Final

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

18 September 2013, 0930 Hours

Mr. Glenn Anderson, Travis Air Force Base (AFB), conducted the Restoration Program Manager's (RPM) meeting on 18 September 2013 at 0930 hours, at Travis AFB, California. Attendees included:

• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Gregory Parrott	Travis AFB
• Jim Spellman	Travis AFB
• David Elias (via phone)	California Regional Water Quality Control Board (RWQCB)
• Jose Salcedo	California Department of Toxic Substances Control (DTSC)
• Nadia Hollan Burke	United States Environmental Protection Agency (USEPA)
• Loren Krook	CH2M HILL
• Mike Wray	CH2M HILL

Handouts distributed at the meeting, and presentations included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting and Document Schedule
• Attachment 3	SBBGWTP Monthly Data Sheet (August 2013)
• Attachment 4	CGWTP Monthly Data Sheet (August 2013)
• Attachment 5	NGWTP Monthly Data Sheet (August 2013)
• Attachment 6	ST018 Monthly Data Sheet (August 2013)
• Attachment 7	Presentation: Program Update: Activities Completed, In Progress and Upcoming

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 21 August 2013 RPM meeting minutes were approved and finalized as written.

Mr. Anderson announced that Mr. Smith and Mr. Linbrunner would not be attending this meeting; they were in Omaha to finalize the next PBC contract.

B. Action Item Review.

Action items from August were reviewed.

Action item 1 still open: Travis AFB to research beneficial reuse of treated water. AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a "net-zero policy" for the Air Force. Update, 16 January 2013: Mr. Duke said that an Air Force energy reduction contractor is looking into the cost of installing a pipe to convey treated water from the central plant to the duck pond. Update, 20 March 2013: Mr. Duke said Travis AFB is looking into energy management projects with respect to ways of reducing water usage. Due date changed to TBD. Update, 18 April 2013: Mr. Smith said that they have the attention of Civil Engineering Operations Flight regarding beneficial reuse. 18 September 2013: 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 17 October 2013 at 1400 hours. Mr. Anderson offered to reserve the room for earlier in the day if there is a need for Response to Comments (RTC) meetings for any documents.

Travis AFB Master Document Schedule

— Groundwater Record of Decision (ROD): No change to the schedule. This document will be discussed in the meeting that has been scheduled this afternoon.

— 3rd Five-Year Review: No change to the schedule. This document is also scheduled to be discussed in the afternoon post-RPM meeting.

— Potrero Hills Annex: (FS, PP, and ROD): No change to the schedule. Mr. Anderson said the RWQCB is still reviewing the documents.

— Old Skeet Range Action Memorandum: The Response to Comments and Final Due due dates were changed to reflect the actual dates. The final document was handed out during this RPM meeting.

— Subarea LF007C and Site SS030 Remedial Process Optimization Work Plan: No change to the schedule. Travis AFB is working on responding to EPA's

comments. RWQCB and DTSC indicated work plan is acceptable, and they have no comments.

— Quarterly Newsletter (October 2013): All new dates to reflect the 4th quarter. This newsletter will be supporting the October RAB meeting.

— Groundwater Remediation Implementation Status Report (GRISR): Agency Comments Due date changed to reflect the dates the comments were actually received. The subsequent dates were changed accordingly.

— Kinder Morgan LF044 Land Use Control Report: The Draft to Agencies was changed to reflect the actual date the report went out. The subsequent dates were changed accordingly. The Draft to Agencies report was handed out during this meeting. Mr. Anderson said this is an informational document and is at the bottom of the document review priority list.

— Pre-Design Site Characterization of SS029 Report: No change to the schedule. Travis AFB is working on the agency comments.

— Old Skeet Range Removal Action Work Plan: New document. Travis AFB would like to receive agencies comments by 30 September 2013. Mr. Duke added we need to obtain dig permits and get in the field before the rainy season starts.

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 3.7 million gallons of groundwater were extracted and treated during the month of August 2013. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 86.8 gallons per minute (gpm). Electrical power usage was 11,580 kWh and approximately 15,865 pounds of CO_2 were created (based on DOE calculation). Approximately 0.68 pounds of volatile organic compounds (VOCs) were removed in August. The total mass of VOCs removed since startup of the system is 440 pounds.

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

The data sheets reflect the July results. Access to SBBGWTP was restricted during the month of August due to repair work on Perimeter Road. Monthly groundwater samples could not collected in August. (see attachment for details)

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.2 million gallons of groundwater extracted and treated during the month of August 2013. All treated water was discharged to the storm drain. The average flow rate for the CGWTP was 28.8 gpm. Electrical power usage was 1,745 kWh for all equipment connected to the Central plant, and approximately 2,391 pounds of CO_2 were generated. Approximately 3.35 pounds of VOCs were removed from groundwater by the treatment plant in August. The total mass of VOCs removed since the startup of the system is 11,340 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 August.

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

North Groundwater Treatment Plant (see Attachment 5)

The North Groundwater Treatment Plant (NGWTP) performed at 100% uptime with approximately 13,490 gallons of groundwater extracted and treated during the month of August 2013. The average flow rate at the NGWTP was 0.11 gpm and electrical power use was 436 kWh for all the equipment connected to the North plant; approximately 597 pounds of CO_2 was generated. Approximately $4.2x10^{-4}$ pounds of VOCs were removed from the groundwater in August. 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 August.

The NGWTP was turned off last Friday at the request of Travis AFB. The valving had failed at the Duck Pond, and a coffer dam was built around it until the valving is repaired. Mr. Parrott said long term project is to dredge the pond to make it deeper.

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

The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 76.5% uptime with approximately 146.1 thousand gallons of groundwater extracted and treated during the month of August 2013. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 4.40 gpm. Electrical power usage for the month was 97 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 133 pounds of CO_2. Approximately 0.22 pounds of BTEX, MTBE and TPH were removed from

groundwater in August from the treatment plant. The total BTEX, MTBE and TPH mass removed since the startup of the system is 24.9 pounds.

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

Optimization Activities for ST018: On 28 August 2013 the second and third granular activated carbon (GAC) vessels were replaced. These two older GAC vessels had begun to leak due to age. The monthly samples collected and the results received were before the carbon change out. Mr. Wray pointed out an increase in the groundwater flow rate due to the new batteries that were installed. (see attachment for details)

Mr. Elias said he is very impressed regarding the up-time with Travis AFB treatment plants. He also asked if Travis AFB has conducted an evaluation of the pump and treat systems and "beneficial use exception". It appears like a lot of energy is going into the treatment plants and, if Travis AFB looked into beneficial use exception (risk based) then perhaps Travis AFB could cleanup to something other than background or MCL levels. Mr. Anderson said that Travis AFB had looked into beneficial use exception and it was originally included in the Technical and Economic Analysis report (TEFA). Mr. Friedman of the RWQCB requested it to be removed from the TEFA. Mr. Elias said he would talk with Mr. Friedman.

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: Old Skeet Range Action Memorandum.

Newly Completed Field Work: Electrical repairs to site SS029 extraction system, Site ST018 carbon vessels upgrade.

In-Progress Documents: Groundwater Record of Decision, 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, Kinder Morgan LF044 Land Use Control Report.

In-Progress Field Work: Pump repairs to Site SS016 (well EW610x16), Site SS030 optimization upgrades, SCADA upgrade for CGWTP and SBBGWTP.

Upcoming Documents: None.

Upcoming Field Work: LF007C optimization upgrades.

4. New Action Item Review

No new action items.

