Final

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

15 July 2015, 1300 Hours

Mr. Mark Smith, of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Team (IST), conducted the Restoration Program Manager's (RPM) teleconference, on 15 July 2015 at 1300 hours, in Building 248 at Travis AFB, California. Attendees included:

• Mark Smith	AFCEC/CZOW
• Glenn Anderson	AFCEC/CZOW
• Lonnie Duke	AFCEC/CZOW
• 1st Lt Alexi Fong	Travis AFB 60 AMW/JA
• William Hall (via telephone)	AFCEC/CZRW
• Adriana Constantinescu (via telephone)	California Regional Water Quality Control Board (RWQCB)
• John Hart (via telephone)	California Department of Toxic Substances Control (DTSC)
• Nadia Hollan Burke (via telephone)	United States Environmental Protection Agency (USEPA)
• Indira Balkissoon (via telephone)	Techlaw, Inc
• Mike Wray	CH2M HILL

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 (June 2015)
• Attachment 4	CGWTP Monthly Data Sheet (June 2015)
• Attachment 5	Subarea LF007C Monthly Data Sheet (June 2015)
• Attachment 6	ST018 Monthly Data Sheet (June 2015)
• Attachment 7	Presentation: Program Update: Activities Completed, In Progress and Upcoming

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 17 June 2015 RPM meeting minutes were approved and finalized as modified. Ms. Burke requested a comment be added to page 3 under Site SD031 Technology Demonstration Construction Completion Report. “EPA requested additional review time.”

B. Action Item Review.

Action items from June were reviewed.

Action item 1 will remain open: AFCEC’s Travis Restoration Support Team and Travis AFB will continue to pursue opportunities for the beneficial reuse of treated water. Due date will remain TBD to ensure this action item remains visible. 15 July 2015: No update.

Action item 2 is ongoing: Mr. Smith to provide updates on PFOS and PFOA as he becomes aware of them. 15 July 2015: No update.

Action item 3 is open: Ms. Constantinescu to provide information about the water quality data that must be provided and met in order to allow the use of treated water during EVO injection. Ms. Constantinescu said that she emailed Mr. Duke on 8 July 2015 stating that the RWQCB has agreed with this request mainly because the groundwater plume is contained. The RWQCB is waiting for the technical memorandum from Travis AFB.

Action item 4 is open: Mr. Wray to contact Ms. Constantinescu to schedule a site visit of the twelve (12) oil water separator sites (OWS). The site visit will be scheduled sometime the first week of September when Ms. Constantinescu is available.

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 face to face meeting, held on Wednesday, 19 August 2015 at 1300 to 1500. Ms. Constantinescu will be on vacation the week of 19 August 2015, so Mr. David Elias/RWQCB will call in for the August RPM meeting. Mr. Hart/DTSC will also be calling in.

Ms. Burke requested that the meeting/teleconference schedule be revised to reflect the 1:00 start for the 16 September 2015 RPM meeting, which will be held as a teleconference.

— Community Involvement Plan: No change was made to the schedule.

— Site DP039 Remedial Design/Remedial Action Work Plan: No change was made to the schedule. Mr. Anderson said that Travis AFB is in agreement with EPA's comments and expects the document to go final at the end of this month.

— Amendment to the NEWIOU Soil, Sediment, and Surface Water Record of Decision: All dates were changed to to-be-determined (TBD). Travis AFB decided to delay further work on the ROD amendments in order to review every site and the remedies that are in place, to determine if the remedies will achieve cleanup in the time frame specified or if the remedies need to be sped up in order to achieve cleanup in accordance with contractual requirements.

— Amendment to the Soil Record of Decision for the WABOU: All dates were changed to TBD. See also the NEWIOU update above.

— Potrero Hills Annex (FS, PP, and ROD): No change to the schedule. Ms. Constantinescu said the responsible parties started their investigation approximately two weeks ago.

— Site ST028 POCO Work Plan: The response to comments (RTC) date and final due date were changed to 10 July 2015 to reflect the actual submittal date.

— Quarterly Newsletter (July 2015): The draft to agencies date changed to 2 July 2015 to reflect the actual submittal date, and no other changes were made to the schedule. Mr. Anderson acknowledged that Travis AFB received EPA's comments.

— 2014 Annual CAMU Monitoring Report: RTC due date and final due date were changed to 7 July 2015 to reflect the actual submittal date.

— 2014 Annual GRISR: No change was made to the schedule.

— Site SD031 Technology Demonstration Construction Completion Report: No change to the schedule. However, EPA will need additional review time.

— Sites SD036 and SD037 Remedial Action Construction Completion Report: No change was made to the schedule.

— Site ST018 POCO Construction Completion Report: The Predraft to AF/Service Center was changed to 10 July 2015 to reflect the actual date, the rest of the dates were changed accordingly. Ms. Constantinescu said that she will be on vacation on 7 August 2015 when the draft to agencies is scheduled. The draft to agencies date will be changed to 25 August 2015 and agencies comments due date will change accordingly. The changes will be reflected in the August 2015 MMDS.

— Site SS016 Groundwater Remedial Action Construction Completion Report: The Predraft to AF/Service Center date was changed to 28 July 2015, the rest of the dates were changed accordingly. The dates were revised to ease some of the documentation overload burden.

— Site SS015 Remedial Action Construction Completion Report: The Predraft to AF/Service Center date was changed to 4 August 2015, the rest of the dates were changed accordingly. The dates were revised to ease some of the documentation overload burden.

— Site SS030 Remedial Action Construction Completion Report: New document with all new dates.

— Site SS014 POCO Technology Demonstration Work Plan: Moved to history.

— Old Skeet Range PAH Delineation Report: Moved to history.

— Site CG508 POCO Site Investigation/Site Closure Request Report: Moved to history.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, June 2015 (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 2.65 million gallons of groundwater were extracted and treated during the month of June 2015. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 68.13 gallons per minute (gpm). Electrical power usage was 11,520 kWh, and approximately 15,782 pounds of CO_2 were created (based on DOE calculation). Approximately 1.35 pounds of volatile organic compounds (VOCs) were removed in June. The total mass of VOCs removed since startup of the system is 461.8 pounds.

Optimization Activities for SBBGWTP: No optimization activities are reported for the month of June 2015.

Central Groundwater Treatment Plant, June 2015 (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.51 million gallons of groundwater extracted and treated during the month of June 2015. All treated water was discharged to the storm drain. The average flow rate for the CGWTP was 29.9 gpm. Electrical power usage was 3,097 kWh for all equipment connected to the Central Plant, and approximately 4,243 pounds of CO_2 were generated. Approximately 3.40 pounds of VOCs were removed from groundwater by the treatment plant in June. The total mass of VOCs removed since the startup of the system is 11,409 pounds.

Optimization Activities for CGWTP: No optimization activities are reported for the month of June 2015.

LF007C Groundwater Treatment Plant, June 2015 (see Attachment 5)

The treatment plant was brought back online on 2 June 2013 when the seasonal vernal pools at Site LF007C were observed to be dry.

Subarea LF007C Treatment Plant (LF007CGWTP) performed at 64% uptime with approximately 143,774 gallons of groundwater extracted and treated during the month of June 2015. The average flow rate at the NGWTP was 4.37 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 $2.19x10^{-2}$ pounds of VOCs were removed from the groundwater in June. The total mass of VOCs removed since the startup of the system is 174.33 pounds.

Optimization Activities for LF007CGWTP: No optimization activities to report for the month of June 2015.

Site ST018 Groundwater (MTBE) Treatment Plant, June 2015 (see Attachment 6)

The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 256,870 gallons of groundwater extracted and treated during the month of June 2015. All treated water was diverted to the sanitary sewer. The average flow rate for the ST018 GWTP was 5.40 gpm. Electrical power usage for the month was 151 kWh for all equipment connected to the ST018 GWTP, which equates to the creation of approximately 207 pounds of CO_2. Approximately 0.36 pound of BTEX, MTBE and TPH was removed from groundwater in June by the treatment plant. Approximately 0.21 pound of MTBE was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 31.7 pounds, and the total MTBE mass removed since startup of the system is 7.3 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: A new extraction well EW2333x18 was installed in mid-March 2015; optimization activities in June 2015, extraction EW2333x18 was be brought online 3 June 2015.

