Final

Travis Air Force Base
Environmental Restoration Program
Restoration Program Manager's
Meeting Minutes
13 February 2019, 0930 Hours

Mr. Lonnie Duke of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Section (ISS) conducted the Restoration Program Manager's (RPM) meeting on 13 February 2019 at 0930 hours in Building 248 at Travis AFB, California. Attendees included:

Lonnie Duke	AFCEC/CZOW
Glenn Anderson	AFCEC/CZOW
Gene Clare	AFCEC/CZOW
Angel Santiago Jr.	AFCEC/CZOW
Haekyung Kim (via telephone)	AFCEC/CZRW
Sarah Miller (via telephone)	USACE
Merrie Schilter-Lowe	Travis AFB/PA
Dominique Forrester (via telephone)	DTSC
Ben Fries	DTSC
Adriana Constantinescu	RWQCB
Nadia Hollan-Burke (via telephone)	EPA
Indira Balkissoon	TechLaw, Inc.
Mike Wray	CH2M/JACOBS
Leslie Royer	CH2M/JACOBS
Jeannette Cumberland	CH2M/JACOBS
Jill Dunphy (via telephone)	CH2M/JACOBS

Handouts distributed prior to or at the meeting, discussions, and presentations included:

Attachment 1	Meeting Agenda
Attachment 2	Master Meeting and Document Schedule
Attachment 3	SBBGWTP Monthly Data Sheet (January 2019)
Attachment 4	CGWTP Monthly Data Sheet (January 2019)
Attachment 5	LF007C Monthly Data Sheet (January 2019)
Attachment 6	ST018 Monthly Data Sheet (January 2019)

Attachment 7	Presentation: Site System Enhancements Planned for 2019
Attachment 8	Presentation: Program Update

1. ADMINISTRATIVE

A. Previous Meeting Minutes

There were no Water Board, DTSC, or EPA comments on the January 2019 RPM Teleconference Summary. EPA clarified that during the partial federal government shutdown, EPA was able to receive mail and it was being distributed, and that EPA contractors were not shut down. Ms. Burke noted that, should there be another federal government shutdown, their contractors can continue to work on EPA projects if given appropriate direction from EPA beforehand.

B. Action Item Review

Action items from January 2019 were reviewed.

Action item 1 is ongoing: Ms. O'Sullivan to provide updates on perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). February 2019 update: Mr. Duke had no updates. Regarding the Site Inspection Report, Ms. Constantinescu said that the Water Board still intends to send a letter to the Air Force requesting that the Air Force issue a work plan by April 12 for additional PFOS/PFOA investigation; however, the Air Force still has not received it. The Air Force stated that they will have to work with AFCEC to resolve the issue. Ms. Constantinescu said the Water Board can accept the work plan, and proposed work may be phased based on findings. Mr. Duke said that they can't write a work plan until the contract for additional investigation is awarded, which will likely be awarded to the contractor who conducted the Site Inspection. DTSC and the Water Board noted that the SI Report was finalized without agency input; however, Mr. Duke stated that the finalized document was provided to the regulators in accordance with the Travis AFB Federal Facilities Agreement.

Action Item 2 is ongoing: Mr. Duke will continue to provide design and construction information for the new KC-46 Hangar construction project. February 2019 update: EPA, DTSC, and the Water Board position is that ongoing, routine vapor intrusion sampling is necessary to ensure that the vapor barrier is working and/or there are no vapor intrusion issues, citing earthquakes as a potential issue. Mr. Duke stated that this is not included in the scope of the current contract, so the Air Force cannot support additional sampling. The Air Force will discuss with AFCEC including routine sampling in the 5-year reviews in the next contract, since those reviews evaluate the ongoing protectiveness of the remedies in place. The contract will not be awarded until 2021, but the next 5-year review is scheduled for 2023 and could potentially be included in that contract.

Action Item 3: Once the partial government shutdown is over and the EPA returns to work, the Air Force will discuss the document schedule with the EPA and revise the Master Meeting and Document Schedule accordingly. Mr. Duke will send the revised MMDS to the regulators ahead of the meeting or teleconference following the reopening of the federal government. February 2019 update: Mr. Duke noted that the updated schedule will be discussed during the Master Meeting and Document discussion. This action item is now closed.

Action Item 4: Mr. Anderson will send a summary email to DTSC regarding acceptable ecological risk at Site SS015 due to a thick overlying concrete pavement, justifying that there is no need for DTSC's ecological risk assessor to review the documents. February 2019 Update: Mr. Anderson sent the summary as requested. The concrete will be left in place and land use controls (LUCs) will remain at the site, and the Air Force will provide additional information regarding the location of contamination at DTSC's request. This action item is now closed.

