			
Monthly Cost per Pound of Mass Removed: $12,195			

lbs = pounds

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

[b] Calculated using May 2014 EPA Method SW8260B analytical results.

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

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

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

FT005[c]				SS029		SS030	
EW01x05	3.3	EW736x05	Offline	EW01x29	0.5	EW01x30	4.6
EW02x05	2.0	EW737x05	Offline	EW02x29	5.5	EW02x30	4.2
EW03x05	Offline	EW742x05	Offline	EW03x29	1.8	EW03x30	3.5
EW731x05	Offline	EW743x05	Offline	EW04x29	8.8	EW04x30	35.9
EW732x05	Offline	EW744x05	Offline	EW05x29	--[d]	EW05x30	19.1
EW733x05	Offline	EW745x05	Offline	EW06x29	3.2	EW06x30	Dry
EW734x05	1.9	EW746x05	Offline	EW07x29	2.8	EW711x30	4.0
EW735x05	1.5						
FT005 Total:	**8.7**			**SS029 Total:**	**22.6**	**SS030 Total:**	**71.3**

SBBGWTP Average Monthly Flow[c]: 61.9 gpm

[a] Extraction well flow rates are based on instantaneous weekly readings collected at the end of the month.
[b] 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.
[c] 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.*
[d] Pump failure occurred at EW05x29 and the well remains offline. This well is expected to be brought back on line in June 2014.

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 were collected at the SBBGWTP on 2 May 2014. Sample results are presented in Table 4. The total VOC concentration (27 µg/L) in the influent sample has increased since the 25 March 2014 sample (22.97 µg /L) was collected. 1,2-Dichloroethane (0.4 J µg/L), cis-1,2-DCE (1.4 µg/L), and TCE (25.2 µg/L) were detected at the influent sampling location. Cis-1,2-DCE (0.22 J µg/L) was also detected at the effluent sampling location at a concentration well below the effluent limitation of 5 µg/L. The carbon was recently changed out in the primary vessel, so it is unlikely that the vessels are experiencing breakthrough at this time. No contaminant concentrations were detected at the midpoint sampling location. Effluent concentrations will continue to be monitored for breakthrough conditions.

Figure 1 presents a plot of influent concentrations and average flow at the SBBGWTP over the past twelve (12) months. The average flow rate at the SBBGWTP decreased in May 2014 to 61.9 gpm. On 12 May 2014, the bag filters at the SBBGWTP were replaced.

On 2 May 2014, extraction well EW02x29 was brought online. On 9 May 2014, extraction well EW02x05 was shut down after it was observed to be leaking into the well casing through a crack in the drop pipe. Repairs to the drop pipe were made on 16 May and EW02x05 operation of EW02x05 was resumed. The only extraction well that was not operable at the end of May is EW05x29, which has a faulty pump. The pump at EW05x29 is scheduled for replacement in June 2014.

Optimization Activities

No optimization activities were performed in May 2014.

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 14,318 pounds of GHG during May 2014. This is an increase from usage during April 2014 and is likely the result of the operation of a greater number of wells in May than in the previous month. GHG production at the SBBGWTP during May 2014 is consistent with expected monthly usage at the SBBGWTP.

TABLE 4
Summary of Groundwater Analytical Data for May 2014 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	2 May 2014 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.50	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.4 J	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	1.4	ND	0.22 J
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	25.2	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	97	NM	NM

