Final

Travis Air Force Base
Environmental Restoration Program
Restoration Program Manager's
Meeting Minutes
21 October 2021, 1400 Hours

Mr. Lonnie Duke of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Section (ISS) conducted the Restoration Program Manager's (RPM) teleconference on 21 October at 1400 hours.

The 60 AMW/CC at Travis Air Force Base (AFB) has directed Health Protection Condition (HPCON) Bravo + (changed from HPCON Bravo) in response to the evolving COVID-19 public health situation in the local area. Masks are required on-base, regardless of vaccination status. The base continues to encourage teleworking and virtual meetings in place of in-person meetings. Essential missions will continue, and visitors are permitted with an approved base pass.

All attendees participated via telephone or Microsoft TEAMS due to increased teleworking measures meant to reduce the number of employees on the base at one time. Attendees included:

Lonnie Duke	AFCEC/CZOW
Chet Storrs	AFCEC/CZOW
Mobashir Ahmad	AFCEC/CZOW
Angel Santiago	AFCEC/CZOW
Darren Rector	AFCEC/CZOW
Dave Leeson	AFCEC/CZRW
Kurt Grunawalt	Travis AFB 60 AMW/JA
Jessica Faragalli	USACE-Sacramento
Ryan Sinnott	USACE-Sacramento
Alan Soicher	USACE-Omaha
Nadia Hollan Burke	EPA
Kimiye Touchi	DTSC
Adriana Constantinescu	RWQCB
Megan Duley	SRS
Diane Escobedo	SRS
Gaby Atik	FPM
Chris Coonfare	FPM
Lynette Mockry	FPM
Leslie Royer	Jacobs
Jill Dunphy	Jacobs

Handouts distributed prior to the meeting included:

Attachment 1	Meeting Agenda
Attachment 2	Master Meeting and Document Schedule
Attachment 3	SBBGWTP Monthly Data Sheet (September 2021)
Attachment 4	CGWTP Monthly Data Sheet (September 2021)
Attachment 5	LF007C GWTP Monthly Data Sheet (September 2021)
Attachment 6	ST018 GWTP Monthly Data Sheet (September 2021)
Attachment 7	Presentation: Overview of the California Group Optimized Remediation Contract (CA Group ORC)
Attachment 8	Presentation: Program Update (October 2021)
Attachment 9	Travis AFB LUC Sites Update (October 2021)
Attachment 10	Travis AFB PFOS/PFOA Update (October 2021)
Attachment 11	Presentation: Phase 1 Remedial Investigation of AFFF Areas (October 2021)

I. JACOBS PBR CONTRACT UPDATES

A. ADMINISTRATIVE

1. Agenda and Introductions

Mr. Duke reviewed the agenda for the meeting.

Mr. Duke informed everyone that a new field person, Tom Potter, will be starting in the coming weeks and will be on the next RPM Teleconference. Mr. Potter will be taking over Gene Clare's role in the program.

2. Previous Meeting Minutes

Comments on the September 2021 RPM Meeting Minutes were received from the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB) via email prior to the meeting. The Environmental Protection Agency had minor editorial comments. These items will be addressed in the Final meeting minutes.

3. Action Item Review

Action Item 1: Ms. Royer will provide the most recent treatment plant O&M manuals to the EPA for their document repository by the end of the PBC POP. Ms. Royer will arrange upload of the O&M manuals to DoDSAFE via Mr. Storrs. October 2021 update: The most recent versions of the O&M manuals were uploaded to and distributed via DoDSAFE. This action item is now closed.

Action Item 2: Mr. Storrs will distribute the updated O&M manuals to the regulatory team via DoDSAFE and will eventually upload them to the Administrative Record. October 2021 update: The most recent versions of the O&M manuals were uploaded to and distributed via DoDSAFE. This action item is now closed.

Action Item 3: Mr. Duke will provide a graphic to the regulatory team illustrating the status of the KC-46 hangar and WTTP pipeline work. October 2021 update: Mr. Duke provided the graphic to the team. He noted that there are ongoing discussions with the construction contractor regarding how the proposed plan will be approached. This action item is now closed.

4. 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 is scheduled for 0930 on 17 November 2021. It will be held as a teleconference via MSTeams. This is the final RPM Meeting for 2021.

All RPM meetings planned for 2022 will be held via MSTeams until all three regulatory agencies are permitted to attend in person. At that time, the schedule will resume to alternating in-person meetings and teleconferences.

The October 2021 Restoration Advisory Board (RAB) meeting is cancelled. The next RAB meeting is scheduled for April 2022. The April 2022 RAB meeting will include information from both the PFAS project and the new ORC.

Travis AFB Master Document Schedule

— Travis AFB AFFF Remedial Investigation Work Plan: The agencies agreed to proceed with finalizing this document. The Final AFFF RI Work Plan will be posted onto the Oneida SharePoint with target date of 27 October 2021. Mr. Storrs asked if the team had any objections for Oneida to submit the final planning documents through the Oneida SharePoint. Alternately, the team could submit through DoDSAFE. The team agreed posting on the Oneida SharePoint worked well for the previous versions and should be used to post the Final documents. Ms. Touchi requested that files greater than 100 megabytes be split into several files to allow for an easier download. Ms. Duley noted that the files would be split into files of 50 MB or less to accommodate the Administrative Record upload.

— Travis AFB AFFF Remedial Investigation Quality Assurance Program Plan (QAPP): The agencies agreed to proceed with finalizing this document. The Final AFFF RI QAPP will be posted onto the Oneida SharePoint with target date of 27 October 2021.

— Universal Federal Program Quality Assurance Program Plan (UFP-QAPP): This is a new document. The Travis AFB document lead will be Mobashir Ahmad, and the ORC lead will be Chris Coonfare of FPM. The Predraft to Air Force Service Center was assigned a due date of 28 October 2021. The remainder of the dates were assigned accordingly. This document will update the 2015 UFP-QAPP last submitted as part of the previous Performance Based Remediation Contract, and will be based on technology changes. Mr. Storrs proposed changing the Draft submittal date from 30 December 2021 to 4 January 2022 to account for the holidays. All agreed with the proposed change.

— Community Relations Plan (CRP) Update: There was no change to the schedule. Now that the ORC has been awarded, this document will be re-prioritized; the first step in the update will be a community survey. Dates will be assigned once the timeframe for the surveys is identified.

— Site SD031 Data Gaps Investigation Work Plan: This is a new document. The Travis AFB document lead will be Mobashir Ahmad, and the ORC document lead will be Levi Pratt of Jacobs. The Predraft to AF/Service Center was assigned a due date of 7 December 2021, the rest of the dates were assigned accordingly. Ms. Royer noted that the field work to be addressed in this work plan is not a major effort, and that both the CERCLA site and POCO site will be considered together as one site in the forthcoming Remedial Investigation Feasibility Study (RI/FS) and Record of Decision (ROD). Ms. Constantinescu of the RWQCB requested 60 days to review the document due to the complex site history and need to understand the site as a combined CERCLA and POCO site. Ms. Royer noted that there will be a summary of

previous investigations included in the document to support the selection of areas for further investigation. Ms. Burke of the EPA noted that her agency would consider the data gaps investigation work plan a primary document because it supports an RI/FS. The DGI Work Plan will be changed to a primary document to allow adequate regulatory review time.

— Quarterly Newsletter (October 2021): The final due date was changed to 29 October to reflect the anticipated submittal date; however, Mr. Storrs noted that it will be sent out today and that next month's MMDS will reflect this.

— Vapor Intrusion Assessment Report: The Response to Comments and Final due dates were changed to 29 September 2021 to reflect actual submittal date. This document will be moved to the History section next month.

— 2020 Annual Site LF007 CAMU Monitoring Report: The Response to Comments and Final due dates were changed to 24 September 2021 to reflect actual submittal date. This document will be moved to the History section next month.

— Potrero Hills Annex (FS, PP, and ROD): There were no updates to the schedule. The RWQCB received a Vapor Intrusion Assessment document approximately 3 weeks ago and will double check the distribution list to be sure the AF and EPA received copies.

— MOVED TO HISTORY:

- 2020 Annual Groundwater Remedy Implementation Status Report (GRISR)

B. CURRENT PROJECTS

1. Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, September 2021 (Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 97.7% uptime, and 3.720 million gallons of groundwater were extracted and treated in September 2021. All treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 97.3 gallons per minute (gpm). Electrical power usage was 11,253 kilowatt hours (kWh), and approximately 9,927 pounds of CO_2 were created (based on DOE calculation). Approximately 0.96 of a pound of

volatile organic compounds (VOCs) were removed in September. The total mass of VOCs removed since startup of the system is 542.6 pounds.

Updates on September 2021 groundwater treatment system sample results, troubleshooting activities, and system down-time are provided in Attachment 3.

No optimization activities were conducted in September 2021.

Central Groundwater Treatment Plant, September 2021 (Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 679,790 gallons of groundwater extracted and treated in September 2021. All treated water was discharged to the storm sewer system which discharges to Union Creek. The average flow rate for the CGWTP was 16.8 gpm. Electrical power usage was 1,040 kWh for all equipment connected to the Central Plant, and approximately 1,658 pounds of CO_2 were generated. Approximately 0.90 of a pound of VOCs were removed from groundwater by the treatment plant in September. The total mass of VOCs removed since the startup of the system is 11,575 pounds.

Updates on September 2021 groundwater treatment system sample results, troubleshooting activities, and system down-time are provided in Attachment 4.

No optimization activities were conducted in September 2021.

LF007C Groundwater Treatment Plant, September 2021 (Attachment 5)

The Subarea LF007C Groundwater Treatment Plant (LF007C GWTP) performed at 100% uptime with approximately 108,281 gallons of groundwater extracted and treated in September 2021. All treated water was discharged to Northgate Pond (formerly known as the Duck Pond) for beneficial reuse. The average flow rate was 2.8 gpm. Approximately 9.02×10^{-4} of a pound of VOCs was removed from groundwater by the treatment plant in September. The total mass of VOCs removed since the startup of the system is 174.4 pounds. There was no electrical power usage statistics because this plant operates on solar power only.

Updates on September 2021 groundwater treatment system sample results, troubleshooting activities, and system down-time are provided in Attachment 5.

No optimization activities were conducted in September 2021.

ST018 Groundwater (MTBE) Treatment Plant, September 2021 (Attachment 6)

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 99.9% uptime with approximately 73,540 gallons of groundwater extracted in September 2021. All groundwater was discharged to the Fairfield – Suisun Sewer District. The average flow rate for the ST018 GWTP was 1.9 gpm. Electrical power usage for the month was 45 kWh for all equipment connected to the ST018 GWTP. The total CO_2 discharge equivalent equates to approximately 33 pounds. Approximately 0.04 of a pound of MTBE, BTEX, VOCs, and TPH was removed in September by the treatment plant, and 0.01 of a pound of MTBE-only was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 50.2 pounds, and the total MTBE mass removed since startup of the system is 12.3 pounds.

Note: Electrical power use at the ST018 GWTP is only for the alarm system and a pump that pushes influent tank water to the Fairfield-Suisun Sanitary Sewer line. The four groundwater extraction pumps in the system are all solar powered.

Updates on September 2021 groundwater treatment system sample results, troubleshooting activities, and system down-time are provided in Attachment 6.

No optimization activities were conducted in September 2021.

C. PRESENTATIONS

1. Presentation: Overview of the California Group Optimized Remediation Contract (CA Group ORC) (see Attachment 7)

Ms. Royer presented an overview of the new Optimized Remediation Contract (ORC). The Period of Performance for the ORC is from 31 August 2021 through 30 August 2031. Please refer to Attachment 7 for the full briefing. Highlights of the discussion are presented below:

- Mr. Duke noted that the cleanup goals for site groundwater COCs at Site SS030 were met more quickly than expected. The next steps identified in the Groundwater ROD are to shut off the extraction wells and do a rebound study for the site groundwater COCs. However recent investigations have indicated that PFAS is also present in Site SS030 groundwater although not identified as a site COC in the Groundwater ROD. Shutting down the extraction system because groundwater cleanup

goals identified in the Groundwater ROD have been met would sacrifice containment of the offbase PFAS plume. He is discussing a path forward with AFLOA, who has stated that it is in the Air Force's best interest to leave the system running. The Air Force is considering continuing to run the system as a treatability study under a separate contract.

