



**DEPARTMENT OF THE NAVY**  
NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST 1220 PACIFIC HIGHWAY  
SAN DIEGO, CA 92132-5190

5090  
Ser OPAE RP/479  
October 23, 2015

Ms. Sophie DiCampalto  
California Environmental Protection Agency California  
Regional Water Quality Control Board Mitigation & Cleanup Unit  
2375 Northside Drive, Suite 100 San Diego, CA 92108

Ms. Beatrice Griffey  
California Environmental Protection Agency California  
Regional Water Quality Control Board Mitigation & Cleanup Unit  
2375 Northside Drive, Suite 100 San Diego, CA 92108

Mr. Tayseer Mahmoud  
California Environmental Protection Agency  
Department of Toxic Substances Control  
Brownfields and Environmental Restoration Program  
5796 Corporate Avenue  
Cypress, CA 90630

Mr. Martin Hausladen  
U.S. Environmental Protection Agency Region IX Code SFD-8-3  
75 Hawthorne Street  
San Francisco, CA 94105-3901

SUBJECT: MEETING MINUTES FOR THE 116<sup>TH</sup> FEDERAL FACILITIES  
AGREEMENT (FFA) TELECONFERENCE MEETING DATED OCTOBER  
13, 2015, MARINE CORPS BASE, CAMP PENDLETON CA

Dear Ms. DiCampalto, Ms. Griffey, Mr. Mahmoud, Mr. Hausladen:

Enclosed are the minutes and updated FFA schedule to the Marine Corps Base, Camp Pendleton Federal Facilities Agreement (FFA) Meeting Number 116, held on October 13, 2015 via teleconference. Should you have questions, please contact Ralph Pearce at (619)-532-3768.

Sincerely,

A handwritten signature in black ink, appearing to read "Gaston C. Bordenave, Jr.", is written over the typed name.

GASTON C. BORDENAVE, JR  
By direction

Enclosures: (1) 116<sup>th</sup> FFA Meeting Minutes  
(2) 116<sup>th</sup> FFA Meeting Agenda  
(3) FFA Schedule  
(4) Deliverables/Fieldwork/Spreadsheets

Copy to: CG, MCB Camp Pendleton (Attn: ACOS, Environmental  
Security - Mr. Luis Ledesma)

# PARSONS

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## PROJECT NOTE NO. 66

**SUBJECT: Marine Corps Base (MCB) Camp Pendleton Federal Facilities Agreement (FFA) Meeting (No. 116)**

**DATE HELD: October 13, 2015**

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### Attendees on Conference Call:

Ralph Pearce (Naval Facilities Engineering Command Southwest [NAVFAC SW]), Adam Hill (NAVFAC SW), Luis Ledesma (MCB Camp Pendleton), Jennifer Sullivan (MCB Camp Pendleton), Martin Hausladen (USEPA), Tayseer Mahmoud (California [Cal] EPA/Department of Toxic Substances Control [DTSC]), Kimberly Gettmann (DTSC), Beatrice Griffey (San Diego Regional Water Quality Control Board [RWQCB or Water Board]), Sophie di Campalto (RWQCB), Kelley Dorsey (RWQCB), and Steve Griswold (Parsons).

### FFA Schedule Update, Project Deliverables, and Field Work Status

A conference call was held to update the FFA Team (Team) on program status. The agenda, FFA Schedule, Deliverables Spreadsheet, Fieldwork Spreadsheet, and Response-to-Comments matrix are attached.

Following introductions, Mr. Pearce stated that this meeting will be focused on the status of the FFA schedule and the current deliverables on the program. The discussion is meant to be interactive, and any issues or questions associated with the sites or documents should be raised during the call. The sites identified as closed on the current version of the FFA schedule, and the deliverables identified as final on the deliverables schedule, will be removed on the next versions of these schedules.

Each active item on the FFA schedule was discussed in sequence. Mr. Griswold started off the discussion of the status of each document, and Mr. Hill and Mr. Pearce provided more detailed information for several sites and documents. Refer to the attached updated FFA Schedule dated October 13, 2015. Certain items were discussed in more detail by the FFA Team as summarized below.

### FFA Schedule Discussion

- 22/23 Area Groundwater
  - The Land Use Control Remedial Design/Remedial Action Work Plan (RD/RAWP, also referred to as the LUCIP in the attachments) can now be finalized based on

the resolution of land use control language in the document. The land use control language, which has been negotiated and recently finalized between the Navy and DTSC, affects three documents currently in progress (22/23 Area Groundwater Land Use Control RD/RAWP, Site 21 Record of Decision (ROD), and Site 1119 ROD).