[a] 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

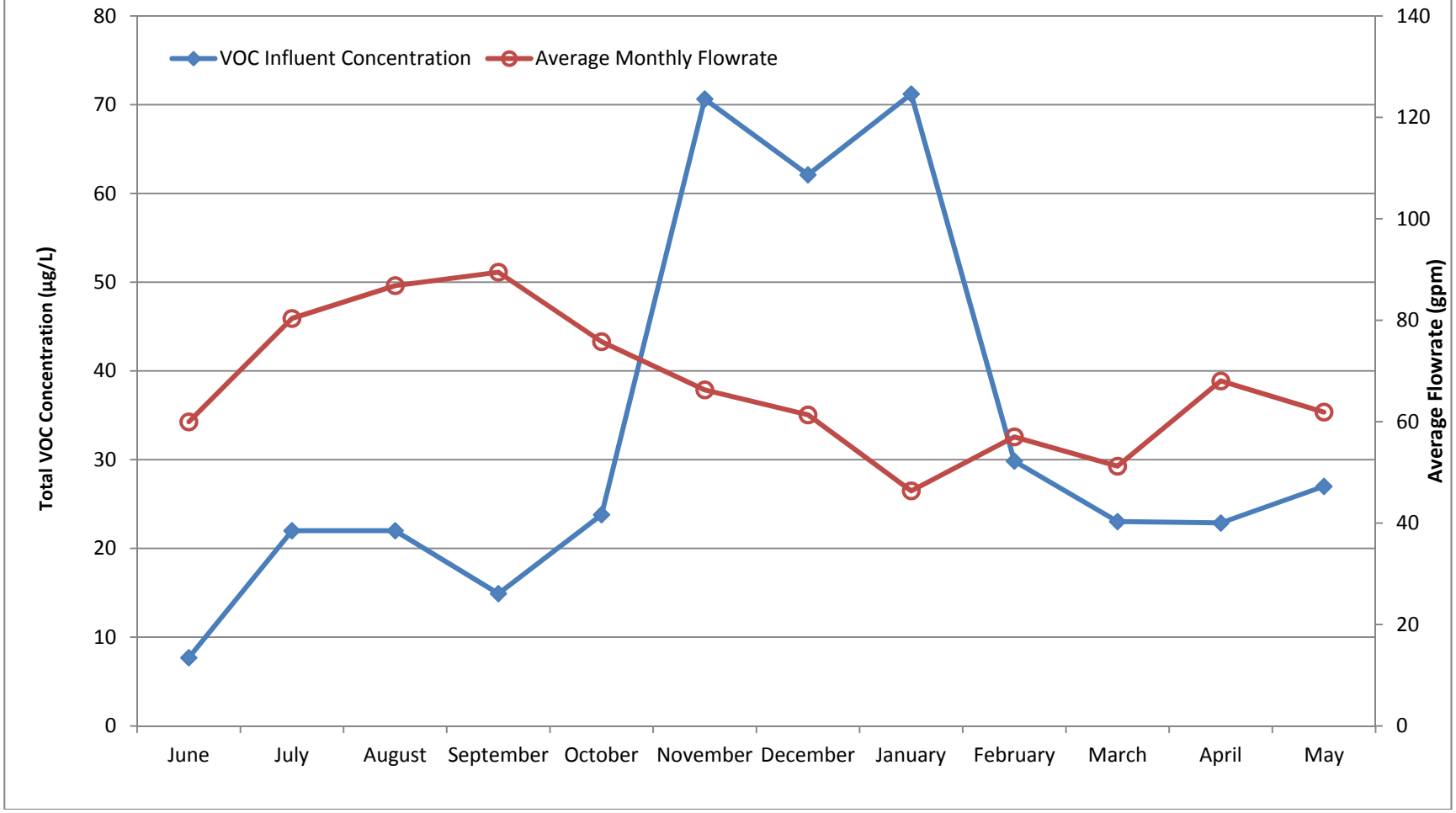
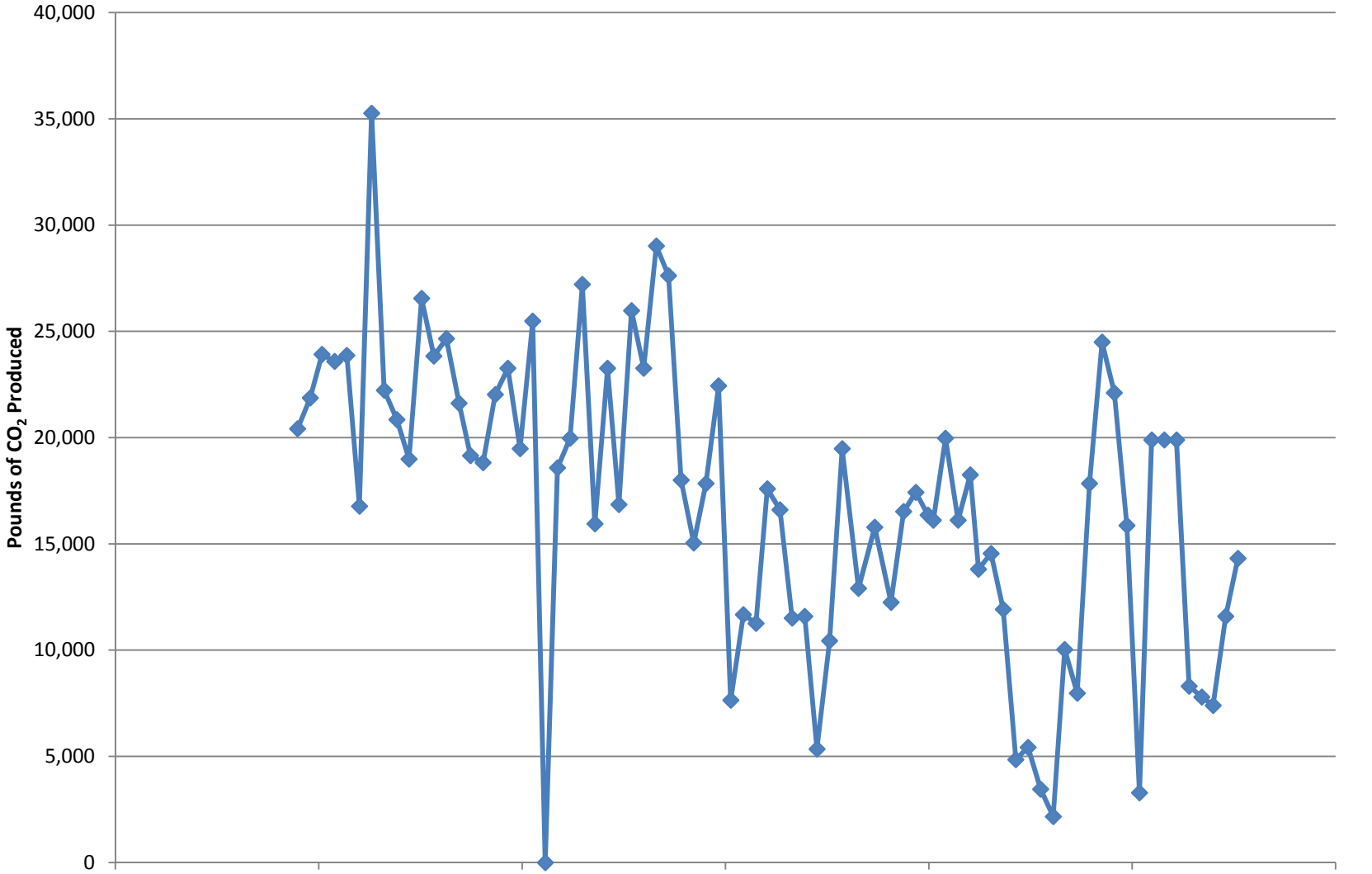


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 178 **Reporting Period: 30 April 2014 – 29 May 2014** **Date Submitted: 13 June 2014**

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 May 2014 reporting period.

Table 1 – Operations Summary – May 2014

Initial Data Collection: 4/30/2014 10:00 **Final Data Collection:** 5/29/2014 16:30

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	703 hours	**CGWTP:**	100%	**CGWTP:**	2,624 kWh (3,595 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.45 million gallons**

Gallons Treated Since January 1996: **496 million gallons**

VOC Mass Removed:

1.42 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,684 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $2,561[c]

Monthly Cost per Pound of Mass Removed: $3,673

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using May 2014 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 and are reported based on the calendar month.

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

Table 2 – CGWTP Average Flow Rates[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm) [b]
EW01x16	19.2[c]	Offline
EW02x16	7.1[c]	Offline
EW03x16	0.0[c]	Offline
EW605x16	7.1	Offline
EW610x16	3.9	Offline
CGWTP	34.4	--
WTTP	--[b]	Offline

[a] Flow rates calculated by dividing total gallons processed by system operating time for the month.
[b] No soil vapor was treated in May 2014.
[c] Flow rate based on instantaneous, end of the month reading for May 2014.
gpm = gallons per minute
-- = not applicable/not available
scfm = standard cubic feet per minute

Table 3 presents 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 2 May 2014. Sample results are presented in Table 4. The total VOC concentration (117.74 µg/L) in the influent sample has decreased since the April 2014 sample (395.21 µg/L) was collected. The influent concentration has decreased from a period of elevated concentrations that occurred during the rainy season.