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: ST028 POCO Work Plan, SS014 POCO Technology Demonstration Work Plan, CG508 Site Investigation/Site Closure Request Report, 2014 Annual CAMU Monitoring Report.

Newly Completed Field Work: SD034 Data Gaps Investigation, SS015 EVO Injection.

In-Progress Documents (CERCLA): SD031 Technology Demonstration Construction Completion Report, DP039 GW RD/RA Work Plan, 2014 Annual GRISR.

In-Progress Documents (POCO): None.

In-Progress Field Work: Oil Water Separators Site Investigation, FT005 Injection Well Installation, FT004 Well Installation, DP039 Well Installation.

Upcoming Documents (CERCLA): Community Involvement Plan (July), Sites SD036 and SD037 Remedial Action Construction Completion Report (July), ROD Amendment for NEWIOU Soil Sediment, and Surface Water ROD (TBD), ROD Amendment for WABOU Soil ROD (TBD), SS016 Groundwater Remedial Action Construction Completion Report (August), SS015 Remedial Action Construction Completion Report (September), Site SS030 Remedial Action Construction Completion Report.

Upcoming Documents (POCO): ST018 POCO Construction Completion Report (August).

Field Work Planned (CERCLA): SS030 Trench/Conveyance/Power Installation (July), FT005 Trench Installation (July), FT004 Trench/Conveyance/Power Installation (August), FT004 EVO Injection (August), FT005 EVO Injection (August), DP039 Infiltration Trench Installation (August), DP039 EVO Injection (September).

Field Work Planned (POCO): SS014 Bioreactor Installation (August).

4. New Action Item Review

None

5. PROGRAM/ISSUES/UPDATE

None

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. 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. Update: Mr. Duke informed the group that Travis AFB is considering the use of treated water during EVO injection at Site FT005 as opposed to potable water. New Action Item 5 added as a follow-up.	TBD	Open
2.	Mark Smith	Mr. Smith to provide updates on PFOS and PFOA as he becomes aware of them. Update: Mr. Smith stated that he has received the final preliminary assessment report from AFCEC. Direction from AFCEC for follow on steps has not yet been provided. Provide EPA a copy of the preliminary assessment report.	Ongoing	Open
3.	Adriana Constantinescu	Ms. Constantinescu to provide information about the water quality data that must be provided and met in order to allow the use of treated water during EVO injection.	10 June 2015	Open
4.	Adriana Constantinescu	Ms. Constantinescu will schedule a site visit of all the oil water separator sites (OWS), when she is available.	TBD	Open

TRAVIS AFB RPM TELECONFERENCE AGENDA
15 July 2015, 1:00 P.M. (PDT)

To:	EPA	Nadia Burke
	DTSC	John Hart
	RWQCB	Adriana Constantinescu
	CH2M Hill	Mike Wray
	AFCEC	William Hall
	USACE	Dezso Linbrunner

The RPM teleconference is scheduled for 2:00 PDT on 17 June 2015. **The call-in number is 1-866-203-7023. Enter the Participation code 5978-75-9736 then enter #.**

Topics for the teleconference include:

- Previous Meeting Minutes (All)
- Action Item Review (All)
- Master Meeting and Document Schedule Review (Glenn, Lonnie)
- Treatment Plant Operation and Maintenance Update (Lonnie)
- Program Update (Mike)
- New Action Item Review (All)

Participants:

TRAVIS	ERP Staff	(707) 424-3062
DTSC	John Hart	(916) 255-3571
RWQCB	Adriana Constantinescu	(510) 622-2353
EPA	Nadia Burke	(415) 972-3187
USACE	Dezso Linbrunner	(402) 238-8846
CH2M HILL	Mike Wray	(916) 715-0949
AFCEC	William Hall	(210) 259-3252

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

(2015)
Annual Meeting and Teleconference Schedule

Monthly RPM Meeting[1] (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-21-15	—	—
02-18-15	—	—
—	03-18-15	—
04-23-15 (Thursday 2:00 PM)	—	04-23-15
—	05-27-15	—
	06-17-15 (start at 12:00)	—
—	07-15-15 (1:00 to 3:00)	—
08-19-15 (1:00 to 3:00)	—	—
—	09-16-15	—
11-05-15 (Thursday 2:00 PM)		11-05-15
—	11-18-15	—
—	—	—

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

As of : 07-15-2015

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS				
Life Cycle	**Community Involvement Plan Travis AFB, Mark Smith CH2M HILL, Tricia Carter**	**Site DP039 Remedial Design/Remedial Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer**	**Record of Decision Amendment to the NEWIOU Soil, Sediment, and Surface Water Record of Decision Travis AFB, Glenn Anderson CH2M HILL, Loren Krook**	**Record of Decision Amendment to the Soil Record of Decision for the WABOU Travis AFB, Glenn Anderson CH2M HILL, Loren Krook**
Scoping Meeting	**NA**	**NA**	**TBD**	**TBD**
Predraft to AF/Service Center	NA	01-15-14	TBD	TBD
AF/Service Center Comments Due	NA	01-29-15	TBD	TBD
Draft to Agencies	07-29-15	03-03-15	TBD	TBD
Draft to RAB	07-29-15	03-03-15	TBD	TBD
Agency Comments Due	08-28-15	04-02-15	TBD	TBD
Response to Comments Meeting	**09-16-15**	**05-27-15**	**TBD**	**TBD**
Agency Concurrence with Remedy	NA	NA	NA	NA
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**
Response to Comments Due	09-30-15	07-01-15	TBD	TBD
Draft Final Due	09-30-15	07-01-15	TBD	TBD
Final Due	11-03-15	07-31-15	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	**POCO Site ST028 Data Gap Investigation Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Doug Berwick**
Scoping Meeting	**NA**
Predraft to AF/Service Center	03-18-15
AF/Service Center Comments Due	04-01-15
Draft to Agencies	04-22-15
Draft to RAB	04-22-15
Agency Comments Due	05-22-15
Response to Comments Meeting	**05-27-15**
Response to Comments Due	07-10-15
Draft Final Due	NA
Final Due	07-10-15
Public Comment Period	NA
Public Meeting	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS				
Life Cycle	**Quarterly Newsletters (July 2015) Travis, Glenn Anderson**	**2014 Annual CAMU Monitoring Report Travis AFB, Lonnie Duke CH2M HILL, Ashley Shaddy**	**2014 Annual GRISR Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer**	**Site SD031 Technology Demonstration Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Ashley Shaddy**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	03-17-15	04-24-15	04-23-15
AF/Service Center Comments Due	NA	03-31-15	05-22-15	05-07-15
Draft to Agencies	07-02-15	04-15-15	06-10-15	05-21-15
Draft to RAB	NA	04-15-15	06-10-15	05-21-15
Agency Comments Due	07-22-15	05-15-15	08-10-15	06-22-15
Response to Comments Meeting	**TBD**	**05-27-15**	**08-19-15**	**07-15-15**
Response to Comments Due	07-24-15	07-07-15	09-02-15	07-29-15
Draft Final Due	NA	NA	NA	NA
Final Due	07-29-15	07-07-15	09-02-15	07-29-15
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS					
Life Cycle	**Sites SD036 and SD037 Remedial Action Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Ashley Shaddy**	**Site ST018 POCO Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Ashley Shaddy**	**Site SS016 Groundwater Remedial Action Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Ashley Shaddy**	**Site SS015 Remedial Action Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Ashley Shaddy**	**Site SS030 Remedial Action Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Ashley Shaddy**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	06-24-15	07-10-15	07-28-15	08-04-15	09-09-15
AF/Service Center Comments Due	07-08-15	07-24-15	08-11-15	08-18-15	09-23-15
Draft to Agencies	07-22-15	08-07-15	08-25-15	09-01-15	10-07-15
Draft to RAB	07-22-15	08-07-15	08-25-15	09-01-15	10-07-15
Agency Comments Due	08-21-15	09-08-15	09-25-15	10-02-15	11-06-15
Response to Comments Meeting	**09-16-15**	**09-16-15**	**10-22-15**	**10-22-15**	**11-18-15**
Response to Comments Due	09-30-15	10-06-15	11-06-15	11-05-15	12-04-15
Draft Final Due	NA	NA	NA	NA	NA
Final Due	09-30-15	10-06-15	11-06-15	11-05-15	12-04-15
Public Comment Period	NA	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

HISTORY			
Life Cycle	**Site SS014 POCO Technology Demonstration Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Leslie Royer**	**Old Skeet Range PAH Delineation Report** **Travis AFB, Glenn Anderson** **Bay West, Steve Thornton**	**Site CG508 POCO Site Investigation/Site Closure Request Report** **Travis AFB, Lonnie Duke** **CH2M HILL, Ashley Shaddy**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	12-05-14	11-24-14	03-25-15
AF/Service Center Comments Due	12-19-14	12-02-14	04-08-15
Draft to Agencies	02-04-15	01-13-15	04-22-15
Draft to RAB	02-04-15	01-13-15	04-22-15
Agency Comments Due	03-06-15	02-12-15	05-22-15
Response to Comments Meeting	**03-18-15**	**02-18-15**	**05-27-15**
Response to Comments Due	05-27-15	05-25-15	05-28-15
Draft Final Due	NA	NA	NA
Final Due	05-27-15	06-09-15	05-28-15
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 178 **Reporting Period: 30 May 2015 – 30 June 2015** **Date Submitted: 15 July 2015**

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 2015 reporting period.