5. PROGRAM/ISSUES/UPDATE

Mr. Anderson reiterated that Mr. Smith, Mr. Linbrunner and Mr. Hall are in Omaha going over some issues that need to be resolved with the new PBC contract and they should be finished up by tomorrow.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Research beneficial reuse of treated water and give update. Update (13 June 2012): AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a "net-zero policy" for the Air Force. Update (15 August 2012): Mr. Duke reported that irrigation lines were destroyed by a communications contractor and not repaired because the system was inactive. Travis AFB will get the system design information to determine if the trunk line is still intact and repairs can be made to get the system running. Update, 16 January 2013: Mr. Duke said that an Air Force energy reduction contractor will look into the cost of installing a pipe to convey treated water from the central plant to the duck pond. Update, 20 March 2013: Mr. Duke said Travis AFB is looking into energy management projects with respect to ways of reducing water usage. Due date changed to TBD.	TBD	Open

2.	Travis AFB	Smith/Travis AFB will contact AMEC to provide an update to regulatory agencies on the LF044 Land Use Control Report.	N/A	Closed

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

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE

3. PRESENTATION

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

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

NOTES: AFTER THE RPM MEETING WE WILL HOLD SEVERAL SEPARATE MEETINGS TO DISCUSS REGULATORY COMMENTS ON THE THIRD FIVE-YEAR REVIEW REPORT AND THE DRAFT GROUNDWATER ROD. TIME PERMITTING, WE MAY ALSO DISCUSS THE 2012 GRISR, THE SITE SS029 PRE-DESIGN CHARACTERIZATION REPORT, AND THE OLD SKEET RANGE REMOVAL ACTION WORK PLAN. ALL PARTICIPANTS ARE WELCOME TO ATTEND.

(2013)

Annual Meeting and Teleconference Schedule

Monthly RPM Meeting[1] (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 10:00 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-16-13	—	—
02-20-13	—	—
03-20-13	—	—
04-18-13 (Thur 2:00 PM)	—	04-18-13
05-22-13	—	—
Cancelled	—	—
07-17-13	—	—
08-21-13	—	—
09-18-13[2]	—	—
10-17-13 (Thur 2:00 PM)[3]	—	10-17-13
11-20-13	—	—
—	—	—

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

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

[3] Note: Should additional time be required to discuss GW ROD issues, a separate meeting with EPA (State is invited) may be held prior to 2:00 pm

PRIMARY DOCUMENTS		
Life Cycle	**Groundwater Record of Decision Travis, Glenn Anderson CH2M HILL, Leah Waller**	**3rd Five-Year Review Travis AFB, Glenn Anderson J.C. Palomar, Chris Bason**
Scoping Meeting	**01-24-07 (11-30-11)**	**10-31-12**
Predraft to AF/Service Center	11-28-12	03-08-13
AF/Service Center Comments Due	12-12-12	03-27-13
Draft to Agencies	01-02-13[1]	05-21-13
Draft to RAB	01-02-13[1]	05-21-13
Agency Comments Due	03-03-13 (04-05-13)	07-23-13
Response to Comments Meeting	**TBD[2]**	**08-06-13**
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	TBD	08-20-13
Draft Final Due	TBD	08-26-13
Final Due	TBD	09-25-13

[1]Sent Appendix A to agencies for review on 07-31-13
[2] Pending Air Force legal review of responses to agency comments

Travis AFB Master Meeting and Document Schedule

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

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS		
Life Cycle	**MMRP** **Old Skeet Range Action Memorandum** **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**	**Subarea LF007C and Site SS030 Remedial Process Optimization Work Plan** **Travis AFB, Lonnie Duke** **CH2M HILL, Tony Chakurian**
Scoping Meeting	NA	NA
Predraft to AF/Service Center	01-10-13	07-19-13
AF/Service Center Comments Due	01-28-13	08-02-13
Draft to Agencies	02-20-13	08-09-13 (08-07-13)
Draft to RAB	02-20-13	08-09-13 (08-07-13)
Agency Comments Due	03-22-13 (04-08-13)	09-09-13
Response to Comments Meeting	**08-21-13**	**09-18-09**
Response to Comments Due	09-18-13	09-25-13
Draft Final Due	NA	NA
Final Due	09-18-13	09-25-13
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	**Quarterly Newsletters (October 2013)** **Travis, Glenn Anderson**	**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	03-28-13	NA
AF/Service Center Comments Due	NA	04-11-13 (04-18-13)	NA
Draft to Agencies	09-24-13	05-14-13	09-18-13
Draft to RAB	NA	05-14-13	09-18-13
Agency Comments Due	10-08-13	06-13-13 (07-03-13 & 09-06-13)	10-18-13
Response to Comments Meeting	**TBD**	**09-18-13**	**11-20-13**
Response to Comments Due	10-10-13	10-02-13	12-11-13
Draft Final Due	NA	NA	NA
Final Due	10-10-13	10-02-13	12-11-13
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS		
Life Cycle	**Pre-Design Site Characterization of Site SS029** **Travis AFB, Lonnie Duke** **Tri-Hydro, Glenn Leong**	**Old Skeet Range Removal Action Work Plan** **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	06-27-13	05-21-13
AF/Service Center Comments Due	07-29-13	06-05-13
Draft to Agencies	08-21-13	08-30-13
Draft to RAB	08-21-13	08-30-13
Agency Comments Due	09-20-13	09-30-13
Response to Comments Meeting	**09-25-13**	**10-07-13**
Response to Comments Due	10-16-13	10-17-13
Draft Final Due	NA	NA
Final Due	10-16-13	10-17-13
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 156 **Reporting Period: 31 July 2013 – 30 August 2013** **Date Submitted: 16 September 2013**

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

System Metrics

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

Table 1 – Operations Summary – August 2013

Initial Data Collection:	07/31/2013 16:00	**Final Data Collection:**	08/30/2013 9:15
Operating Time:		Percent Uptime:	
SBBGWTP:	713 hours	**SBBGWTP:**	100 %
Electrical Power Usage:			
SBBGWTP:	11,580 kWh (15,865 lbs CO_2 generated[a])		
Gallons Treated: **3.7 million gallons**		Gallons Treated Since July 1998: **829 million gallons**	
Volume Discharged to Union Creek: **3.7 million gallons**			
VOC Mass Removed: **0.68 lbs**[b]		VOC Mass Removed Since July 1998: **440 lbs**[b]	
Rolling 12-Month Cost per Pound of Mass Removed: $9,871[b,c]			
Monthly Cost per Pound of Mass Removed: $11,165[b,c]			

lbs = pounds

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

[b] Vehicle access was restricted to the SBBGWTP during August 2013. The VOC mass removed and operating costs have been estimated based on July 2013 EPA Method SW8260B analytical results.

[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. Monthly costs for July 2013 reported due to invoicing delay in August 2013.

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	5.1	EW736x05	Offline	EW01x29	2.1	EW01x30	2.7
EW02x05	1.7	EW737x05	Offline	EW02x29	Offline	EW02x30	2.6
EW03x05	Offline	EW742x05	Offline	EW03x29	4.5	EW03x30	1.4
EW731x05	Offline	EW743x05	Offline	EW04x29	Offline	EW04x30	23.9
EW732x05	Offline	EW744x05	Offline	EW05x29	7.5	EW05x30	19.7
EW733x05	Offline	EW745x05	Offline	EW06x29	Dry	EW06x30	Dry
EW734x05	4.5	EW746x05	Offline	EW07x29	Dry	EW711x30	16.2
EW735x05	11.0						
FT005 Total:	**22.3**			**SS029 Total:**	**14.1**	**SS030 Total:**	**66.5**

SBBGWTP Average Monthly Flow[c]: 86.8 gpm

[a] Extraction well flow rates are based on instantaneous weekly readings collected at the end of the month.
[b] The average 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.*

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

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

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
	None	NA			

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Vehicle access to the SBBGWTP was restricted during the month of August due to repair work on Perimeter Road. Monthly groundwater samples were not collected at the SBBGWTP in August 2013. Monthly sampling will resume when Perimeter Road is reopened.

Results of the July 2013 monthly sampling event have been used to approximate the VOC mass removed and operations and maintenance costs per mass removed for August. Monthly groundwater samples at the SBBGWTP were last collected on 16 July 2013. The results of the July sampling event are presented in Table 4. The total VOC concentration was 22.0 µg/L in the influent sample. 1,2-DCA (0.48 J µg/L), chloroform (0.18 J µg/L), cis-1,2-DCE (0.81 J µg/L), and TCE (20.5 µg/L) were detected at the influent sampling location in July 2013. Cis-1,2-DCE (0.42 J µg/L) and TCE (0.23 J µg/L) were also detected at the midpoint sampling location. 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 twelve (12) months prior to August 2013. The average flow rate at the SBBGWTP has increased since wiring repairs were completed at Sites SS029 and SS030. The average flow rate measured for this reporting period (86.8 gpm) has exceeded the average flow rate seen at the SBBGWTP during the month of August in 2011 (63.6 gpm) and 2012 (79.4 gpm). It is expected that the average flow rate will continue to increase consistent with seasonal trends.