Concentrations of 1,1-DCE (0.76 µg/L), 1,2-Dichlorobenzene (0.29 J µg/L), cis-1,2-DCE (72.6 µg/L), tetrachloroethene (0.59 µg/L), trans-1,2-Dichloroethene (3.5 µg/L), TCE (342 µg/L), and vinyl chloride (0.28 J µg/L) were detected at the influent sampling location. Vinyl chloride was also detected at the midpoint sampling location after Carbon 1 (0.6 µg/L) and after Carbon 2 (0.28 J µg/L).

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) and the influent flow rate at the CGWTP versus time for the past twelve (12) months. The average flow rate through the treatment plant in May 2014 increased from the flow rate measured in April 2014.

On 13 May 2014 the flow meter at extraction well EW03x16 was observed to be inoperable. An electrical repair was made to transfer the meter to a 120V power supply in an attempt to make it functional, but the flow meter remains offline. Additional troubleshooting will be conducted in June 2014 to determine whether the flow meter can be repaired or if it needs to be replaced.

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. On 12 May 2014, PVC piping at the bioreactor was observed to be damaged. The bioreactor was immediately shut off and repairs were made on 29 May 2014. The bioreactor will remain offline until the next scheduled pulse date of 6 June 2014.

Optimization Activities

No optimization activities occurred at CGWTP in May 2014.

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 3,595 pounds of GHG during May 2014. This is an increase from the amount produced in April 2014 (approximately 3,392 pounds) and is the result of more gallons being treated in May than in the previous month.

TABLE 4
Summary of Groundwater Analytical Data for May 2014 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	2 May 2014 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	72.6	ND	ND	ND
1,1-Dichloroethane	5.0	0.5	0	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	0.76	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.59	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	0.19	0	342	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.5	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.28 J	0.6	0.28 J	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 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
µg/L = micrograms per liter
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	7 June 2013	21 June 2013
	15 July 2013	26 July 2013
	8 August 2013	16 August 2013
	30 August 2013	13 September 2013
	27 September 2013	11 October 2013
	25 October 2013	8 November 2013
	22 November 2013	5 December 2013
	20 December 2013	3 January 2014
	17 January 2014	31 January 2014
	18 February 2014	28 February 2014
	14 March 2014	28 March 2014
	22 April 2014	28 April 2014*
	12 May 2014	12 May 2014*

* Damage to the above ground discharge pipe feeding the bioreactor was observed and the bioreactor was shut down for repair.
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

