Final

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

21 October 2010, 1400 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 21 October 2010 at 1400 in the Main Conference Room, Building 570, Travis AFB, California. Attendees included:

• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Mark Smith	Travis AFB
• Gregory Parrott	Travis AFB
• Merrie Schilter-Lowe	Travis AFB
• Dezso Linbrunner	United States Army Corp of Engineers (USACE), Omaha District
• Alan Friedman	California Regional Water Quality Control Board (RWQCB)
• Jose Salcedo	California Department of Toxic Substances Control (DTSC)
• Nadia Hollan Burke	United States Environmental Protection Agency (USEPA)
• Mary Snow	Techlaw, Inc
• Rachel Hess	ITSI
• Mike Wray	CH2M HILL
• Loren Krook	CH2M HILL
• Doug Berwick	CH2M HILL

Handouts distributed at the meeting and presentations included:

• Attachment 1	Meeting Agenda
• Attachment 2	Master Meeting and Document Schedule
• Attachment 3	SBBGWTP Monthly Data Sheet (September 2010)
• Attachment 4	CGWTP Monthly Data Sheet (September 2010)
• Attachment 5	NGWTP Monthly Data Sheet (September 2010)
• Attachment 6	Presentation: SS015 and SD036 EVO Injection Implementation Update
• Attachment 7	Presentation: Program Update: Activities Completed, In Progress and Upcoming
• Attachment 8	Presentation: 2010 Field Schedule

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 22 September 2010 RPM meeting minutes were approved and finalized as written.

B. Action Item Review.

Action items from September were reviewed.

Action item one still open. No change.

Action item two still open. No change.

Action item three still open. No change

Master Meeting and Document Schedule Review (see Attachment 2)

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

Travis AFB Annual Meeting and Teleconference Schedule

— The next RPM meeting will be held on 01 December 2010 at 09:30 PM.

Travis AFB Master Document Schedule

The RPM 08 December 2010 meeting has been changed to 01 December 2010.

— Focused Feasibility Study (FFS): No change.

— Proposed Plan (PP): No change.

— Groundwater Record of Decision (ROD): No change.

— Comprehensive Site Evaluation Phase II: Dates changed to reflect draft submitted to agencies and RAB.

— Potrero Hills Annex: (FFS, PP, and ROD): No change.

— ISCO/ERD Technical Memorandum: Response to comments meeting date changed to coincide with the rescheduled RPM December's meeting. Ms. Burke mentioned that she is going to have Office of Research and Development (ORD) persons look at the technical Memo to keep them "in the loop".

— Site SS015 Work Plan: No change.

— Sites SS014 and ST032 Tier 1 POCO Evaluation Report: New document added for the benefit of the Water Board agency.

— Site ST018 POCO Field Implementation Report: New document added for the groundwater extraction treatment plant for the benefit of the Water Board agency.

— Quarterly Newsletter (October 2010): The Guardian has been completed.

— 2009/2010 GSAP: The 2009/2010 annual GSAP draft report is scheduled to go to the agencies on 19 November 2010.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status.

South Base Boundary Groundwater Treatment Plant (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 97.1% uptime, and 4.1 million gallons of groundwater were extracted and treated during the month of September 2010. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 97.3 gallons per minute (gpm), and electrical power usage was 10,980 kWh. Approximately 15,043 pounds of CO_2 were created (based on DOE calculation); approximately 1.46 pounds of volatile organic compounds (VOCs) were removed in September. The total mass of VOCs removed since the startup of the system is 387 pounds.

Optimization Activities: None to report for the month of September.

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 99.5% uptime with approximately 1.66 million gallons of groundwater extracted and treated during the month of September 2010. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 38.6 gpm, and electrical power usage was 62 kWh for all equipment connected to the Central plant; approximately 85 pounds of CO_2 were created. Approximately 5.38 pounds of VOCs were removed from groundwater in September. The total mass of VOCs removed since the startup of the system is 11,192 pounds.

Optimization Activities: On 27 September 2010, the system was shut down for a short period to facilitate GAC removal from three 2,000-pound vessels prior to their relocation to the new GET system for site ST018.

The West Treatment and Transfer Plant (WTTP) remains turned off for the ongoing rebound study.

North Groundwater Treatment Plant (see Attachment 5)

The North Groundwater Treatment Plant (NGWTP) performed at 100% uptime with approximately 17,230 gallons of groundwater extracted and treated during the month of September 2010. The average flow rate of the NGWTP was 0.40 gpm, and electrical power use was 465 kWh for all the equipment connected to the North plant; approximately 637 pounds of CO_2 were created. The amount of VOCs removed was very low and consequently difficult to measure. The total mass of VOCs removed since the startup of the system is 656 pounds **(see Attachment 5)**.

Optimization Activities: None to report for the month of September.

3. Presentations

SS015 and SD036 Updates (see Attachment 6)

Mr. Berwick gave the presentations on SS015 and SD036.

The key points made for site SS015 presentation included:

- Install three injection wells near the existing monitoring well MW216x15. Shown in attached map.
- Install four monitoring wells to close data gaps for the characterization. The monitoring wells will be 4 inch wells to allow Emulsified Vegetable Oil (EVO) injection, if needed.
- Complete baseline sampling scheduled in November 2010. The subsequent sampling: quarterly for the first year, and annually thereafter.
- Inject about 5,100 lbs of EVO into the source area using the newly installed injection wells.
- Prepare a completion report after the EVO injection has been completed.
- Evaluate ongoing progress in monthly data sheets and annual O&M reports.

Mr. Berwick provided a map of site SS015 that illustrated where the new injection wells and monitoring wells are being installed in relation to the high TCE concentration.

The key points made on site SD036 presentation included.

- Install eight injection wells in the “hot spot”. No additional monitoring wells need to be installed.
- Complete baseline sampling scheduled in November 2010.
- Inject approximately 19,200 lbs of EVO into the newly installed injection wells.
- Initiate performance monitoring of the remedy optimization.

- Prepare a completion report after the EVO injection has been completed.
- Evaluate ongoing progress in monthly data sheets and annual O&M reports.