- Ms. Burke suggested treating this as a removal action including preparation of an Engineering Estimate/Cost Analysis and ROD amendment to include PFAS issues; the groundwater system could be considered a removal action instead of an interim action.

- Ms. Burke inquired about the planned ROD Amendment for Sites FT004 and SD034, noting that a Proposed Plan is usually not prepared without a Feasibility Study. Ms. Royer replied that a Focused Feasibility Study (FFS) was completed to evaluate groundwater remedies prior to the Groundwater ROD. Ms. Burke said if the FFS includes an adequate assessment of the proposed new remedies, the AF will just need to document what has changed since the preparation of the FFS.

- Regarding the Community Relations Plan Update, Ms. Constantinescu inquired if the addresses where private wells were sampled for PFAS will receive the survey. Mr. Duke replied that we haven't identified survey recipients because the contract is still ramping up, but we will consider this suggestion as we start planning the CRP Update activities.

- Ms. Burke suggested drafting a memorandum for the file to document the optimizations at Sites SD036, SD037, and DP039, if the slight change in technology of dissolved carbon delivery changes the ARARs in the ROD.

2. Presentation: Program Update (see Attachment 8)

Ms. Royer reported on the status of upcoming fieldwork and documents. Please refer to Attachment 8 for the full briefing.

D. PROGRAM ISSUES/UPDATE

None.

E. NEW ACTION ITEM REVIEW

No new action items were identified.

F. ACTION ITEMS

Item #	Responsible	Action Item Description	Due Date	Status
		No action items identified		

II. TRAVIS AFB UPDATES

A. Land Use Control Sites, October 2021 (Attachment 9)

Mr. Duke reported on the status of the LUC sites at Travis AFB. Please refer to Attachment 8 for the full briefing. He thanked everyone for their input regarding the WTTP, noting that it helped to make the design easier.

B. PFAS PROGRAM STATUS, October 2021 (Attachment 10)

Mr. Storrs reported on the status of the PFOS/PFOA Program at Travis AFB. Please see Attachment 10 for the full briefing. He clarified for the regulatory agencies that the installation information and sampling data from the private well point of entry treatment systems will be documented; he will let them know where.

III. SRS PFOS/PFOA CONTRACT

A. ADMINISTRATIVE

All administrative topics were discussed earlier in the RPM meeting.

B. PRESENTATIONS

1. Travis AFB Phase I RI of AFFF Sites (Attachment 11)

Ms. Duley presented slides providing an update on the Phase I RI of AFFF sites. Please refer to Attachment 11 for the full briefing.

Phase 1 Remedial Investigation Data-Driven Process

Ms. Duley discussed the next steps and ongoing action items in preparation for the CSM development. As indicated on the data-driven process graphic, the Oneida Team will have Stakeholder Meeting #1 with the Agencies to discuss the results from the initial sampling event and the recommendations for the next field event. The next field event, anticipated for Spring 2022, will include monitoring well installation, groundwater sampling, and sampling of soil, sediment, and surface water media. The Oneida Team will provide meeting materials such as figures with analytical results and recommendations for monitoring well installation/sampling locations ahead of time. This meeting will be a platform for technical discussion/input and consensus on the recommended approach. The updated recommendations will be documented in the RI UFP-QAPP Amendment #1 and submitted for regulatory concurrence.

Initial Sampling Event and Next Steps

The Oneida Team completed the first sampling event on 02 September 2021. The team is still waiting for data validation to be completed in order to begin the RI UFP-QAPP Addendum #1.

Ms. Constantinescu noted that AFCEC had provided the preliminary results for the South Base Boundary Treatment System and requested the preliminary data from the other treatment plant samples. Mr. Duke requested that the Oneida Team work with the lab to provide the preliminary data. Ms. Duley will contact the lab immediately and provide to Mr. Duke and Mr. Storrs as soon as possible.

Ms. Touchi asked if the contract specified resampling the systems and about the planned timing for sampling. Ms. Duley noted that the contract included sampling at the SGGGWTP twice, at approximate 6-month intervals to observe potential seasonal variation. She noted that at the direction of AFCEC and USACE, the team had been able to include the one-time samples from the other treatment systems per request of the RWQCB. Ms. Touchi noted that it may be more advantageous to coordinate sample timing with GAC changeout, possibly sampling closer to expected carbon breakthrough, to understand what may be happening with loading of the GAC vessels. Mr. Duke noted that it shouldn’t be a problem to adjust the timing of the second planned sample collection at the SBBGWTP to better align with the later phase of carbon use.

AFFF and Remedial Investigation Areas

A map showing the AFFF areas and the sampled wells was presented.

C. PROGRAM ISSUES/UPDATE

On 18 October 2021, the EPA released the PFAS Strategic Roadmap to provide an agency approach for addressing PFAS.

The team recognized the new EPA roadmap and exchanged links:

https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024

D. NEW ACTION ITEM REVIEW

1. Ms. Duley/Oneida Team to provide preliminary data for all treatment plant samples.

E. ACTION ITEMS

Item #	Responsible	Action Item Description	Due Date	Status
1	Megan Duley/Diane Escobedo	Send meeting minutes to Travis AFB.	22 September 2021	Attached
2	Megan Duley/Oneida Team	Provide preliminary data for all treatment plant samples	TBD	In Progress

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
RESTORATION PROGRAM MANAGER'S MEETING

The RPM Teleconference is scheduled for 2:00 PM PST on 21 October 2021. **The call-in number will be provided in the MS Teams meeting invite and also in the same email that the meeting materials are provided in. If you are able to participate via MS Teams meeting, you will see the shared documents that will be viewable by all participants.**

AGENDA

A. FPM ORC CONTRACT

1. ADMINISTRATIVE

   a. INTRODUCTIONS
   b. PREVIOUS MEETING MINUTES
   c. ACTION ITEM REVIEW
   d. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

2. CURRENT PROJECTS

   TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE

3. PRESENTATIONS

   OVERVIEW OF THE CA GROUP ORC
   SUMMARY OF MAIN OPTIMIZATIONS/INVESTIGATIONS PLANNED

   PROGRAM UPDATE:
   DOCUMENTS & ACTIVITIES COMPLETED, IN PROGRESS & PLANNED

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

B. TRAVIS UPDATES

1. CURRENT PROJECTS

   a. LUC SITES
   b. PFOS / PFOA

C. SRS PFAS RI CONTRACT

1. ADMINISTRATIVE

    a. INTRODUCTIONS
    b. PREVIOUS MEETING MINUTES
    c. ACTION ITEM REVIEW
    d. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

2. CURRENT PROJECTS

    PHASE 1 REMEDIAL INVESTIGATION OF AFFF AREAS

3. PRESENTATIONS

    PROGRAM UPDATE

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

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

2021

Annual Meeting and Teleconference Schedule

Monthly RPM Meeting[1] (Begins at time noted)	RPM Teleconference (Begins at time noted)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
—	01-20-21	—
—	02-17-21	—
—	03-17-21	—
—	04-15-21 (Thursday 2:00 PM)	—
—	05-19-21	—
—	06-16-21	—
—	07-21-21	—
08-18-21	—	—
—	09-15-21	—
—	10-21-21 (Thursday 2:00 PM)	—
—	11-17-21	—
—	—	—

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

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS		
Life Cycle	**Travis AFB AFFF RI Work Plan[2] Travis AFB, Chet Storrs SRS, Megan Duley**	**Travis AFB AFFF RI QAPP[2] Travis AFB, Chet Storrs SRS, Megan Duley**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	10-27-20	10-27-20
AF/Service Center Comments Due	12-08-20	12-08-20
Draft to Agencies / RAB	03-26-21	03-26-21
Agency Comments Due	05-26-21	05-26-21
Response to Comments Meeting	**06-16-21**	**06-16-21**
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	06-30-21	06-30-21
Draft Final Due	06-30-21	06-30-21
Final Due	07-30-21 (10-27-21)	07-30-21 (10-27-21)

[2] Note: SRS documents will be discussed during the afternoon meeting session.

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS		
Life Cycle	**UFP-QAPP Travis AFB, Mobashir N. Ahmad FPM, Chris Coonfare**	**Community Relations Plan Update Travis AFB,TBD Jacobs, Jill Dunphy**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	10-28-21	08-23-16
AF/Service Center Comments Due	11-29-21	09-07-16
Draft to Agencies / RAB	12-30-21	09-28-16 (03-22-18)
Agency Comments Due	03-02-22	10-28-16 (04-27-18)
Response to Comments Meeting	**03-16-22**	**TBD**
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	03-30-22	TBD
Draft Final Due	03-30-22	TBD
Final Due	04-29-22	TBD

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS	
Life Cycle	**Site SD031 Data Gaps Investigation Work Plan** **Travis AFB, Mobashir N. Ahmad** **Jacobs, Levi Pratt**
Scoping Meeting	**NA**
Predraft to AF/Service Center	12-07-21
AF/Service Center Comments Due	01-10-22
Draft to Agencies / RAB	02-10-22
Agency Comments Due	03-14-22
Response to Comments Meeting	**03-16-22**
Response to Comments Due	04-01-22
Draft Final Due	NA
Final Due	04-01-22
Public Comment Period	NA
Public Meeting	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	**Quarterly Newsletter (October 2021) Travis, Lonnie Duke**	**Vapor Intrusion Assessment Report Travis AFB, Chet Storrs CH2M, Stephanie Curtis**	**2020 Annual Site LF007 CAMU, Monitoring, and Maintenance Report Travis AFB, Mobashir Ahmad CH2M HILL, Levi Pratt**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	08-31-21	07-14-21	06-03-21
AF/Service Center Comments Due	09-03-21	07-28-21	07-06-21
Draft to Agencies / RAB	09-20-21	08-11-21	07-19-21
Agency Comments Due	09-27-21	08-25-21	08-18-21
Response to Comments Meeting	**09-30-21**	**09-08-21**	**09-02-21**
Response to Comments Due	09-30-21	09-27-21 (09-29-20)	09-16-21 (09-24-20)
Draft Final Due	NA	NA	NA
Final Due	10-29-21	09-27-21 (09-29-20)	09-16-21 (09-24-20)
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
	Potrero Hills Annex Travis, Lonnie Duke		
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

https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL20299915

Travis AFB Master Meeting and Document Schedule

HISTORY - INFORMATIONAL DOCUMENTS	
Life Cycle	**2020 Annual GRISR Travis AFB, Mobashir Ahmad CH2M, Levi Pratt**
Scoping Meeting	**NA**
Predraft to AF/Service Center	04-27-21
AF/Service Center Comments Due	05-27-21
Draft to Agencies / RAB	06-11-21
Agency Comments Due	07-12-21
Response to Comments Meeting	07-21-21
Response to Comments Due	09-09-21
Draft Final Due	NA
Final Due	09-09-21
Public Comment Period	NA
Public Meeting	NA

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 251 **Reporting Period: 2 September 2021 – 29 September 2021** **Date Submitted: 14 October 2021**

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP).

System Metrics

Table 1 presents operational data from the September 2021 reporting period.