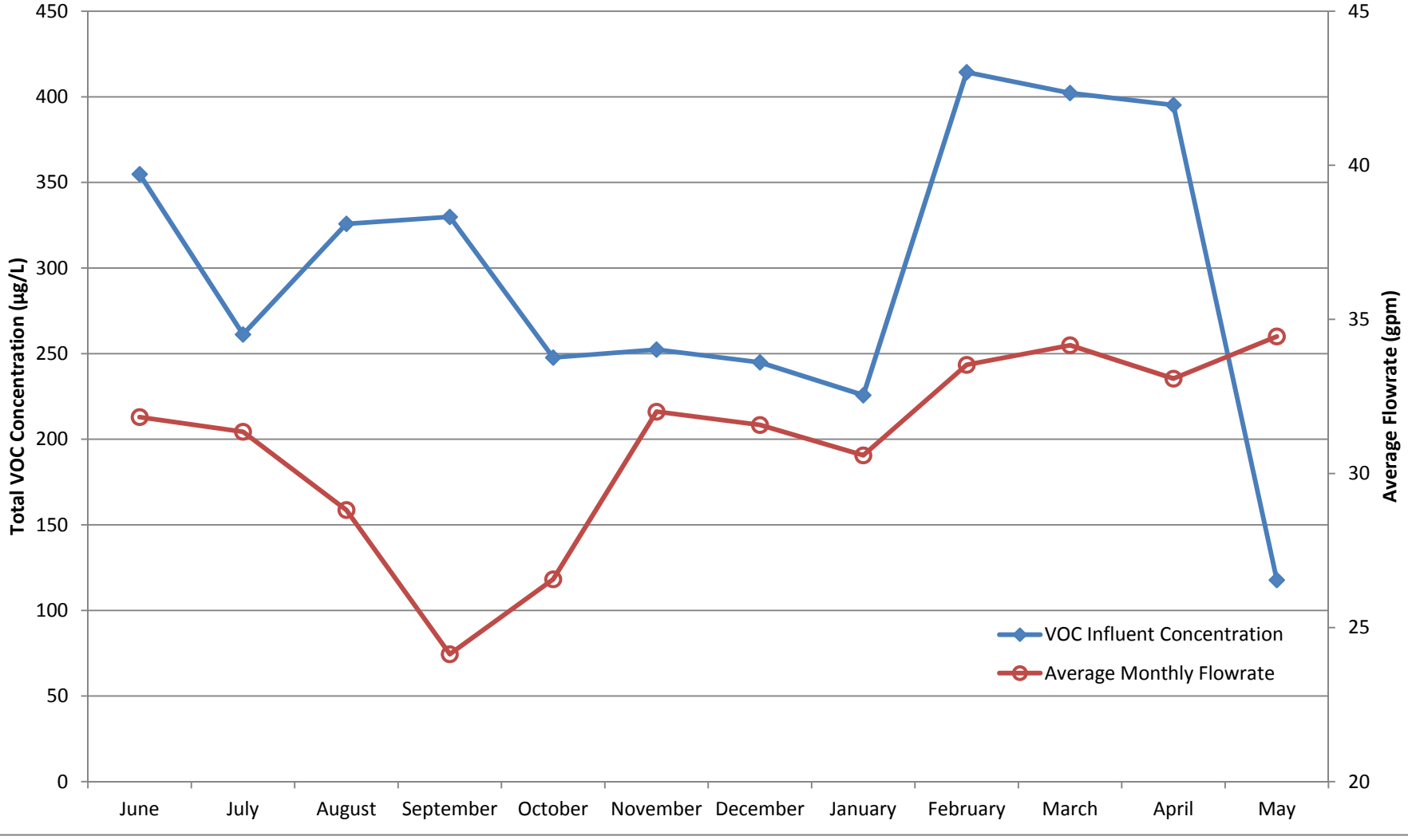
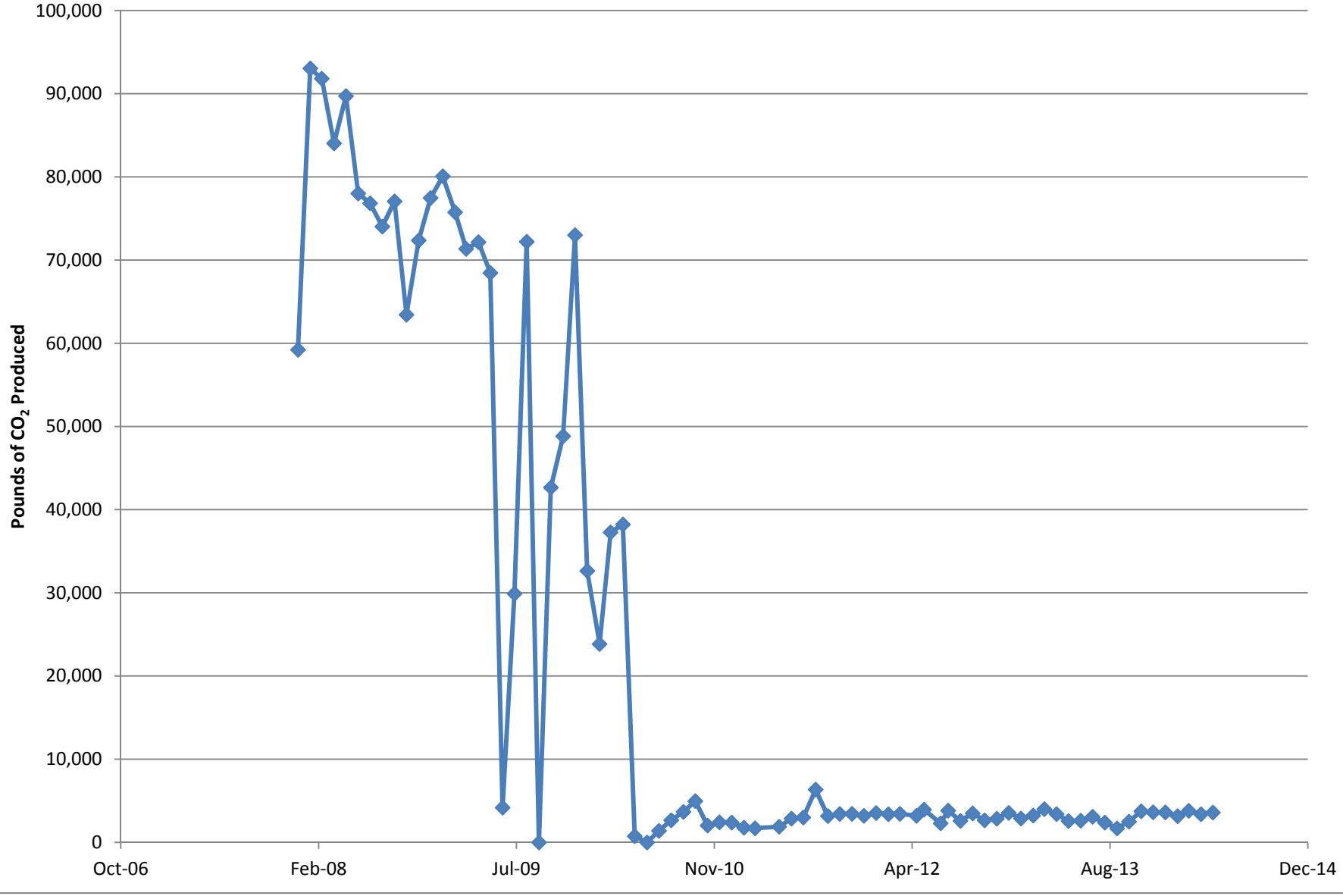


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 138 **Reporting Period: 7 May 2014 – 30 May 2014** **Date Submitted: 13 June 2014**

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities. The NGWTP was brought online on 7 May 2014 when the seasonal vernal pools at Site LF007C were observed to be dry. As required by US Fish and Wildlife Service (USFWS), extraction wells EW614x07 and EW615x07 were offline due to the presence of standing water in the vernal pools during the wet season.

System Metrics

Table 1 presents operational data from the May 2014 reporting period:

Table 1 – Operations Summary – May 2014

Initial Data Collection:	5/7/2014 12:00	**Final Data Collection:**	5/30/2014 17:00
Operating Time:		Percent Uptime:	
NGWTP:	436 hours	**NGWTP:**	78%
Electrical Power Usage[a]:			
NGWTP:	0 kWh		
Gallons Treated: **203,715 gallons**		Gallons Treated Since March 2000: **83.1 million gallons**	
Volume Discharged to Duck Pond: **203,715 gallons**		Volume Discharge to Storm Drain: **0 gallons**	
VOC Mass Removed: **4.16×10^{-3} pounds**[b]		VOC Mass Removed Since March 2000: **174.3 pounds (Groundwater)**	
Rolling 12-Month Cost per Pound of Mass Removed: **Not Measured**[c]			
Monthly Cost per Pound of Mass Removed: **Not Measured**[c]			

[a] Optimization activities were completed in January 2014 to transition the NGWTP to solar-only operations.
[b] VOCs from May 2014 influent sample detected by EPA Method SW8260B.
[c] Value not calculated since measurement does not accurately represent the cost effectiveness of the system.