- On the 22/23 Area Groundwater Zero-Valent Zinc (ZVZ) Pilot Study Report, the response to one remaining agency comment that requires resolution will be submitted to the agencies in October.
- The 22/23 Groundwater 1,4-dioxane Groundwater Monitoring Technical Memorandum has been added to the FFA schedule, and will be submitted to the agencies in November 2015.
- For the Site 7 Annual Groundwater Monitoring Report, Mr. Hill noted that the final will be submitted to the agencies by tomorrow (October 14, 2015). Next year's report will also be submitted in the October timeframe.
- For the Site 21 Remedial Design, Mr. Mahmoud noted that it may be required to submit the RD within 90 days of signing the Record of Decision (ROD). [Note that following the meeting, the Camp Pendleton FFA was reviewed and it is not a requirement that the RD be submitted 90 days after signing the ROD. However, Section 8.2 of the FFA does specify that a schedule for the RD will be established and distributed to the FFA within 21 days of ROD signing.]
- At Site 1115, Mr. Pearce noted that there will be a demonstration project under the Navy Environmental Security Technology Certification Program (ESTCP) involving the use of hydraulic fracturing to assist in environmental remediation. A Work Plan may be available by January 2016, and a presentation may be included in the January 2016 FFA meeting.
- For Site 1116, Mr. Griswold noted that the information in the Performance Monitoring Report and Additional Investigation Report, which are both currently in progress, will be used in the development of the planned Technical Memorandum for expansion of the enhanced in situ bioremediation system at Subsites 1491 and 140008.
- Site 1118 (Subsites 21565, 520400, 2664, and Building 210568):
  - Regarding Subsite 21565, Mr. Hill informed the team that the planned removal action for the site will be delayed until after field work at Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) Site 61 in order to minimize the impact to the tenants in the area. Consequently, the removal action at Subsite 21565 is now currently planned for January 2016.
  - Mr. Hill also said that the Letter Work Plan for Subsite 520400 will be focused on an area with an elevated detection of total petroleum hydrocarbons-diesel (TPH-diesel), and that Subsite 2664 is already no further action (NFA) status.
  - The discussion then focused on the planned indoor air sampling at Building 210568. Mr. Hill provided an overview of the planned sampling.

- A contract is in place for the work plan, and it is scheduled to be submitted to the Navy in November. The Navy will be following an approach similar to other indoor air sampling projects (e.g., Space and Naval Warfare Command (SPAWAR) and North Island). A 60-day review is not possible, so once the work plan is prepared, the Navy will proceed as quickly as logistically possible, so the agencies are asked to let the Navy and Base know if there are any concerns at that time.
- NAVFAC recently briefed the Command on the planned indoor air sampling and prepared a fact sheet to inform interested parties of the logistics of the sampling. The indoor air sampling will likely be carried out during the holidays to minimize disruption to workers in the building. A Hazardous Air Pollutants on Site (HAPSITE) portable sampling device will be used first, followed by the placement of two summa canisters in the building to obtain time-weighted average air samples. The laboratory analyses will be based on the chemicals-of-concern (COCs) that have been established in prior studies at the site.
- Ms. Dorsey asked if there were plans for sub-slab sampling, and Mr. Hill said that is not currently planned, but depending on what the indoor air data indicates, further steps can be evaluated. Mr. Hill also said that a review of the building plans shows that there is no engineered vapor barrier at the building except for a standard sub-slab moisture barrier.
- Ms. Gettmann asked whether 8-hour or 24-hour samples would be obtained, and indicated that 24-hour samples would be preferred. Mr. Hausladen asked if the building air conditioning (A/C) will be off or on. It was noted during the discussion that the building A/C has been known to be down for extended periods. Ms. Gettmann suggested that having it off is closer to a worst-case scenario, so that would be preferred. Mr. Griswold asked if normal operation of A/C is acceptable, since it reflects actual normal working conditions. Ms. Gettmann said it would be preferable to have the A/C off, but if the A/C must be on during the testing, then it would be necessary to document pressure measurements inside and outside the building. Ms. Gettmann noted that the sampling team should make sure they are looking at latest July 2015 vapor intrusion (VI) guidance, and that the second sampling event would need to be in roughly the opposite season from the initial sampling.
- For Site 1119, Ms. Griffey said that RWQCB comments would be provided on the Enhanced In Situ Bioremediation (EISB) Pilot Study Work Plan by the end of October 2015. Also, for this site, Mr. Mahmoud asked that the Land Use Control Plan be added to future versions of the FFA and deliverables schedules.
- Regarding the planned treatability study at Site 1120, Mr. Pearce said that the trees that are along the tree line area of the site will be removed prior to treatability study implementation, and that this task will be carried out independent of the work plan and FFA Team reviews.
- For the Site 1121 Remedial Investigation Report, responses to agency comments were submitted on September 30 to allow the team to see the responses prior to implementation of the comments into the finalized document. Ms. Griffey said that

the responses indicate that various changes have been made to the document and the figures, but that the actual revisions to the document or figures were not provided with the responses. Mr. Pearce said the revisions will be provided as soon as possible and will determine the schedule for providing the revisions.