Action Item 5: Mr. Duke will upload the Environmental Assessment from the Concrete Batch Plant for Water Board review of the stormwater management section. February 2019 Update: Mr. Anderson stated that the Air Force sent the Environmental Analysis (EA) to the Water Board. Ms. Constantinescu stated that the Water Board received, and is reviewing the EA, and she will check with the Watershed division regarding acceptability of the stormwater BMPs. This action item is now closed.

Action Item 6: Mr. Anderson will send an Outlook invitation to the regulators for the annual LUC inspection, tentatively planned for 29 January 2019. February 2019 Update: Mr. Anderson sent invitations to DTSC and the Water Board; DTSC attended. Mr. Anderson stated that he did not send an outlook invite to EPA or their contractor due to the partial federal government shutdown. This action item is now closed.

C. Master Meeting and Document Schedule Review (see Attachment 2)

The Travis AFB Master Meeting and Document Schedule (MMDS) was discussed during this meeting (see Attachment 2).

The progress of several documents was affected by the 35-day partial federal government shutdown, and resulting furlough of EPA staff. Delays related to legal review and comments pose a potential issue since the Air Force is still waiting for EPA Legal responses to Air Force Legal comments on the Amendment to the NEWIOU Record of Decision (ROD) dating back to September 2018. This delay affects many projects, including the KC-46 hangar. Mr. Duke noted that he may need to elevate this to management in order to

resolve in a timely manner. As a result, the schedule for many documents remains "TBD".

Travis AFB Annual Meeting and Teleconference Schedule

The next RPM meeting will be a teleconference held on Wednesday, 20 March 2019.

Travis AFB Master Document Schedule

— Community Relations Plan Update (CRP): There was no change to the schedule.

— Amendment to the NEWIOU Soil ROD for the Travis AFB ERP Sites SS016 and SD033: There was no change to the schedule. Air Force Legal delays are related to staff turnover, and EPA Legal delays are related to the partial federal government shutdown. **This is a super-critical document** due to site work supporting planned KC-46 hangar construction.

— No Further Action ROD for Old Skeet Range (TS060 MRA): There is no change in the schedule. Responses to comments were sent to the acting Air Force Legal staff. **This is an important but not critical document**.

— Site SS016 Remedial Design/Remedial Action Work Plan: There was no change in the schedule. This document won't go final until the final Amendment to the NEWIOU Soil ROD is submitted, which is also delayed due to the shutdown. This excavation project is located within the footprint of the future new KC-46 hangar, so **this document is critical**.

— Site SD031 Soil Remedial Investigation/Feasibility Study: No change was made to the schedule. **This document is important but not time-critical**.

— Fourth Five-Year Review Report for Multiple Groundwater, Soil, and Sediment Sites: No change was made to the schedule. **This document is very important but not critical**.

— Addendum to the Site SS016 Groundwater Remedial Design/Remedial Action Work Plan: The Draft to Agencies and Draft to RAB due dates were changed to 28 February 2019, and the Agency Comments due date was changed to 1 April 2019. The rest of the schedule was changed to TBD due to delays resulting from the shutdown.

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

— Quarterly Newsletters (April 2019): The PreDraft to AF/Service Center was changed to 26 February 2019. The rest of the schedule was changed accordingly. This newsletter announces the April RAB Meeting so must be delivered a few weeks prior to that.

— 2017 Annual GRISR: The Agency Comments Due date was changed to 31 January 2019. The Air Force is preparing responses to EPA and Water Board comments. An email with the DTSC comments was submitted on 12 February 2019; and Mr.

Fries indicated a letter providing the final comments will be sent. Responses to DTSC comments cannot be prepared until the official letter is received (note, agency comments were due for this document on 19 November 2018).

— Site SS015 Soil Sampling Results Technical Memorandum. No change was made to the schedule. The Water Board is reviewing Air Force responses to their comments and will confirm if the responses are adequate and accepted by 22 February. Ms. Burke and Mr. Fries indicated that the Air Force responses to their comments were adequate, therefore accepted.

— Site LF006 Technology Demonstration Construction Completion Report: The Draft to Agencies due date was changed to 20 February 2019. EPA noted they do not need to review this document because it is a secondary document.

— Subarea LF007C Total Petroleum Hydrocarbon Chromatogram Review Technical Memorandum: The Response to Comment due date was changed to 22 February 2019. The Water Board is reviewing. Ms. Constantinescu has a meeting scheduled with the Waste Water Discharge permitting specialist to see if he agrees with dropping the TPH analysis. Ms. Burke requested she be copied on the submittal when the document is finalized.