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

Table 2 – NGWTP Average and Total Flow Rates – May 2014

Location	Average Flow Rate (gpm)[a]	Total Gallons Processed (gallons)
EW614x07	7.8	203,480
EW615x07	0.01	235
NGWTP	**7.8**	**203,715**

[a] Average flow rate calculated by dividing the total gallons processed collected from wellhead totalizers by the hours recorded by the system hour meter.
gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP	8 February 2014	22:00	7 May 2014	12:00	The NGWTP was shut down due to the presence of vernal pools and operated briefly for startup sampling.
NGWTP	7 May 2014	14:00	12 May 2014	16:00	Normal operations were resumed after startup sampling results received.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 7 May 2014 sampling event are presented in Table 4. Cis-1,2-dichloroethene (0.25 J µg/L) and TCE (2.2 µg/L) were detected at the influent sample location. No contaminant concentrations were measured at the midpoint or effluent sample locations.

Figure 1 presents a chart of influent concentrations (total VOCs) at the NGWTP versus time for the past twelve (12) months. Analytical data (Table 4) continue to indicate effective treatment of the influent process stream with only two (2) operating GAC drums online. Operation of the NGWTP was discontinued on 8 February 2014 as required by US Fish and Wildlife Service (USFWS), due to the presence of standing water in the vernal pools at Site LF007C. Operation of the NGWTP was resumed on 7 May 2014 when the vernal pools no longer contained standing water.

On 7 May 2014 the NGWTP was operated briefly for startup sampling. On 12 May 2014 normal operation of the NGWTP was resumed upon receipt of sample results and the system remains online. The average flow rate through the NGWTP has increased significantly since optimization activities were completed in January 2014 to increase pumping rates. During May 2014, an average flow rate of 7.8 gpm was achieved by extraction well EW614x07, which is a more than ten-fold increase from the 0.5 gpm flow rate commonly seen at this location prior to the system optimization.

Optimization Activities

Optimization of the groundwater extraction and treatment system (GETS) at Site LF007C occurred from November 2013 through January 2014 to transition the treatment system to solar-only operations. A newly installed treatment system is now located on Collins Drive, between Site LF007C and the discharge point for the NGWTP at the Duck Pond. A new containment pad houses the same treatment equipment that has been in use since 2010 at the NGWTP, but in a smaller enclosure. Extraction well EW614x07 was upgraded to extract groundwater at an increased rate. The upgraded solar system at extraction well EW614x07 will help to increase capture of the off base portion of the plume and increase the volume of water the system is able to treat during operation from approximately May through December.

Sustainability

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

Figure 2 presents the historical GHG production from the systems associated with the NGWTP. The NGWTP is taken off line when vernal pools are present at Site LF007C. The NGWTP is now a solar-only operated treatment system.

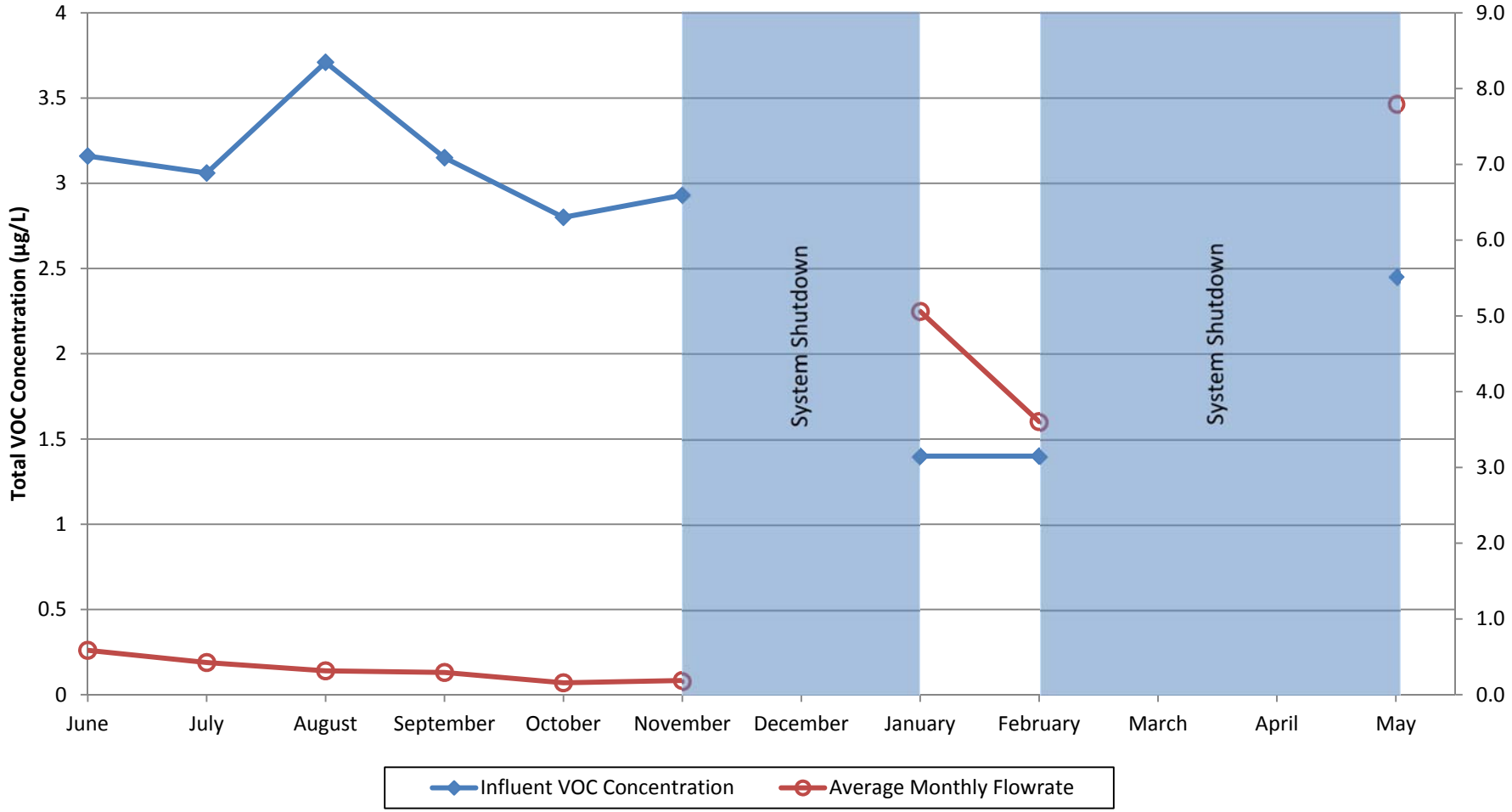
TABLE 4
Summary of Groundwater Analytical Data for May 2014 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	7 May 2014 (µg/L)		
				Influent	After Carbon 1	Effluent
Halogenated Volatile Organics						
Bromodichloromethane	5.0	0.15	0	ND	ND	ND
Bromoform	5.0	0.19	0	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	0.25 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	2.2	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 Dissolved Solids (mg/L)	NA	10	0	NM	NM	NM

* In accordance with Appendix G of the *Travis AFB North Groundwater Treatment Plant Operations and Maintenance Manual*, Sites FT004, SD031, and LF007 Area C (URS Group, Inc., 2005).