- Mr. Hill then provided a brief status of the Site 1122 Shot Fall Zone. The site was denied acceptance into the Installation Restoration (IR) program by Navy headquarters because the Potentially Responsible Party (PRP) needs to be pursued first. In the meantime, non-permanent, non-destructive best management practices (BMPs) (for storm water runoff) are going to be implemented at the site to minimize downstream migration of the lead shot and associated contamination. Ms. Griffey suggested that the Navy could informally communicate with the RWQCB storm water unit to determine the most appropriate BMPs at the site, and will provide the point-of-contact at the RWQCB storm water unit.

#### Deliverables/Fieldwork/Responses-to-Comments Spreadsheets

- The various dates shown on spreadsheets are largely self-explanatory (see attached), but several points were made during the discussion as follows.
- For Item 16 of the Deliverables Spreadsheet, the 1,4-dioxane Characterization Technical Memorandum, Mr. Pearce noted that no agency comments will likely be solicited, but suggested that the document can be taken into account when reviewing the follow-on work plan for the site. The work plan for this site is not in the FY14-16 Joint Execution Plan (JEP) but it is in the FY16-18 JEP, and Mr. Pearce will evaluate if a JEP amendment will be needed to cover review of that document prior to the July 2016 start of the FY16-18 JEP.
- Deliverables Spreadsheet Item 21 is a duplicate of Item 27, as noted by Mr. Mahmoud, which will be corrected on next version of the schedule.
- Item 10 of the Fieldwork Spreadsheet is now planned for January 2016 as noted in the above discussion of Site 1118 (Subsite 21565).
- The three documents affected by the recent agreement on land use control language are the 22/23 Area Groundwater Land Use Control RD/RAWP, Site 21 ROD, and the Site 1119 ROD. These three documents will be submitted to the agencies for review with responses to agency comments and changes shown in track-changes in order to get concurrence before finalizing. These three documents are planned to be sent to the agencies by the end of October or early November 2015.

#### Schedule for Next FFA Meeting

The next FFA Meeting is scheduled to be held in San Francisco on January 14, 2016. The conference call meeting was adjourned.

**MCB Camp Pendleton  
116<sup>th</sup> FFA Meeting Agenda**

**Call-In Number 1-888-598-1409 / Access Code: 883 024 1**

**October 13, 2015**

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|--------------------|--|
| <b>0900 – 0915</b> | <b>Welcome and Introductions</b>   |
| <b>0915 – 1045</b> | <b>FFA Schedule Update, Project Deliverables, and<br/>Field Work Status of Camp Pendleton IR Sites</b> |
| <b>1045 – 1100</b> | <b>Meeting Conclusion and Action Items</b>   |

FFA Schedule for Draft Documents – October 13, 2015

Original schedule was agreed to by all FFA signatories at the May 17, 2011 FFA meeting. Updates are made every four months, prior to the FFA meetings. Dates marked with an asterisk are tentative, based on funding and subject to change. Once funding becomes available for a site, the date will be updated and the asterisk removed. Items in italics represent field work and are not enforceable. Dates in green have changed since the May 14, 2015 FFA schedule.

**Site 6 (Site number is for funding purposes only) – 22/23 Area Groundwater**

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This site consists of VOC plumes in the groundwater under the 22 and 23 Areas. Various industrial activities have historically taken place in the 22 and 23 Areas. An RI/FS was completed in January 2011. The Proposed Plan outlined the various alternatives from the FS and proposed the preferred alternative which is a combination of alternatives 2, 3 and 4. Alternative 2 includes Land Use Controls and Long-Term Monitoring, Alternative 3 involves an Alternate Water Supply and Alternative 4 is Source Area Treatment via In-Situ Technologies. A public comment period and public meeting for the Proposed Plan were held in July/August 2011. A Record of Decision has been completed. To evaluate the effectiveness of the remedies proposed for Alternative 4, two pilot studies are in progress and a third planned: a Zero Valent Zinc (ZVZ) Permeable Reactive Barrier for the TCP plume; Enhanced In Situ Bioremediation (EISB) for the TCE plume; and, characterization of the 1,4-dioxane plume. Reports are being reviewed for two of the pilot studies (ZVZ and EISB), and underway for the production well installation.

- |   |                    |
|---|--------------------|
| – Proposed Plan   | complete           |
| – Geotechnical and Design Information for ZVZ PRB Pilot Study   | complete           |
| – <i>Implementation of ZVZ PRB Pilot Study</i>                  | complete           |
| – Record of Decision  | complete           |
| – Well Siting Study Sampling and Analysis Plan                  | complete           |
| – <i>Field Work for Well Siting Study</i>                       | <i>complete</i>    |
| – Work Plan for Enhanced In Situ Bioremediation (EISB)          | complete           |
| – <i>Field Work for EISB Pilot Study</i>                        | <i>complete</i>    |
| – Work Plan to Install Wells and Conduct Groundwater Monitoring | complete           |
| – <i>Installation of Alternative Water Supply Well</i>          | <i>in progress</i> |
| – Land Use Control Implementation Plan <sup>1</sup>             | 5/16/2014          |
| – Tech Memo to Implement Alternate Water Supply                 | complete           |
| – Baseline LTM Groundwater Monitoring Tech Memo                 | complete           |
| – ZVZ Pilot Study for TCP Report                                | 3/24/2015          |
| – EISB Pilot Study for TCE Report                               | 6/29/2015          |
| – 1,4-dioxane Characterization Results Tech Memo                | Nov 2015           |
| – Annual LTM Groundwater Monitoring Report                      | <b>Feb 2016</b>    |
| – Work Plan for EISB Expanded System                            | May 2016           |