Table 1 – Operations Summary – June 2015

Initial Data Collection: 05/29/2015 12:15	**Final Data Collection:** 06/25/2015 11:45
Operating Time:	Percent Uptime:
SBBGWTP: 648 hours	**SBBGWTP:** 100%
Electrical Power Usage:	
SBBGWTP: 11,520 kWh[a] (15,782 lbs CO_2 generated[b])	
Gallons Treated: **2.65 million gallons**	Gallons Treated Since July 1998: **896 million gallons**
Volume Discharged to Union Creek: **2.65 million gallons**	
VOC Mass Removed: **1.35 lbs**[c]	VOC Mass Removed Since July 1998: **461.8 lbs**
Rolling 12-Month Cost per Pound of Mass Removed: $2,733[d]	
Monthly Cost per Pound of Mass Removed: $2,473	

lbs = pounds

[a] Power use estimated from previous usage due to unreliable readings in May 2015.

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

[c] Calculated using May 2015 EPA Method SW8260B analytical results.

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

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

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

FT005[b]				SS029		SS030	
EW01x05	Offline[c]	EW736x05	Offline	EW01x29	0.7	EW01x30	11.0
EW02x05	0.3	EW737x05	Offline	EW02x29	3.3	EW02x30	0.7
EW03x05	Offline	EW742x05	Offline	EW03x29	1.9	EW03x30	2.4
EW731x05	Offline	EW743x05	Offline	EW04x29	9.3	EW04x30	36.8
EW732x05	Offline	EW744x05	Offline	EW05x29	3.8	EW05x30	2.1
EW733x05	Offline	EW745x05	Offline	EW06x29	5.9	EW06x30	Dry
EW734x05	Offline[c]	EW746x05	Offline	EW07x29	0.1	EW711x30	2.2
EW735x05	Offline[c]						
FT005 Total:	**0.3**			**SS029 Total:**	**25.0**	**SS030 Total:**	**55.2**
SBBGWTP Average Monthly Flow[d]: 68.13 gpm							

[a] Flow rates presented are instantaneous measurements.
[b] Most extraction wells at FT005 were taken offline in accordance with the *2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.*
[c] These extraction wells are offline due to pump or other malfunction.
[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	NA	--			

-- = Time not recorded
[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 9 June 2015 sampling event are presented in Table 4. The total VOC concentration (61.4 µg/L) in the influent sample increased from the May 2015 sample results (42.4 µg/L). Cis-1,2-DCE (3.3 µg/L), TCE (57.9 µg/L), and chloroform (0.17 J µg/L) were detected at the influent sampling location. TCE was detected at a concentration of 0.24 J µg/L at the midpoint location, and no contaminants were detected at the effluent sampling location.

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 slightly in June 2015 to 68.1 gpm from the May 2015 flow rate of 78.01 gpm, which was due to a decrease in the number of operating hours in June 2015.

Troubleshooting activities were performed at extraction wells EW01x05, EW734x05, and EW735x05 on June 8, 2015. The variable frequency drive at EW01x05 was experiencing repeated overload faults which has resulted in prolonged downtime of its associated pump. The effluent hose barb had corroded at well EW734x05, and a short in the power wiring had been preventing the pump from sustained operation. Well EW735x05 requires a new pressure transducer and flow meter, though the pump has continued to operate. EW734x05 and EW735x05 are expected to be brought back on line in July 2015. EW01x05 will continue to be evaluated in July 2015, and is expected to be brought back on line in August 2015.

Optimization Activities

No optimization activities were performed in May 2015.

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 15,782 pounds of GHG during June 2015. This amount is lower than the May 2015 amount of 18,495 pounds of GHG, which is due in part to the decreased runtime.

TABLE 4

Summary of Groundwater Analytical Data For May 2015 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	09 June 2015 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	0.17 J	ND	ND
1,1-Dichloroethane	5.0	0.50	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	3.3	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	57.9	0.24 J	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	ND	NM	NM

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

Notes:

J = analyte concentration is considered an estimated value 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