Optimization Activities

No optimization activities were performed in August 2013.

Sustainability

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

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 15,865 pounds of GHG during August 2013. GHG production has decreased (from 22,112 pounds) since July 2013. This decrease is the result of a shorter reporting period and fewer gallons treated in August 2013.

TABLE 4
Summary of Groundwater Analytical Data for July 2013 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	16 July 2013[b] (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	0.18 J	ND	ND
1,1-Dichloroethane	5.0	0.50	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.48 J	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	0.81 J	0.42 J	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	20.5	0.23 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	20	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).

[b] The results of the most recent sampling event are provided as an estimate of concentrations present during August 2013. Routine monthly sampling will resume at the SBBGWTP when vehicle access to the SBBGWTP has been restored.

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

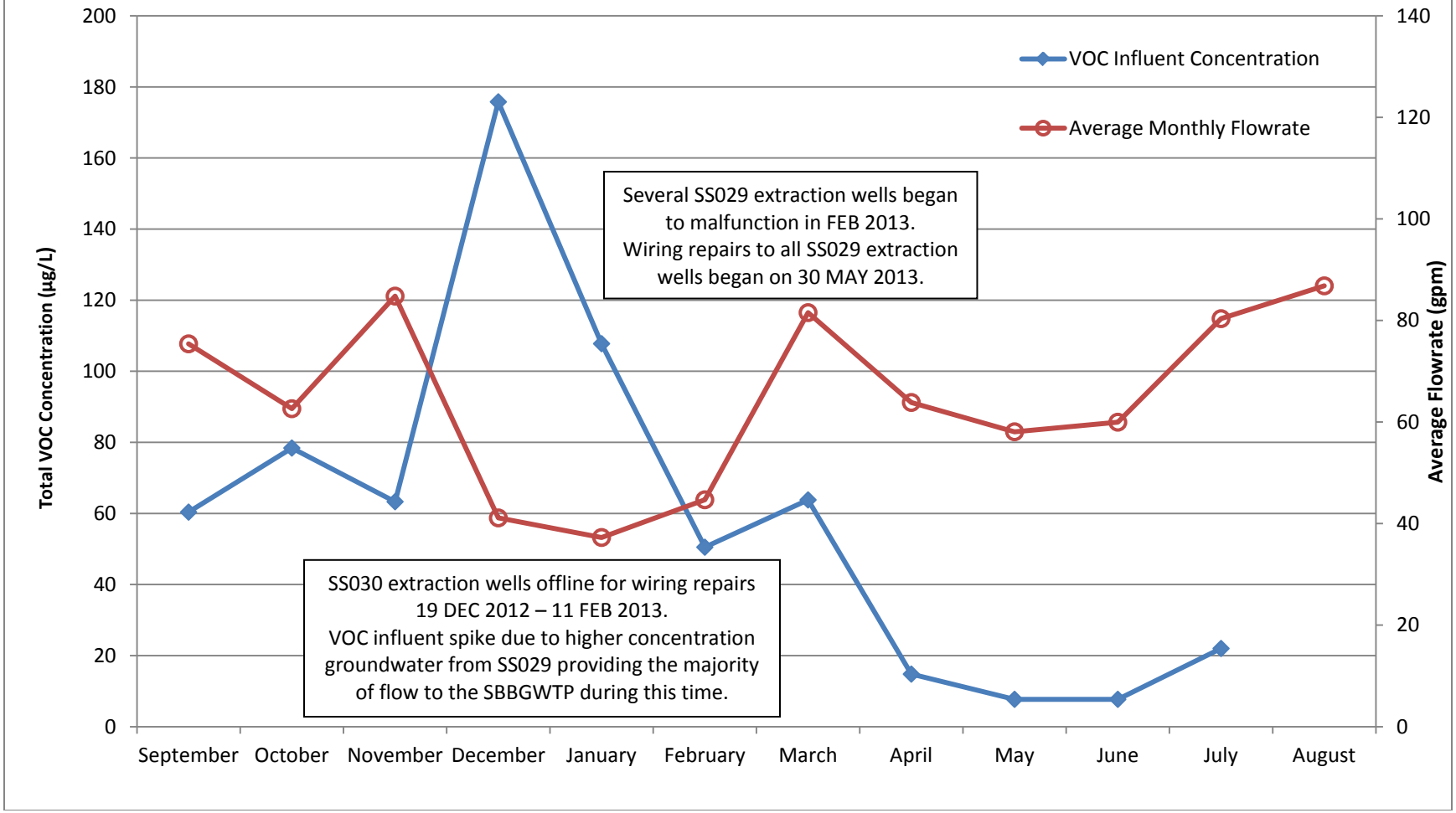
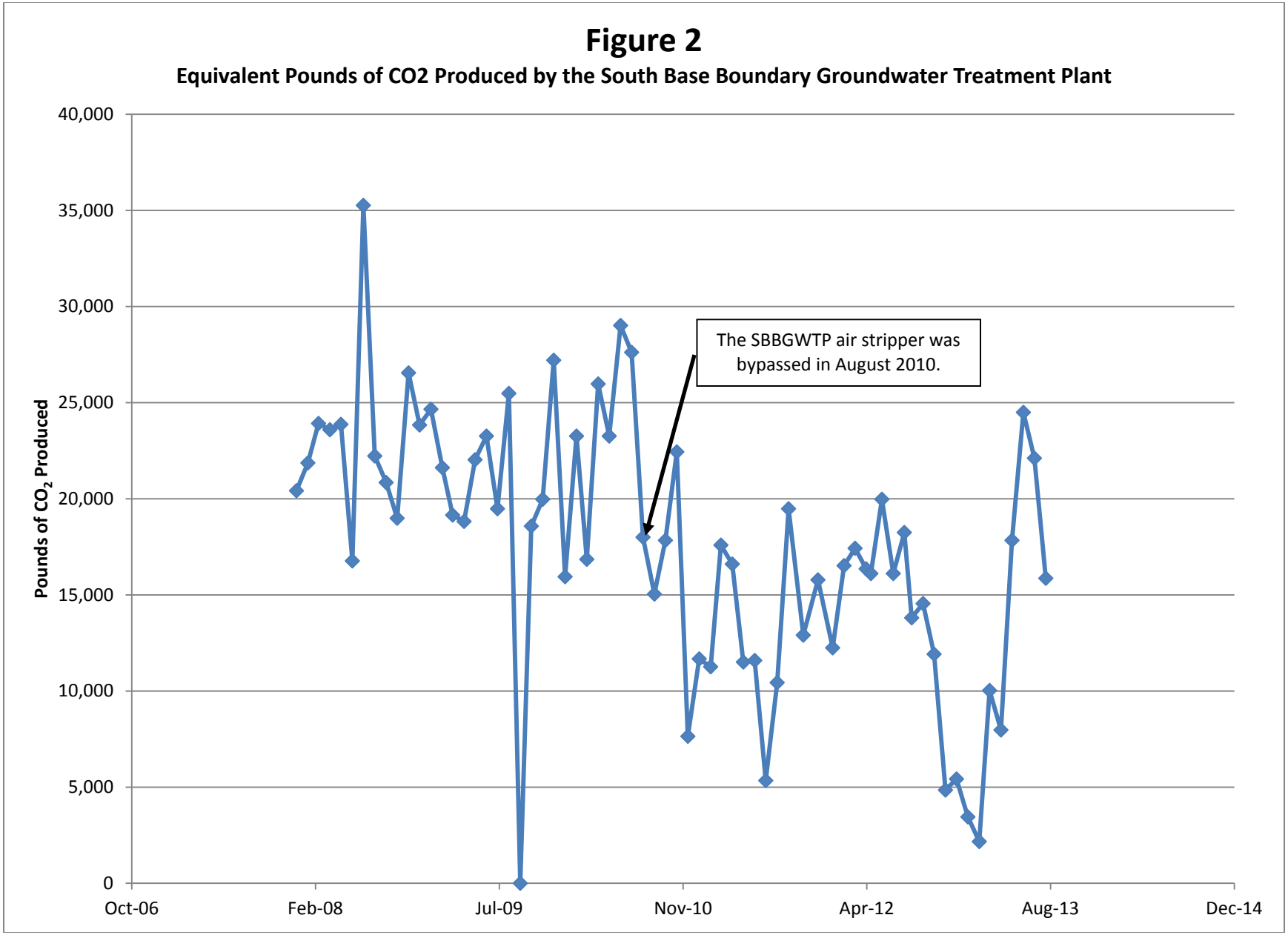