Table 1 – Operations Summary – September 2021

Initial Data Collection:	9/2/2021 8:30	**Final Data Collection:**	9/29/2021 12:40
Operating Time:	Percent Uptime:	Electrical Power Usage:	
SBBGWTP: 637 hours	**SBBGWTP:** 97.7%	**SBBGWTP:**	11,253 kWh (9,927 lbs CO_2 generated[a])
Gallons Treated: **3.720 million gallons**		Gallons Treated Since July 1998: **1.282 billion gallons**	
Volume Discharged to Union Creek: **3.720 million gallons**		Gallons Treated from Other Sources: **0 gallons**	
VOC Mass Removed: **0.96 lbs**[b]		VOC Mass Removed Since July 1998: **542.6bs**	
Rolling 12-Month Cost per Pound of Mass Removed: **$22,132**[c]			
Monthly Cost per Pound of Mass Removed: **$22,994**[c]			

lbs = pounds
[a] SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG. Value also includes approximately 1,600 pounds of GHG from GAC change out services averaged to a per month basis.
[b] Calculated using September 2021 EPA Method SW8260C analytical results.
[c] Costs include operations and maintenance, carbon change out, 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) – September 2021

FT005				SS029		SS030	
EW01x05	Offline[a]	EW743x05	Offline[a]	EW01x29	Offline[c]	EW01x30	Offline[d]
EW02x05	Offline[a]	EW744x05	Offline[d]	EW02x29	7.5	EW02x30	Offline[d]
EW03x05	Offline[a]	EW745x05	Offline[d]	EW03x29	20.0	EW03x30	15.7
EW731x05	Offline[b]	EW746x05	Offline[a]	EW04x29	5.8	EW04x30	9.9
EW732x05	Offline[a]	EW2291x05	Offline[b]	EW05x29	4.6	EW05x30	6.1
EW733x05	Offline[a]	EW2782x05	7.1	EW06x29	14.1	EW2174x30	4.3
EW734x05	6.6	EW2783x05	2.8	EW07x29	8.7	EW711x30	5.3
EW735x05	8.2	EW2784x05	Offline[d]				
EW736x05	Offline[a]	EW2785x05	Offline[d]				
EW737x05	Offline[a]	EW2786x05	12.0				
EW742x05	Offline[a]						
FT005 Total: 36.7				**SS029 Total: 60.7**		**SS030 Total: 41.3**	

SBBGWTP Average Monthly Flow[e]: 97.3 gpm

[a] 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.*
[b] Extraction well was taken offline because the Site FT005 TD has concluded and COCs no longer exceed cleanup goals in this extraction area.
[c] Extraction well taken offline because of persistent fouling of the well pump and associated discharge piping.
[d] Extraction well was operational; however, well was recharging.
[e] The average SBBGWTP groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the total time the system was operational.

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	27 September 2021	9:30	27 September 2021	10:30	Low flow alarm
SBBGWTP	27 September 2021	21:05	28 September 2021	8:35	Low flow alarm.
SBBGWTP	28 September 2021	9:45	28 September 2021	12:10	Repair fiber optic lines.

[a] Shutdown and restart times estimated based on field notes
SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the SBBGWTP on 14 September 2021. Sample results are presented in Table 4. The total VOC concentration (31.0 µg/L) in the influent sample increased from the August 2021 sample results (28.9 µg/L). TCE was the primary VOC detected in the influent sample at a concentration of 29 µg/L. TCE and cis-1,2-DCE were detected in the midpoint sampling location. No VOCs were detected in the effluent sampling location.

The influent and effluent samples were analyzed for TPH-g, TPH-d, and TPH-mo. TPH-d (130 µg/L) was detected in the influent sample, and no TPH was detected in the effluent sample.

In August 2021, hexavalent chromium (48 µg/L) was detected in the effluent sample in excess of the discharge limit in the current NPDES permit. No background concentration of hexavalent chromium has been established. On 10 September 2021, confirmation samples were collected from the influent and effluent samples as well as the receiving waters and analyzed for hexavalent chromium. Sample results are presented in Table 5. The hexavalent chromium concentrations in the influent (1.65 µg/L) and effluent (2.60 µg/L) samples were significantly less than the August 2021 results, and less than the discharge limit. No hexavalent chromium was detected in the upstream sample; however, hexavalent chromium was detected at 2.66 µg/L in the downstream sample.

Figure 1 presents a plot of influent VOC concentrations and average flow at the SBBGWTP over the past twelve (12) months. VOC concentrations have been seasonally variable; however, over the last 12 months the trend has increased. An overall decreasing flow rate trend was also observed in the past 12 months.

In September 2021 troubleshooting was performed on four extraction wells. The following list presents the maintenance activities and status of those extraction wells:

- EW2784x05 – The flowmeter cartridge was replaced. The well is currently online.
- EW734x05 – The pump was cleaned and repaired. The digital flow meter was replaced. The PLC module (analog card) associated with this well malfunctioned and was replaced. The well is currently online.
- EW735x05 – The analog card was replaced. The well is currently online.
- EW744x05 – The analog card was replaced. The well is currently online.

On 27 September 2021, the system shut down for approximately 1 hour because of a low flow alarm. Upon the system restart, only Site SS030 and FT005 extraction wells restarted. A communication failure from the Site SS029 wells prevented the restart of all six (6) operating wells at Site SS029. Following the system restart, the SBBGWTP system shut down again for a low flow alarm and was restarted on 28 September. Two of the fiber optic lines were replaced to restore communication with the Site SS029 wells on 28 September and the system was restarted. No other shutdowns were observed for the remainder of the reporting period.

Optimization Activities

No optimization activities occurred at the SBBGWTP in September 2021.

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 offline that are no longer necessary for contaminant plume capture.

Figure 2 presents the historical GHG production from the SBBGWTP. In September 2021, the SBBGWTP produced approximately 9,927 pounds of GHG, which includes approximately 1,600 pounds of GHG generated from GAC change out services averaged to a per month basis.

TABLE 4
Summary of Groundwater Analytical Data for September 2021 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	14 September 2021 (µg/L)		
				Influent	Midpoint	Effluent[b]
Halogenated Volatile Organics						
Acetone	NA	1.9	0	ND	ND	ND
Bromodichloromethane	NA	0.17	0	ND	ND	ND
Chloroform	1.9	0.16	0	ND	ND	ND
Chloromethane	NA	0.30	0	ND	ND	ND
1,1-Dichloroethane	0.50	0.22	0	ND	ND	ND
1,2-Dichloroethane	0.50	0.13	0	ND	ND	ND
1,1-Dichloroethene	0.50	0.23	0	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15	0	2.0	2.1	ND
trans-1,2-Dichloroethene	0.50	0.11	0	ND	ND	ND
Dichlorodifluoromethane	NA	0.31	0	ND	ND	ND
Tetrachloroethene	0.50	0.20	0	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16	0	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27	0	ND	ND	ND
Trichloroethene	0.65	0.16	0	29	1.6	ND
Vinyl Chloride	0.90	0.10	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	0.50	0.13	0	ND	ND	ND
Ethylbenzene	0.50	0.15	0	ND	ND	ND
Toluene	0.50	0.25	0	ND	ND	ND
Xylenes	0.50	0.10 – 0.18	0	ND	ND	ND
Other						
Total Petroleum Hydrocarbons – Gasoline	50	10	0	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	25	0	130	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	100	32	0	ND	NM	ND

[a] In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.

[b] Concentrations in **bold** exceeded discharge limits.

Notes:

J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant.
NA = not applicable

N/C = number of samples out of compliance with discharge limits.
ND = not detected
NM = not measured
µg/L = micrograms per liter

TABLE 5
Summary of Groundwater Chromium Analytical Data for September 2021 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	10 September 2021 (µg/L)			
				Influent	Effluent[b]	Up-stream	Down-stream
Metals							
Chromium, hexavalent	16	4.0	1	1.65	2.60	ND	2.66

[a] In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.
[b] Concentrations in **bold** exceeded discharge limits

Notes:
J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant.
NA = not applicable
N/C = number of samples out of compliance with discharge limits.
ND = not detected
µg/L = micrograms per liter

Figure 1

SBBGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History

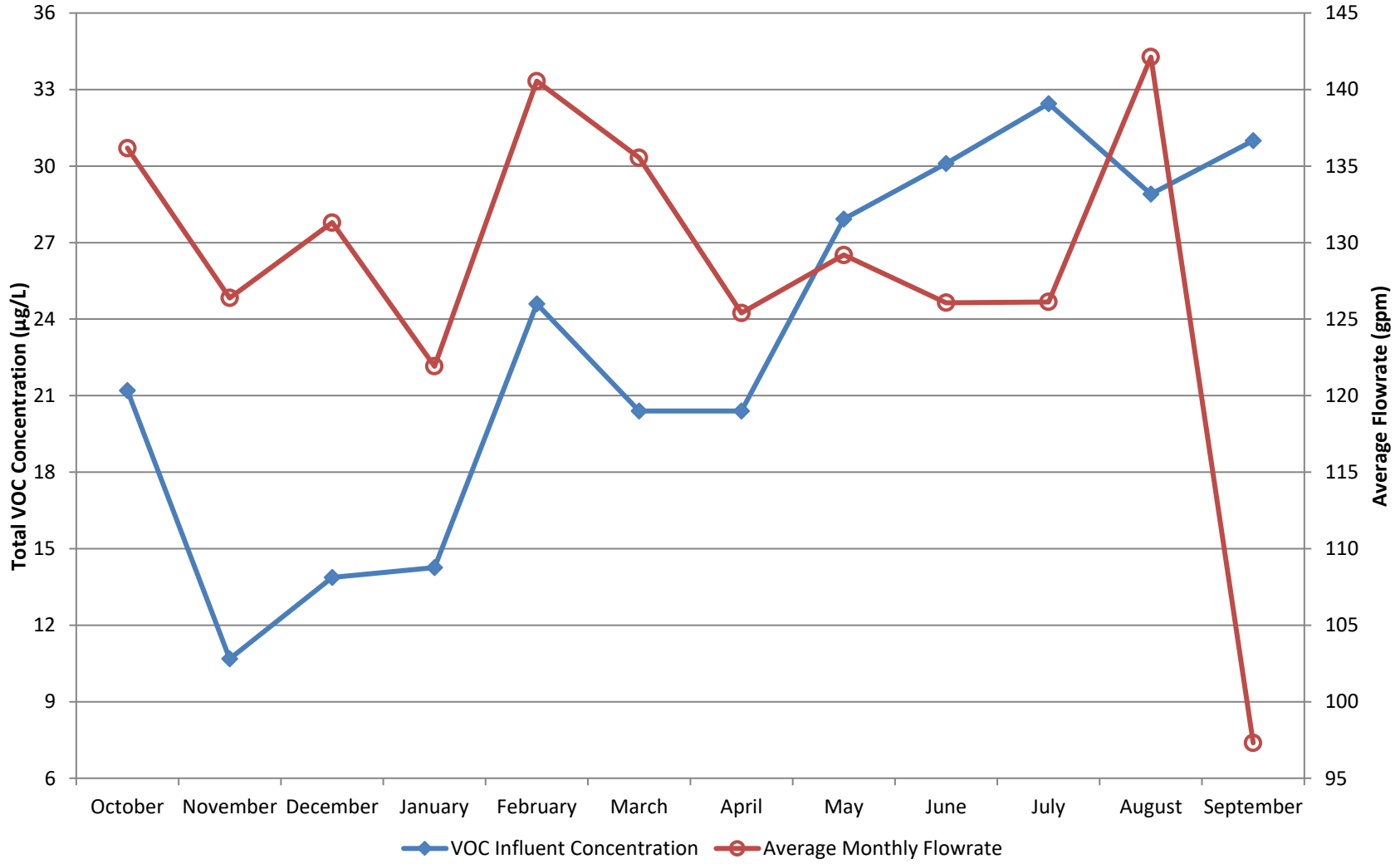
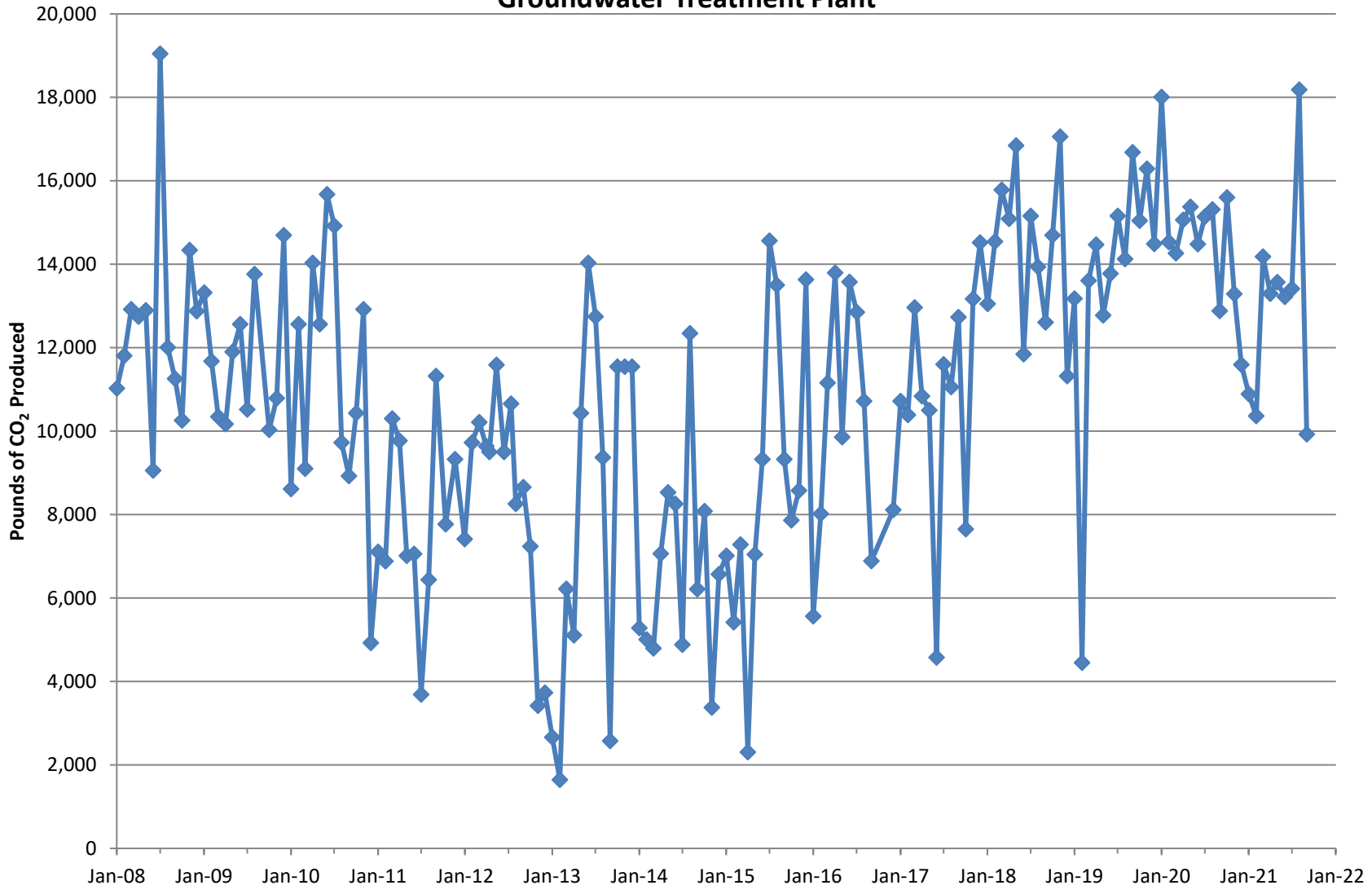