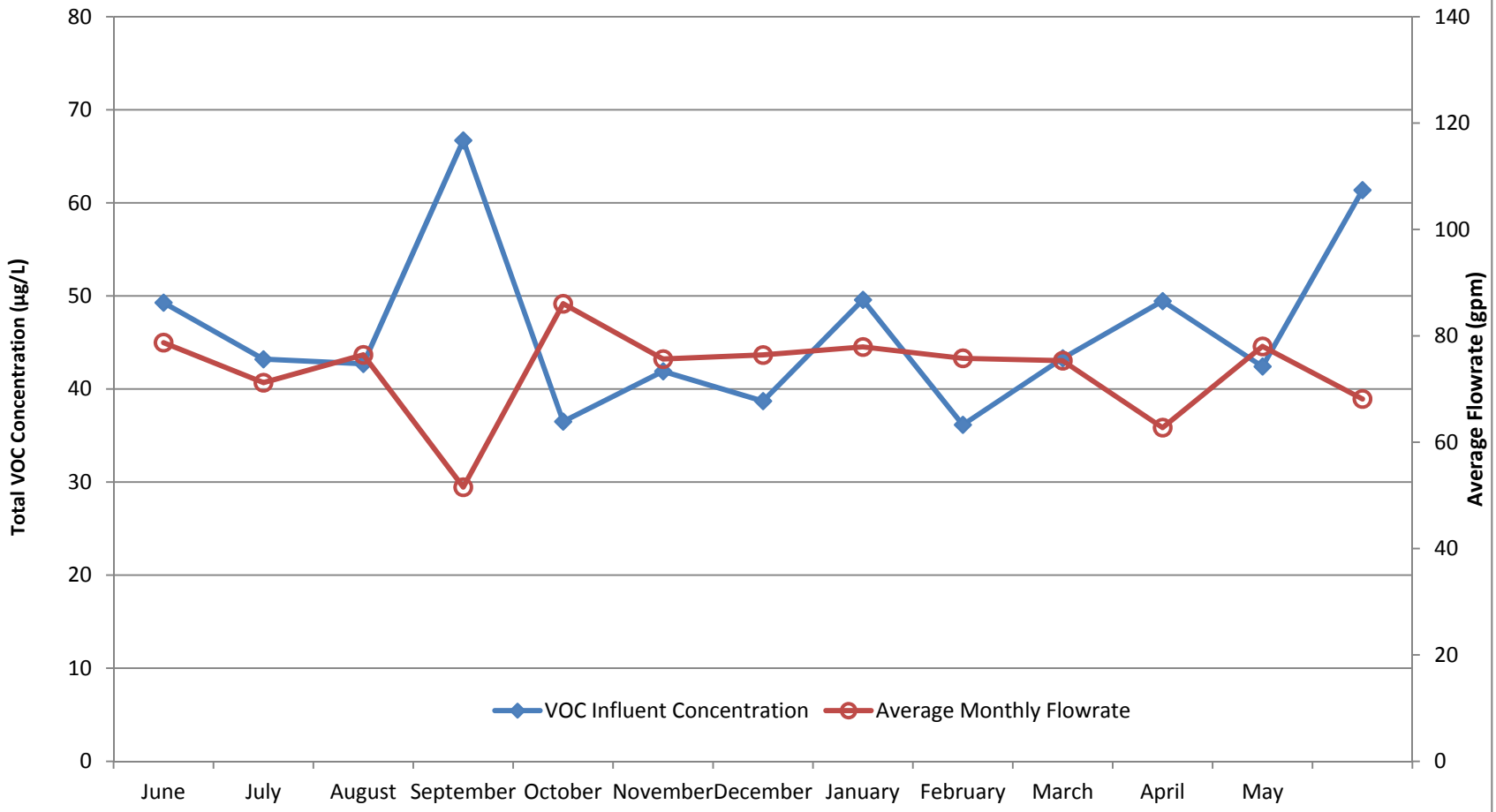
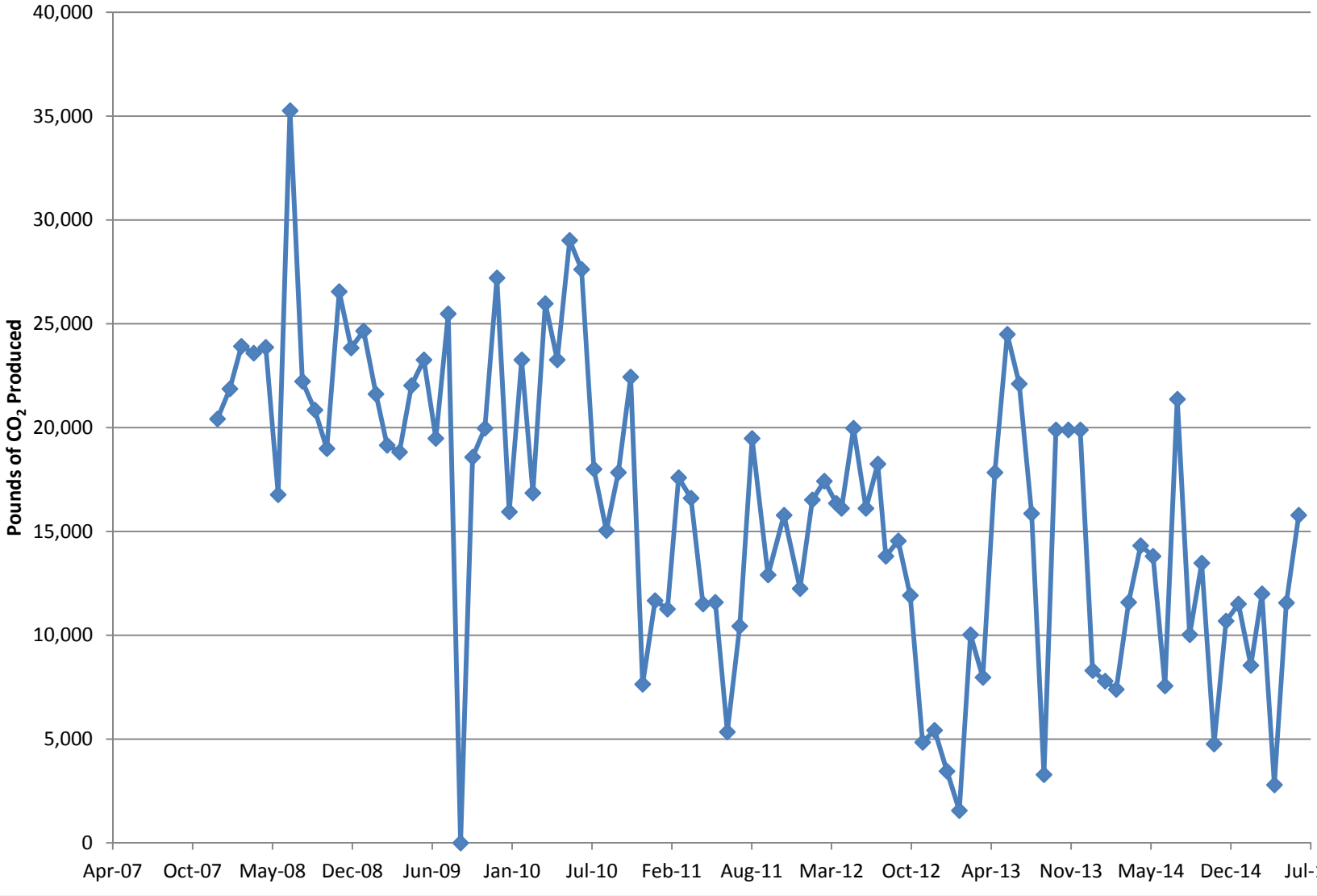


Figure 2

Equivalent Pounds of CO_2 Produced by the South Base Boundary Groundwater Treatment Plant



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 191 **Reporting Period: 29 May 2015 – 30 June 2015 -** **Date Submitted: 15 July 2015**

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 June 2015 reporting period.

Table 1 – Operations Summary – June 2015

Initial Data Collection:	05/29/2015 13:00	**Final Data Collection:**	06/30/2015 13:00		
Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	768 hours*	**CGWTP:**	100%	**CGWTP:**	3,097* kWh (4,243 lbs CO_2 generated[a])

Gallons Treated: **1.51 million gallons***

Gallons Treated Since January 1996: **513 million gallons**

VOC Mass Removed from groundwater:

3.40 lbs[b]

VOC Mass Removed Since January 1996:

2,723 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $806[c]

Monthly Cost per Pound of Mass Removed: $811

* Values are assumed to be the same as those from May 2015. No data were collected during June 2015 for these parameters. July 2015 parameters will be inclusive and accurate.

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

[b] Calculated using June 2015 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)
EW01x16	16.9[b]
EW02x16	7.0[b]
EW03x16	1.0
EW605x16	6.8
EW610x16	2.8[b]
CGWTP	29.9

[a] Flow rates calculated by dividing total gallons processed by system operating time for the month. Values reported are estimated based on May 2015 calculations, which had a similar run time to June 2015.
[b] Flow rate based on instantaneous, beginning of the month reading for May 2015.

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[a]		Restart[a]		Cause
	Date	Time	Date	Time	
CGWTP					
	NA	--			

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

Summary of O&M Activities

Monthly groundwater samples were collected at the CGWTP on 9 June 2015. Sample results are presented in Table 4. The total VOC concentration (271.1 µg/L) in the June 2015 influent sample has remained consistent with the May 2015 sample (272.3 µg/L). Vinyl chloride was detected at a concentration of 0.32 J µg/L after the first carbon vessel, 0.62 J µg/L after the second carbon vessel, and 0.24 J µg/L at the effluent sampling location. The concentration of vinyl chloride at the effluent location in June 2015 was less than half of the effluent limitation of 0.5 µg/L.

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 flow rate through the treatment plant remained consistent in June 2015 at 32.7 gpm, up from 29.9 in May 2015.

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 June 2015, and was brought back on line from 5 June to 19 June 2015, then turned off again. The bioreactor is scheduled to be brought back online on 3 July 2015.

Optimization Activities

No optimization activities occurred at the CGWTP in May 2015.

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 4,243 pounds of GHG during June 2015. This is consistent with the May 2015 amount.

TABLE 4
Summary of Groundwater Analytical Data for June 2015 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	9 June 2015 (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	57.2	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	0.5	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	0.54	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	206	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	2.8	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.23 J	0.32 J	0.62 J	0.24 J
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 Suspended Solids (mg/L)	NA	10	0	ND	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

NM = not measured

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	22 April 2014	28 April 2014
	12 May 2014	12 May 2014
	6 June 2014	20 June 2014
	3 July 2014	24 July 2014
	01 August 2014	15 August 2014
	01 September 2014	12 September 2014
	26 September 2014	30 September 2014[a]
	24 October 2014	7 November 2014
	21 November 2014	4 December 2014
	19 December 2014	January 2, 2015
	16 January 2015	29 January 2015
	13 February 2015	27 March 2015
	10 April 2015	24 April 2015
	8 May 2015	22 May 2015
	5 June 2015	19 June 2015

[a] = DP039 Bioreactor turned off on 30 September 2014 to replace hose.
CGWTP = Central Groundwater Treatment Plant
MW = Monitoring Well

