

Addendum 1 to the Revised Final Sampling and Analysis Plan  
Anomaly Area 3 and IRP Sites 1 and 2  
Former MCAS El Toro

GW Monitoring At AA 3 and IRP Sites 1 and 2  
Revision Number:  
Revision Date:

**FINAL**  
**ADDENDUM 1 TO THE REVISED FINAL**  
**SAMPLING AND ANALYSIS PLAN**  
(Field Sampling Plan and Quality Assurance Project Plan)  
November 9, 2009

**GROUNDWATER MONITORING AT**  
**ANOMALY AREA 3 and IRP SITES 1 AND 2**  
**FORMER MARINE CORPS AIR STATION EL TORO**  
**IRVINE, CALIFORNIA**

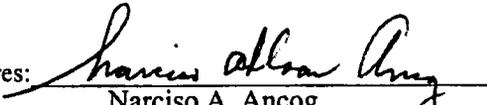
**Prepared for:**  
DEPARTMENT OF THE NAVY  
Base Realignment and Closure  
1455 Frazee Road, Suite 210  
San Diego, California 92108

**Prepared by:**  
Trevet  
9888 Carroll Centre Road, Suite 228  
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**Prepared under:**  
Naval Facilities Engineering Command Southwest  
Contract Number N62473-09-C-0607  
Contract Task Order 0000  
DCN: TRVT-0607-0000-0013

Review Signatures:   
Gerald Tamashiro  
Trevet QA/QC Coordinator

Date: Oct. 30, 2009

Approval Signatures:   
Narciso A. Ancog  
NAVFAC SW Quality Assurance Officer

Date: 11/5/2009

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FINAL SAMPLING AND ANALYSIS PLAN (FIELD SAMPLING  
PLAN AND QUALITY ASSURANCE PROJECT PLAN)  
GROUNDWATER MONITORING AT ANOMALY AREA 3  
AND IRP SITES 1 AND 2, IS APPENDIX A OF:

REVISED FINAL  
WORK PLAN GROUNDWATER MONITORING AT  
ANOMALY AREA 3 AND IRP SITES 1 AND 2

DATED 15 NOVEMBER 2007

THIS RECORD IS ENTERED IN THE DATABASE AND FILED  
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**SAP Worksheet #3 - Distribution List**

<b>Name of SAP Recipients</b>	<b>Title/Role</b>	<b>Organization</b>	<b>Telephone Number (Optional)</b>	<b>Mailing Address and E-mail Address</b>	<b>Document Control Number (Optional)</b>
Sean McGoey	Remedial Project Manager (RPM)	BRAC PMO West	(619) 532-0959	1455 Frazee Rd. Ste 900 San Diego, CA 92108 sean.mcgoey.ctr@navy.mil	
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Diane Silva	Administrative Records manager	NAVFAC SW	(619) 532-3676	1220 Pacific Hwy Bldg. 1, 3 <sup>rd</sup> Floor San Diego, CA 92132 diane.silva@navy.mil	
John Broderick	Regulatory Agency Representative	Regional Water Quality Control Board (RWQCB), Santa Ana Region	(951) 782-4494	Santa Ana Regional Water Quality Control Board 3737 Main Street, Suite 500 Riverside, CA 92501-3348 jbroderick@waterboards.ca.gov	
Richard Muza	Remedial Project Manager	United States Environmental Protection Agency	(415) 972-3349	U.S. EPA Region 9 75 Hawthorne Street San Francisco, CA, 94105 muza.richard@epa.gov	
Quang Than	Regulatory Agency Representative	California Department of Toxic Substances Control (DTSC)	(714) 484-5352	5796 Corporate Avenue Cypress, CA 90630 qthan@dtsc.ca.gov	
Pete Stang, P.G.	Project Manager	Trevet	(858) 578-8859	9888 Carroll Centre Rd, STE 228 San Diego, CA 92126 pete@trevetinc.com	
Gerald Tamashiro	Program Quality Control Manager / Project Chemist	Trevet	(714) 200-3826	9888 Carroll Centre Road, STE 228 San Diego, CA 92126 gerald@trevetinc.com	
Ye Myint	Project Manager (analytical services)	EMAX Laboratories	(310) 618-8889	1835 W. 205th St. Torrance, CA 90501 ymyint@emaxlabs.com	
Linda Rauto	Project Manager (data validation)	Laboratory Data Consultants	(760) 634-0437	7750 El Camino Real, Suite 2L Carlsbad, CA. 92009 lrauto@lab-data.com	