Notes:
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
NM = not measured
µg/L = micrograms per liter
mg/L = milligrams per liter

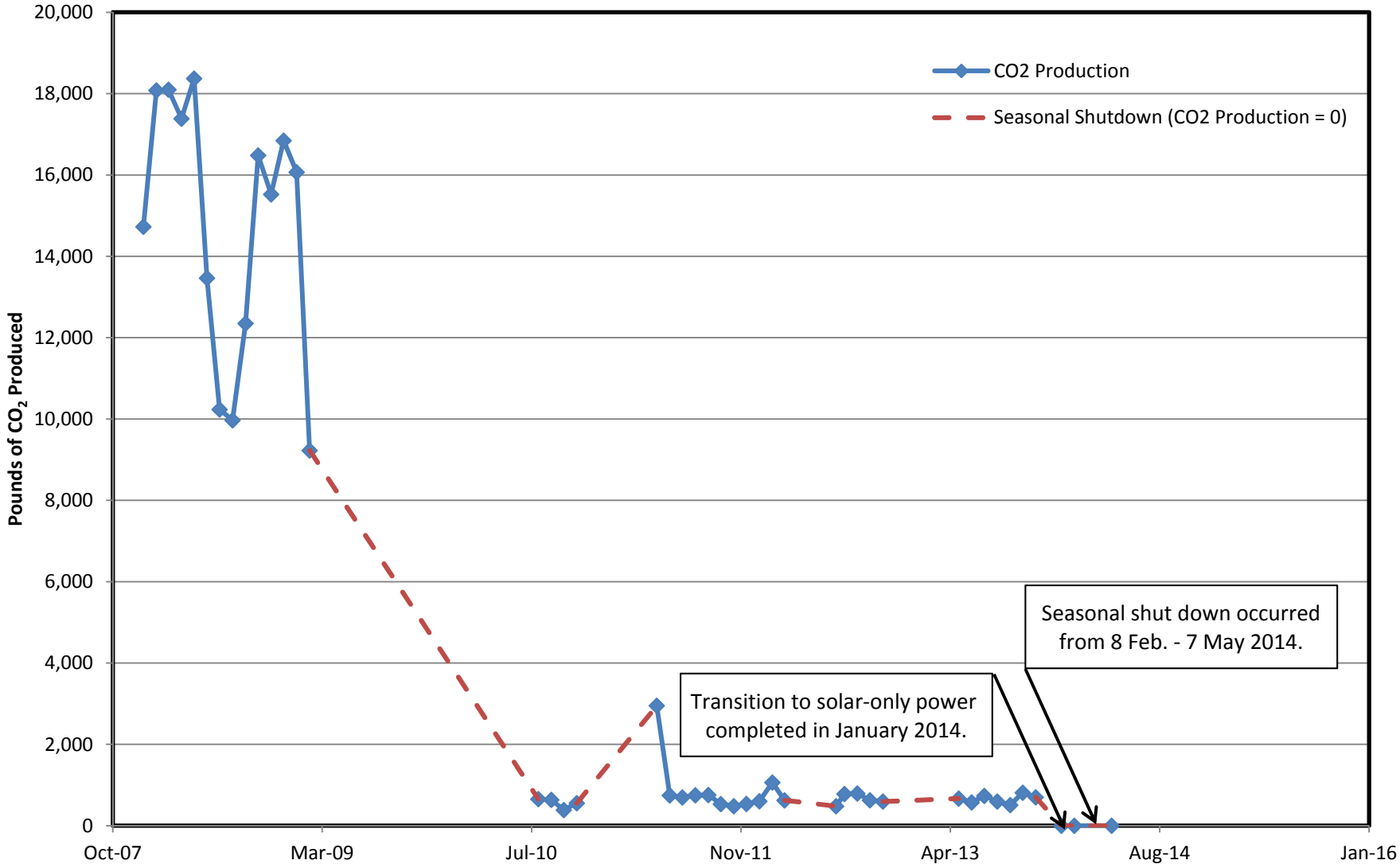
Figure 1
NGWTP Total VOC Influent Concentrations and Average Flowrate
Twelve Month History
Travis Air Force Base, California



*20 January 2014 sample results are shown as an estimation of February influent concentrations due to seasonal shutdown prior to the February monthly sampling event.

Figure 2

Equivalent Pounds of CO2 Produced by the North Groundwater Treatment Plant



Note: Dashed line represents seasonal shutdowns due to the presence of vernal pools at Site LF007C during which no CO2 production occurred.

Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 039 **Reporting Period: 1 May 2014 – 30 May 2014** **Date Submitted: 13 June 2014**

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

System Metrics

Table 1 presents operation data from the May 2014 reporting period.