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 169 **Reporting Period: 31 July 2013 – 30 August 2013** **Date Submitted: 16 September 2013**

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

System Metrics

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

Table 1 – Operations Summary – August 2013

Initial Data Collection:	07/31/2013 17:45	**Final Data Collection:**	08/30/2013 11:00		
Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	713 hours	**CGWTP:**	100%	**CGWTP:**	1,745 kWh (2,391 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.2 million gallons**

Gallons Treated Since January 1996: **484 million gallons**

VOC Mass Removed:

3.35 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,654 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $3,000[c,d]

Monthly Cost per Pound of Mass Removed: $1,753[d]

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using August 2013 EPA Method SW8260B analytical results.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the CGWTP and are reported based on the calendar month.
[d] Monthly costs for July 2013 reported due to invoicing delay in August 2013.

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	20.0	Offline
EW02x16	7.1	Offline
EW03x16	0.2[c]	Offline
EW605x16	4.8	Offline
EW610x16	Offline	Offline
CGWTP	28.8	--
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 August 2013.
[c] Water discharged to Site SS016 bioreactor – flow rate taken from wellhead Flow Totalizer divided by operating time during the month.
gpm = gallons per minute
-- = not applicable/not available
scfm = standard cubic feet per minute

Table 3 presents 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 7 August 2013. Sample results are presented in Table 4. The total VOC concentration (325.82 µg/L) in the influent sample has increased since the July 2013 sample (261.20 µg/L) was collected. Concentrations of 1,1-Dichloroethene (0.64 µg/L), cis-1,2-DCE (72.5 µg/L), tetrachloroethene (0.98 µg/L), trans-1,2-Dichloroethene (3.7 µg/L), and TCE (248 µg/L) were detected at the influent sampling location.

No contaminants were detected at the midpoint or effluent sampling locations. 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 continued to decrease in August 2013. A replacement pump was installed at extraction well EW610x16 on 22 August 2013. Further troubleshooting identified bad wiring between the OSA vault and extraction well EW610x16. Due to access restrictions on the flightline, wiring replacement activities are currently being scheduled for September 2013.

Annual vapor samples at the WTTP were collected on 12 August 2013 as part of the ongoing rebound study. The WTTP ran for five (5) hours while samples were collected at four (4) dual phase extraction wells

(EW510x37, EW700x37, EW704x37, and EW707x37). These vapor sample results will be presented in the September 2013 monthly data sheet for the CGWTP.

This annual vapor sampling event is part of an ongoing soil vapor extraction rebound study in the WIOU. Vapor samples from individual DPE wells in the WIOU are collected on an annual basis, with the first samples having been collected at the beginning of the rebound study in July 2009. The samples collected during August 2013 constitute the fifth sampling event since the rebound study began (baseline).

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 August 2013.

Optimization Activities

No optimization activities occurred at CGWTP in August 2013.

Sustainability

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

Figure 2 presents the historical GHG production from the systems associated with the CGWTP. The CGWTP produced approximately 2,391 pounds of GHG during August 2013. This is a decrease from the amount produced in July 2013 (approximately 3,083 pounds) and can be attributed to a decrease in the number of gallons treated and a shorter reporting period.

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

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	7 August 2013 (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	72.5	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	0.64	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	0.98	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	248	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.7	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND	ND
Non-Halogenated Volatile Organics							
Benzene	1.0	0.17	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND	ND
Total Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND	ND
Other							
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	NM	NM

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

Notes:

J = analyte concentration is considered an estimated value 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	5 September 2012	16 September 2012
	28 September 2012	13 October 2012
	29 October 2012	9 November 2012
	21 November 2012	7 December 2012
	21 December 2012	4 January 2013
	18 January 2013	4 February 2013
	15 February 2013	1 March 2013
	15 March 2013	29 March 2013
	12 April 2013	26 April 2013*
	10 May 2013	24 May 2013
	7 June 2013	21 June 2013
	15 July 2013	26 July 2013
	8 August 2013	16 August 2013
	30 August 2013	--

* Damage to the above ground discharge pipe feeding the bioreactor was observed at shutdown. The piping was repaired prior to the 10 May 2013 restart.