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 266 **Reporting Period: 2 September 2021 – 30 September 2021** **Date Submitted: 14 October 2021**

This monthly data sheet presents information regarding the Central Groundwater Treatment Plant (CGWTP) and its associated bioreactors (Sites DP039 and SS016).

System Metrics

Table 1 presents operational data from the September 2021 reporting period.

Table 1 – Operations Summary – September 2021

Initial Data Collection: 9/2/2021 9:30 **Final Data Collection:** 9/30/2021 13:00

Operating Time:	Percent Uptime:	Electrical Power Usage:
CGWTP: 675.5 hours	**CGWTP:** 100%	**CGWTP:** 1,040 kWh (1,658 lbs CO_2 generated[a])

Gallons Treated (discharge to storm sewer): **679,790 gallons**

Gallons Treated Since January 1996: **597.5 million gallons**

VOC Mass Removed from groundwater: **0.90 lbs**[b]

VOC Mass Removed Since January 1996: **2,889 lbs from groundwater**; **8,686 lbs from vapor**

Rolling 12-Month Cost per Pound of Mass Removed: $3,031[c]

Monthly Cost per Pound of Mass Removed: $4,146[c]

[a] SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG. Value also includes approximately 888 pounds of GHG from GAC change out services averaged to a per month basis.
[b] Calculated using September 2021 EPA Method SW8260C analytical results.
[c] Costs include operations and maintenance, carbon change out, reporting, analytical laboratory, project management, and utility costs related to operation of the system.

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

Table 2 – CGWTP Average Flow Rates[a] – August 2021

Location	Average Flow Rate Groundwater (gpm)
EW001x16	10.0
EW002x16	5.1
EW003x16[b]	0.0
EW605x16	NM[c]
EW610x16	NM[c]
CGWTP	16.8

[a] Flow rates calculated by dividing total gallons processed by system operating time for the month or the average of the instantaneous readings.
[b] Extracted groundwater from EW003x16 had been treated in Site SS016 bioreactor until November 2020 when it was taken offline and decommissioned. The well replacing EW003x16 (EW003Ax16) has been installed but is not yet online.
[c] No current access available to the wellhead totalizers because of construction activities
gpm = gallons per minute
NM = not measured

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

Table 3 – Summary of System Shutdowns

Location	Shutdown[a]		Restart		Cause
	Date	Time	Date	Time	
CGWTP	None	--	--	--	

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

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the CGWTP on 14 September 2021. Sample results are presented in Table 4. The total VOC concentration (164.5 µg/L) in the September 2021 influent sample has decreased from the August 2021 sample (205.3 µg/L). The cause of the decrease is likely because EW605x16 and EW610x16 were offline during the monthly sample collection. TCE was the primary VOC detected in the influent sample at a concentration of 100 µg/L. Vinyl chloride and chloromethane were detected at trace concentrations in the sample collected after the first carbon vessel. A trace amount (0.81 J µg/L) of chloromethane was detected in the system effluent sample. Chloromethane does not have an established effluent limitation.

The September influent and effluent samples were analyzed for TPH-g, TPH-d, and TPH-mo. TPH-d (49 J µg/L) was detected in the influent sample, and TPH-mo (140 µg/L) was detected in the effluent sample. The TPH-mo concentration exceeded the discharge limit of 100 µg/L. The October effluent TPH-mo sample, collected on 4 October 2021, was expedited and used as a confirmation sample. Preliminary analytical results for the confirmation sample were reported on October 15, 2021, and TPH-mo was not detected. The CGWTP has remained on line.

In September 2021, EW002x16 was temporarily offline due to low water levels within the well. It is possible that the overall water level within this well when fully recharged does not trigger the high-water level sensor. The positioning of these water level sensors will be investigated in October 2021. Temporarily, the high-water level sensor has been bypassed, though the low-water sensor is still operational. EW002x16 remains online.

Figure 1 presents a plot of influent concentrations (total VOCs) and the influent flow rate at the CGWTP versus time for the past twelve (12) months. The influent concentrations have been seasonally variable; however, over the last 12 months the trend has decreased. An overall decreasing flow rate trend was observed in the past 12 months.

The Site SS016 subgrade biogeochemical reactor (SBGR), also known as the bioreactor, and the Site DP039 bioreactor both continued operating in August 2021. The Site SS016 bioreactor was offline between November 2020 and March 2021 because EW003x16, which fed the bioreactor, was offline. EW003x16 has since been decommissioned, and a replacement horizontal extraction well (EW003Ax16) has been installed but has not yet been brought online. On 20 April 2021, the Site SS016 bioreactor began receiving groundwater from a pump installed in a nearby monitoring well, MW2022x16, located near the northwest corner of the bioreactor. In September 2021, the Site SS016 bioreactor continued receiving approximately 6-10 gallons of groundwater from MW2022x16 per day.

A 3-bay aircraft hangar is being constructed over much of the Oil Spill Area (OSA) source area (former Buildings 16 and 18 area). This project is scheduled to be constructed over at least the next year or so. Every attempt will be made to keep all extraction wells and the Site SS016 bioreactor in operation. However, there may be times when extraction needs to be shutdown to facilitate construction activities. For approximately two weeks in September, EW605x16 and EW610x16 were temporarily offline due to construction activities. Both wells are currently operational.

Optimization Activities

No optimization activities occurred at the CGWTP in September 2021.

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 1,658 pounds of GHG during September 2021.

TABLE 4
Summary of Groundwater Analytical Data for September 2021 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	14 September 2021 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent[b]
Halogenated Volatile Organics							
Acetone	NA	1.9 – 3.8	0	ND	ND	ND	ND
Bromomethane	NA	0.21 – 0.42	0	ND	ND	ND	ND
Carbon disulfide	NA	0.17	0	ND	ND	ND	ND
Chloroform	1.9	0.16 – 0.32	0	ND	ND	ND	ND
Chloromethane	NA	0.30 – 0.60	0	ND	0.81 J	ND	0.81 J
1,2-Dichlorobenzene	NA	0.15 – 0.30	0	ND	ND	ND	ND
1,3-Dichlorobenzene	NA	0.13 – 0.26	0	ND	ND	ND	ND
1,4-Dichlorobenzene	NA	0.16 – 0.32	0	ND	ND	ND	ND
1,1-Dichloroethane	0.50	0.22 – 0.44	0	ND	ND	ND	ND
1,2-Dichloroethane	0.50	0.13 – 0.26	0	ND	ND	ND	ND
1,1-Dichloroethene	0.50	0.23 – 0.46	0	0.46 J	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15 – 0.30	0	60	ND	ND	ND
trans-1,2-Dichloroethene	0.50	0.15 – 0.30	0	2.6	ND	ND	ND
Tetrachloroethene	0.50	0.20 – 0.40	0	0.45 J	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16 – 0.32	0	ND	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27 – 0.54	0	ND	ND	ND	ND
Trichloroethene	0.65	0.16 – 0.32	0	100	ND	ND	ND
Vinyl Chloride	0.90	0.10 – 0.20	0	0.96 J	0.36 J	ND	ND
Non-Halogenated Volatile Organics							
Benzene	0.50	0.16 – 0.32	0	ND	ND	ND	ND
Ethylbenzene	0.50	0.16 – 0.32	0	ND	ND	ND	ND
Toluene	0.50	0.17 – 0.34	0	ND	ND	ND	ND
Total Xylenes	0.50	0.15 – 0.38	0	ND	ND	ND	ND
Other							
Total Petroleum Hydrocarbons – Gasoline (C6 – C10)	50	10	0	ND	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel (C10 – C28)	50	24 – 27	0	49 J	NM	NM	ND
Total Petroleum Hydrocarbons – Motor Oil (C28 – C40)	100	24 – 27	1	ND	NM	NM	**140**

[a] In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.

[b] Concentrations in **bold** exceeded discharge limits

Notes:

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

NA = not applicable

NM = not measured

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

µg/L = micrograms per liter

ND = not detected

Figure 1

CGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History

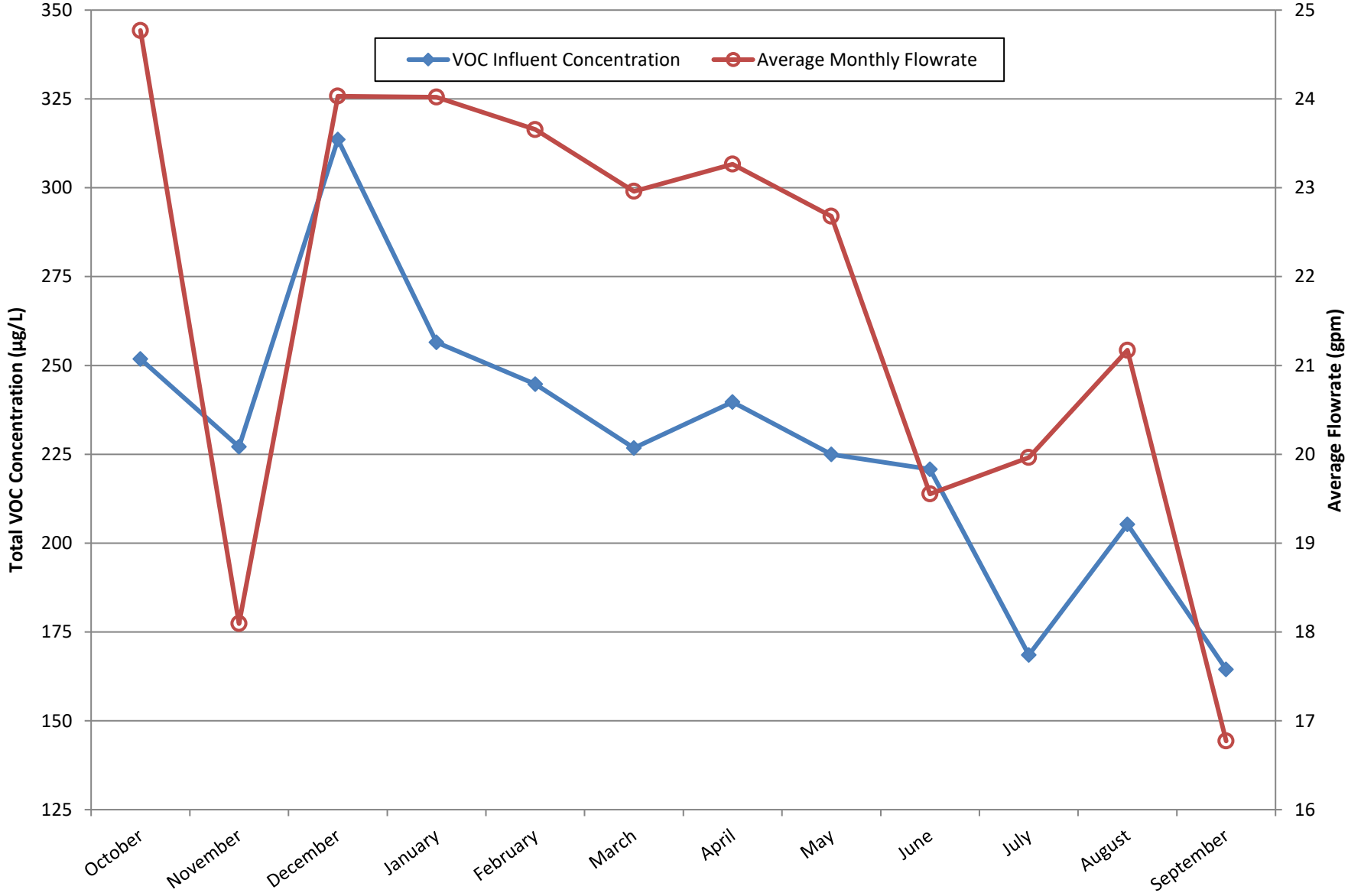
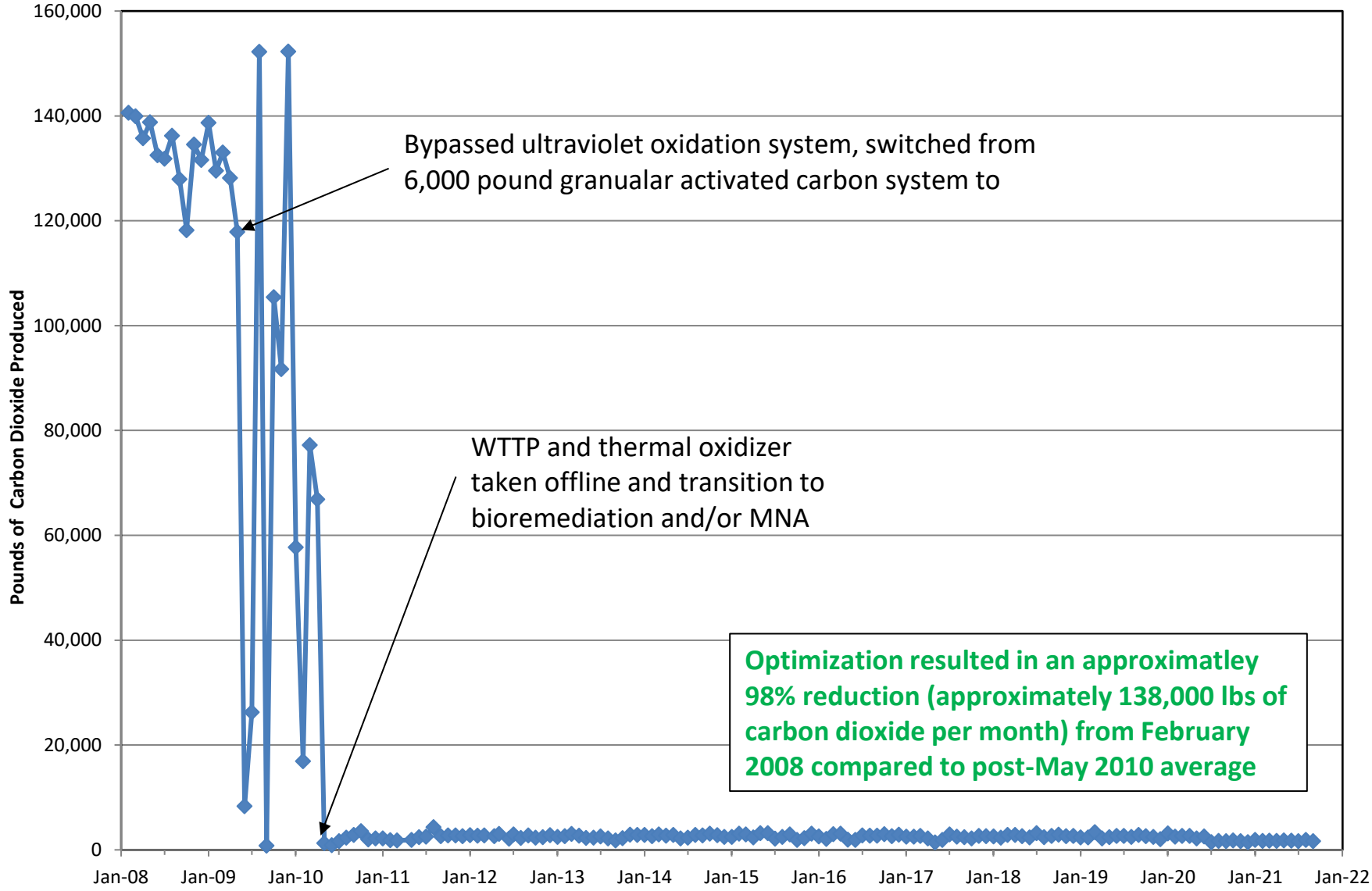


Figure 2

Equivalent Pounds of Carbon Dioxide Produced by the Central Groundwater Treatment Plant



Subarea LF007C Groundwater Treatment Plant Monthly Data Sheet

Report Number: 205 **Reporting Period: 2 September 2021 – 29 September 2021** **Date Submitted: 14 October 2021**

This monthly data sheet presents information regarding the Subarea LF007C Groundwater Treatment Plant (LF007C GWTP).

System Metrics

Table 1 presents operational data from the September 2021 reporting period:

Table 1 – Operations Summary – September 2021

Initial Data Collection:	9/2/2021 14:00		**Final Data Collection:**	9/29/2021 12:00	
Operating Time:		Percent Uptime:		Electrical Power Usage[a]:	
LF007C GWTP:	646 hours	**LF007C GWTP**	100%	**LF007C GWTP:**	0 kWh
Gallons Treated: **108,281 gallons**				Gallons Treated Since March 2000: **92.2 million gallons**	
Volume Discharged to Northgate Pond (formerly the Duck Pond): **108,281 gallons**					
VOC Mass Removed: **9.02×10^{-4} pounds**[b]				VOC Mass Removed Since March 2000: **174.4 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 LF007C GWTP operates on solar power only.
[b] VOCs from September 2021 influent sample detected by EPA Method SW8260C.
[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 – LF007C GWTP Average and Total Flow Rates – September 2021

Location	Average Flow Rate (gpm)[a]	Total Gallons Processed (gallons)
EW614x07	2.5	97,281
EW615x07	0.5	21,091
LF007C GWTP	**2.8**	**108,281**

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

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

Table 3 – Summary of System Shutdowns

Location	Shutdown[a]		Restart[a]		Cause
	Date	Time	Date	Time	
LF007C GWTP	None	--	--	--	

-- = Time not recorded
[a] Shutdown and restart times estimated based on field notes
LF007C GWTP = Subarea LF007C Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the LF007C GWTP on 14 September 2021. Sample results are presented in Table 4. The total VOC concentration in the September 2021 influent sample was 1.0 µg/L. TCE was the only VOC detected at the influent sample location. TCE (0.73 J µg/L) was also detected in the midpoint sample location. No VOCs were detected in the effluent sample location.

Figure 1 presents a chart of influent concentrations (total VOCs) at the LF007C GWTP versus time for the past twelve (12) months. VOC concentrations, primarily TCE, have been shown to be seasonally variable; however, over the last 12 months the trend has decreased. The average flow rate through the LF007C GWTP has gradually increased over the last 12 months due to typical seasonal variation.

Optimization Activities

No optimization activities occurred at the LF007C GWTP in September 2021.

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 LF007C GWTP. The LF007C GWTP is a solar-only operated treatment system and does not generate GHG, with exception of a small amount of GHG generated from changing out the GAC averaged to a per month basis.

TABLE 4
Summary of Groundwater Analytical Data for September 2021 – Subarea LF007C Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	14 September 2021 (µg/L)		
				Influent	After Carbon 1	Effluent[b]
Halogenated Volatile Organics						
Acetone	NA	1.9	0	ND	ND	ND
Bromodichloromethane	NA	0.17	0	ND	ND	ND
Bromoform	NA	0.46	0	ND	ND	ND
2-Butanone	NA	2.0	0	ND	ND	ND
Carbon Tetrachloride	NA	0.19	0	ND	ND	ND
Chloroform	1.9	0.16	0	ND	ND	ND
Chloromethane	NA	0.30	0	ND	ND	ND
Dibromochloromethane	NA	0.17	0	ND	ND	ND
1,3-Dichlorobenzene	NA	0.13	0	ND	ND	ND
1,4-Dichlorobenzene	NA	0.16	0	ND	ND	ND
1,1-Dichloroethane	0.50	0.22	0	ND	ND	ND
1,2-Dichloroethane	0.50	0.13	0	ND	ND	ND
1,1-Dichloroethene	0.50	0.23	0	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15	0	ND	ND	ND
trans-1,2-Dichloroethene	0.50	0.15	0	ND	ND	ND
Methylene Chloride	NA	0.94	0	ND	ND	ND
Tetrachloroethene	0.50	0.20	0	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16	0	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27	0	ND	ND	ND
Trichloroethene	0.65	0.16	0	1.0	0.73 J	ND
Vinyl Chloride	0.90	0.10	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	0.50	0.16	0	ND	ND	ND
Ethylbenzene	0.50	0.16	0	ND	ND	ND
Toluene	0.50	0.17	0	ND	ND	ND
Xylenes	0.50	0.15 – 0.19	0	ND	ND	ND

[a] In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.
[b] Concentrations in **bold** exceeded discharge limits

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.
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, biased low.
NA = not applicable
N/C = number of samples out of compliance with discharge limits.
ND = not detected
µg/L = micrograms per liter