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

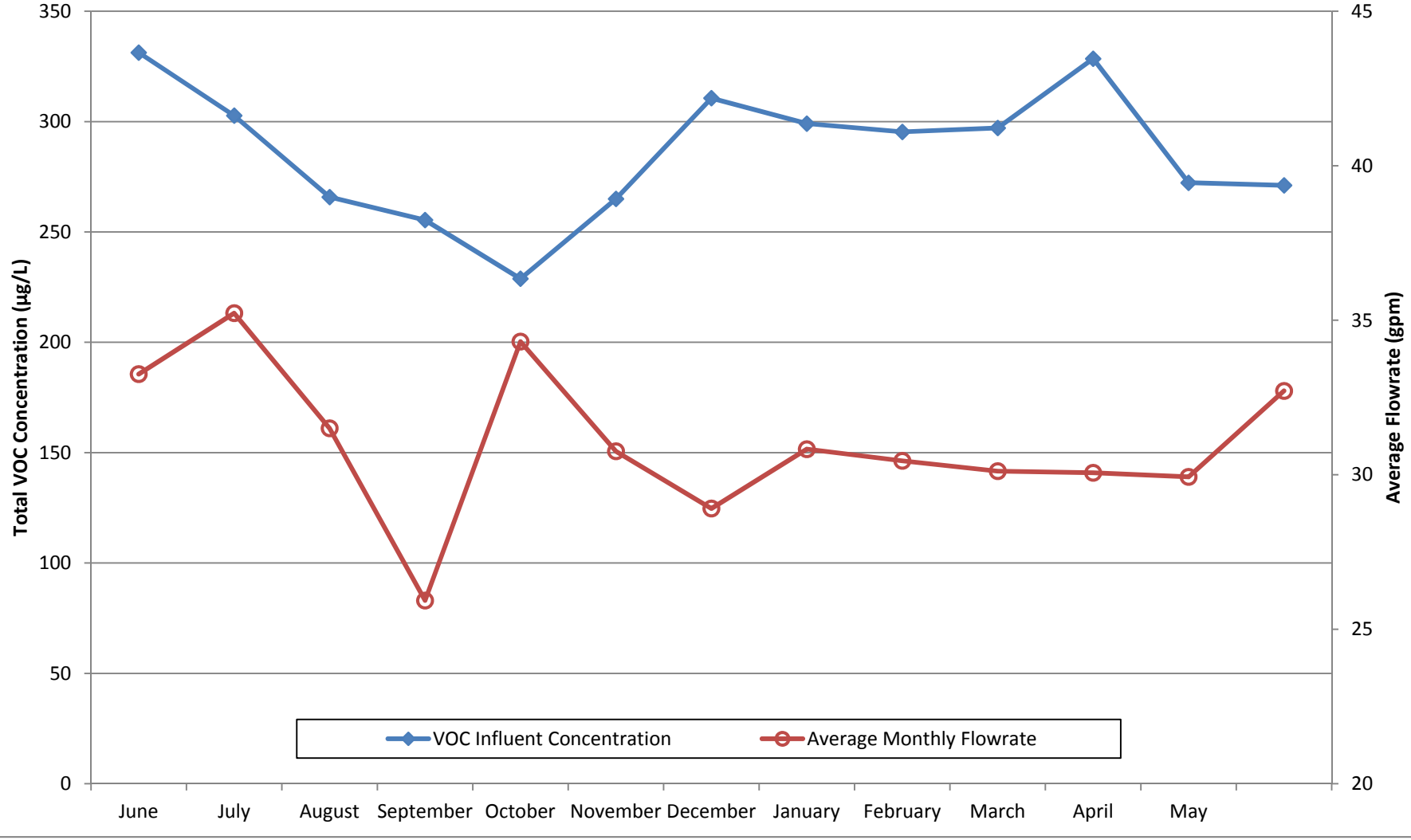
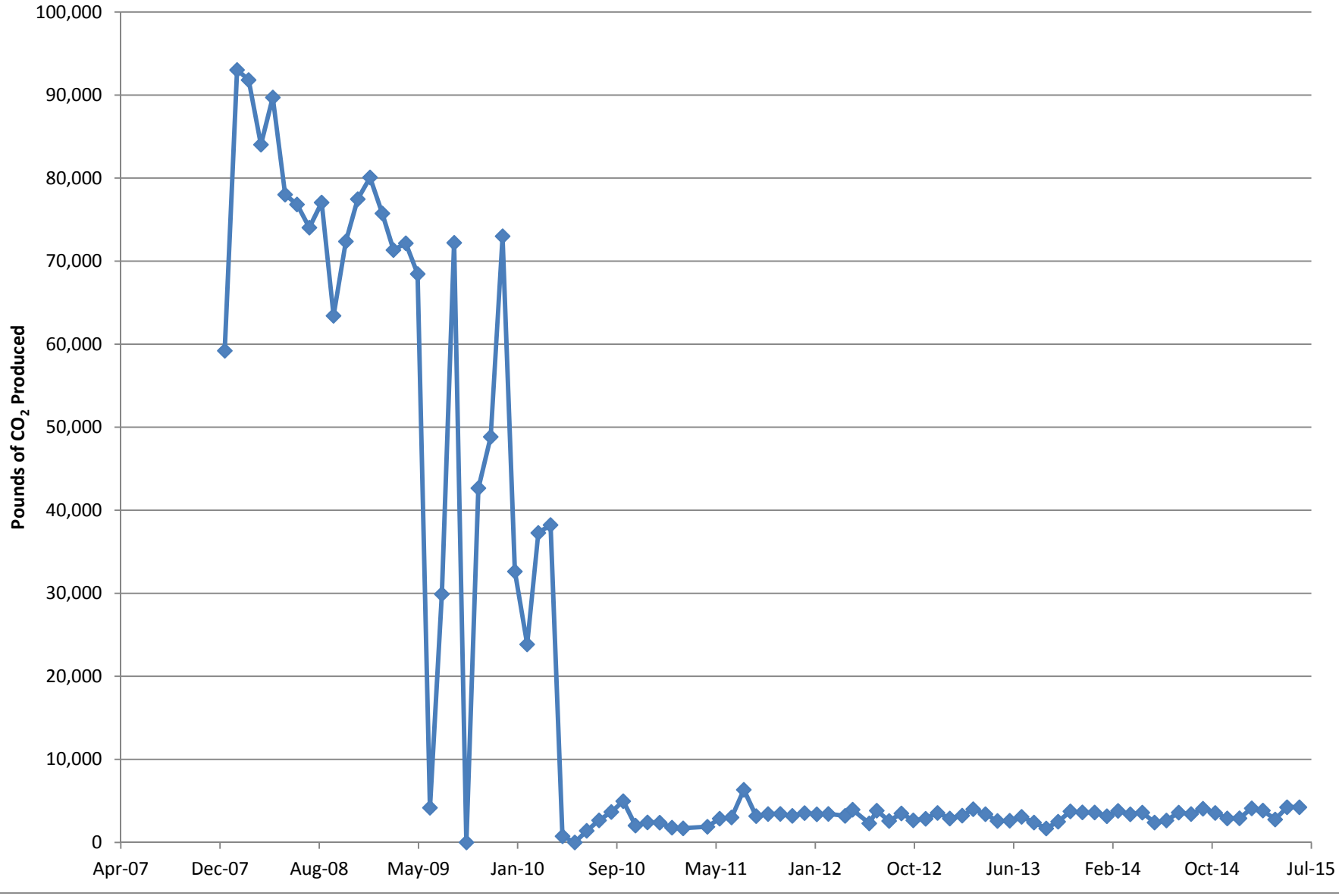


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



Subarea LF007C Groundwater Treatment Plant Monthly Data Sheet

Report Number: 145 **Reporting Period: 2 June 2015 – 8 July 2015** **Date Submitted: 15 July 2015**

This monthly data sheet presents information regarding the Subarea LF007C Groundwater Treatment Plant (LF007CGWTP) and associated remedial process optimization (RPO) activities.