Mr. Berwick provided a map of site SD036 that illustrated where the new injection wells are being installed in relation to the high TCE concentration.

No questions were asked during this presentation.

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

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. See Attachment 7 for details.

2010 Field Schedule (see Attachment 8)

Mr. Wray reported on the 2010 Field Schedule. See attachment 8 for details.

Mr. Smith said that the Air Force Project Management office in San Antonio, the Remedial Process Optimization (RPO) team, is looking at the decision logic for the groundwater sampling and groundwater treatment operation. The group has been reviewing presentation slides that have been presented in the Travis AFB RPM meetings on all cleanup methods. Based on what they observe, the team will present recommendations in February 2011. Mr. Smith stressed it was for CH2M HILL's consideration. The decision logic is similar to what is in the GSAP already and helps to determine the wells to sample and those you want to extract groundwater from. Once Travis receives this information from the RPO team, it will be shared with CH2M HILL touse as they see fit as part of the Groundwater Sampling Analysis Program (GSAP).

4. New Action Item Review

There are no new action items.

5. PROGRAM/ISSUES/UPDATE

A) Tyndall RPM Assistance Visit: Mr. Smith is going to Tyndall AFB in Florida on temporary assignment starting on 25 October 2010 through 29 January 2011, possibly longer. Mr. Smith assume the Environmental RPM duties at Tyndall and said he is looking forward to the opportunities and challenges.

General Discussion

Mr. Smith provided copies of the draft 2011 RPM/RAB schedule so that all may review and place the dates on their calendars. The January RPM date was changed back to the original date of 26 January 2011. Mr. Smith explained the importance of everyone being able to attend the meetings in order to facilitate decision-making and participate in the streamlined presentations in the RPM meetings.

7. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Petition to have the Lysimeter removed.	TBD	Open
2.	Travis AFB	Research beneficial reuse of treated water and give update.	TBD	Open
3.	EPA	Review past site closure completion reports to determine if future site closure reports are necessary.	TBD	Open

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
BLDG 570, Main Conference Room
21 October 2010, 1:00 P.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)

3. PRESENTATIONS

   A. SS015 AND SD036 EVO INJECTION IMPLEMENTATION UPDATE
   B. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING
   C. 2010 FIELD SCHEDULE UPDATE

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

   A. TYNDALL RPM ASSISTANCE VISIT
   B. 2011 MASTER MEETING SCHEDULE REVIEW

Travis AFB Master Document Schedule

Annual Meeting and Teleconference Schedule

Monthly RPM Meeting (Begins at 9:30 a.m.)	RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
01-27-10	—	—
—	—	—
03-30-10	—	—
04-22-10 *(1:00 PM)	—	04-22-10
05-19-10	—	—
06-23-10	—	—
07-21-10	—	—
08-25-10	—	—
09-22-10	—	—
10-21-10 *(1:00 PM)	—	10-21-10
—	11-17-10	—
12-08-10	—	—

* RPM meeting moved to coincide with the RAB meeting.

Travis AFB Master Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	**Basewide Groundwater**		
	Focused Feasibility Study Travis, Glenn Anderson CH2M Hill, Loren Krook	**Proposed Plan Travis, Glenn Anderson CH2M HILL, Loren Krook**	**Record of Decision Travis, Glenn Anderson CH2M HILL, Tony Jaegel**
Scoping Meeting	**03-30-10**	NA	**01-24-07**
Predraft to AF/Service Center	12-30-10	**06-08-11**	12-08-11
AF/Service Center Comments Due	01-13-11	06-22-11	01-11-12
Draft to Agencies	01-27-11	07-06-11	01-25-12
Draft to RAB	01-27-11	07-06-11	01-25-12
Agency Comments Due	03-31-11	08-31-11	03-28-12
Response to Comments Meeting	**05-04-11**	**09-22-11**	04-18-12
Agency Concurrence with Remedy	NA	NA	05-09-12
Public Comment Period	NA	10-13-11 to 11-14-11	NA
Public Meeting	**NA**	***10-20-11**	**NA**
Response to Comments Due	06-01-11	12-14-11	05-29-12
Draft Final Due	06-01-11	12-14-11	05-29-12
Final Due	07-01-11	01-13-12	06-27-12

*Public meeting to coincide with RAB meeting.

PRIMARY DOCUMENTS	
	Comprehensive Site Evaluation Phase II **Travis AFB, Glenn Anderson** **Sky Research, Ian Roberts**
Life Cycle	**Report**
Scoping Meeting	**NA**
Predraft to AF/Service Center	04-23-10
AF/Service Center Comments Due	05-04-10
Draft to Agencies	10-14-10
Draft to RAB	10-14-10
Agency Comments Due	11-24-10
Response to Comments Meeting	**12-08-10**
Agency Concurrence with Remedy	NA
Public Comment Period	NA
Public Meeting	**NA**
Response to Comments Due	12-21-10
Draft Final Due	12-21-10
Final Due	01-23-11

PRIMARY DOCUMENTS			
	Potrero Hills Annex Travis, Glenn Anderson		
Life Cycle	FFS	**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

SECONDARY DOCUMENTS			
Life Cycle	**ISCO/ERD Technical Memorandum Travis AFB, Glenn Anderson CH2M HILL, Loren Krook**	**Site SS015 Work Plan Travis AFB, Lonnie Duke CH2M HILL, Loren Krook**	**Sites SS014 and ST032 Tier 1 POCO Evaluation Report Travis AFB, Lonnie Duke CH2M HILL, Gavan Heinrich**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	08-25-10	10-13-10	12-10-10
AF/Service Center Comments Due	09-08-10 (09-10-10)	10-27-10	01-14-11
Draft to Agencies	10-06-10	11-10-10	01-28-11
Draft to RAB	10-06-10	11-10-10	01-28-11
Agency Comments Due	11-05-10	12-10-10	02-27-11
Response to Comments Meeting	**12-08-10**	**01-19-11**	**03-23-11**
Response to Comments Due	01-05-11	02-16-11	03-30-11
Draft Final Due	NA	NA	NA
Final Due	01-05-11	02-16-11	03-30-11
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