Table 1 – Operations Summary – May 2014

Initial Data Collection: 5/1/2014 10:00	**Final Data Collection:** 5/30/2014 16:00
Operating Time: **ST018GWTP:** 685 hours	Percent Uptime: **ST018GWTP:** 98%
Electrical Power Usage: **ST018GWTP:** 125 kWh (171 lbs CO_2 generated[a])	
Gallons Treated: **188.7 thousand gallons**	Gallons Treated Since March 2011: **5.83 million gallons**
Volume Discharged to Union Creek: **188.7 thousand gallons**	
BTEX, MTBE, TPH Mass Removed: **1.64 lbs**[b]	BTEX, MTBE, TPH Mass Removed Since March 2011: **28.9 lbs**
MTBE (Only) Removed: **0.10 lbs**[b]	MTBE (Only) Mass Removed Since March 2011: **6.2 lbs**
Rolling 12-Month Cost per Total Pounds of Mass Removed: $19,121[c]	
Monthly Cost per Pound of Mass Removed: $3,926	

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using May 2014 EPA Method SW8260B analytical results.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.
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

Location	Average Flow Rate Groundwater (gpm)[a]	Hours of Operation
EW2014x18	2.14	683
EW2016x18	1.52	683
EW2019x18	1.55	685 (701[b])
Site ST018 GWTP	4.59	685

[a] Flow rates calculated by dividing total gallons processed by the hours of operation, from the totalizer and hour meter at each location.
[b] The hour meter at EW2019x18 continued to record hours while the treatment system and pumps were shutdown.
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		Restart		Cause
	Date	Time	Date	Time	
ST018GWTP	15 May 2014	17:00	16 May 2014	9:00	The treatment system shut down as the result of high pressure. The vessels were back flushed before bringing the system back on line.

ST018GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the ST018GWTP on 1 May 2014. Sample results from the May sampling event are presented in Table 4. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the May 2014 influent sample was 1,042.3 µg/L, which is a decrease from the previous (April 2014) influent concentration of 1,064.5 µg/L. The influent concentration for MTBE during May 2014 was 66.2 µg/L. This is also a decrease from the April 2014 influent concentration for MTBE of 89.3 µg/L.TPH was detected in the influent sample for the first time in several months during the quarterly (1 April 2014) sampling event and is reflected in the May influent concentration. Influent TPH samples are collected on a quarterly basis in accordance with the National Pollutant Discharge Elimination System (NPDES) permit.

Figure 1 presents plots of flow rate and influent total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the ST018GWTP versus time. No contaminants were detected at the midpoint or effluent sampling locations in May 2014.

As shown on Figure 1, the average flow rate through the ST018GWTP has increased from the first quarter 2014 average flow rates. Downtime occurred at the ST018GWTP from approximately 15 May through 16 May due to high pressure which was likely the result of sedimentation in the carbon vessels. Operation of the ST018GWTP was restored on 16 May after the carbon vessels were back flushed.

Optimization Activities

No optimization activities were performed in May 2014.

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 approximately 171 pounds of GHG during May 2014. This is an increase from April 2014 (141 pounds) and is likely the result of increased hours of operation and gallons treated in May from the previous month. Figure 2 presents the historical GHG production from the ST018GWTP. 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 May 2014 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	1 May 2014 (µg/L)			
				Influent	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
MTBE	5	0.5	0	66.2	NM	ND	ND
Benzene	5	0.17	0	3.5	NM	ND	ND
Ethylbenzene	5	0.22	0	2.8	NM	ND	ND
Toluene	5	0.14	0	0.48 J	NM	ND	ND
Total Xylenes	5	0.23 – 0.5	0	7.3	NM	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	740[b]	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	52 J[b]	ND	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	--	160	--	170 J[b]	ND	NM	ND

[a] In accordance with the National Pollutant Discharge Elimination System (NPDES) Effluent Limitations
µg/L = micrograms per liter
[b] Influent TPH samples are collected on a quarterly basis. Results presented from 1 April 2014.
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
ND = not detected above method detection limit
NM = not measured this month