System Metrics

Table 1 presents operational data from the June 2015 reporting period:

Table 1 – Operations Summary – June 2015

Initial Data Collection:	6/2/2015 13:20		**Final Data Collection:**	7/8/2015 9:22	
Operating Time:		Percent Uptime:		Electrical Power Usage[a]:	
LF007CGWTP:	549 hours	**LF007CGWTP**	64%	**LF007CGWTP:**	0 kWh
Gallons Treated: **143,774 gallons**			Gallons Treated Since March 2000: **84.2 million gallons**		
Volume Discharged to Duck Pond: **143,774 gallons**			Volume Discharge to Storm Drain: **0 gallons**		
VOC Mass Removed: **2.19×10^{-2} pounds**[b]			VOC Mass Removed Since March 2000: **174.33 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] The LF007CGWTP operates on solar power only.
[b] VOCs from June 2015 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 – LF007CGWTP Average and Total Flow Rates – June 2015

Location	Average Flow Rate (gpm)[a]	Total Gallons Processed (gallons)
EW614x07	4.35	143,368
EW615x07[b]	0	0
NGWTP	**4.37**	**143,774**

[a] Average flow rate calculated by dividing the total gallons processed collected from wellhead totalizers by the hours recorded by the system hour meter.
[b] Extraction well currently offline due to insufficient battery power.
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	
NGWTP	2 December 2014	10:00	2 June 2015	13:20	Shut down due to vernal pools. Restarted when dry.
NGWTP	27 June 2015	9:00	8 July 2015	9:22	System shut down due to water in sump.

-- = Time not recorded

[a] Shutdown and restart times estimated based on field notes

LF007CGWTP = Subarea LF007C Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 9 June 2015 sampling event are presented in Table 4. 2-butanone (12.4 µg/L, not shown in Table 4), acetone (4.1 J µg/L, not shown in Table 4), and TCE (1.8 µg/L) were detected at the influent sample location. No contaminants were detected at either the midpoint or effluent sampling locations.

The LF007CGWTP (formerly referred to as the North Groundwater Treatment Plant) was brought back on line on 2 June 2015 after having been taken off line in December 2014 when vernal pools formed at Subarea LF007C.

Figure 1 presents a chart of influent concentrations (total VOCs) at the NGWTP versus time for the past twelve months. Analytical data (Table 4) continue to indicate effective treatment of the influent process stream with only two (2) operating GAC vessels online.

The average flow rate through the NGWTP in June 2015 (4.37 gpm) increased from the flow rate measured in November 2014 (2.7 gpm). The June 2015 flow rate was consistent with previous flow rates observed in October and November 2015.

Optimization Activities

No optimization activities were performed during June 2015.

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 and LF007CGWTP. The LF007CGWTP is now a solar-only operated treatment system and no longer generates GHG.

TABLE 4
Summary of Groundwater Analytical Data for June 2015 – Subarea LF007C Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	9 June 2015 (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	ND	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	1.8	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
LF007CGWTP Total VOC Influent Concentrations and Average Flowrate
Twelve Month History
Travis Air Force Base, California

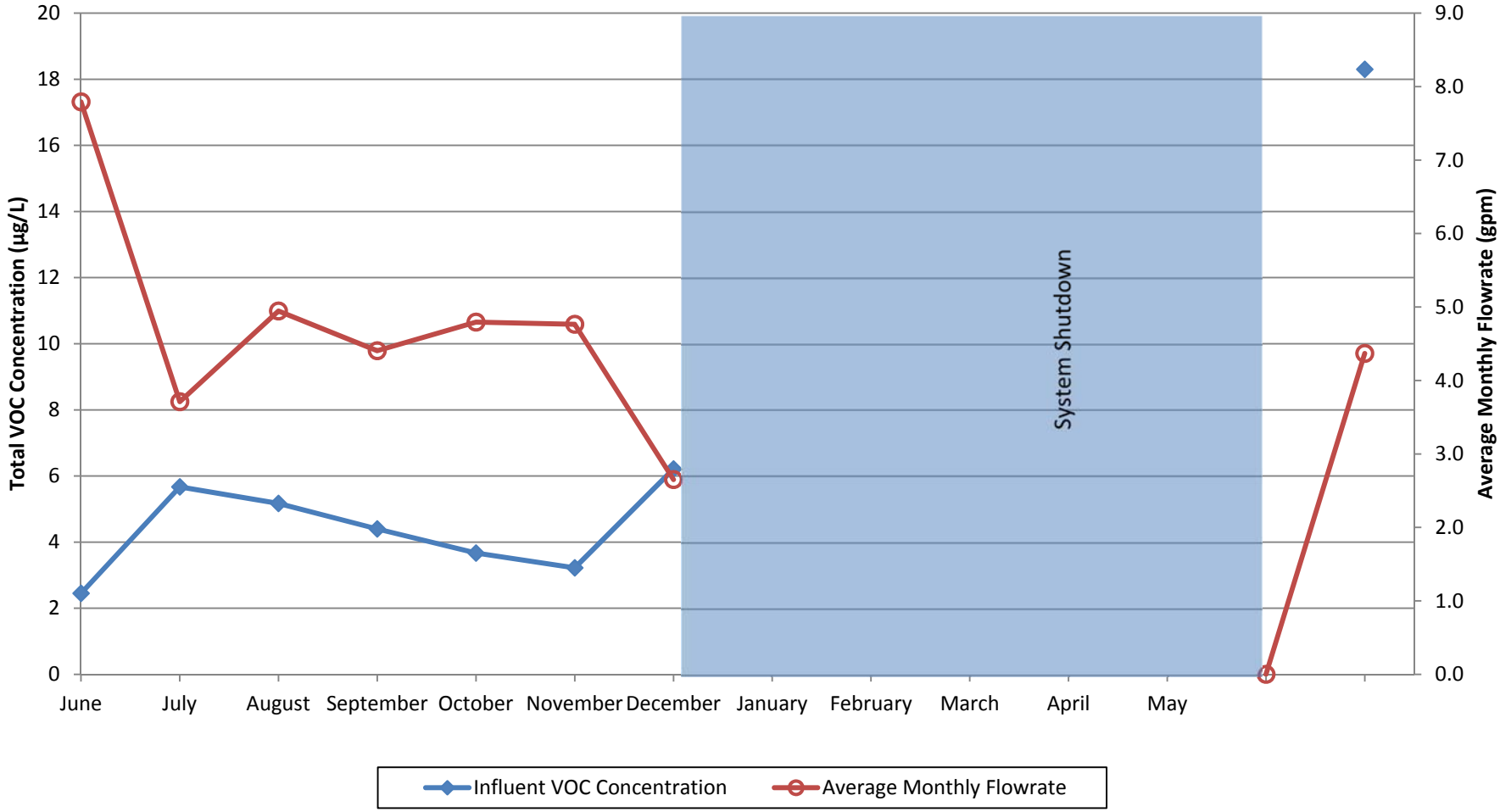
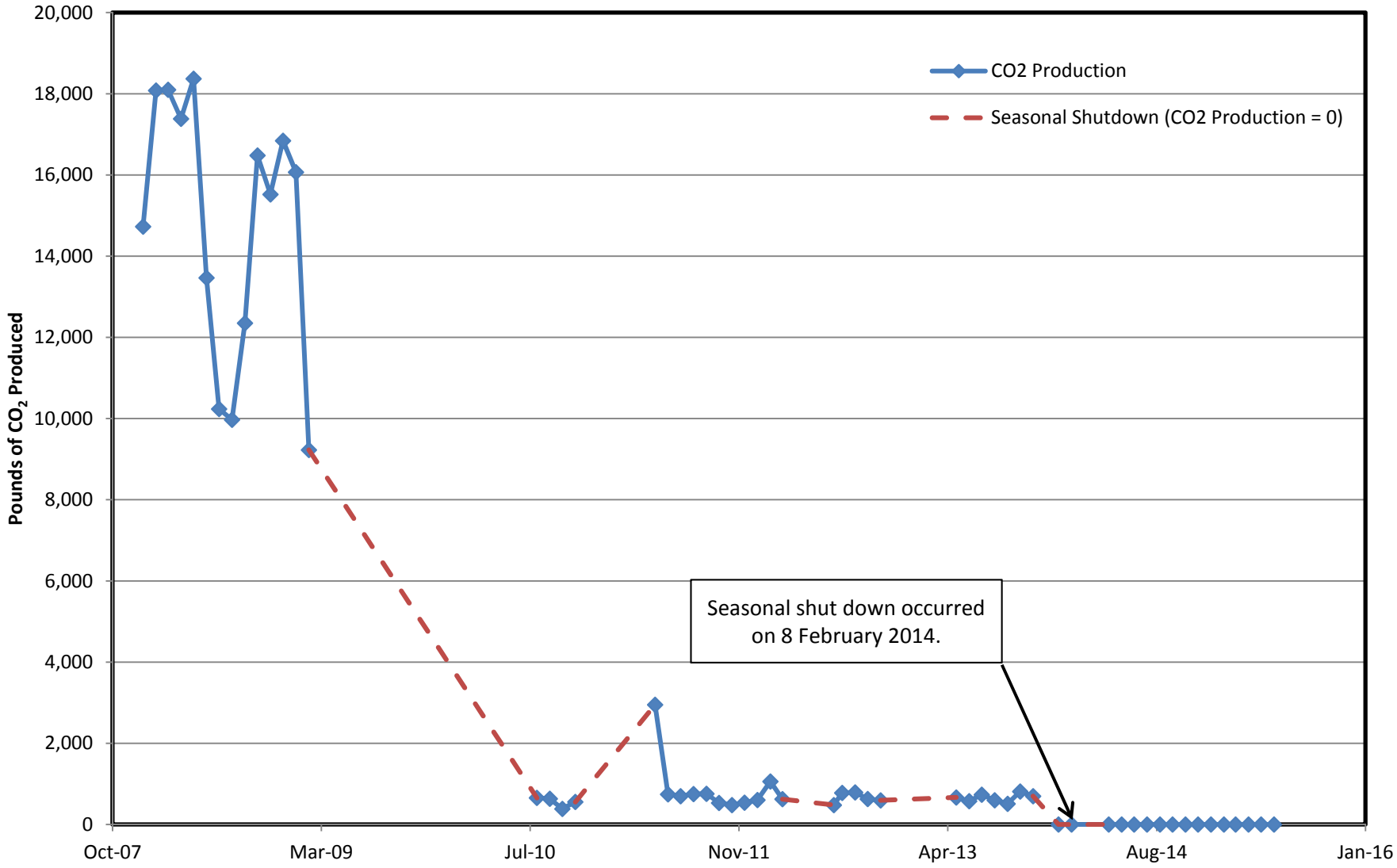