SECONDARY DOCUMENTS		
Life Cycle	**Site ST018 POCO Field Implementation Report Travis AFB, Lonnie Duke CH2M HILL, Gavan Heinrich**	**Phytostabilization Study Report Travis AFB, Glenn Anderson Parsons, Bill Plaehn**
Scoping Meeting	**NA**	**10-09-08**
Predraft to AF/Service Center	01-21-11	04-12-10
AF/Service Center Comments Due	02-04-11	06-07-10
Draft to Agencies	02-18-11	06-16-10
Draft to RAB	02-18-11	06-16-10
Agency Comments Due	03-20-11	07-19-10 (7-30-10)
Response to Comments Meeting	**03-23-11**	**09-22-10**
Response to Comments Due	**04-05-11**	09-30-10
Draft Final Due	NA	NA
Final Due	04-05-11	09-30-10 (9-24-10)
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**

INFORMATIONAL DOCUMENTS		
Life Cycle	**Quarterly Newsletters (October 2010) Travis, Glenn Anderson**	**2009/2010 Annual GSAP Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer**
Scoping Meeting	**NA**	**NA**
Predraft to AF/Service Center	NA	10-27-10
AF/Service Center Comments Due	NA	11-10-10
Draft to Agencies	09-29-10	11-19-10
Draft to RAB	NA	11-19-10
Agency Comments Due	10-08-10	12-19-10
Response to Comments Meeting	**TBD**	**01-26-11**
Response to Comments Due	10-12-10	02-08-11
Draft Final Due	NA	NA
Final Due	10-13-10	02-08-11
Public Comment Period	NA	**NA**
Public Meeting	**NA**	**NA**

South Base Boundary Groundwater Treatment Plant
Monthly Data Sheet

Report Number: 122 **Reporting Period: 1 Sept 2010-30 Sept 2010** **Date Submitted: 18 September 2010**

This data sheet includes the following: results for the operation of the South Base Boundary Groundwater Treatment Plant (SBBGWTP), a summary of flow rates for the individual extraction wells, a brief description of any shutdowns or significant events related to the system, and a summary of analytical results for selected samples collected.

Operations Summary – September 2010

Operating Time: **699 hours** Percent Uptime: **97.1%**

Electrical Power Usage:**10,980 kWh (15,043 lbs CO2)**

Gallons Treated: **4.1 million gallons** Gallons Treated Since July 1998: **707 million gallons**

Volume Discharged to Union Creek: **4.1 million gallons**

VOC Mass Removed: **1.46 pounds**[a] VOC Mass Removed Since July 1998: **387 pounds**

Rolling 12-Month Cost per Pound of Mass Removed : $3,570[b]

Monthly Cost per Pound of Mass Removed : $3,187[b]

[a] Calculated using September 2010 EPA Method SW8260B analytical results.
[b] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.

Flow Rates

Average Groundwater Total Flow Rate: 97.3 gpm[a]

Average Flow Rate (gpm)[b]							
FT005[c]				SS029		SS030	
EW01x05	Off line	EW736x05	Off line	EW01x29	0.57	EW01x30	9.87
EW02x05	1.97	EW737x05	Off line	EW02x29	4.40	EW02x30	1.67
EW03x05	Off line	EW742x05	Off line	EW03x29	Off line[e]	EW03x30	3.03
EW731x05	Off line	EW743x05	Off line	EW04x29	7.40	EW04x30	21.8
EW732x05	Off line	EW744x05	Off line	EW05x29	14.0	EW05x30	9.70
EW733x05	Off line	EW745x05	Off line	EW06x29	15.9	EW06x30	Dry
EW734x05	10.2	EW746x05	Off line	EW07x29	16.5	EW711x30	10.0[f]
EW735x05	NM[d]						
FT005 Total:		**12.1**		**SS029 Total:**	**58.8**	**SS030 Total:**	**56.1**

[a] The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant.
[b] Extraction well flow rates are based on the average of the weekly readings.
[c] Extraction wells at FT005 were taken off line in accordance with the *2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.*
[d] Flow rate not shown on SCADA due to stripped pump splines. Scheduled repair in October 2010.
[e] Extraction well is off line due to low VOC concentrations.
[f] Extraction well online, but has a faulty flow meter. Flow rate is measured at the well head.

gpm—gallons per minute

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP	29 September 2010	14:30	30 September 2010	11:00	Leaking gasket on the inlet header replaced

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 7 September 2010. Sample results are presented in Table 1. The total VOC concentration (43.0 µg/L) in the influent sample has decreased since the July 2010 sample (49.9 µg/L) was collected. VOCs were not detected in the effluent sample indicating good treatment efficiency.

The extraction pump in EW735x05 has continued to shut down due to motor malfunction. The pump will be replaced in October 2010, and restarted. EW02x05, EW734x05, and EW735x05 continue to remain online in an effort to address 1,2-DCA contamination at Site FT005.

The increased monthly cost per pound of mass removed ($9,080) in August 2010 was a result of the carbon change out that occurred in the 6,000 pound vessels at the SBBGWTP. This cost returned to a near-average value in September 2010, as expected.

Optimization Activities

No optimization activities occurred during September 2010.

Table 1
Summary of Groundwater Analytical Data for September 2010 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	7 September 2010 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Bromodichloromethane	5.0	0.15	0	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND
Chloroform	5.0	0.16	0	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND
1,1-Dichloroethane	5.0	0.19	0	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	2.5	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND
Trichloroethene	5.0	0.19	0	40.5	ND
Vinyl Chloride	0.5	0.18	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.17	0	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND
Toluene	5.0	0.14	0	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	ND
Total Suspended Solids (mg/L)	NE	1.0	0	10 J	NM

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

J = analyte concentration is considered an estimated value
mg/L = milligrams per liter
N/C = number of samples out of compliance with discharge limits
ND = not detected
NE = not established
NM = not measured
µg/L = micrograms per liter

Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 134 **Reporting Period: 1 Sept 2010- 30 Sept 2010** **Date Submitted: 18 October 2010**

This data sheet includes the following: results for the operation of the Central Groundwater Treatment Plant (CGWTP) and West Treatment and Transfer Plant (WTTP). A summary of flow rates for the CGWTP, WTTP, and extraction wells EW01x16, EW02x16, EW03x16, EW605x16, and EW610x16, a brief description of any shutdowns or significant events related to the systems, and a summary of analytical results for selected samples collected are also included on this data sheet.