<sup>1</sup>**Delayed while Navy and DTSC counsel agree to land use control language.**

## **\*\*POST ROD Site 7 – Box Canyon Landfill**

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This site is a CAMU situated above an old municipal landfill. This site is post-ROD. The selected remedy was an EvapoTranspiration (ET) cap with land use controls. The site must be fenced and signed. Annual inspections are made in relation to the monitoring systems, cover maintenance, drainage/erosion control, cracks, settlement and movement and vegetation growth. Additionally, groundwater monitoring wells are sampled every year and gas probes are sampled according to the percent of methane in the probe. The groundwater monitoring results and the annual maintenance activities are summarized in annual reports. The methane results are emailed to the FFA team monthly. A Gas Collection and Control System (GCCS) was installed and has reduced methane concentrations to below compliance standards.

- Memo to File for Site 7 (pv panels) complete
- *Field Work for Non Methane Organic Compounds* complete
- Memo To File complete
- Report for Non Methane Organic Compounds complete
- Annual Post Closure Maintenance Report (for CY15) 2/22/2016
- Annual Groundwater Monitoring Report 7/3/2015
- Five Year Review complete

## **12 Area Site 13 – Former Building 1280 and 1283**

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This site is the site of a former UST and has some low level concentrations of VOCs in groundwater. An RI/FS has been completed. Due to an impending construction project through the site, contaminated soil and groundwater were removed from the area to be impacted by construction. A year of groundwater monitoring has been completed and a Project Completion Report is complete. A Soil Vapour Extraction system has reduced concentrations in groundwater; only one well has levels barely above the MCL. A site closure report is being prepared.

- Groundwater Monitoring Report complete
- Project Completion Report for Soil and Groundwater complete
- *AS/SVE Pilot Study* complete
- Post SVE Closure Report 10/20/2015
- NFA Proposed Plan 2016\*
- NFA Record of Decision 2016\*

## **Site 21 – 14 Area Surface Area Impoundment**

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This site was a former oxidation pond near a maintenance facility which has some low levels of VOCs in groundwater. A Remedial Investigation has been completed for the site. A pilot study to evaluate the effectiveness of in-situ bioremediation of chlorinated solvents at low concentrations in groundwater is complete. Technical Memorandums reporting on the effectiveness of both phases of the pilot study were

finalized and the Feasibility Study is in agency review. A Proposed Plan is final and a Record of Decision is in process with the following preferred alternatives: land use controls and long-term monitoring; biosparging/venting for the shallow plume; and, enhanced in situ bioremediation for the deep plume.

- Pilot Study Tech Memo complete
- Site 21 Pilot Study Work Plan Addendum complete
- *Second Phase of Pilot Study Field Work* complete
- Feasibility Study complete
- Proposed Plan complete
- Record of Decision<sup>1</sup> 3/9/2015
- Remedial Design 2016
- Remedial Action 2016
- Land Use Control Implementation Plan (LUCIP) 2017\*

<sup>1</sup>**Delayed while Navy and DTSC counsel agree to land use control language.**

### **Site 33 – 52 Area Armory**

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Gun cleaning in the armory contributed to a PCE plume downgradient of the armory. A Remedial Investigation and Feasibility Study have been completed for this site. An Engineering Evaluation/Cost Analysis and a Non-Time Critical Action Memorandum have also been completed. The selected remedy was excavation of the source material, and treatment of groundwater from the site. An interim Removal Action was completed, concentrating on the worst part of the plume. An additional Removal Action was recently completed for the source area. Groundwater monitoring, EISB injections and soil gas sampling are currently in progress.

- Removal Action Work Plan for plume complete
- *Plume Removal Action (geophysical work started 15 Nov 11)* complete
- Plume Removal Action Completion Report complete
- Removal Action Work Plan for source complete
- *Source Removal Action/EISB Injection* in progress
- Groundwater Monitoring Report complete
- SAP Addendum for Soil Gas Monitoring complete
- Source Removal Action Completion Report complete
- Proposed Plan complete
- Record of Decision **Dec 2015**
- Groundwater Monitoring & Soil Gas Report **Dec 2015**

### **Site 150 – 21 Area, Location 1**

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This site became an IR site after a discovery investigation conducted based on information gained from a former Marine stationed at Camp Pendleton. During the discovery investigation, one location had vinyl

chloride in soil gas that exceeded risk screening criteria. Field work for the Site Inspection has located groundwater contamination. This site is in the Remedial Investigation phase.