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

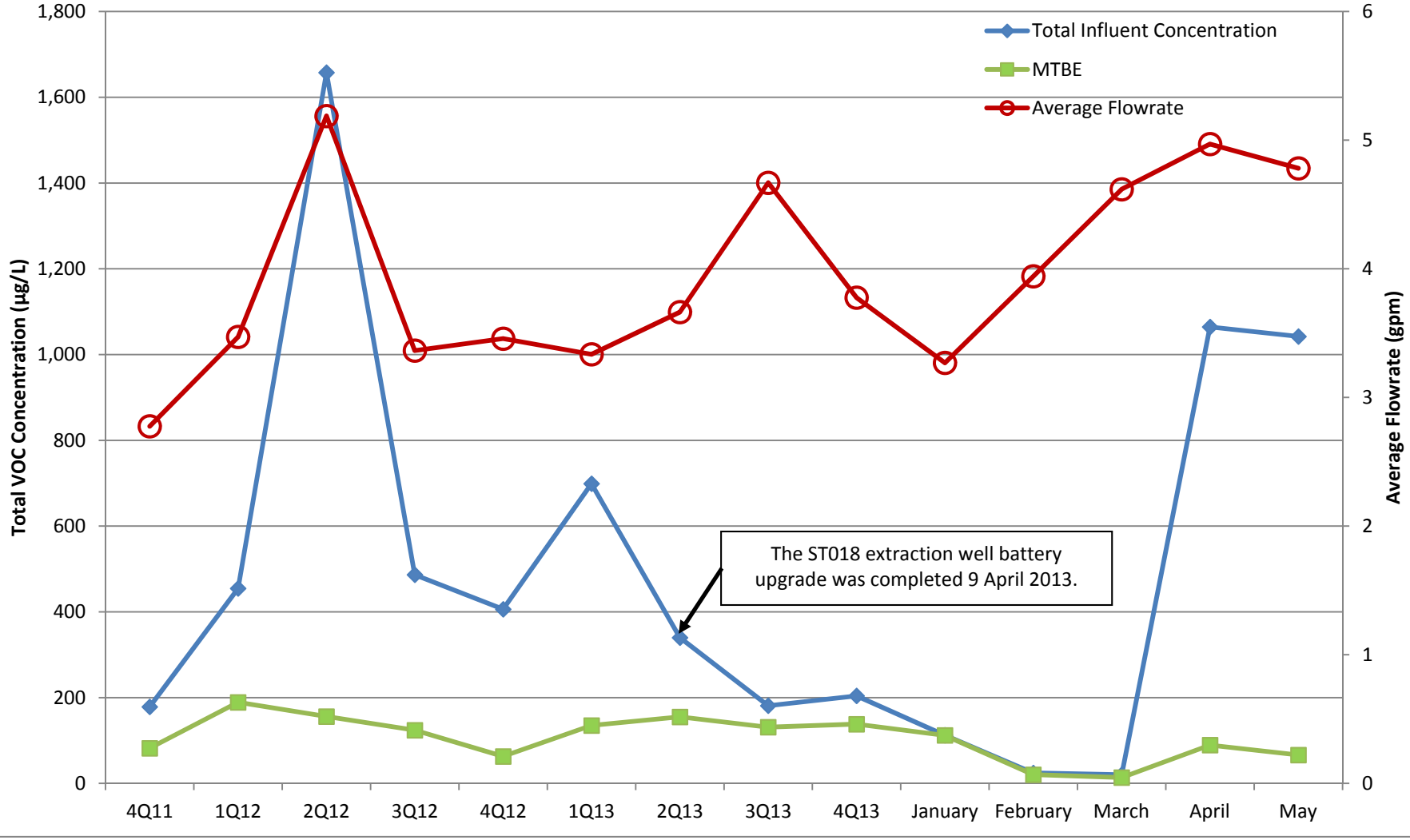
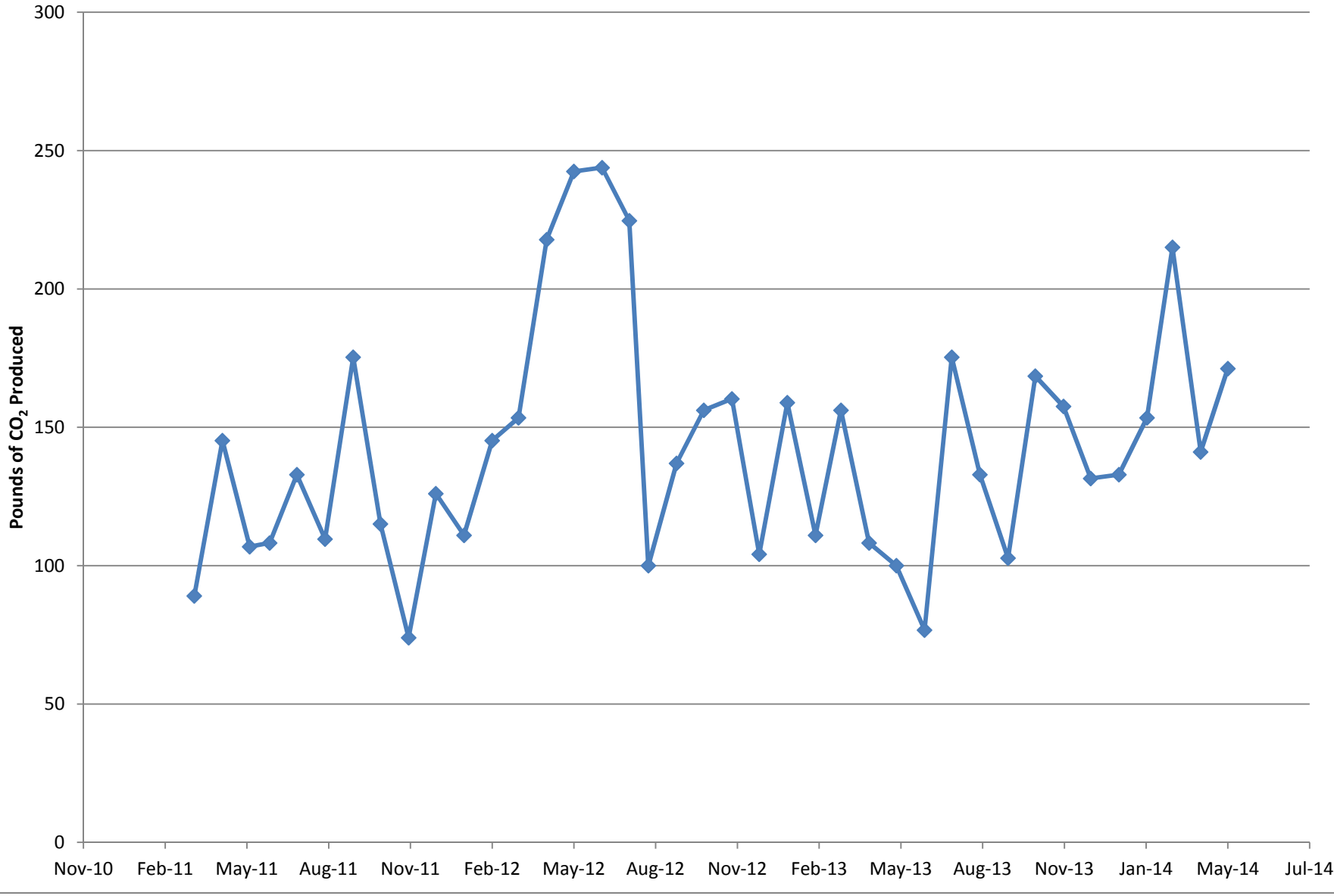


Figure 2

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



Travis AFB
Restoration Program

Program Overview

RPM Meeting

June 18, 2014

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

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***

Documents & Field Work In-Progress

Documents

- Groundwater Record of Decision (ROD)
- Kinder Morgan LF044 Land Use Control Report
- CG508 POCO Work Plan
- 2013 Annual GRISR

Field Work

- ***Site CG508 Site Investigation***

Documents Planned

• FT004 Treatment Demonstration Work Plan	Jun
• DP039 Lead Excavation Technical Memo	Jun
• ESD to WABOU Soil ROD	Jul
• ESD to NEWIOU Soil, Sediment, & Surface Water ROD	Jul
• Travis AFB UFP-QAPP	Jul
• SD031 Treatment Demonstration Work Plan	Jul
• SS014 Technology Demonstration Work Plan	TBD
• TA500 Investigation Work Plan	TBD
• SS015 GW RD/RA Work Plan	TBD
• SS016 GW RD/RA Work Plan	TBD
• SD036 RD/RA Work Plan	TBD
• SD037 GW RD/RA Work Plan	TBD

ESD = Explanation of Significant Defferences

Field Work Planned

- Old Skeet Range Characterization Sampling TBD
- ***SD031 Technology Demonstration*** ***Sep***

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

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 Memorandum

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 (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