Operations Summary – September 2010

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	716 hours	**CGWTP:**	99.50%	**CGWTP:**	62 kWh (85 lbs CO2)
WTTP:	Water: 0 hours	**WTTP:**	Water: 0%	**WTTP:**	0 kWh
	Vapor: 0 hours		Vapor: 0%		

Gallons Treated: **1.66 million gallons**

Gallons Treated Since January 1996: **432.9 million gallons**

VOC Mass Removed:

5.38 lbs [a] **(groundwater only)**

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,506 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,042 [b]

Monthly Cost per Pound of Mass Removed: $1,489[b]

[a] Calculated using September 2010 EPA Method SW8260B analytical results.
[b] Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the CGWTP and WTTP.

Flow Rates

Average Groundwater Flow Rate: **38.6 gpm**[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm) [b]
EW01x16	23.0	Off line
EW02x16	7.23	Off line
EW03x16	Off line [c]	Off line
EW605x16	12.4	Off line
EW610x16	4.63	Off line
WTTP	Off line	Off line

[a] Measured by the effluent discharge to the storm drain divided by the operating time during the month
[b] No vapor was treated in September 2010
[c] EW03x16 off line June 2010-Sept 2010 due to seized motor. New solar-powered pump to be installed in October 2010.

gpm = gallons per minute
NA = not applicable/not available
scfm = standard cubic feet per minute

Average Flow Rate from the WIOU Extraction Wells[a] (gpm)							
SD037/ SD043				SD033/SD034		SD036	
EW599x37	Off line	EW705x37	Off line	EW501x33	Off line	EW593x36	Off line
EW700x37	Off line	EW706x37	Off line	EW503x33	Off line	EW594x36	Off line
EW701x37	Off line	EW707x37	Off line	EW01x34	Off line	EW595x36	Off line
EW702x37	Off line	EW510x37	Off line	EW03x34	Off line		
EW703x37	Off line	EW511x37	Off line				
EW704x37	Off line	EW555x43	Off line				

[a] Extraction wells are offline due to the ongoing rebound study in the WIOU.

gpm—gallons per minute
NA – not available / not recorded

Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
CGWTP	27 September 2010	10:45	27 September 2010	15:00	System shutdown to facilitate GAC removal from three 2,000 pound vessels
WTTP (Vapor)					
WTTP	24 August 2009				SVE system shutdown for rebound study

CGWTP = Central Groundwater Treatment Plant

WTTP = West Transfer Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 7 September 2010. Sample results are presented in Table 1. The total VOC concentration (389.21 µg/L) in the influent sample has decreased since the August 2010 sample (417.47 µg/L) was collected.

No VOCs, including vinyl chloride, were detected in the effluent sample indicating good treatment efficiency. In the following months, Travis AFB will continue to monitor the effluent sample to ensure treated water remains in compliance with discharge requirements.

Optimization actions for the WIOU vapor extraction system will be presented in the October 2010 Monthly Data Sheet.

Optimization Activities

On 27 September 2010, 6,000 pounds of GAC was removed from the three 2,000-pound carbon vessels at the CGWTP. These vessels have been bypassed since 2009 as part of continuing optimization efforts at the CGWTP. The carbon vessels were not refilled, and are intended to be used at the Site ST018 groundwater treatment plant, which will be constructed in October 2010.

The WTTP remained off line since being shut down in April 2010 for the ongoing rebound study. No other optimization activities occurred at the CGWTP in September 2010.

Table 1
Summary of Groundwater Analytical Data for September 2010 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	7 September 2010 (µg/L) Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
Bromodichloromethane	5.0	0.15	0	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	5.9	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.08	0	ND	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.15	0	0.54	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	0.25 J	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	0.79	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	91.8	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.5	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.68	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	1.9	0	286	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND	ND
Non-Halogenated Volatile Organics							
Benzene	1.0	0.17	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND	ND
Total Xylenes	5.0	0.5 – 0.23	0	ND	ND	ND	ND

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

J = analyte concentration is considered an estimated value
N/C = number of samples out of compliance with discharge limits
ND = not detected
µg/L = micrograms per liter

North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 109 **Reporting Period: 1 Sept 2010 - 30 Sept 2010** **Date Submitted: 18 October 2010**

This data sheet includes the following: data collected during operation of the groundwater extraction system, a summary of flow rates for the individual extraction wells, a brief description of any shutdowns or significant events related to the systems, and a summary of analytical results for samples collected during the reporting period.

Operations Summary – September 2010

Operating Time: **Water:** 720 hours

Percent Uptime: **Water:** 100%

Electrical Power Usage: **465 kWh (637 lbs CO2)**

Gallons Treated: **17,230**

Gallons Treated Since March 2000: **82.5 million gallons**

Volume Discharged to Duck Pond: **17,230**

Volume Discharged to Storm Drain: **0**

Percentage of Treated Water to Beneficial Use: **100%**

VOC Mass Removed:

NM[a]

VOC Mass Removed Since March 2000:

174.3 lbs from groundwater

Rolling 12-Month Cost per Pound of Mass Removed: **NM**

Monthly Cost per Pound of Mass Removed: **NM**

[a] Low influent VOC concentrations resulted in no accurate measurement of mass removed

Flow Rates

Average Groundwater Total Flow Rate: **0.40**

Location	Average Flow Rate (gpm)
EW614x07	NM[a]
EW615x07	NM[a]

[a] Individual flow rates were not recorded in September 2010

gpm = gallons per minute

Shutdown/Restart Summary

	Shutdown		Restart		
Location	Date	Time	Date	Time	Cause
NGWTP (water)					No system shutdowns during September 2010

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater sampling at the NGWTP was performed on 7 September 2010. The total VOC concentration (6.9 µg/L) was a slight decrease from the August 2010 concentration (7.1 µg/L). The only VOCs detected in the influent samples were Trichloroethene (6.4 µg/L) and cis-1-2,dichloroethene (0.49 J µg/L). No VOCs were detected in the effluent sample.