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

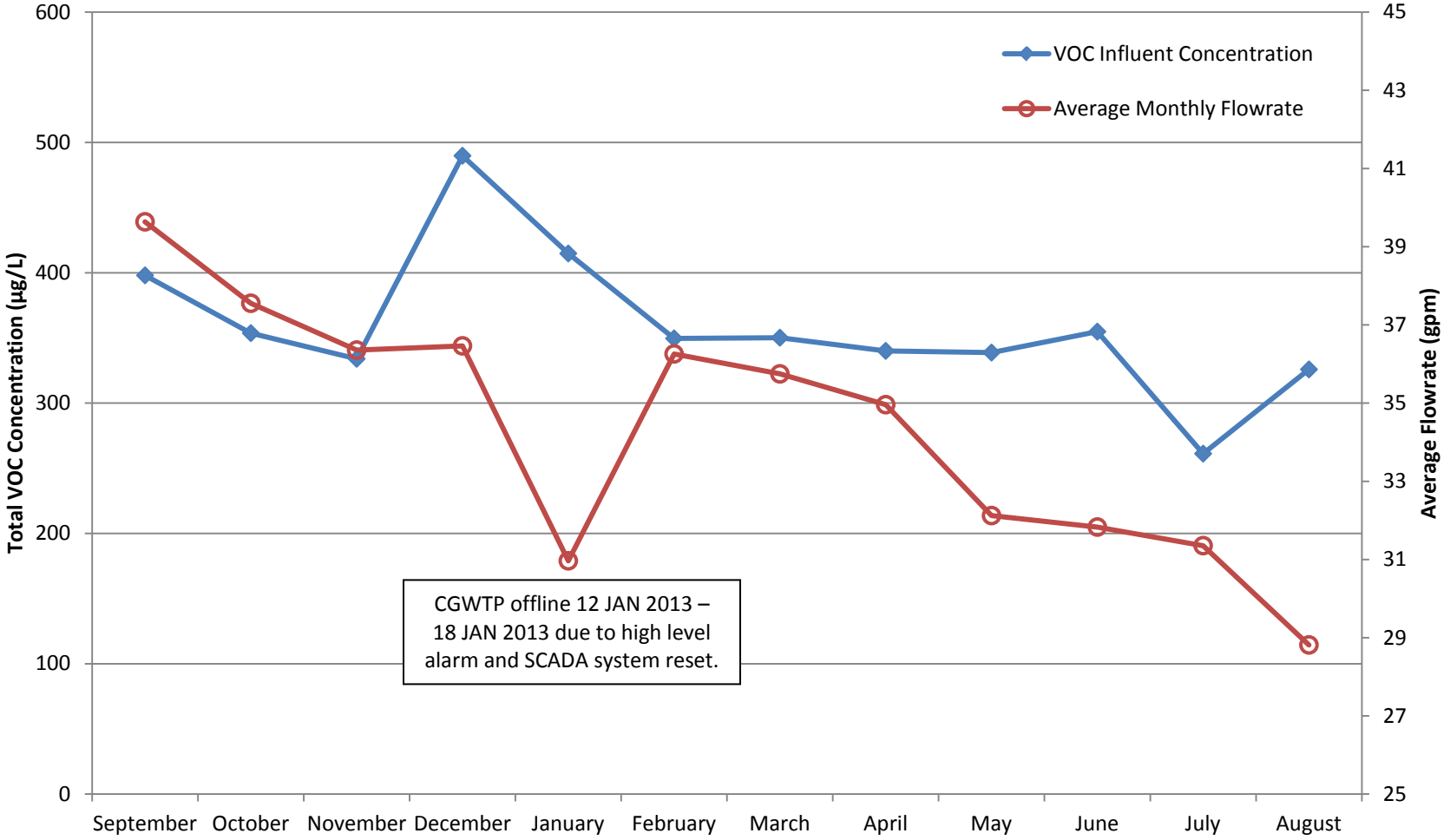
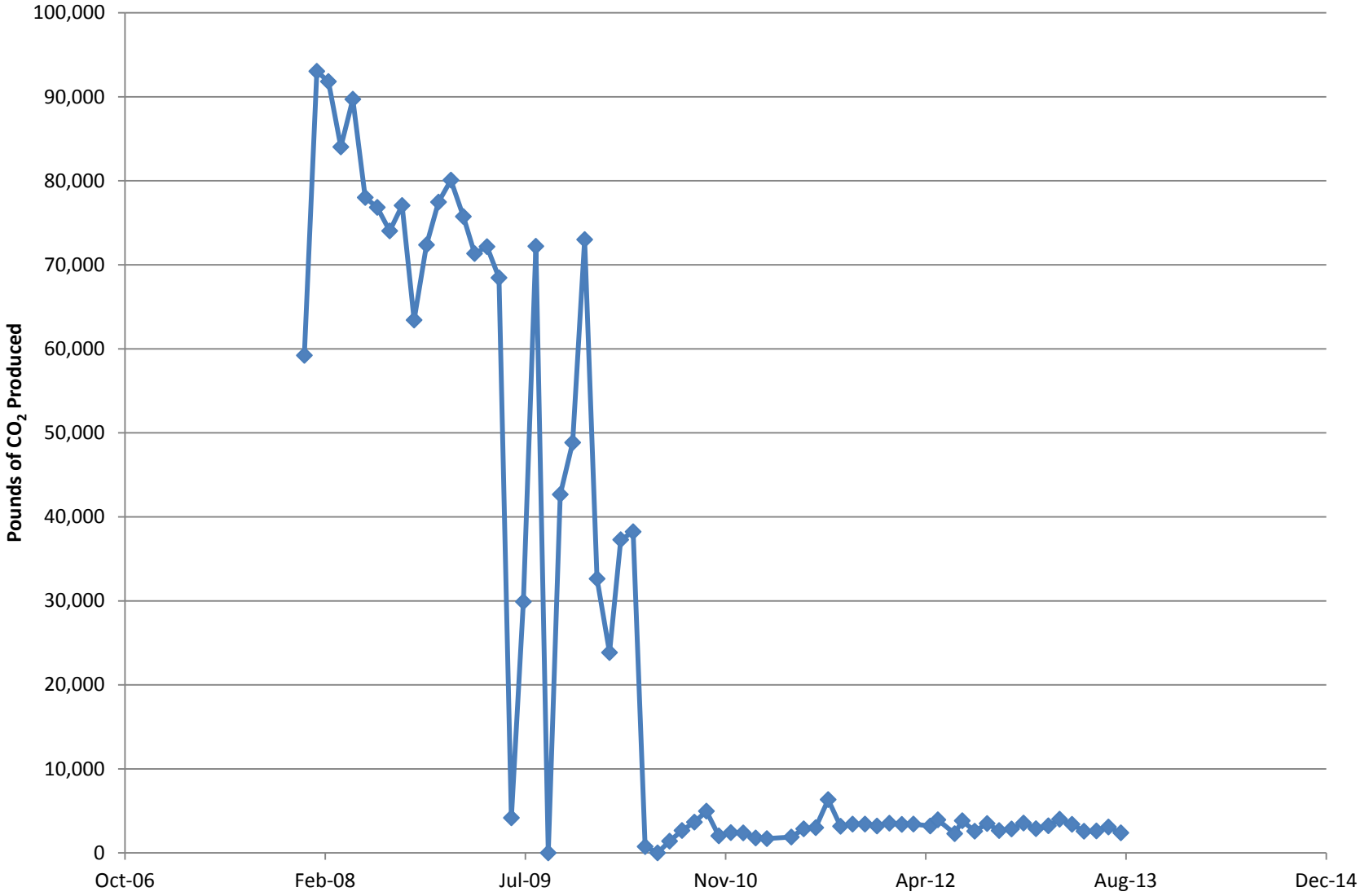


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 134 **Reporting Period: 31 July 2013 – 30 August 2013** **Date Submitted: 16 September 2013**

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

System Metrics

Table 1 presents operational data from the August 2013 reporting period:

Table 1 – Operations Summary – August 2013

Initial Data Collection:	07/31/2013 17:30	**Final Data Collection:**	08/30/2013 10:30
Operating Time:		Percent Uptime:	
NGWTP:	713 hours	**NGWTP:**	100%
Electrical Power Usage:			
NGWTP:	436 kWh (597 lbs CO_2 generated[a])		
Gallons Treated: **13,490 gallons**		Gallons Treated Since March 2000: **82.8 million gallons**	
Volume Discharged to Duck Pond: **13,490 gallons**		Volume Discharge to Storm Drain: **0 gallons**	
VOC Mass Removed: **4.2×10^{-4} pounds**[b]		VOC Mass Removed Since March 2000: **174.3 pounds (Groundwater)**	
Rolling 12-Month Cost per Pound of Mass Removed: **Not Measured**[c]			
Monthly Cost per Pound of Mass Removed: **Not Measured**[d]			

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] VOCs from August 2013 influent sample detected by EPA Method SW8260B.
[c] Value not calculated since measurement does not accurately represent the cost effectiveness of the system.
[d] Value not calculated since measurement does not accurately represent the potential effectiveness of the system. O&M costs are low, but very little contaminant mass is being treated.

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

Table 2 – NGWTP Average and Total Flow Rates – August 2013

Location	Average Flow Rate (gpm)[a]	Total Gallons Processed (gallons)
EW614x07	0.12	14,020
EW615x07	0.002	200
NGWTP	**0.11**	**13,490**

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

gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
	None	NA			

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 7 August 2013 sampling event are presented in Table 4. Cis-1,2-DCE (0.41 J µg/L) and TCE (3.3 µg/L) were detected at the influent sample location. No contaminant concentrations were measured at the midpoint or effluent sampling 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. As required by US Fish and Wildlife Service (USFWS), the NGWTP was taken off line ("System Shutdown") on 30 November 2012 when vernal pools had formed at Site LF007C. The NGWTP resumed operation on 1 May 2013 when the vernal pools no longer contained standing water.

Optimization Activities

No optimization activities were performed during August 2013.

Sustainability

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

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 used 436 kWh, which calculates to approximately 597 pounds of GHG generation, in August 2013. This is less than July 2013 when the NGWTP produced approximately 734 pounds of GHG. This decrease can be attributed to a shorter operating period in August 2013. 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 August 2013 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	7 August 2013 (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	0.41 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	3.3	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	1.0	0.17	0	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND
Other						
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	NM	ND
Total 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