Figure 1

LF007CGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History

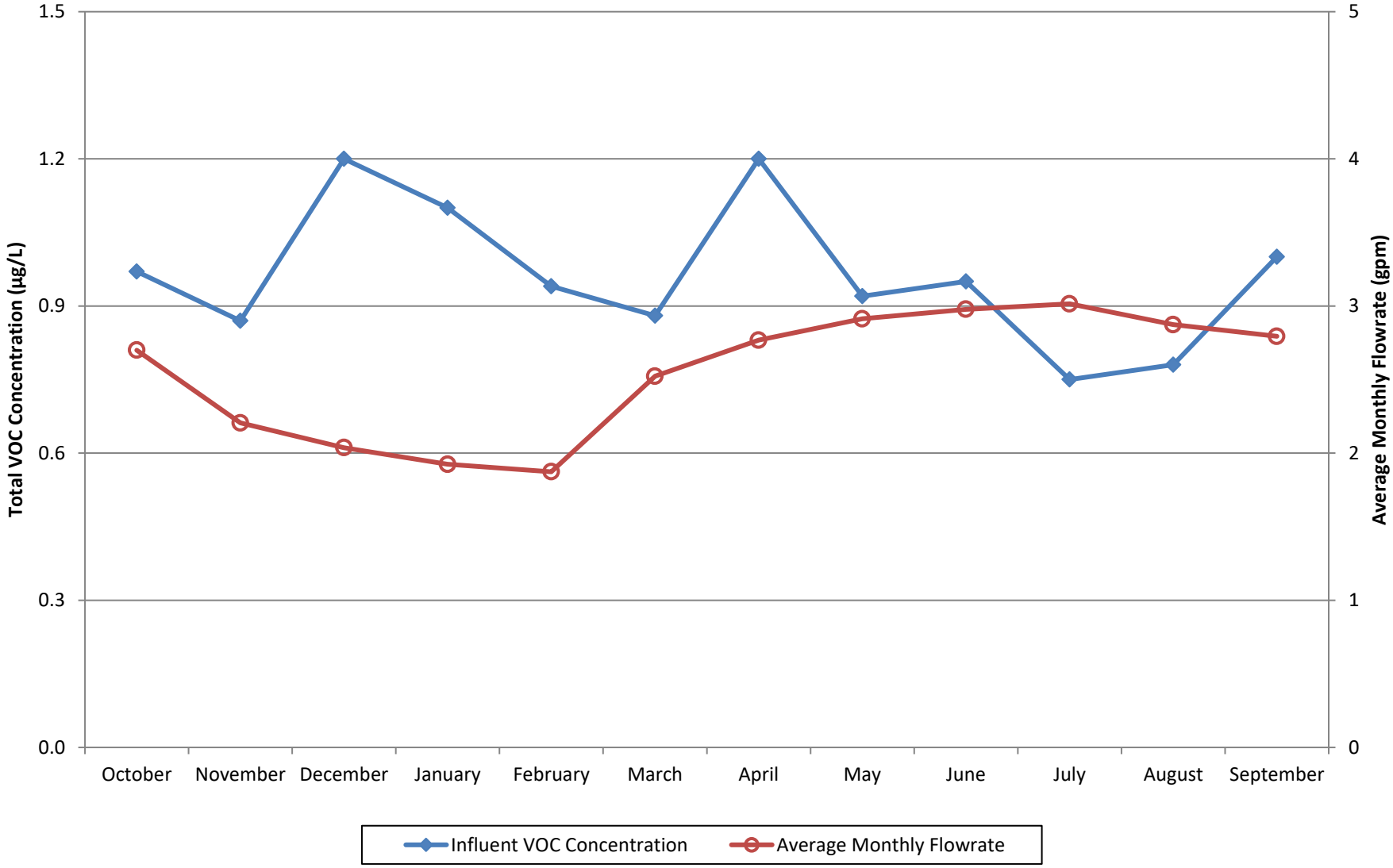
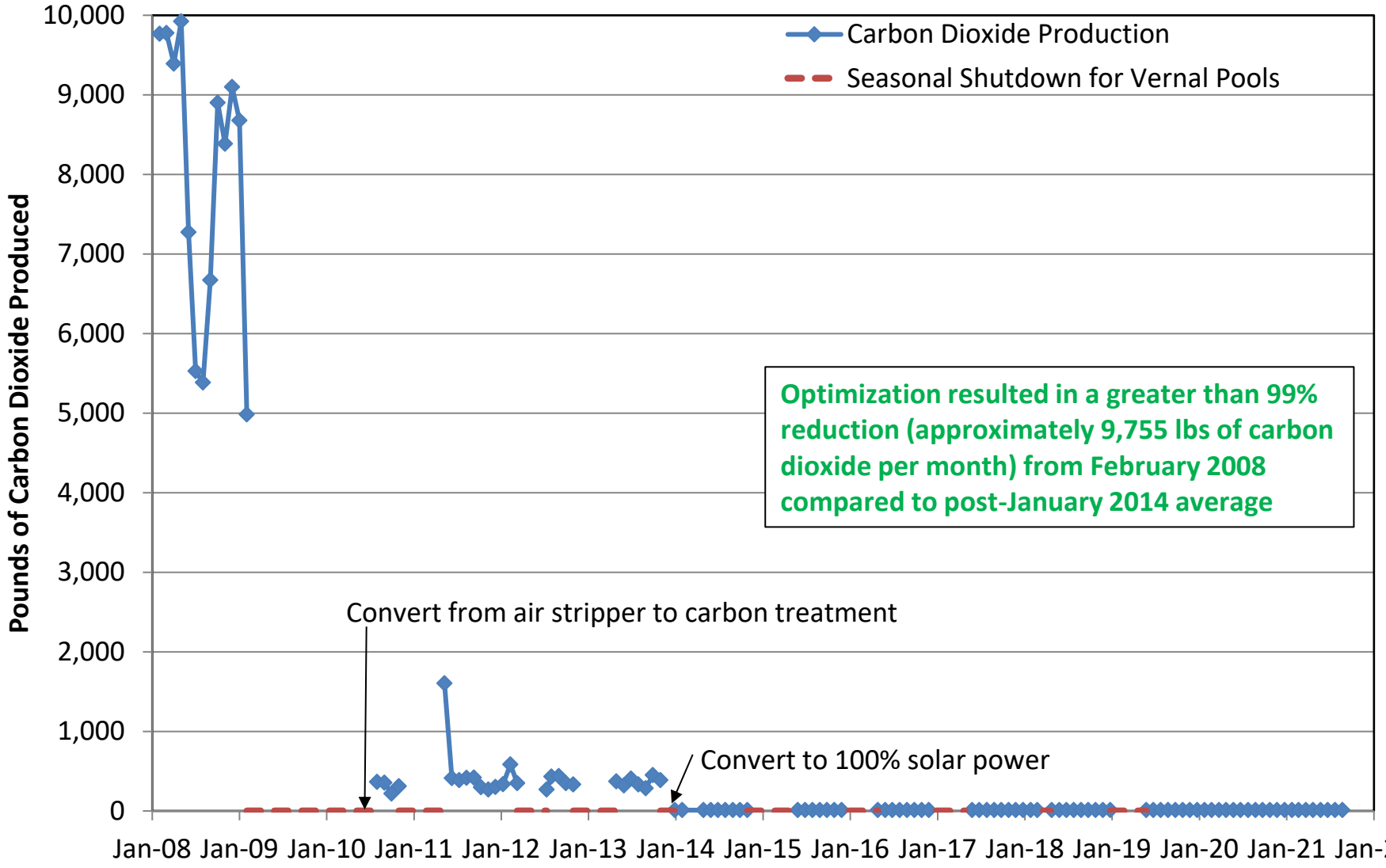


Figure 2

Equivalent Pounds of Carbon Dioxide Produced by the NGWTP/LF007C GWTP



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

Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 127 **Reporting Period: 2 September 2021 – 29 September 2021** **Date Submitted: 14 October 2021**

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

System Metrics

Table 1 presents operation data from the September 2021 reporting period.

Table 1 – Operations Summary – September 2021

Initial Data Collection: 9/2/2021 14:30	**Final Data Collection:**	9/29/2021 12:30
Operating Time:	Percent Uptime:	Electrical Power Usage:
ST018GWTP: 645.5 hours	**ST018GWTP:** 99.9%	**ST018GWTP:** 45 kWh (33 lbs CO_2 generated[a])
Gallons Extracted: **73,540 gallons**	Gallons Extracted Since March 2011: **20.6 million gallons**	
Volume Discharged to Sanitary Sewer: **73,540 gallons**	Final Totalizer Reading: **20,563,479 gallons**	
Cumulative Volume Discharged to Sanitary Sewer since 1 November 2014: **14.1 million gallons**		
MTBE, BTEX, VOC, TPH Mass Removed: **0.04 lbs**[b]	MTBE, BTEX, VOC, TPH Mass Removed Since March 2011: **50.2 lbs**	
MTBE (Only) Removed: **0.01 lbs**[b]	MTBE (Only) Mass Removed Since March 2011: **12.3 lbs**	
Rolling 12-Month Cost per Total Pounds of Mass Removed: $83,823[bc]		
Monthly Cost per Pound of Mass Removed: $97,839[bc]		

[a] SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG.
[b] Calculated using September 2021 EPA Method SW8260C and SW8015B analytical results.
[c] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.
kWh = kilowatt hour
lbs = pounds

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

Table 2 – ST018GWTP Average Flow Rates – September 2021

Location	Average Flow Rate Groundwater (gpm)[a]	Hours of Operation
EW2014x18	1.1	645
EW2016x18	0.9	645
EW2019x18	0.0	Offline[b]
EW2333x18	1.7	645
ST018GWTP	1.9	645

[a] Flow rates calculated by dividing total gallons processed by amount of operating time of the pump/system. The extraction pumps take in air from the subsurface, which alters the flow and totalizer.
[b] Extraction well was turned off with regulatory approval on 25 November 2019 because of low MTBE concentrations.

gpm = gallons per minute
ST018GWTP = Site ST018 Groundwater Treatment Plant

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

Table 3 – Summary of System Shutdowns

Location	Shutdown[a]		Restart[a]		Cause
	Date	Time	Date	Time	
ST018GWTP	7 September 2021	15:00	7 September 2021	15:30	Repair broken fitting

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

Summary of O&M Activities

Monthly groundwater discharge samples were collected at the ST018GWTP on 14 September 2021. Because the extracted groundwater is no longer treated with carbon prior to discharge to the sanitary sewer, only discharge samples are now collected, rather than influent and effluent samples. Results are presented in Table 4. The complete September 2021 laboratory data report is available upon request. The MTBE discharge concentration during the September 2021 sampling event was 16 µg/L, which is an increase from the August 2021 sample result of 14 µg/L. TPH-d, TPH-g, benzene, and acetone were also detected in the system discharge sample and are listed in Table 4.

The Fairfield-Suisun Sewer District does not currently have a discharge limit for MTBE, but a limit of 6,400 µg/L is advised based on worker health and safety. Travis AFB will continue to monitor discharge contaminant concentrations to maintain compliance with the Fairfield-Suisun Sewer District discharge permit.

On 7 September 2021, the system was shut down for approximately 30 minutes to repair a broken fitting on the transfer pump. The system was restarted without issue.

Figure 1 presents plots of the average flow rate and total extracted contaminants (MTBE, TPH-g, TPH-d, TPH-mo, BTEX, and VOCs) and extracted MTBE concentrations at the ST018GWTP over the past twelve (12) months. The average flow rate through the ST018GWTP has been cyclical with typical flow rates decreasing

during the dry season (summer and fall) and increasing during the rainy season (winter and spring). The overall average flow rates in the past 12 months show an increasing trend. The extracted MTBE concentrations and extracted total concentrations have exhibited overall decreasing trends over the past 12 months.

Optimization Activities

No optimization activities occurred at the ST018GWTP in September 2021.

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 a majority of the ST018GWTP system.

Figure 2 presents the historical GHG production from the ST018GWTP. The ST018GWTP produced 33 pounds of GHG during September 2021 and removed 73,540 gallons of water. The amount of GHG produced is directly attributed to the amount of water removed through the system because the only line-power electrical use is for a transfer pump to push the water from the system to the sanitary sewer.

TABLE 4
Summary of Groundwater Analytical Data for September 2021 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	14 September 2021 (µg/L)
				System Discharge[b]
Fuel Related Constituents				
Methyl tert-Butyl Ether	6,400	0.25	0	16
Benzene	25,000[c]	0.16	0	0.26 J
Ethylbenzene	25,000[c]	0.16	0	ND
Toluene	25,000[c]	0.17	0	ND
Total Xylenes	25,000[c]	0.19 – 0.34	0	ND
Total Petroleum Hydrocarbons – Gasoline	50,000[d]	10	0	18 J
Total Petroleum Hydrocarbons – Diesel	50,000[d]	15	0	29 J
Total Petroleum Hydrocarbons – Motor Oil	100,000	160	0	ND
Other				
Acetone	NA	1.9	0	4.1 J
Bromomethane	NA	0.21	0	ND
2-Butanone (MEK)	NA	2.0	0	ND
1,2-Dichloroethane	20	0.13	0	ND
Isopropylbenzene	NA	0.19	0	ND
Naphthalene	NA	0.22	0	ND
N-Propylbenzene	NA	0.16	0	ND

[a] In accordance with the Fairfield-Suisun Sewer District Discharge Limitations

[b] Concentrations in **bold** exceeded discharge limits

[c] The limit of 25,000 µg/L is a combined limit for BTEX.

[d] 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.
NA = not applicable
N/C = number of samples out of compliance with discharge limits.
ND = not detected above method detection limit.