Optimization Activities

No additional optimization activities were performed at the NGWTP in September 2010.

Table 1
Summary of Groundwater Analytical Data for September 2010 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	7 September 2010 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Bromodichloromethane	5.0	0.18	0	ND	ND
Bromoform	5.0	0.10	0	ND	ND
Carbon Tetrachloride	0.5	0.22	0	ND	ND
Chloroform	5.0	0.17	0	ND	ND
Dibromochloromethane	5.0	0.10	0	ND	ND
1,3-Dichlorobenzene	5.0	0.13	0	ND	ND
1,4-Dichlorobenzene	5.0	0.10	0	ND	ND
1,1-Dichloroethane	5.0	0.19	0	ND	ND
1,2-Dichloroethane	0.5	0.22	0	ND	ND
1,1-Dichloroethene	5.0	0.24	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.16	0	0.49 J	ND
trans-1,2-Dichloroethene	5.0	0.21	0	ND	ND
Methylene Chloride	5.0	0.27	0	ND	ND
Tetrachloroethene	5.0	0.16	0	ND	ND
1,1,1-Trichloroethane	5.0	0.20	0	ND	ND
1,1,2-Trichloroethane	5.0	0.14	0	ND	ND
Trichloroethene	5.0	0.50	0	6.2	ND
Vinyl Chloride	0.5	0.19	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.12	0	ND	ND
Ethylbenzene	5.0	0.10	0	ND	ND
Toluene	5.0	0.14	0	ND	ND
Xylenes	5.0	0.10 – 0.21	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	50	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	100	0	NM	ND

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

J = analyte concentration is considered an estimated value
N/C = number of samples out of compliance with discharge limits
ND = not detected
NM = not measured
µg/L = micrograms per liter

Sites SD036 and SS015 Updates

Travis Air Force Base, California

October 21, 2010

Site SS015 — Plan

- Install 3 injection wells near existing monitoring well MW216x15
- Install 4 monitoring wells to close data gaps in characterization
- Complete baseline sampling event
- Inject about 5,100 lbs of EVO into the source area via 3 new injection wells
- Initiate performance monitoring of the remedy optimization
- Prepare a completion report after EVO injection is finished
- Evaluate ongoing progress in monthly data sheets and Annual O&M reports

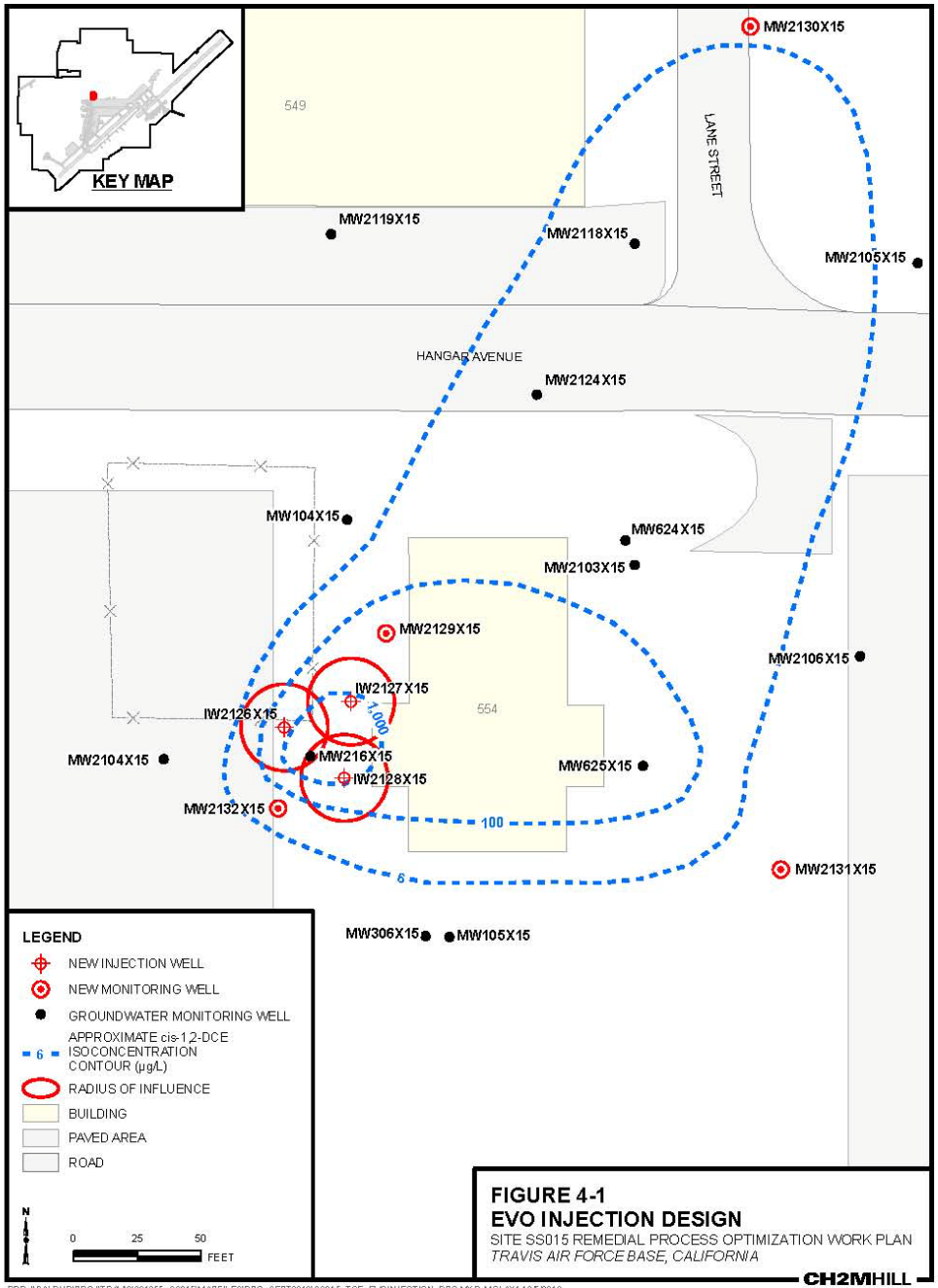

FIGURE 4-1
EVO INJECTION DESIGN
SITE SS015 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