- *Site Inspection Field Work* *complete*
  - Site Inspection Report complete
  - Remedial Investigation Work Plan complete
  - *Field Work for Remedial Investigation* *in progress*
  - **Remedial Investigation Report** **Feb 2016**
  - **Feasibility Study** **May 2016**
  - NFA Proposed Plan 2016
  - NFA Record of Decision 2016
- Dates changed to collect additional data**

**SITE CLOSED Site 1003 (Site number is for funding purposes only) – Site 1D Soil**

This site was a former burn ash site and has undergone a Remedial Investigation and Feasibility Study for soil only. A ROD was signed documenting the selected remedy consisting of excavation and off-base disposal of contaminated soil. During the remedial action a cell with 90 drums and drum fragments containing liquid and solid chemicals was discovered. The drums were removed but the material in the drums had reached groundwater. A Remedial Action Closure Report (RACR) was completed to close out the soil portion of the site, but the groundwater contamination remains to be addressed. As an interim measure, until funding could be secured for further investigation, 650,000 gallons of the groundwater was pumped from the site, treated and disposed of in the base sanitary sewer system. This lowered the concentrations of contaminants in groundwater, however, additional work is planned under a new site, IR Site 1121 Site 1D Groundwater. This site is for soil only; and was closed through the ROD and the RACR.

- Data Gap Analysis for Groundwater Work Plan complete
- *Data Gap Analysis Field Work* *complete*
- Data Gap Analysis Report complete

**SITE CLOSED Site 1111 – 26 Area Ash and Debris Disposal Area**

This burn ash site was remediated and four quarters of groundwater monitoring have been completed. The site was revegetated and a report was written summarizing the actions that had been completed to date, and why the site qualified for unrestricted land use. A No Further Action Record of Decision (ROD) was signed on April 19, 2013.

- Proposed Plan for No Further Action complete
- Record of Decision for NFA complete

## Site 1114 – 41 Area Arroyo

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This site was created to investigate the PCE concentrations in one well that used to be associated with IR Site 9 (closed). A Site Inspection was carried out and described low-level concentrations of TPH and vinyl chlorides in soil gas and groundwater. A Remedial Investigation was conducted to validate the findings of the SI and to complete a risk assessment for the site. The EPA did not agree with the proposed NFA, so an interim Removal Action was completed to address elevated concentrations in groundwater. Performance monitoring to examine the effectiveness of the substrate injected during the removal action is underway.

- Remedial Investigation Report complete
- Engineering Evaluation/Cost Analysis & Action Memorandum complete
- Removal Action Work Plan complete
- *Removal Action* complete
- Work Plan for Performance Monitoring complete
- Removal Action Completion Report complete
- *Performance Monitoring* in progress
- Performance Monitoring Report Apr 2016
- Proposed Plan 2016
- Record of Decision 2017

## Site 1115 – 13 Area FSSG Lot

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There are two plumes underneath the parking lot at this site, one shallow and one deep, containing chlorinated solvents and benzene. A pilot study to evaluate the effectiveness of in-situ bioremediation of chlorinated solvents in groundwater was completed. The technology was successful at reducing contaminant concentrations, but the site geology limited its effectiveness. A Technical Memorandum detailing the pilot study is complete. A work plan to collect more data is final and the results have been included in a Remedial Investigation/Feasibility Study. The Feasibility Study identified remedial alternatives for various Target Treatment Zones (TTZs) throughout the site. Pilot studies are currently underway to address the different plumes and contaminants at the site.

- Tech Memo complete
- Work Plan to collect additional data for site complete
- *Field Work to collect additional data* complete
- Remedial Investigation/Feasibility Study Report complete
- Pilot Study Work Plan for TTZ-2L and TTZ-2S complete
- Pilot Study Work Plan for TTZ-1S complete
- *Field Work for TTZ-2L and TTZ-2S Pilot Study* complete
- *Field Work for TTZ-1S Pilot Study* in progress
- Pilot Study Report for TTZ-1S Jan 2017
- Pilot Study Report for TTZ-2L and TTZ-2S 2016
- Proposed Plan 2017\*

**Site 1116 – 14 Area Groundwater**

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Nine USTs were transferred from the UST Program to the IR Program due to low-levels of chlorinated solvents. A Site Inspection was completed and six of the sites do not warrant further action under the IR Program. The three other sites will be remediated. An Engineering Evaluation/Cost Analysis (EE/CA) and Action Memo has been completed for this site. A Removal Action Work Plan, with a report detailing the results of a limited investigation to close data gaps as an appendix, is complete. The removal action will address the mainly petroleum sources at the old USTs, along with Dual-Phase Extraction (DPE) at one site and an Enhanced In Situ Bioremediation (EISB) pilot study at another site. The limited investigation that was conducted in 2012 indicated that the TCE plumes at the site are not likely associated with the USTs. Therefore, an additional investigation is in progress to delineate the TCE plumes and to find a source, if possible.