Figure 1

ST018GWTP Total Influent and MTBE Concentrations and Average Flowrate Twelve Month History

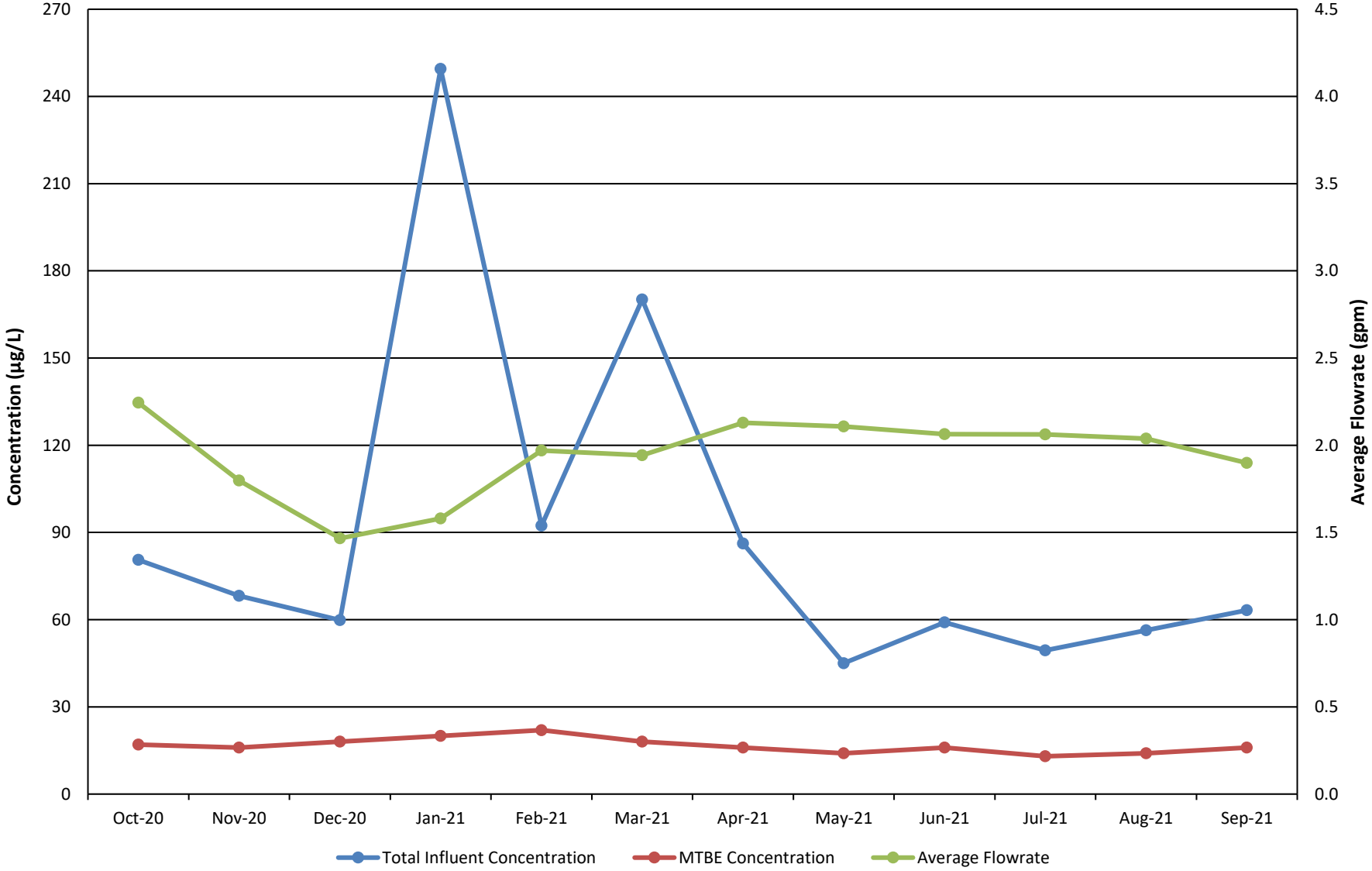
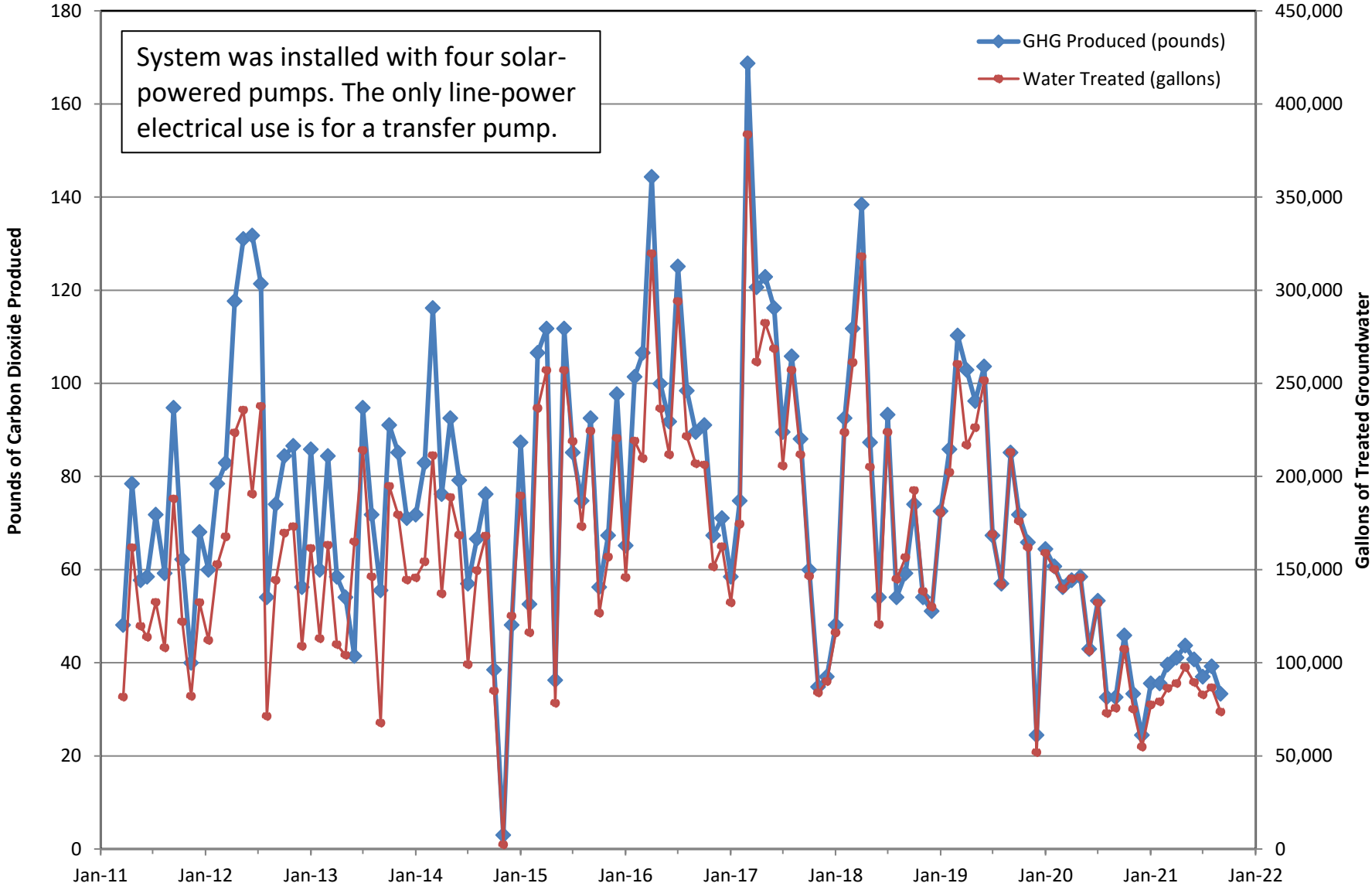


Figure 2

Equivalent Pounds of Carbon Dioxide Produced by the Site ST018 Groundwater Treatment Plant



FPM Remediations, Inc.
An Olgoonik Company

Jacobs

Overview of the California Group Optimized Remediation Contract

(CA Group ORC)

Contract Number W9123821C0021

Introduction

- CA Group ORC includes Plant 42 and Travis AFB, this overview pertains to Travis AFB scope
- The Period of Performance is 31 August 2021 – 30 August 2031
- The Prime Contractor is FPM; with Jacobs as a team member
- FPM Travis AFB team leads: Chris Coonfare (PM) and Lynette Mokry (Installation Manager)
- Jacobs Travis AFB team leads: Leslie Royer (technical manager) and Doug Berwick (O&M manager)
- Primary ORC objective for Travis AFB is to Conduct Remedial Action-Operations (RA-O)/Long-Term Monitoring (LTM)/Operations and Maintenance (O&M)

Project Scope-Travis AFB

- RA-O/LTM/O&M at 21 Environmental Restoration Program (ERP) sites includes:
  - LTM program; groundwater remediation implementation program (GRIP)
  - O&M [groundwater extraction & treatment systems (GETS), bioreactors, phytoremediation system]
  - Corrective Action Management Unit (CAMU) monitoring
  - Land use control inspections
  - Well repair/replacement
  - These tasks will continue through entire contract and continue to be documented in annual Groundwater Remediation Implementation Status Reports (GRISRS), annual CAMU monitoring reports, and annual Land Use Inspection Reports

Project Scope-Travis AFB, Cont.

- Decision Documents:
  - Proposed Plan (PP), Record of Decision-Amendment (ROD-A), Remedial Design/Remedial Action (RD/RA) Workplans for Sites FT004 and SD034; incorporating technology demonstration (TD) into final groundwater remedy (anticipated to begin 2024)
  - Corrective Action Plan (CAP) for Site SS014; incorporating TD into final groundwater remedy (POCO site) (anticipated to begin in 2023)
  - Remedial Investigation (RI) Work Plan (WP), RI/Feasibility Study (RI/FS), PP, and ROD For Site SD031 (anticipated to begin in 2023)

Project Scope-Travis AFB, Cont.

- Optimizations:
  - Expanding and/or improving treatment at enhanced attenuation (EA) Sites SS015, SD036, SD037, and DP039 using solar powered organic carbon (SPOC) injection systems (anticipated 2022-2023)
  - Expanding LF007C GETS to target remaining lobes of the TCE plume and expedite attaining cleanup levels (anticipated 2022-2023)
  - Optimize pumping at ST018 to target remaining MTBE plume; perform rebound study if LTM data indicate it is appropriate (anticipated 2022-2024)

Project Scope-Travis AFB, Cont.

- Site Closure
  - Only one site, LF006, is expected to attain closure over the contract period.
  - Site has begun closure monitoring; closure monitoring will need to demonstrate COC concentrations remain below cleanup levels over the closure monitoring period and rebound is not occurring prior to starting closure activities.

Project Scope-Travis AFB, Cont.

- Community Relations:
  - Community Relations Plan (CRP)
    - To include input from a community survey, and feedback on survey results presentation from April 2022 RAB
    - First update in 2022, maybe updated again, if needed, over contract

Project Scope-Travis AFB, Cont.

- Anticipated documents for regulatory review 2021-2022:
  - UFP-QAPP
  - Site SD031 Data Gaps Investigation (DGI) Work Plan (WP)
  - Site SD031 DGI Technical Memorandum (TM)
  - Sites SD036, SD037, and DP039 Optimization WP
  - Site LF007C Optimization WP
  - Community Relations Plan
  - Annual GRISR
  - Annual CAMU Monitoring Report

Project Scope-Travis AFB, Cont.

- Anticipated Fieldwork for 2021-2022
  - GRIP
  - Site SD031 DGI
  - Sites SD036, SD037, and DP039 optimizations

Questions?