Figure 2

Equivalent Pounds of CO2 Produced by the Subarea LF007C 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: 052 **Reporting Period: 29 May 2015 – 30 June 2015** **Date Submitted: 15 July 2015**

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

System Metrics

Table 1 presents operation data from the June 2015 reporting period.

Table 1 – Operations Summary – June 2015

Initial Data Collection:	05/29/2015 9:00	**Final Data Collection:**	06/30/2015 09:00
Operating Time:		Percent Uptime:	Electrical Power Usage:
ST018GWTP: 768 hours*		**ST018GWTP:** 100%	**ST018GWTP:** 151 kWh* (207 lbs CO_2 generated[a])
Gallons Treated: **256,870 gallons***		Gallons Treated Since March 2011: **7.5 million gallons**	
Volume Discharged to Sanitary Sewer: **256,870 gallons**		Final Totalizer Reading: **7,644,570 gallons***	
Cumulative Volume Discharged to Sanitary Sewer since 1 November 2014: **1,261,485 gallons**			
BTEX, MTBE, TPH Mass Removed: **0.36 lbs**[b]		BTEX, MTBE, TPH Mass Removed Since March 2011: **31.7 lbs**	
MTBE (Only) Removed: **0.21 lbs**[b]		MTBE (Only) Mass Removed Since March 2011: **7.3 lbs**	
Rolling 12-Month Cost per Total Pounds of Mass Removed: $21,336[c]			
Monthly Cost per Pound of Mass Removed: $7,019			

* Values are assumed to be the same as those from April 2015, which had a similar run time as June 2015. No data were collected during June 2015 for these parameters. July 2015 parameters will be inclusive and accurate.

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

[b] Calculated using June 2015 effluent 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, b]	Hours of Operation
EW2014x18	1.65	768
EW2016x18	1.44	768
EW2019x18	1.42	768
Site ST018 GWTP	5.40	768

[a] Flow rates calculated by dividing total gallons processed by the hours of operation, from the totalizer and hour meter at each location.
[b] Flow rates estimated as the same values as from April 2015.
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	

[a] Shutdown and restart times estimated based on field notes
-- = time not known
ST018GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the ST018GWTP on 10 June 2015. Results are presented in Table 4. The complete June 2015 laboratory data report is available upon request.

The influent concentration for MTBE during the June 2015 sampling event was 100 µg/L, which is an increase from the May 2015 sample (30.9 µg/L). This is likely a direct result from the addition of extraction well EW2333x18, which was brought on line on 3 June 2015 (this well will be added to Table 2 next month). 1,2-DCA (1.3 µg/L) and acetone (2.7 J µg/L) were also detected in the influent sample. TPH-g and TPH-mo were also detected at the influent sample location at concentrations of 280 µg/L and 55 µg/L, respectively. These concentrations also represent an increase from previous months, which may also be due to the new extraction well being brought online. TPH-d and TPH-mo were detected at the effluent sample location at concentrations of 79 J µg/L and 300 µg/L, respectively. TPH (gas or diesel) is not typically detected at the effluent sampling location. Travis AFB will continue to monitor effluent contaminant concentrations and evaluate the condition of the carbon filter beds.

Figure 1 presents plots of flow rate and influent total contaminant (TPH-g, TPH-d, MTBE, and BTEX) and MTBE concentrations at the ST018GWTP versus time.

The ST018GWTP system was briefly taken offline in May 2015 during installation of extraction well EW2333x18, and the subsequent piping/conveyance tie-in to the ST018GWTP system. Extraction well EW2333x18 was brought online on 3 June 2015.

As shown on Figure 1, the average flow rate through the ST018GWTP has been seasonally variable with a slight increasing trend since the battery upgrade in 2013. June 2015 represents an increased amount of groundwater treated and discharged by the ST018GWTP from April 2015. This increase is due to the new extraction well EW2333x18 being brought online on 3 June 2015.

Optimization Activities

In order to decrease the time needed to meet the MTBE cleanup goal of the ST018GWTP, the system was optimized in March through June 2015 by the installation of an additional extraction well in the central portion of the plume, where MTBE concentrations remain elevated. Extraction well EW2333x18 was installed in mid-March 2015; optimization activities continued throughout May 2015 with installation of the extraction well vault and tying into the existing system. Trenching for the piping and electrical connections occurred from 4 May through 11 May 2015 and the solar control panel and electrical connections were completed on 19 May 2015. Extraction well EW2333x18 was brought online on 3 June 2015.

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 67 pounds of GHG during June 2015, which consistent with the April 2015 amount (the treatment plant also had 100 percent uptime in April 2015). The amount of water treated in June 2015 (256,870 gallons) was also consistent with the April 2015 amount. The amount of GHG produced during June was representative of typical values observed with months of 100 percent uptime. Figure 2 presents the historical GHG production from the ST018GWTP. The overall GHG generation has been decreasing since a 2014 peak in March, 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 June 2015 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	10 June 2015 (µg/L)			
				Influent	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
MTBE	6,400	0.5	0	100	NM	NM	ND
Benzene	25,000[a]	0.17	0	ND	NM	NM	ND
Ethylbenzene	25,000[a]	0.22	0	ND	NM	NM	ND
Toluene	25,000[a]	0.14	0	ND	NM	NM	ND
Total Xylenes	25,000[a]	0.23 – 0.5	0	ND	NM	NM	ND
Total Petroleum Hydrocarbons – Gasoline	50,000[b]	8.5	0	55	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50,000[b]	50	0	110 J	ND	NM	79 J
Total Petroleum Hydrocarbons – Motor Oil	100,000	160	0	280	270	NM	300

* 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
ST18GWTP Total VOC and MTBE Influent Concentrations Versus Time
Travis Air Force Base, California