**SAP Worksheet #4 - Project Personnel Sign Off Sheet**

Name	Organization/Title/Role	Telephone Number (optional)	Signature/e-mail receipt	SAP Section Reviewed	Date SAP Read
Pete Stang, P.G.	Trevet/Professional Geologist/Project Manager	(858) 578-8859		All	
Jonathan Bush	Trevet/Geologist/Field Team Leader	(858) 578-8859		All	
Nia Nikmanesh	Trevet/Geologist/Field Sampler	(858) 578-8859		All	
Jon Holstein	Trevet/Scientist/Field Sampler	(858) 578-8859		All	
Ye Myint	EMAX Laboratories/ Project Manager	(310) 618-8889		Worksheets 12, 15, 19, 20, 23, 24, 25, 28, and 30	
Linda Rauto	Laboratory Data Consultants, Inc.	(760) 634-0437		Worksheets 12, 15, 19, 20, 23, 24, 25, 28, and 30	

## Section 1: Introduction

This Addendum to the Revised Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan) for Groundwater Monitoring at Anomaly Area 3 (AA 3) and Installation Restoration Program (IRP) Sites 1 and 2, former Marine Corps Air Station (MCAS) El Toro was prepared to document the changes to the Revised Final Sampling and Analysis Plan (SAP) prepared by CDM Federal Programs Corporation (CDM) in 2007 (CDM, 2007a).

This Addendum 1 is being prepared for the Department of the Navy by Trevet, under the Naval Facilities Engineering Command Southwest (NAVFAC SW) Contract No. N62473-09-C-0607. This Addendum 1 is being submitted as Administrative Addendum to Appendix A of the Revised Final Groundwater Monitoring at AA 3 and IRP Sites 1 and 2 Work Plan, Former Marine Corps Air Station El Toro, Irvine, California, (CDM, 2007b).

The original SAP (CDM, 2007) describes activities necessary to further characterize groundwater at AA 3, and to update the current groundwater monitoring plan (GMP) activities at IRP Sites 1 and 2.

As part of this project, Trevet will monitor groundwater quality, general chemistry, and chemical concentrations in groundwater including perchlorate, volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) consistent with the procedures in the established GMP.

This Addendum 1 is to document changes in contractor (Trevet) and current project personnel. This Addendum 1 will be used in conjunction with the original SAP (CDM, 2007a). All policies and procedures set forth in the original SAP that were not modified in this addendum (Addendum 1) will remain in effect for this project. The contractor name has been changed from CDM to Trevet globally throughout the document.

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## Section 2: Project Organization

Changes to organization and responsibilities specific to the GMP are discussed below. Table 2-1 provides an outline of project related communication pathways between Trevet, NAVFAC Southwest, and the Regional Water Quality Control Board (RWQCB) Santa Ana region. An organizational chart is provided in Figure 2-1. The updated Table 2-1 and Figure 2-1 are attached on the following pages.

### 2.1 Trevet Project Team

The Trevet project team will consist of the project manager, field team leader, field samplers, site safety and health officer (SSHO), Quality Assurance (QA) director, and project staff.

The project manager, Pete Stang, Professional Geologist (P.G.), will have overall responsibility for all aspects of the project and for communications between Trevet and NAVFAC Southwest.

Day-to-day operations oversight will be the responsibility of the field team lead, Jonathan Bush, who will report regularly to the project manager and project QC manager. In addition, Mr. Bush will be responsible for plan implementation and policy conformance by all field personnel and subcontractors at the site.

The SSHO, John Willis, will be responsible for the field oversight of the site safety and health plan (SSHP). Mr. Willis will be the primary contact for problem resolution and safety enforcement issues occurring in the field.

The SHM, Dr. Maureen Sassoon, Certified Industrial Hygienist (CIH), will be responsible for project oversight and review of the SSHP.