- EE/CA and Action Memorandum (3 subsites – Moving Forward) complete
- Expanded Site Inspection WP (3 subsites – Moving Forward) complete
- *Field Work for Site Inspection* (3 subsites – Moving Forward) complete
- Expanded Site Inspection Report (3 subsites – Moving Forward) appendix to RAWP
- Removal Action Work Plan (RAWP) (3 subsites – Moving Forward) complete
- *Interim Removal Action* (3 subsites – Moving Forward) in progress
- Additional Investigation Work Plan complete
- Performance Monitoring SAP complete
- *Additional Investigation Field work* complete
- *Performance Monitoring Field Work* complete
- Removal Action Completion Report (3 subsites – Moving Forward) complete
- Performance Monitoring Report Nov 2015
- Additional Investigation Report Dec 2015
- Proposed Plan 2016\*
- Record of Decision 2017\*

**Site 1117 – 15/16 Area Groundwater**

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Six USTs were transferred from the UST Program to the IR Program due to low-levels of chlorinated solvents. The agencies have concurred with the Site Inspection Report recommending the site move into the Remedial Investigation phase. A Remedial Investigation Report justifying No Further Action at all subsites is currently under agency review.

- *Field Work for Site Inspection* complete
- Site Inspection Report complete
- Remedial Investigation Work Plan complete

- *Remedial Investigation Field Work* complete
- Remedial Investigation Report 7/24/2015
- NFA Proposed Plan 2016
- NFA Record of Decision 2016

### **Site 1118 – 21/26/52 Area Groundwater**

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Three USTs were transferred from the UST Program to the IR Program due to low-levels of chlorinated solvents. A Site Inspection and Extended Site Inspection have been completed for this site, resulting in No Further Action for one subsite, 2664. Additional investigation is needed at Subsite 520400 and an interim removal action will begin at Subsite 21565 soon.

- Extended Site Inspection (ESI) Work Plan complete
- *Field Work for Site Inspection* complete
- Extended Site Inspection Report complete
- EE/CA and Action Memo Subsite 21565 complete
- Removal Action Work Plan Subsite 21565 complete
- *Field Work for Subsite 21565 Removal Action* in progress
- Removal Action Completion Report Subsite 21565 2016
- Letter Work Plan for Subsite 520400 Feb 2016
- *Field Work for Subsite 520400* 2016
- Tech Memo for Subsite 520400 2016
- Proposed Plan 2017\*
- Record of Decision 2018\*

### **Site 1119 – 26 Area Groundwater**

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This site was created to investigate the source or sources of chlorinated solvents in the 26 Area production wells. Field work for the Remedial Investigation has been completed. TCE had been discovered at two of the wells and further investigation was needed to delineate the extent of contamination and to locate the source. The results of the additional investigation and proposed remedial alternatives were included in the Remedial Investigation/Feasibility Study Report. The preferred alternative has been documented in a Proposed Plan, and the Record of Decision is currently in agency review. There are three preferred alternatives: land use controls and long-term monitoring; enhanced in-situ bioremediation at the source area; and, a permeable reactive barrier downgradient of the plume and upgradient of the production wells.

- *Field Work for Remedial Investigation* complete
- Work Plan Addendum to Delineate Source complete
- *Additional RI Field Work* complete
- RI/FS Report complete

- Proposed Plan complete
  - Record of Decision<sup>1</sup> 3/9/2015
  - EISB Pilot Study Work Plan 8/3/2015
  - *EISB Pilot Study Field Work* 2016
  - EISB Pilot Study Report (Interim) 3rd Qtr 2016
  - EISB Pilot Study Report (Final) 1st Qtr 2018
  - Permeable Reactive Barrier (PRB) Work Plan 2016
  - *PRB Field Work* 2016
  - PRB Completion Report 2017
- <sup>1</sup>**Delayed while Navy and DTSC counsel agree to land use control language.**

### **SITE CLOSED Site 62 – Asphalt Batch Plant**

This site was created when a transformer containing PCBs tipped over and spilled. A Site Inspection was performed, however data was missing and further investigation was needed. An Extended Site Inspection, including trenching, has been completed. The ESI Report recommended No Further Action (NFA) at the site and a Proposed Plan has been completed. The NFA Record of Decision is final and signed.

- Extended Site Inspection Work Plan complete
- *Field Work for Extended Site Inspection* complete
- Extended Site Inspection Report complete
- Proposed Plan complete
- Record of Decision complete

### **Site 1120 – Stuart Mesa Pesticide Maintenance Areas**

This site was created in 2012 to address pesticide contamination due to releases from agricultural maintenance activities. A Phase II Environmental Assessment was completed for this site in support of real estate agreement closure. The Environmental Assessment is analogous to a Site Inspection, so this site entered the Installation Restoration Program at the Remedial Investigation stage. Currently the field work for the Remedial Investigation is in progress.