— AOC TA500 POCO Well Decommissioning and Site Closeout Technical Memorandum: Moved to History.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, January 2019 (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 6.2 million gallons of groundwater were extracted and treated in January 2019. All treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 142.9 gallons per minute (gpm). Electrical power usage was 15,645 kilowatt hours (kWh), and approximately 12,377 pounds of CO_2 were created (based on DOE calculation). Approximately 1.3 pounds of volatile organic compounds (VOCs) were removed in January. The total mass of volatile organic compounds (VOCs) removed since startup of the system is 512.1 pounds.

1,2-DCA was detected in the effluent sample at concentrations greater than the instantaneous maximum effluent discharge limit. TPH-D was also detected in the effluent, but did not exceed the discharge limit. The agencies were notified of the exceedance. Confirmation samples were collected, as well as samples from Union Creek upstream and downstream of the outfall; results will be included in the next monthly data sheet. A carbon changeout is planned for February 2019.

Troubleshooting activities were performed on several extraction wells in January 2019. Details can be found in Attachment 3.

No optimization activities are reported for the month of January 2019.

Central Groundwater Treatment Plant, January 2019 (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1,158,130 gallons of groundwater extracted and treated in January 2019. All treated water was discharged to the storm sewer system which discharges to Union Creek. The average flow rate for the CGWTP was 27.7 gpm. Electrical power usage was 1,979 kWh for all equipment connected to the Central Plant, and approximately 2,353 pounds of CO_2 were generated. Approximately 1.8 pounds of VOCs were removed from groundwater by the treatment plant in January. The total mass of VOCs removed since the startup of the system is 11,510 pounds.

Optimization Activities for CGWTP: The DP039 bioreactor continues to operate in a four-week "pulsed mode." No other optimization activities are reported for the month of January 2019.

LF007C Groundwater Treatment Plant, January 2019 (See Attachment 5)

The Subarea LF007C Groundwater Treatment Plant (LF007C GWTP) performed at 100% uptime with approximately 17,867 gallons of groundwater extracted and treated in January 2019. All treated water was discharged to the Duck Pond for beneficial reuse. The average flow rate was 2.6 gpm. Approximately 2.1×10^{-4} pound of VOCs was removed from groundwater by the treatment plant in January. 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.

The LF007C GWTP was taken off line on 7 January 2019 when vernal pools formed at Subarea LF007C. The system will be restarted once the vernal pools have dissipated. Monthly groundwater samples were not collected at the LF007C GWTP in January 2019 because the system was shut down before monthly samples were collected. Samples will be collected once the treatment plant resumes operation.

No optimization activities are reported for the month of January 2019.

ST018 Groundwater (MTBE) Treatment Plant, January 2019 (see Attachment 6)

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 180,430 gallons of groundwater extracted in January 2019. All groundwater was discharged to the Fairfield – Suisun Sewer District. The average flow rate for the ST018 GWTP was 4.2 gpm. Electrical power usage for the month was 98

kWh for all equipment connected to the ST018 GWTP. The total CO_2 equivalent, including an estimate for the carbon change-out, equates to approximately 73 pounds. Approximately 0.49 pound of MTBE, BTEX, VOCs, and TPH was removed in January by the treatment plant, and approximately 0.02 pound of MTBE-only was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 46.6 pounds, and the total MTBE mass removed since startup of the system is 11.3 pounds.

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

There were no shutdowns of the ST018 GWTP in January 2019; however, because of consecutive cloudy, foggy, and/or rainy days, the extraction wells experienced decreased production throughout the monitoring period. In addition, extraction well EW2333x18 experienced shutdowns during the reporting period because of high pressures in the extraction piping. This well has its flow restricted to reduce frequent well cycling, and this can lead to occasional shutdowns. This alarm set point will be adjusted if continued shutdowns are experienced going forward.

No optimization activities are reported for the month of January 2019.

3. Presentations:

A) Site System Enhancements Planned for 2019(see Attachment 7)

Ms. Royer discussed the sites and systems where ongoing remedial actions will be enhanced in 2019. Full details of the presentation can be found in Attachment 7. Highlights include:

- Minor adjustments are necessary at a few sites to enhance remedial efforts or the ongoing technology demonstrations (TDs).
- These enhancements result from observations in the 2018 Groundwater Remediation Implementation Program (GRIP) data. They will be recommended in the forthcoming 2018 Groundwater Remediation Implementation Status Report (GRISR), implemented during the 2019 field season, and reported on in the 2019 GRISR. There will not be any work plans submitted relating to these enhancements.