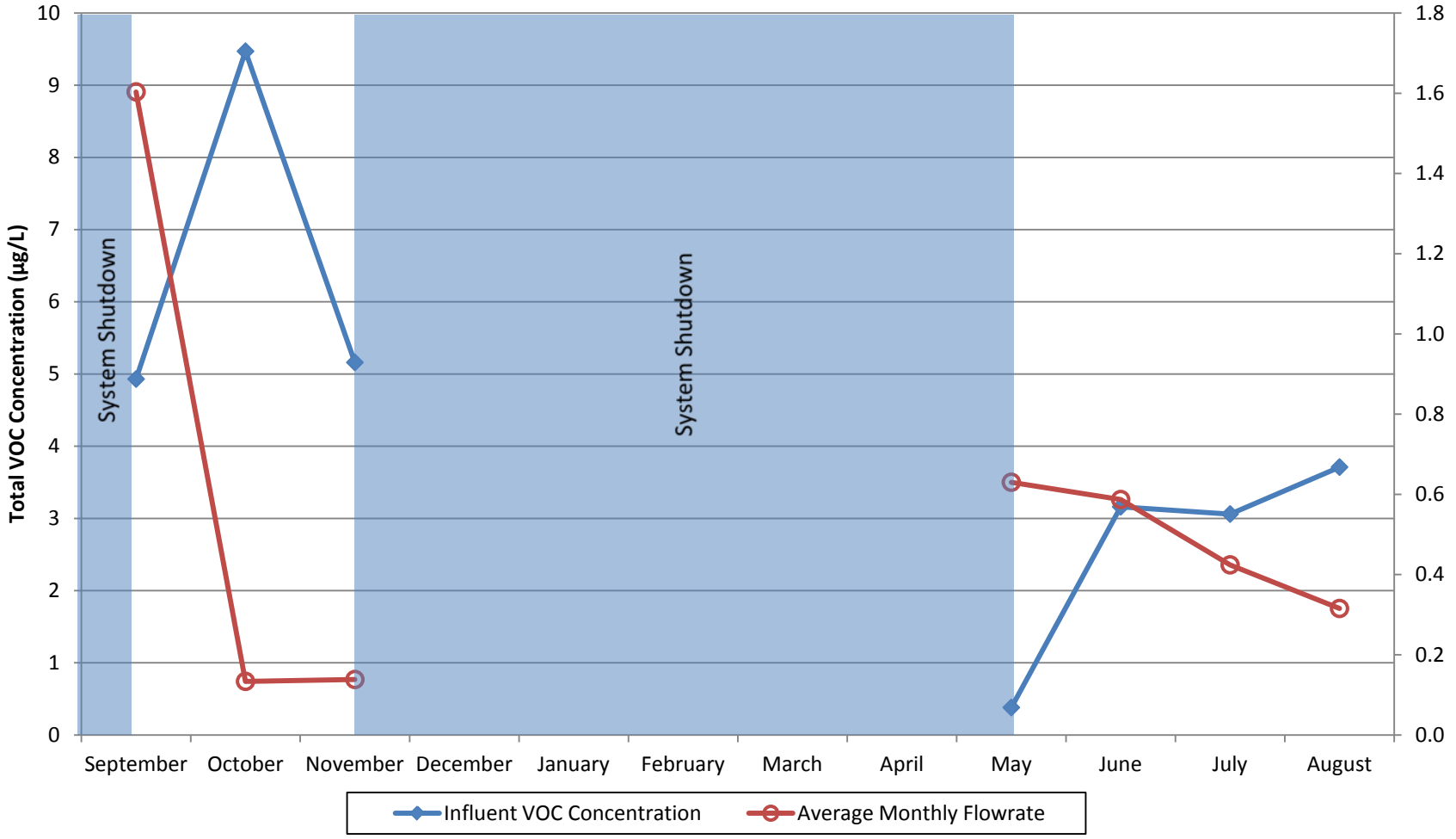
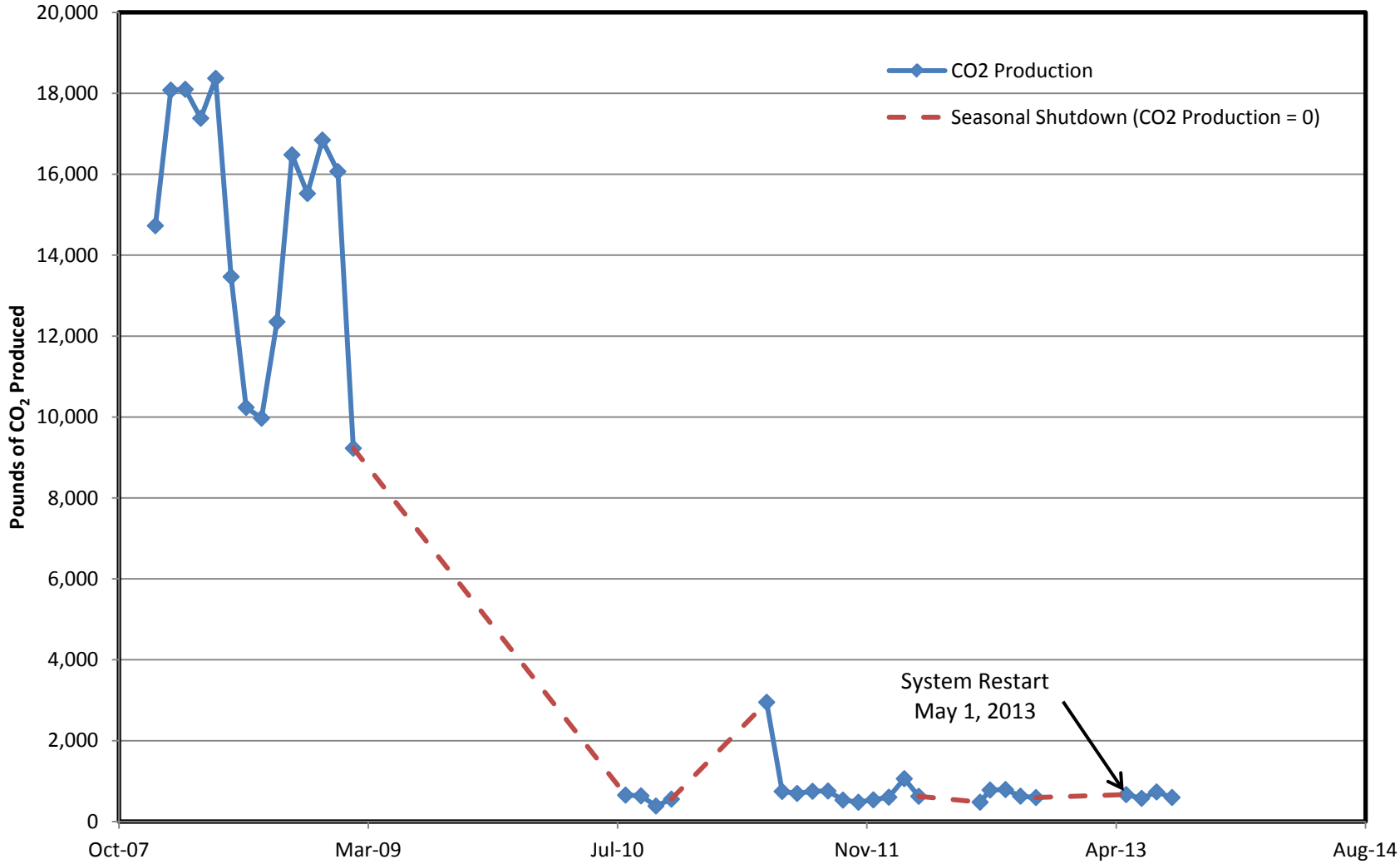


Figure 2

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: 030 **Reporting Period: 31 July 2013 – 30 August 2013** **Date Submitted: 16 September 2013**

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

System Metrics

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

Table 1 – Operations Summary – August 2013

Initial Data Collection:	07/31/2013 17:00	**Final Data Collection:**	08/30/2013 12:00

Operating Time:
ST018GWTP: 547 hours

Percent Uptime:
ST018GWTP: 76.5%

Electrical Power Usage:
ST018GWTP: 97 kWh (133 lbs CO_2 generated[a])

Gallons Treated: **146.1 thousand gallons**

Gallons Treated Since March 2011: **4.40 million gallons**

Volume Discharged to Union Creek: **146.1 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.22 lbs**[b]

BTEX, MTBE, TPH Mass Removed Since March 2011: **24.9 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $20,616 [c,d]

Monthly Cost per Pound of Mass Removed: $17,271[d]

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using July 2013 influent and August 2013 effluent EPA Method SW8260B analytical results. Influent samples are collected on a quarterly basis.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.
[d] Monthly costs for July 2013 reported due to invoicing delay in August 2013.
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	1.52	547
EW2016x18	1.51	547
EW2019x18	1.54	547
Site ST018 GWTP	4.46	547

[a] Flow rates calculated by dividing total gallons processed by the hours of operation, from the totalizer and hour meter at each location.
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	23 August 2013	11:50	Offline		Shut down for confirmation sampling and GAC vessel replacement.