- Remedial Investigation Work Plan complete
- *Remedial Investigation Field Work* complete
- Remedial Investigation/Feasibility Study Report **Feb 2016**
- Treatability Study Work Plan **Feb 2016**
- *Treatability Study Field Work* 2016
- Treatability Study Completion Report 2016
- Proposed Plan 2017\*
- Record of Decision 2018\*

### **Site 1121 – Site 1D Groundwater**

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This site was created in 2012 to differentiate Site 1D groundwater from Site 1D soil, which was closed with a previous remedial action and Record of Decision. There is a plume consisting of elevated concentrations of VOCs, metals, and pesticides. A Remedial Investigation is almost complete and a Feasibility Study is currently in progress.

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|--|-----------------|
| – Remedial Investigation Work Plan         | complete        |
| – <i>Remedial Investigation Field Work</i> | <i>complete</i> |
| – Remedial Investigation Report            | 5/13/2015       |
| – Feasibility Study                        | 2016            |
| – Proposed Plan                            | 2017*           |
| – Record of Decision                       | 2018*           |

### **Site 1122 – Shot Fall Zone**

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This site was created in 2013 to address lead and Polycyclic Aromatic Hydrocarbon contamination due to overshoot from skeet range activities off base. Limited soil samples were collected that indicated elevated levels of lead, so the site came into the Installation Restoration Program at the Site Inspection stage. The Site Inspection is complete; however, headquarters has determined that the DON must go after the responsible parties before they will fund anymore work under this IR site.

- |                                     |                 |
|-------------------------------------|-----------------|
| – Site Inspection Work Plan         | complete        |
| – <i>Site Inspection Field Work</i> | <i>complete</i> |
| – Site Inspection Report            | complete        |

MCB Camp Pendleton Deliverables Spreadsheet

Date: 10/13/15

Item	Document	Contractor	Status	Date Due	Agency Comments	Response Received From:		
				to Agencies	Due By	EPA	DTSC	RWQCB
1	Land Use Control Implementation Plan - 22/23 Area Groundwater	Parsons	Discussing with DTSC attorney	5/16/14	7/15/14	9-Jun	14-Jul	21-Jul
2	NFA Record of Decision for Site 62 - Asphalt Batch Plant	TriEco	FINAL	9/10/14	11/10/14	6-Nov	30-Oct	22-Oct
3	Removal Action Work Plan Site 1118 - Subsite 21565	Trevet	FINAL	1/9/15	3/10/15	3-Mar	4-Mar	3-Mar
4	Removal Action Completion Report Site 33 (52 Area Armory)	ECM	FINAL	1/16/15	3/17/15	NC	10-Mar	16-Mar
5	Record of Decision for Site 21 (14 Area Surface Impoundment)	SDVJV	Responding to agency comments	3/9/15	5/8/15	5-May	29-Apr	4-May
6	Record of Decision for Site 1119 (26 Area Groundwater)	Tidewater	Responding to agency comments	3/9/15	5/8/15	17-Apr	28-Apr	11-May
7	ZVZ Pilot Study Report - 22/23 Area Groundwater	Brady	Responding to agency comments	3/24/15	5/22/15	31-Mar	14-May	10-Jun
8	Proposed Plan for Site 33 - 52 Area Armory	ECM/Parsons	FINAL	4/2/15	6/1/15	NC	22-Apr	22-Apr
9	Remedial Investigation Report - Site 1121 (Site 1D Groundwater)	SDVJV	Responding to agency comments	5/13/15	7/30/15	30-Jun	9-Jul	21-Jul
10	EISB Pilot Study Report - 22/23 Area Groundwater	Battelle	Responding to agency comments	6/29/15	8/28/15	31-Aug	26-Aug	30-Sep
11	Annual Groundwater Monitoring Report - Site 7 (Box Canyon)	Trevet	Responding to agency comments	7/3/15	9/1/15	NC	17-Aug	12-Aug
12	Remedial Investigation Report - Site 1117 (15/16 Area Groundwater)	Trevet	With agencies	7/24/15	9/22/15	8-Sep	14-Sep	6-Oct
13	Pilot Study Work Plan - Site 1119 (26 Area Groundwater)	Tidewater	With agencies	8/3/15	10/2/15	15-Sep	28-Sep	
14	Post-SVE Closure Report for 12 Area Site 13	SDV	Draft in progress	10/20/15				
15	Performance Monitoring Report for Site 1116 (Subsite 1491/140008)	ECM	Pre-draft in progress	11/2015				
16	1,4 - Dioxane Characterization for 22/23 Area Tech Memo	Insight	Draft In progress	11/2015				
17	Work Plan for Bldg 210568 Indoor Air Sampling	WSI-IO	Pre-draft in progress	11/2015				
18	ROD for Site 33	ECM	Pre-draft in progress	12/2015				
19	Additional Investigation Report for Site 1116 (Subsite 1491/140008)	Tetra Tech	Pre-draft in progress	12/2015				
20	Groundwater Monitoring and Soil Gas Report for Site 33	Trevet	Pre-draft in progress	12/2015				
21	SAP For Ag Fields Treatability Study	WSI-IO	Pre-draft in progress	2/2016				