CH2MHILL

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Site SS015 – Field Work Status

- Most characterization work is done
- Will be installing injection wells and final 4 monitoring wells beginning week of 25 October, 2010
- Well development & baseline sampling scheduled for November 2010
- EVO injection planned for November 2010

Site SS015 Performance Monitoring Plan

- **Monitoring Well Network**

  -three (3) injection wells (IW2126x15, IW2127x15, IW2128x15)

  -two (2) performance/transition wells (MW216x15, MW2129x15)

  -seventeen (17) compliance wells (all other monitoring wells in Site SS015, analyzed for VOCs only)
- **Analytes**

  -VOCs (including VC), Dissolved Hydrocarbon Gases, Total Organic Carbon, Sulfate, Dissolved Iron and Manganese, pH, ORP, Temperature, EC, DO
  -Soil PSOD at two (2) distal monitoring well locations
- **Frequency**

  -Pre-Installation: All wells sampled in baseline event

  -Post-Installation: Quarterly for the first year, Annually thereafter

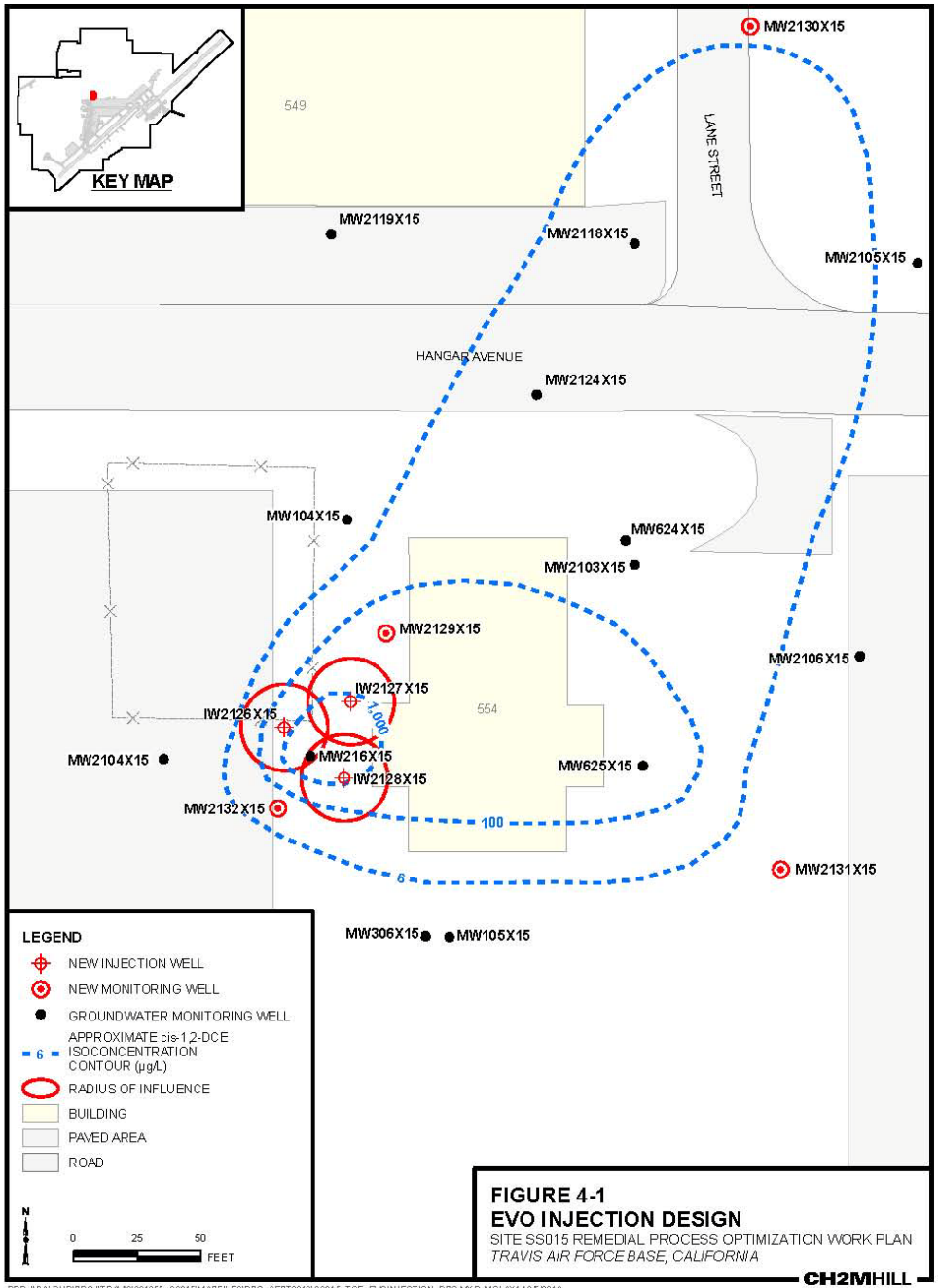

FIGURE 4-1
EVO INJECTION DESIGN
SITE SS015 REMEDIAL PROCESS OPTIMIZATION WORK PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