- Site SD034 Oxygen Enhancement:
  - Original remedy was monitored natural attenuation (MNA) with passive skimming

- The current system is pulling in a lot more contamination than was initially evident from baseline concentrations, and it is using more oxygen than the system can continue to provide

- Oxygen distribution in the washboard bioreactor system has slowed; more oxygen is needed in the subgrade biogeochemical reactor (SBGR) trenches to continue degradation
- This potential need for additional oxygen was anticipated during the TD design, so the slotted pipes and risers, which would allow for introduction of oxygen, are already installed in the trenches
- In addition to increasing oxygen delivery, low-yielding extraction well EW01x34 will be decommissioned and replaced in close proximity, and one additional extraction well will be installed near MW02x34. The improvement in extraction will allow more product to be removed and delivered to the trenches.
- Utilities and location of proposed enhancements have been assessed

- ST027B Reinjection:
  - Slight rebound observed a few wells, need to reinject in order for degradation to continue.
  - Emulsified vegetable oil (EVO) is likely being used up faster than expected, and injections were also a challenge due to fractured bedrock
  - The same mix of EVO and EVO and bioaugmentation used in 2016 will be used again, and at the same locations.

- Site DP039 Extraction and SBGR recirculation enhancement:
  - Two of the components of the DP039 RA (the bioreactor and SBGR trench) will be modified to increase effectiveness of the remedy.
  - The SBGR along the upgradient edge of the phytoremediation system is receiving more water than it can effectively handle, but don't want to decrease the rate of extraction at the two wells that provide groundwater to the SBGR.
  - The bioreactor has the capacity to handle additional water
  - A flow control valve will be installed in order to direct excess flow to the bioreactor using the existing pipeline
  - The goal would be to maximize flow from all extraction wells and split it between the infiltration trench and bioreactor
  - In the event of a drought, extraction water could be diverted away from the bioreactor and back to the infiltration trench
  - There will be a fence around the flow controller for security

- Site SS015 Reinjection Study:
  - EVO Injection is the final remedy; two injections have been completed already
  - Progress in remediation was slower than desired

- Samples from 4 wells at the site have been collected, and will be analyzed to determine the types of bacteria present
- Use of amendments will be evaluated based on the types of bacteria present; different nutrients are needed for aerobic vs. anaerobic decomposition.
- If an amendment is identified that has the potential to better support the site-specific bacterial population, the effectiveness of the amendment will be tested in a small area of the site prior to implementing at the entire site.

- Sites SD036 and SD037 Aquifer Testing:
  - Certain wells at each site have shown increasing VOC concentrations; at SD036, this well is outside of the treatment area
  - 72-hour aquifer tests will be conducted to refine hydrogeologic parameters in the area and evaluate TCE concentrations as the aquifer is stressed in the immediate vicinity of the pumped wells.

- Extraction Well Redevelopment:
  - There are ongoing sedimentation issues at some extraction wells, so these wells will be redeveloped to enhance performance

- Because the enhancements will likely occur before the 2018 GRISR is ready for review, Ms. Burke noted that EPA will provide comments on this presentation rather than wait until review of the 2018 GRISR
- There is no operation and maintenance plan for the technology demonstrations because the technology and resulting data are too dynamic. EVO reinjections for RA remedies involving ERD are part of routine maintenance of the remedy and will continue, as needed, until the remedial action objectives are met. The Air Force will continue to follow procedures outlined in existing, approved work plans to conduct this work.

B) Program Update: Activities Completed, In Progress, and Upcoming (see Attachment 8)

Mr. Wray reported on the status of fieldwork and documents which are completed, in progress, and upcoming. Please refer to Attachment 8 for the full briefing.

4. New Action Item Review

1. Ms. Royer will let EPA know which of the Site ST027B wells showed rebound and led to planned reinjections.

5. PROGRAM ISSUES/UPDATE

None

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Monika O'Sullivan	Ms. O'Sullivan to provide updates on PFOS and PFOA as she becomes aware of them.	Ongoing	Open
2.	Lonnie Duke	Mr. Duke will continue to provide design and construction information for the KC-46 Hangar for agency input ahead of the Air Force/Civil Engineering awarding the construction contract.	Ongoing	Open
3.	Leslie Royer	Ms. Royer will let EPA know which of the Site ST027B wells showed rebound and led to planned reinjections.	February 28, 2019	Open