ST018GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the ST018GWTP on 8 August 2013. Quarterly influent sample results and monthly midpoint and effluent sample results from the August sampling event are presented in Table 4. MTBE (2.2 µg/L) was detected at the midpoint sampling location (Carbon 2) in August 2013. Total Petroleum Hydrocarbons (TPH) – Diesel (700 µg/L) and TPH – Motor Oil (220 µg/L) were detected at the effluent sampling location. Upon receipt of the monthly sampling results, confirmation sampling was performed at the ST018GWTP, due to the detections in the effluent, and the system was shut down on 23 August 2013 pending analytical results.

The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (3Q13) influent sample was 181 µg/L, which is a decrease from the previous (2Q13) influent concentration of 340 µg/L. This decrease is largely due to TPH-motor oil not being detected in the influent sample this quarter. During 2Q13, the influent concentration of TPH-motor oil was 180 J µg/L. The influent concentration for MTBE during 3Q13 was 131 µg/L. This is a slight decrease from the 2Q13 influent concentration for MTBE of 155 µg/L. Figure 1 presents plots of flow rate and influent quarterly total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the ST018GWTP versus time.

As shown on Figure 1, the average flow rate through the ST018GWTP continues to increase since optimization activities, which included battery upgrades at each of the three ST018 extraction wells, were completed in April 2013. In August 2012 the average flow rate for the ST018GWTP was 1.59 gpm. The average flow rate for this reporting period was 4.46 gpm, which is nearly triple the flow rate achieved at this time last year. The new

batteries installed at ST018 have allowed the extraction wells operate with less down time, even during periods of low to no sun (overnight), increasing the overall efficiency of the ST018GWTP.

Optimization Activities

On 28 August 2013 the second and third granular activated carbon (GAC) vessels at the ST018GWTP were replaced. These two older GAC vessels had begun to leak due to age. The two new GAC vessels are from the same series as the existing GAC vessel #1, which continues to operate effectively.

Sustainability

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

The ST018GWTP produced approximately 133 pounds of GHG during August 2013. This is a decrease from July 2013 (175 pounds) resulting from decreased operating time and fewer gallons treated during the reporting period. 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 August 2013 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	8 August 2013 (µg/L)			
				Influent[b]	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
MTBE	5	0.5	0	131	NM	2.2	ND
Benzene	5	0.17	0	1.1	NM	ND	ND
Ethylbenzene	5	0.22	0	0.55	NM	ND	ND
Toluene	5	0.14	0	ND	NM	ND	ND
Total Xylenes	5	0.23 – 0.5	0	0.43 J	NM	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	48 J	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	ND	840	NM	700
Total Petroleum Hydrocarbons – Motor Oil	--	160	--	ND	250	NM	220

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

[b] Values taken from July 2013 (3Q13) sample data. Influent sampling is conducted on a quarterly basis.

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
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

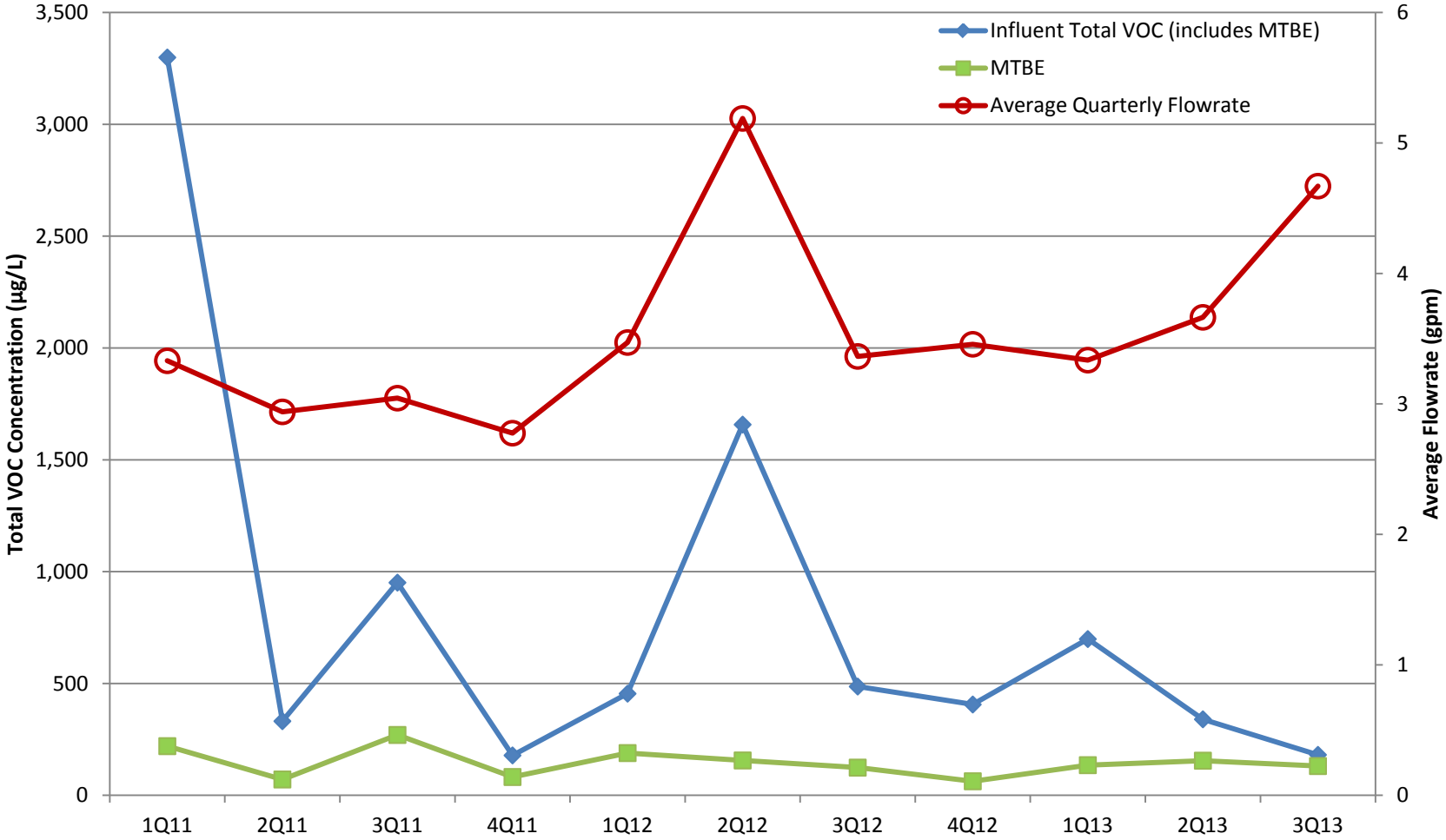
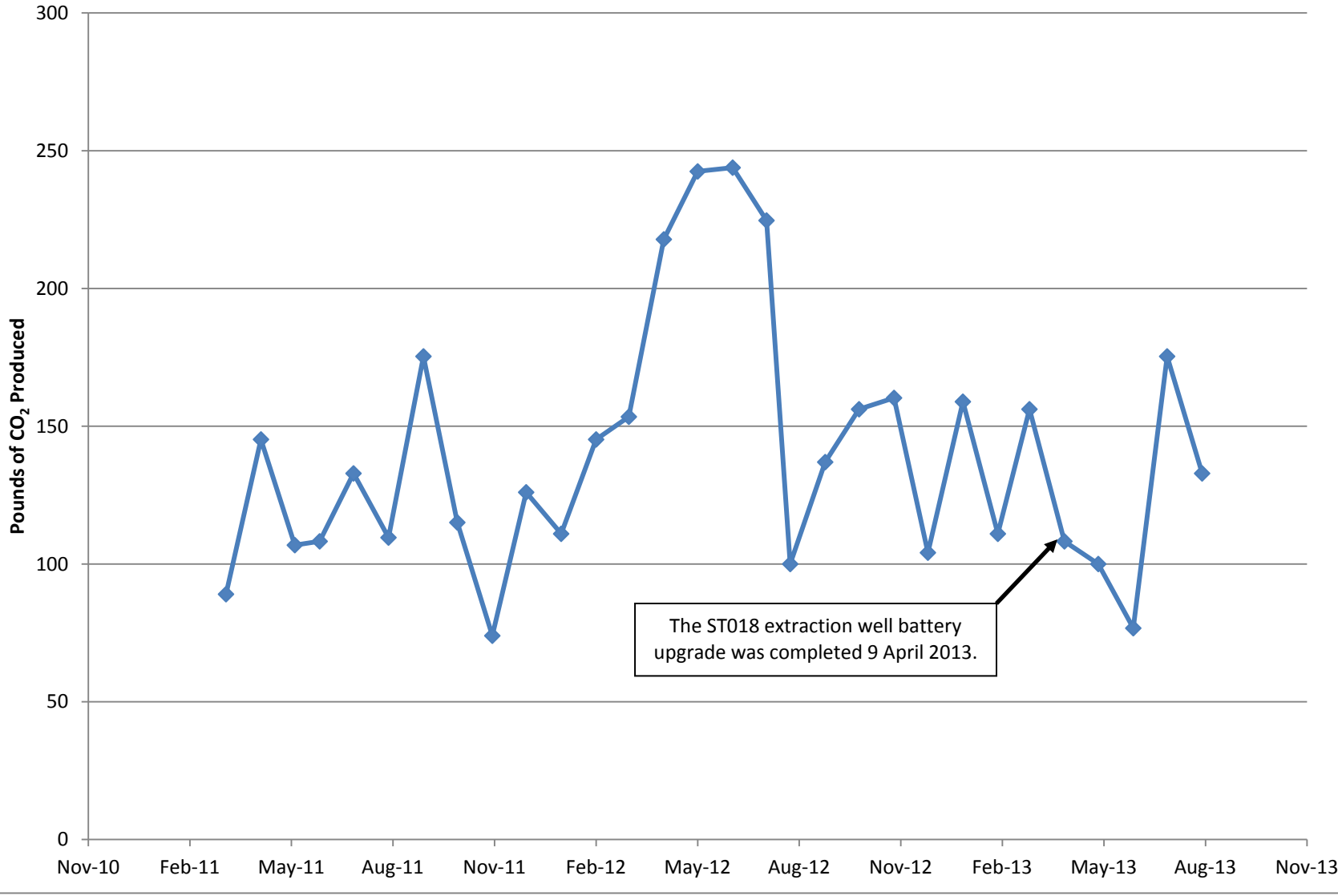