CH2MHILL

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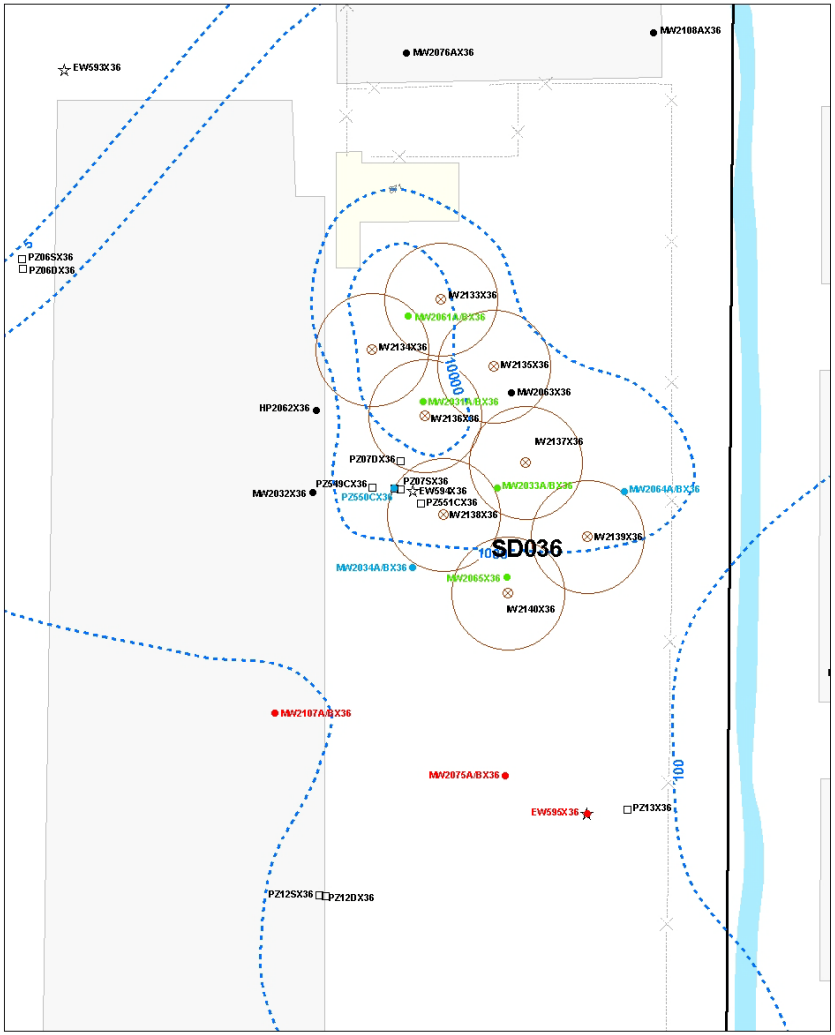
Site SD036 — Plan

- Install eight (8) injection wells in the “hot spot”
- No additional monitoring wells to be installed
- Complete baseline sampling event
- Inject about 19,200 lbs of EVO into the injection wells via new injection wells
- Initiate performance monitoring of the remedy optimization
- Prepare a completion report after EVO injection is finished
- Evaluate ongoing progress in monthly data sheets and annual O&M reports



LEGEND

- PERFORMANCE MONITORING WELL
- TRANSITION ZONE MONITORING WELL
- COMPLIANCE MONITORING WELL
- GROUNDWATER MONITORING WELL
- PIEZOMETER
- EXTRACTION WELL
- EVO INJECTION WELL
- 5 - APPROXIMATE 2009-2010 TCE ISOCONCENTRATION CONTOUR (µg/L)
- FENCE
- ROAD
- PAVED AREA
- BUILDING
- SURFACE WATER
- ERP SITE BOUNDARY

0 15 30 Feet

VICINITY MAP

FIGURE 2
INJECTION WELL LOCATION MAP
SITE SD036 IMPLEMENTATION PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

CH2MHILL

Site SD036 – Field Work Status

- Characterization complete
- New injection wells to be installed beginning week of 25 October, 2010
- Well development and baseline sampling event in November 2010
- EVO injection in November 2010

Site SD036 Performance Monitoring Plan

- **Monitoring Well Network**

  -eight (8) injection wells (IW2133x36 – IW2140x36)

  -seven (7) performance monitoring wells (MW2031A/Bx36, MW2033A/Bx36, MW2061A/Bx36, MW2065x36)

  -five (5) transition monitoring wells (MW2034A/Bx36, MW2064A/Bx36, PZ550Cx36)

  -five (5) compliance wells (MW2075A/Bx36, MW2107A/Bx36, EW595x36)

  -all other Site SD036 monitoring and extraction wells to be sampled for VOCs only according to GSAP schedule

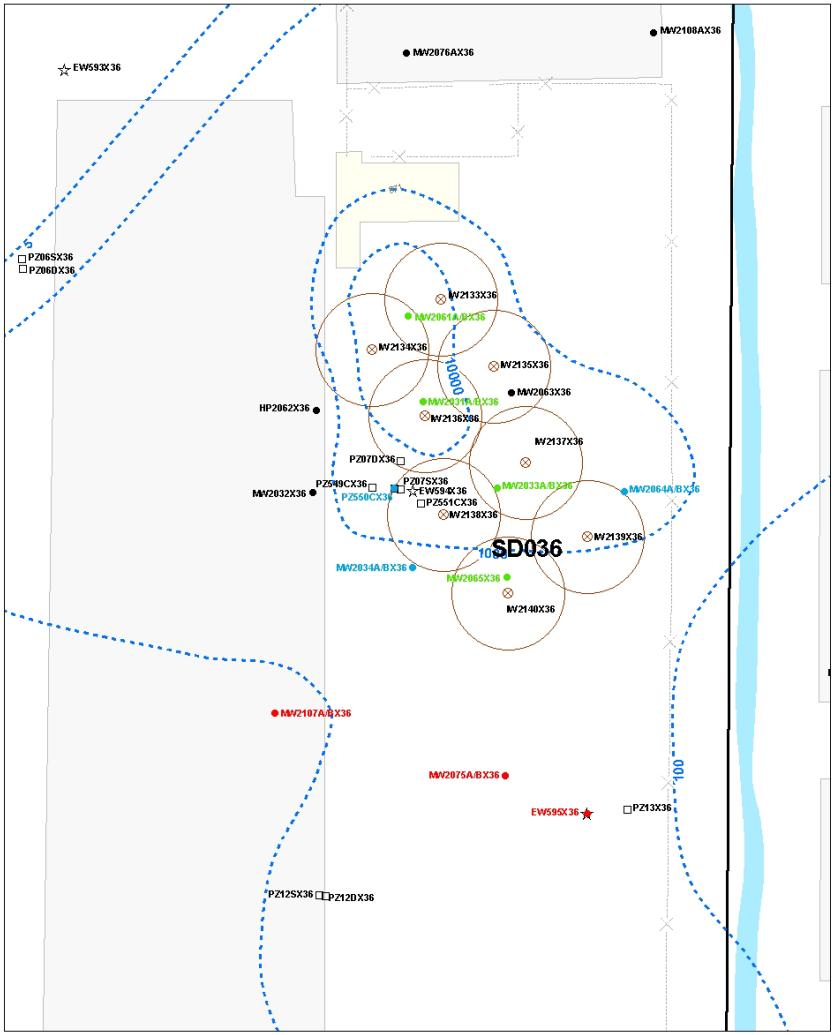
  Analytes

  -VOCs (including VC), Dissolved Hydrocarbon Gasses, Total Organic Carbon, Sulfate, Dissolved Iron and Manganese, pH, ORP, Temperature, EC, DO