MCB Camp Pendleton Deliverables Spreadsheet

Date: 10/13/15

Item	Document	Contractor	Status	Date Due	Agency Comments	Response Received From:		
				to Agencies	Due By	EPA	DTSC	RWQCB
22	Remedial Investigation Report for Site 150	Trevet	Field Work in progress	2/2016				
23	Annual Groundwater LTM Report for 22/23 Area	Tidewater	GW Monitoring in progress	2/2016				
24	Work Plan for Site 1118 (Subsites 520400, 21565)	WSI-IO	Pre-draft in progress	2/2016				
25	Annual Post-Closure Maintenance Report for Site 7 (CY 15)	Trevet	Pre-draft in progress	2/22/16				
26	RI/FS Report for Site 1120	Tidewater	Pre-draft in progress	2/28/16				
27	Treatability Study Work Plan for Site 1120	WSI-IO	Pre-draft in progress	2/2016				
28	Tech Memo for Site 1116 (Subsite 1491/140008)	WSI-IO	Pre-draft in progress	3/2016				
29	Performance Monitoring Report for Site 1114	Tetra Tech	Monitoring in progress	4/2016				
30	Feasibility Study Report for Site 150	Trevet	Field Work in progress	5/2016				
31	Work Plan for 22/23 Area EISB Expansion	WSI-IO	Awaiting prior results	5/2016				
32	Removal Action Completion Report Subsite 21565	Trevet	Following removal action	2016				
33	Pilot Study Report for Site 1115 (TTZ-2)	Insight	Pilot Study in progress	2016				
34	Pilot Study Report for Site 1115 (TTZ-1S)	Tidewater	Pilot Studies in progress	1/2017				
35	ESTCP Work Plan for Site 1115	CDM/Smith	pending					
36	Work Plan/SAP for PRB at Site 1119	CB&I	pending					

Agencies have commented

**MCB Camp Pendleton Fieldwork Spreadsheet**

**Date: 10/13/15**

<b>Item</b>	<b>Field Work</b>	<b>Planned Start Date</b>	<b>Planned Completion Date</b>
1	Install Test Well - 22/23 Area GW	6-Jul-15	9/30/2015 (complete)
2	22/23 Area LTM Quarterly Sampling	Baseline complete	Jan (1st); Apr (2nd); Jul (3rd); Oct (4th)
3	Removal Action Site 1116	ongoing	2016
4	Site 1114 Performance Monitoring	Quarterly event in Nov 2015	2 years performance monitoring 2015/2016 (Feb/May/Aug/Nov)
5	Site 1116 Groundwater Investigation	Performance monitoring completed	complete
6	Pilot Study Site 1115 TTZ-1S and 1L	injections (4/6) and (9/1) 1st quarter groundwater monitoring (Dec 2015)	3 more quarters in 2016
7	Pilot Study Site 1115 TTZ-2S and 2L	post-treatment sampling in Oct and Dec 2015	Dec 2015
8	Install New Wells - 22/23 Area GW	12-Jan-15	complete
9	Soil gas & data gap samples Site 1120 RI	1-Sep-15	complete
10	Removal Action Site 1118-Bldg 21565	Sep	Nov
11	Groundwater Monitoring - 12 Area Site 13	Aug 2015	complete
12	Dioxane Plume Pilot Study - 22 Area	Install wells 13 April	complete
13	BMPs at Site 1122	January 2016	Feb 2016

SIOH Bearing

Date: 10/13/15

Item	Document	Contractor	RTCs to agencies	RTC Approved		
				EPA	DTSC	RWQCB
1	Land Use Control Implementation Plan - 22/23 Area Groundwater	Parsons	10/21/2014; addl RTCs 1/13/15	21-Oct	addl comment 11/13/14	29-Oct
2	Removal Action Work Plan Site 1118 - Subsite 21565	Trevet	5/21/2015	16-Jun	2-Jun	21-May
3	Record of Decision for Site 21 (14 Area Surface Impoundment)	SDVJV	DON legal review			
4	Record of Decision for Site 1119 (26 Area Groundwater)	Tidewater	DON legal review			
5	ZVZ Pilot Study Report - 22/23 Area Groundwater	Brady	7/20/2015	21-Jul	20-Jul	
6	Remedial Investigation Report - Site 1121 (Site 1D Groundwater)	SDVJV	9/30/2015			
7	EISB Pilot Study Report - 22/23 Area Groundwater	Battelle				
8	Annual Groundwater Monitoring Report - Site 7 (Box Canyon)	Trevet				
9	Remedial Investigation Report - Site 1117 (15/16 Area Groundwater)	Trevet				
10	Pilot Study Work Plan - Site 1119 (26 Area Groundwater)	Tidewater				