Figure 2

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



Travis AFB
Restoration Program

Program Overview

RPM Meeting

September 18, 2013

Completed Documents

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation Work Plan
- ST027B Site Characterization Work Plan
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo
- RD/RA QAPP Update
- ST032 Tier 1 POCO Evaluation Work Plan
- Phytostabilization Demonstration Technical Memo
- Model QAPP
- LF008 Rebound Test Technical Memo
- Comprehensive Site Evaluation Phase II Work Plan
- Field Sampling Plan (FSP)
- SS016 RPO Work Plan
- ST018 POCO RA Work Plan
- Vapor Intrusion Assessment Report
- GSAP 2008/2009 Annual Report
- FT005 Data Gap Work Plan
- First, Second, & Third Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- SD036/SD037 RPO Work Plan
- ST027B Site Characterization Report
- 2009 GWTP RPO Annual Report Natural Attenuation Assessment Report (NAAR)
- Union Creek Sites SD001 & SD033 Remedial Action Report
- CAMU 2008-2009 Monitoring Annual Report

Completed Documents (cont'd)

- Phytostabilization Study Report
- 2009/2010 Annual GSAP Report
- SS015 Remedy Optimization Field Implementation Plan
- Sites SS014 and ST032 Tier 1 POCO Evaluation Report
- SD036 Remedy Optimization Field Implementation Plan
- 2010 Annual CAMU Inspection Report
- Site ST018 POCO Baseline Implementation Report
- FT005 Data Gaps Investigation Report
- Comprehensive Site Evaluation Phase II Report
- 2010 Groundwater RPO Annual Report
- Focused Feasibility Study (FFS)
- Site ST027-Area B Human Health Risk Assessment
- Site ST027-Area B Ecological Risk Assessment
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- 2010/2011 Annual GSAP Report
- Baseline Implementation Report (Sites SS015, SS016, SD036, SD037, and DP039)
- 2011 CAMU Annual Report
- Technical and Economic Feasibility Analysis (TEFA)
- Work Plan for RPO of Sites SS016 and SS029
- Site LF007C Data Gaps Investigation Technical Memorandum
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- Old Skeet Range Engineering Evaluation/Cost Analysis
- 2011 Groundwater Treatment RPO Annual Report
- Groundwater Proposed Plan (PP)
- FT005 Remedial Action Completion Report
- 2012 GSAP Technical Memorandum

Completed Documents (cont'd)

- Vapor Intrusion Assessment Update Technical Memorandum
- 2012 CAMU Annual Report
- ***Old Skeet Range Action Memorandum***

Completed Field Work

- ST027B Gore Sorber Survey–Phase 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization
- LF008 Rebound Study
- GSAP Annual Sampling Event - 2009
- SS030 Site Characterization–Phase 1
- ST027 Site Characterization -Phase 3
- ST014 Monitor Well Install - Subsite 3
- SD001/SD033 Sediment RA
- SS016 Site Characterization (OSA source area)
- ST018 Site Characterization
- SS030 Site Characterization (Off-base VOC Plume)
- DP039 Site Characterization (for Biobarrier Placement)
- SS014 & ST032 Q1 2010 MNA Sampling (2nd of 4 quarterly events)
- SD036 Additional Site Characterization (north & east)
- Therm/Ox System Removal
- SS016 Monitoring Well Installation
- SD037 EVO Injection Well Installation
- DP039 Monitoring Well & Injection Well Installation
- DP039 EVO Injection
- SD037 Monitoring Well Installation
- GSAP 2010 Annual Sampling Event
- SD037 EVO Injection
- SS015 Site Characterization
- South Plant GAC Change-out
- FT005 Data Gap Investigation
- SS016 Position Survey of EW03
- SS016 Bioreactor Installation
- SS016 Bioreactor Baseline Sampling
- DP039 Biobarrier Quarterly Performance Sampling

Completed Field Work (cont'd)

- DP039 Bioreactor Quarterly Performance Sampling
- SD037 EVO Quarterly Performance Sampling
- SS015 EVO Baseline Sampling
- SD036 EVO Baseline Sampling
- SS016 Bioreactor Startup
- SD036 Injection Wells Installation
- SS015 Injection Wells Installation
- ST018 GETS Installation
- SD036 EVO Injection
- 2010 Semiannual GSAP
- SS015 EVO Injection
- Quarterly RPO Performance Monitoring (Feb 2011)
- ST018 GETS Startup
- Quarterly RPO Performance Monitoring (May 2011)
- 2011 Annual GSAP Sampling
- SS029 GET Shutdown Test (System Optimization analysis)
- Quarterly RPO Performance Monitoring (Aug 2011)
- Quarterly RPO Performance Monitoring (Nov 2011)
- 2011 Semiannual GSAP Sampling
- LF007C Site Characterization (Wetlands)
- FT005 Soil Remedial Action
- Performance Monitoring SS015 (4^{th} Quarterly event)
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)
- 2012 Annual GSAP Sampling
- CAMU Lysimeter Removal
- LF007C GET System Optimization
- SS029/SS016 System Optimization Analysis
- GSAP Semiannual Sampling Event
- Replace electrical wiring for well field at Site SS030

Completed Field Work (cont'd)

- 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***

In-Progress Documents & Field Work

Documents

- Groundwater Record of Decision (ROD)
- 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***
- ***Kinder Morgan LF044 Land Use Control Report***

Field Work

- Pump repairs to Site SS016 well (EW610x16)
- ***Site SS030 optimization upgrades***
- ***SCADA upgrade for CGWTP & SBBGWTP***

Upcoming Documents & Field Work

Documents

- No documents upcoming at this time

Field Work

- Subsite LF007C optimization upgrades

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