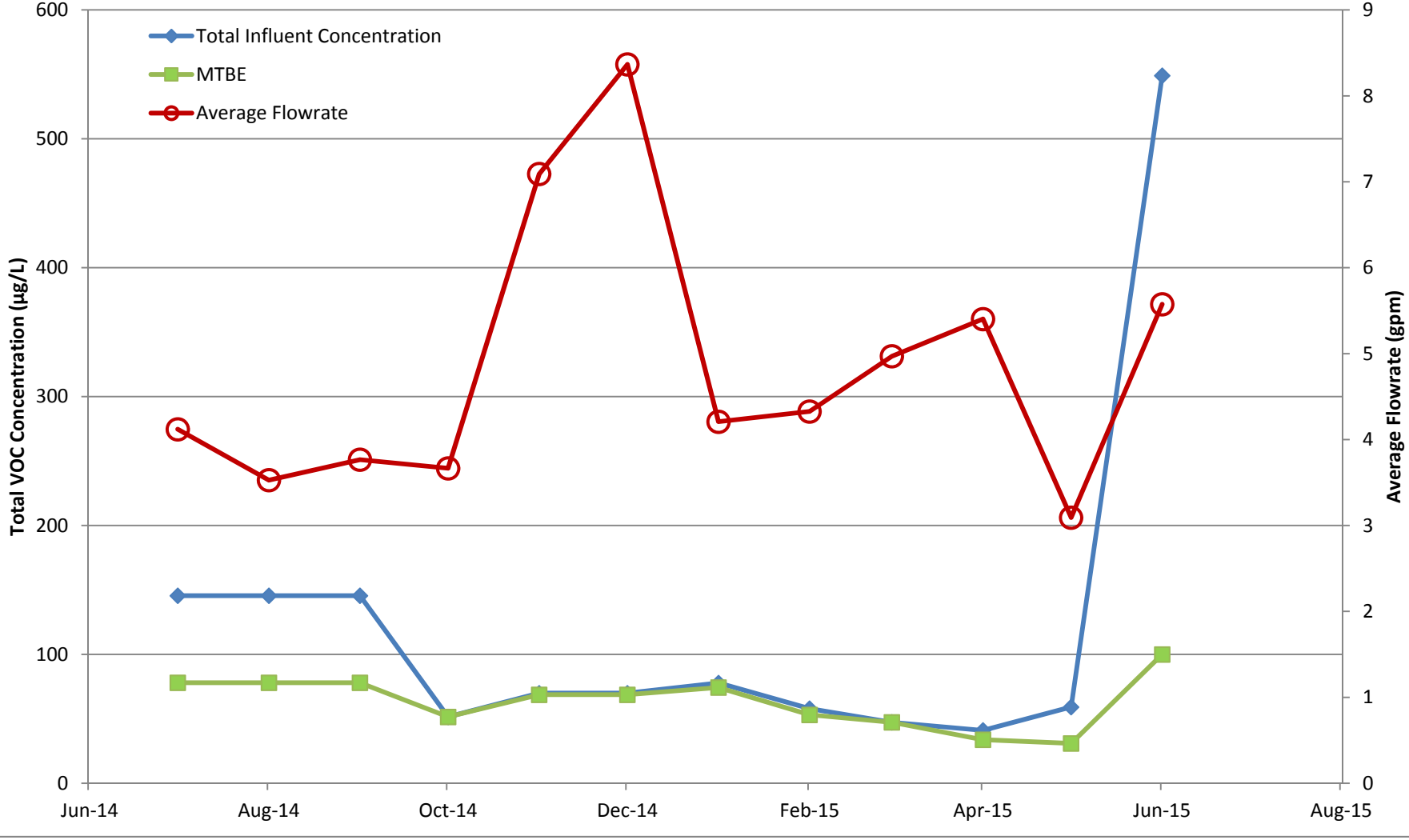
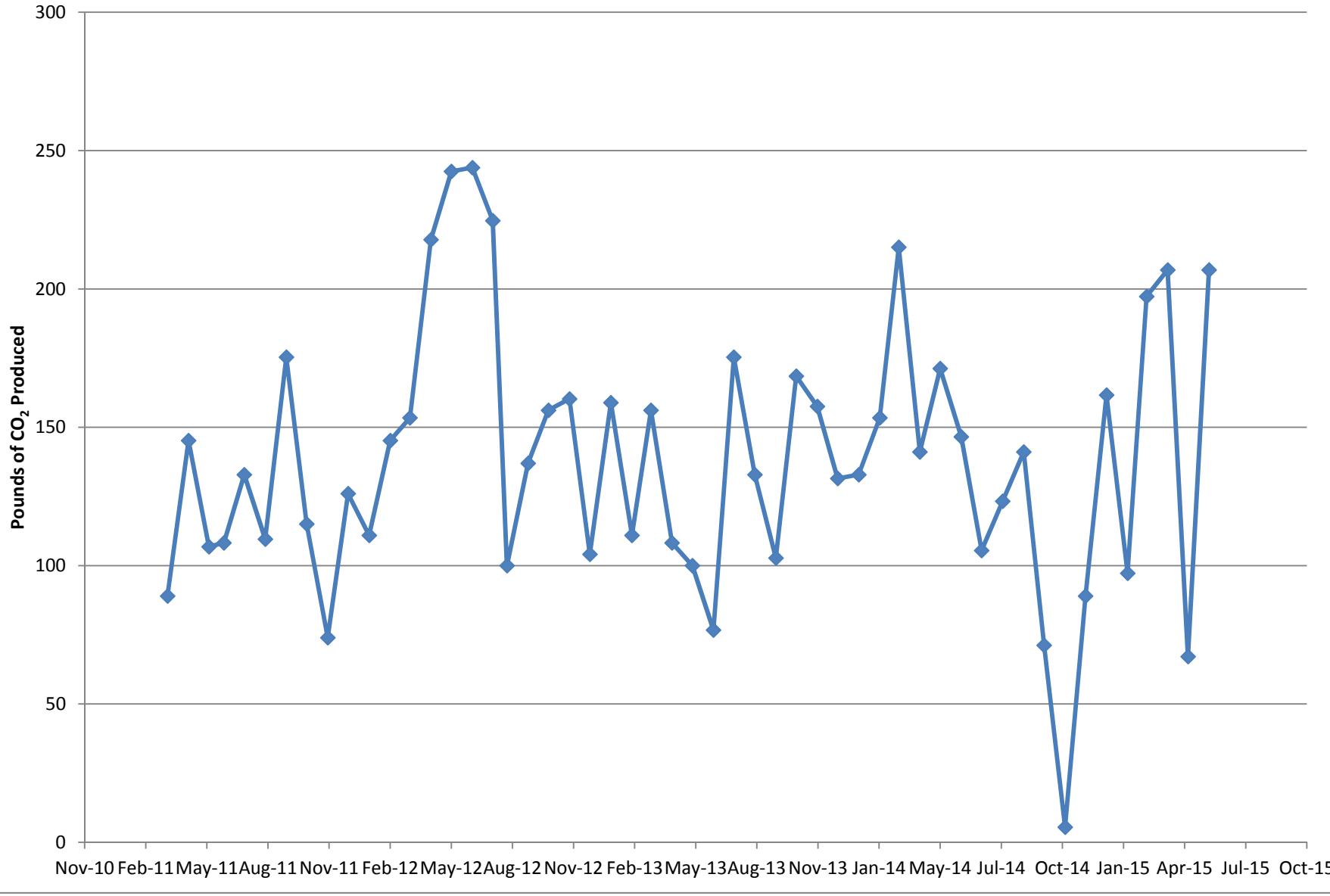


Figure 2

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



Travis AFB
Restoration Program

Program Overview

RPM Meeting

July 15, 2015

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 Technology Demonstration Work Plan***
- ***CG508 Site Investigation/Site Closure Request Report***
- ***2014 Annual CAMU Monitoring 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
- 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***

Documents In-Progress

CERCLA

- SD031 Technology Demonstration Construction Completion Report
- DP039 GW RD/RA Work Plan
- 2014 Annual GRISR

Documents In-Progress

POCO

- None

Field Work In-Progress

- Oil Water Separators Site Investigation
- FT005 Injection Well Installation
- ***FT004 Well Installation***
- ***DP039 Well Installation***

Documents Planned

CERCLA

• Community Involvement Plan	Jul
• Sites SD036 and SD037 Remedial Action Construction Completion Report	Jul
• ROD Amendment for NEWIOU Soil, Sediment, and Surface Water ROD	TBD
• ROD Amendment for WABOU Soil ROD	TBD
• Site SS016 Groundwater Remedial Action Construction Completion Report	Aug
• Site SS015 Groundwater Remedial Action Construction Completion Report	Sep
• Site SS030 Remedial Action Construction Completion Report	Oct

Documents Planned

POCO

- ST018 POCO Construction Completion Report Aug

Field Work Planned

CERCLA

- SS030 Trench/Conveyance/Power Installation — Jul
- FT005 Trench Installation — Jul
- FT004 Trench/Conveyance/Power Installation — Aug
- FT004 EVO Injection — Aug
- FT005 EVO Injection — Aug
- DP039 Infiltration Trench Installation — Aug
- DP039 EVO Injection — Sep

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

Field Work Planned

POCO

- 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 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