- **Frequency**

  -Pre-Installation: All wells sampled in baseline event

  -Post-Installation: Quarterly for first year, Annually thereafter



LEGEND

- PERFORMANCE MONITORING WELL
- TRANSITION ZONE MONITORING WELL
- COMPLIANCE MONITORING WELL
- GROUNDWATER MONITORING WELL
- PIEZOMETER
- EXTRACTION WELL
- EVO INJECTION WELL
- 5 - APPROXIMATE 2009-2010 TCE ISOCONCENTRATION CONTOUR (µg/L)
- FENCE
- ROAD
- PAVED AREA
- BUILDING
- SURFACE WATER
- ERP SITE BOUNDARY

0 15 30 Feet

VICINITY MAP

FIGURE 2
INJECTION WELL LOCATION MAP
SITE SD036 IMPLEMENTATION PLAN
TRAVIS AIR FORCE BASE, CALIFORNIA

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Travis AFB
Groundwater Program

Management Overview Briefing

RPM Meeting

October 21, 2010

Completed Documents

Documents

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation WP
- ST027B Site Characterization WP
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo
- RD/RA QAPP Update
- ST032 Tier 1 POCO Evaluation WP
- Phytostabilization Demonstration Tech Memo
- Model QAPP
- LF008 Rebound Test Tech Memo

Documents

- Comprehensive Site Evaluation Phase II Work Plan
- Field Sampling Plan (FSP)
- SS016 RPO Work Plan
- ST018 POCO RA Work Plan
- Vapor Intrusion Assessment Report
- GSAP 2008/2009 Annual Report
- FT005 Data Gap Work Plan
- First and Second Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- SD036/SD037 RPO Work Plan
- ST027B Site Characterization Report
- 2009 GWTP RPO Annual Report
- Natural Attenuation Assessment Report (NAAR)
- Union Creek Sites SD001 & SD033 Remedial Action Report
- CAMU 2008-2009 Monitoring Annual Report
- ***Phytostabilization Study Report***

Completed Field Work

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

In-Progress Documents & Field Work

Documents

- ***Comprehensive Site Evaluation Phase II Report***
- ***ISCO/ERD Tech Memo***

Field Work

- ***ST018 GETS Installation***
- ***SD036 Injection Well Installation***
- ***SS015 Injection Well Installation***

Upcoming Documents

- 2010 Annual GSAP Report — Nov
- SS015 Remedy Optimization Work Plan — Nov
- Focused Feasibility Study (FFS) — Jan
- ***Sites SS014 and ST032 Tier 1 POCO Evaluation Report*** — ***Jan***
- ***Site ST018 POCO Field Implementation Report*** — ***Feb***
- FT005 Data Gap Investigation Report — TBD

Upcoming Field Work

- DP039 Biobarrier Quarterly Performance Sampling — Nov
- DP039 Bioreactor Quarterly Performance Sampling — Nov
- SD037 EVO Quarterly Performance Sampling — Nov
- ST018 GETS Startup — Nov
- SS015 EVO Injection — Nov
- SS015 EVO Baseline Sampling — Nov
- SD036 EVO Injection — Nov
- SD036 EVO Baseline Sampling — Nov
- Semiannual GSAP — Nov-Dec
- SS016 Bioreactor Initial Quarterly Performance Sampling — Jan
- LF007C Site Characterization (Wetlands) — TBD

October 2010
Field Schedule – Travis PBC

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
	SS016 Bioreactor Solar Power System Installation					
10	11	12	13	14	15	16
	SS016 Bioreactor Baseline Sampling	SS016 Bioreactor solar connection				
17	18	19	20	21	22	23
	SS015 Monitoring/Injection Wells Installation					
	SD036 Monitoring/Injection Wells Installation					
		ST018 Kickoff Meeting		SS016 Bioreactor Startup		
24	25	26	27	28	29	30
	SS015 Monitoring/Injection Wells Installation					
	SD036 Monitoring/Injection Wells Installation					
31						

As of 21 October 2010

November 2010
Field Schedule – Travis PBC

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
	ST018 GETS Construction					
	SD036 Monitoring/Injection Wells Installation	SS015 & SD036 Baseline Sampling				
	Performance Sampling: DP039 Semiannual Bioreactor, DP039 Biobarrier, & SD037 Quarterly EVO					
7	8	9	10	11	12	13
	SS015 EVO Injection					
	ST018 GETS Construction					
	Performance Sampling: DP039 Semiannual Bioreactor, DP039 Biobarrier, & SD037 Quarterly EVO					
14	15	16	17	18	19	20
	SD036 EVO Injection					
	ST018 GETS Construction					
	GSAP Semiannual Sampling, Including Rebound Sampling (sites FT004, SD031, LF008, FT005, & WIOU					
21	22	23	24	25	26	27
	ST018 GETS Construction					
	GSAP Semiannual Sampling, Including Rebound Sampling (sites FT004, SD031, LF008, FT005, & WIOU					
28	29	30				
	ST018 GETS Startup (pending receipt of NPDES permit)					
	GSAP Semiannual Sampling, Including Rebound Sampling (sites FT004, SD031, LF008, FT005, & WIOU					

As of 21 October 2010

December 2010
Field Schedule – Travis PBC

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
			GSAP Semiannual Sampling, Including Rebound Sampling (sites FT004, SD031, LF008, FT005, & WIOU			
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

As of 21 October 2010