FPM Remediations, Inc.
An Olgoonik Company

Jacobs

Travis AFB
Restoration Program

ORC Program Update

RPM Meeting October 21, 2021

Documents Planned

CERCLA

- UFP- QAPP — January
- Site SD031 Data Gaps Investigation WP — February

POCO

None

Field Work Planned

CERCLA

- 4Q GRIP Event — October ‘21
- 2Q GRIP Event — April ‘22
- Site SD031 Data Gaps Investigation — June ‘22

POCO

None

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

Travis AFB
RPM Meeting
21 October 2021

Land Use Control Sites
Status/Update

Projects on Sites with LUCs Will Start Documenting in Annual Report

Site #	Project Description	Date Discussed/Approved	Additional Information
SS016	KC-46 Hangar and Fuel System Project	Starting in 2018 with approval and following up during construction	Regulators provided input from the beginning of the design of this project
SD037	New Material Handling System at Bldg. 977	January 2019 and August 2020	Soil impacted with TPH from old hydraluic rams will be sampled and properly disposed of.
LF044	Concrete Batch Plant	May 2021 RPM meeting	Soil and or debris scraped up during ground preparation will be sampled and properly disposed of.
SS016/SS029/ST032	Runway Replacement	May 2021 RPM meeting	EA submitted to regulators on June 8
SS016	Fuel Sample Probes	Email Discussion Initiated 27 August 2021	Email notification that project is scheduled to begin sent 09 September 2021

UPDATE

SS016-KC-46 Hangar Project

-There continues to be issues with interference from other utilities to include the connection between the CGWTP and the WTTP

- Anticipate scheduling the step-rate pump test and bringing the replacement horizontal well on line after start of FY22

SD037-Bldg. 977 Material Handling System-Contract Awarded-Design in Progress

LF044-Concrete Batch Plant-Construction ongoing, footprint of LF044 not impacted

SS016/SS029/ST032-Runway Replacement-Air Force working to finalize EA, still waiting for USFWS Consultation

SS016-Fuel Sample Probes-Project Complete, no data yet

PFOS/PFOA Updates

Off-Base Point-Of-Entry-Treatment-Systems

- Routing of letters-to-residents continues through Base Staff sections.

  - 15 Oct, Travis AFB Legal office completed their review and found the letters "…legally sufficient and ready for 60 AMW/CC signature."

  - Once letters are submitted/received by property owners, delivery of bottled water will be discontinued.

- 16 Sep, 90-day system monitoring sampling event occurred.
  - 12 Oct, Stage 2A data validation received; effluent samples were non-detect for PFOS/PFOA/PFBS.

- Influent/effluent general chemistry data was collect during the initial, 30-day and 90-day sampling events.
  - There were no changes to the water chemistry data between influent and effluent indicating that the POETS are not affecting water chemistry.
  - Collection of general water chemistry data will be discontinued.

Expanded Site Inspection

- The Site Inspection Addendum Report is complete.
- Expect to receive the Final week of 18 Oct.
- The final report will be redacted of PII for uploading to the Administrative Record.
- Per the FFA, regulator stakeholders will not receive a draft copy for review; the Final will be provided but without a request for comments.

AFFF RI Updates

Travis Air Force Base
Phase I Remedial Investigation of AFFF Areas

Presented by
Megan Duley, PE

ONEIDA Sustainment and Restoration Services

21 October 2021

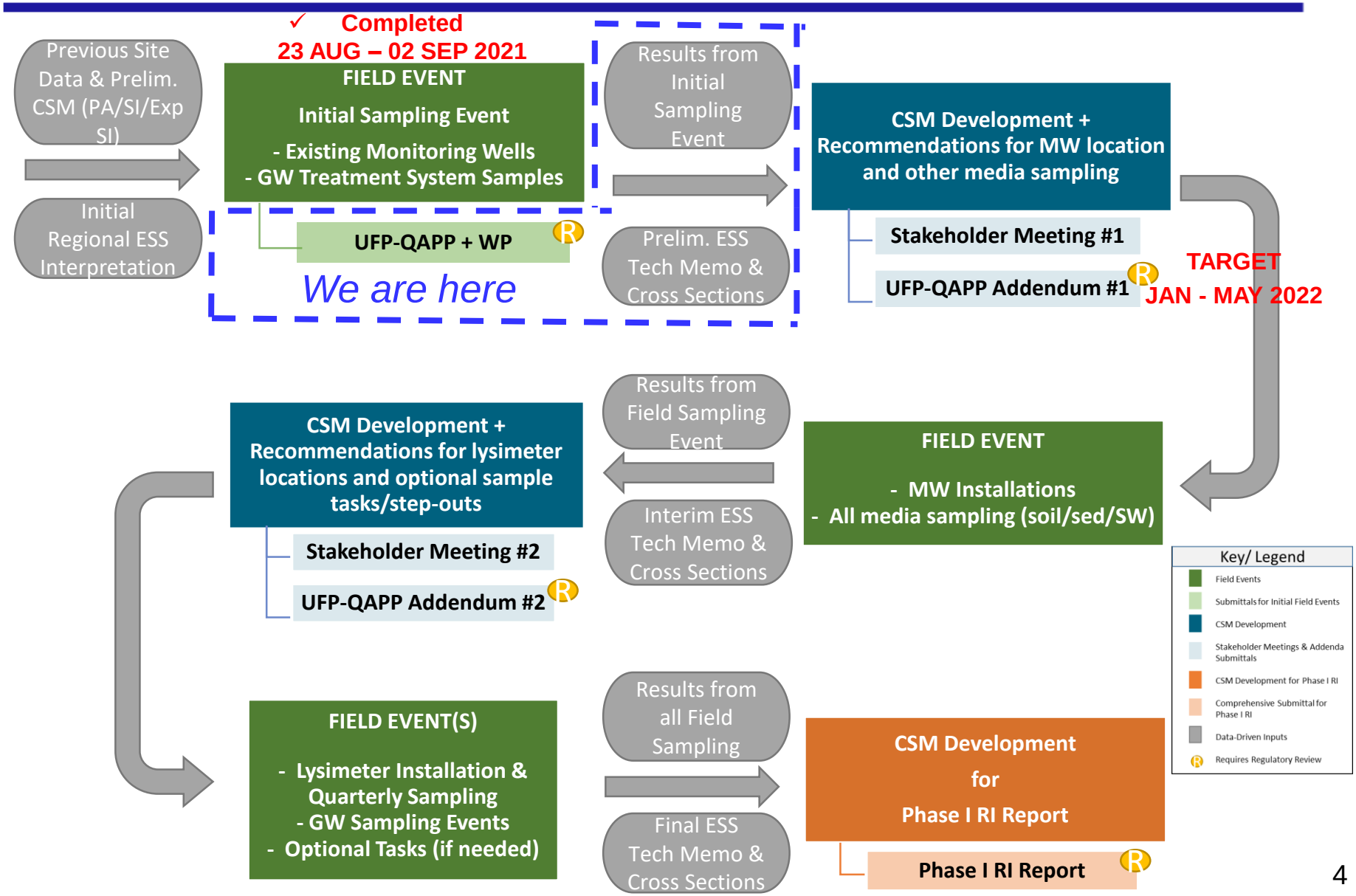
Planning Document Update

- *25 March 2021*. Phase I RI WP and UFP-QAPP Intro Mtg.
- *26 March 2021*. Draft docs submitted electronically.
- *26 May 2021*. Regulatory comments received.
- *16 June 2021*. Comment discussion/resolution mtg held.
- *30 June 2021*. Draft Final docs submitted.
- *30 July 2021 – 5 August 2021*. Regulatory concurrence on the Draft-Final docs for initial sampling and additional Agency concerns received.
- *12 August 2021*. USACE Approves Project APP/SSHP.
- *18 August 2021*. RLSO Draft Final WP and UFP-QAPP docs posted to Sharepoint for initial sampling event.

Planning Document Update

- *22 September 2021*. Response to additional Agency comments submitted to Agencies. Request concurrence by 1 October 2021.
- *27 September 2021*. USEPA requested extension to review. AFCEC requested Agency review/concurrence by 18 October 2021.
- ***28 September 2021****.* DTSC provided concurrence for the Work Plan and UFP-QAPP documents.
- ***13 October 2021.*** USEPA and RWQCB provided concurrence for the Work Plan and UFP-QAPP documents.
- *Target 27 October 2021.* Final document submittal.

Phase I Remedial Investigation Data-Driven Process



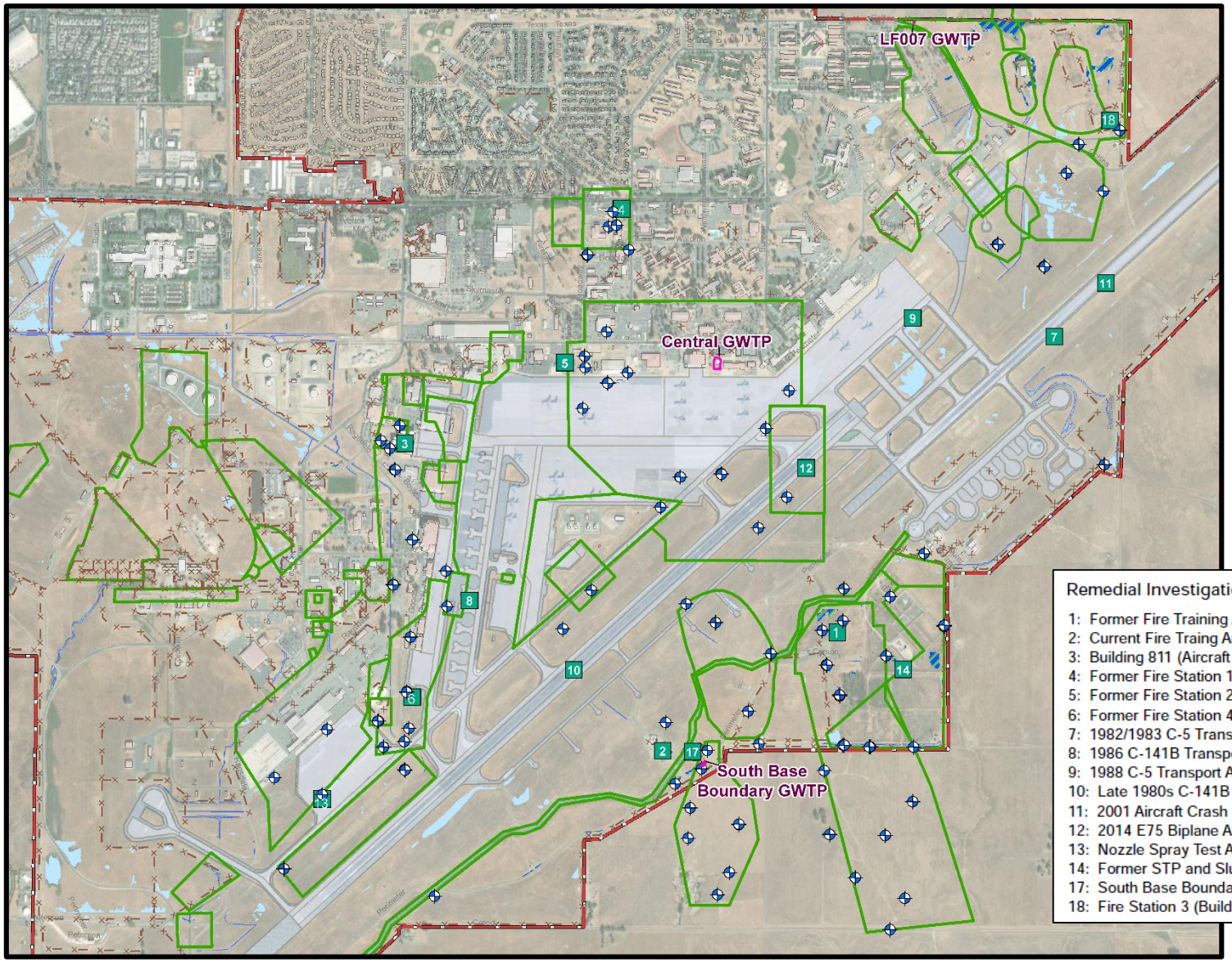
Initial Sampling Event and Next Steps

- *23 Aug – 2 Sep 2021.* Sampled 96 monitoring wells and collected influent and effluent samples at the SBBGWTP, CGWTP, and LF007 treatment systems.
- *24 Sep 2021.* Receipt of preliminary (unvalidated) laboratory data for the SBBGWTP.
  - SBBGWTP- Influent Concentrations:

    2100 ng/L PFOS, 1600 ng/L PFOA, 570 ng/L PFBS
  - SBBGWTP- Effluent Concentrations:

    1.00 ng/L PFOS, 10 ng/L PFOA, 220 ng/L PFBS
- *30 Oct 2021.* Receipt of remaining (unvalidated) laboratory data packages.
- *Nov/Dec 2021.* Data Validation.
- *Dec/Jan 2021.* Generate data tables and figures.
- *Target Jan/Feb 2021.* Stakeholder Meeting #1 and UFP-QAPP Addendum #1.

AFFF and Remedial Investigation Areas




AIR FORCE CIVIL ENGINEER CENTER