The Program Quality Control (QC) Manager, Gerald Tamashiro, will be responsible for ensuring that analytical QC requirements are met, as well as in-house QC requirements for project deliverables and subcontractor work products associated with the project.

In accordance with Trevet's QC program, all documents will be reviewed for technical accuracy and internal consistency prior to submittal to NAVFAC Southwest and regulatory agencies.

### 2.2 Subcontractors

No changes.

### **2.3 NAVFAC Southwest Personnel**

Changes to the NAVFAC Southwest personnel assigned to the GMP are as follows:

- The NAVFAC Southwest Contract Specialist can authorize changes to the contract that affect schedule and cost. The Contract Specialist is Karen Barba, who can be reached at (619) 532-0786.

### **2.4 Regulatory Oversight and Communication Pathways**

No changes.



**SAP WORKSHEET #7 — PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE**

<b>Name</b>	<b>Title/Role</b>	<b>Organizational Affiliation</b>	<b>Responsibilities</b>	<b>Education and Experience Qualifications (Optional)</b>
Nars Ancog	Quality Assurance Officer	NAVFAC SW	Reviews and approves SAP Provides DON oversight of Trevet’s Quality Assurance Program Provides technical and administrative oversight of surveillance audit activities Acts as point of contact for matters concerning quality assurance and the DON’s Laboratory Quality Assurance Program Coordinates training on matters pertaining to generation and maintenance of quality of data Authorizes the suspension of project execution if quality assurance requirements are not adequately followed	
Sean McGoey	Remedial Project Manager	NAVFAC SW	Performs project management for the DON Ensures that the project scope of work requirements are fulfilled Oversees the project cost and schedule Provides formal technical direction to the Trevet project team, as needed Acts as lead interface with agencies	

**SAP WORKSHEET #7 — PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE (continued)**

Name	Title/Role	Organizational Affiliation	Responsibilities	Education and Experience Qualifications (Optional)
Pete Stang	Project Manager	Trevet	<p>Coordinates work activities of subcontractors and ensuring that all personnel adhere to the administrative and technical requirements of the project</p> <p>Monitors and reports the progress of work and ensures that the project deliverables are completed on time and within project budget</p> <p>Monitors the budget and schedule and notifies the client and the RPM of any changes that may require administration actions</p> <p>Ensures adherence to the quality requirements of the contract, project scope of work, and the QC plans</p> <p>Ensures that all work is conducted in accordance with the work plan</p> <p>Ensures that all work meets the requirements of the technical specifications and complies with applicable codes and regulations</p> <p>Ensures that all work activities are conducted in a safe manner in accordance with the Site-specific health and safety plan, USACE’s Safety and Health Requirements (EM-385-1-1), and all applicable OSHA regulations</p> <p>Serves as the primary contact between the DON for actions and information related to the work and includes appropriate Trevet’s technical personnel in the decision-making</p> <p>Coordinates satisfactory resolution and completion of evaluation and acceptance report for nonconformance reports</p>	



**SAP WORKSHEET #7 — PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE (continued)**

Name	Title/Role	Organizational Affiliation	Responsibilities	Education and Experience Qualifications (Optional)
Gerald Tamashiro	QC Manager	Trevet	Establishes and maintains the quality program Oversees QC, including construction and chemical data acquisition Acts as a focal point for coordination for quality matters for all project and resolves quality issues Suspends project activities if quality standards are not maintained Interfaces with the DON, including NAVFAV SW QAO, on quality-related items Conducts field QC audits to ensure that project plans are being followed Discusses and implements DON technical direction letters related to quality topics with Trevet's PM and field team	
Gerald Tamashiro	Project Chemist	Trevet	Assists in the development of the SAP Evaluates and selecting a qualified subcontract laboratory Ensures that sampling personnel have documented training on sampling procedures for specific project requirements Supports projects as the technical lead for chemical data collection and analysis Monitors performance of subcontract laboratory and data validator Audits sample collection activities Reviews laboratory data before they are used against the requirements in this SAP Evaluates and selects a qualified data validation subcontractor Reviews data validation reports Prepares data quality assessment report to ensure the quality of the data meets the intended use of the data	

**SAP WORKSHEET #7 — PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS TABLE (continued)**

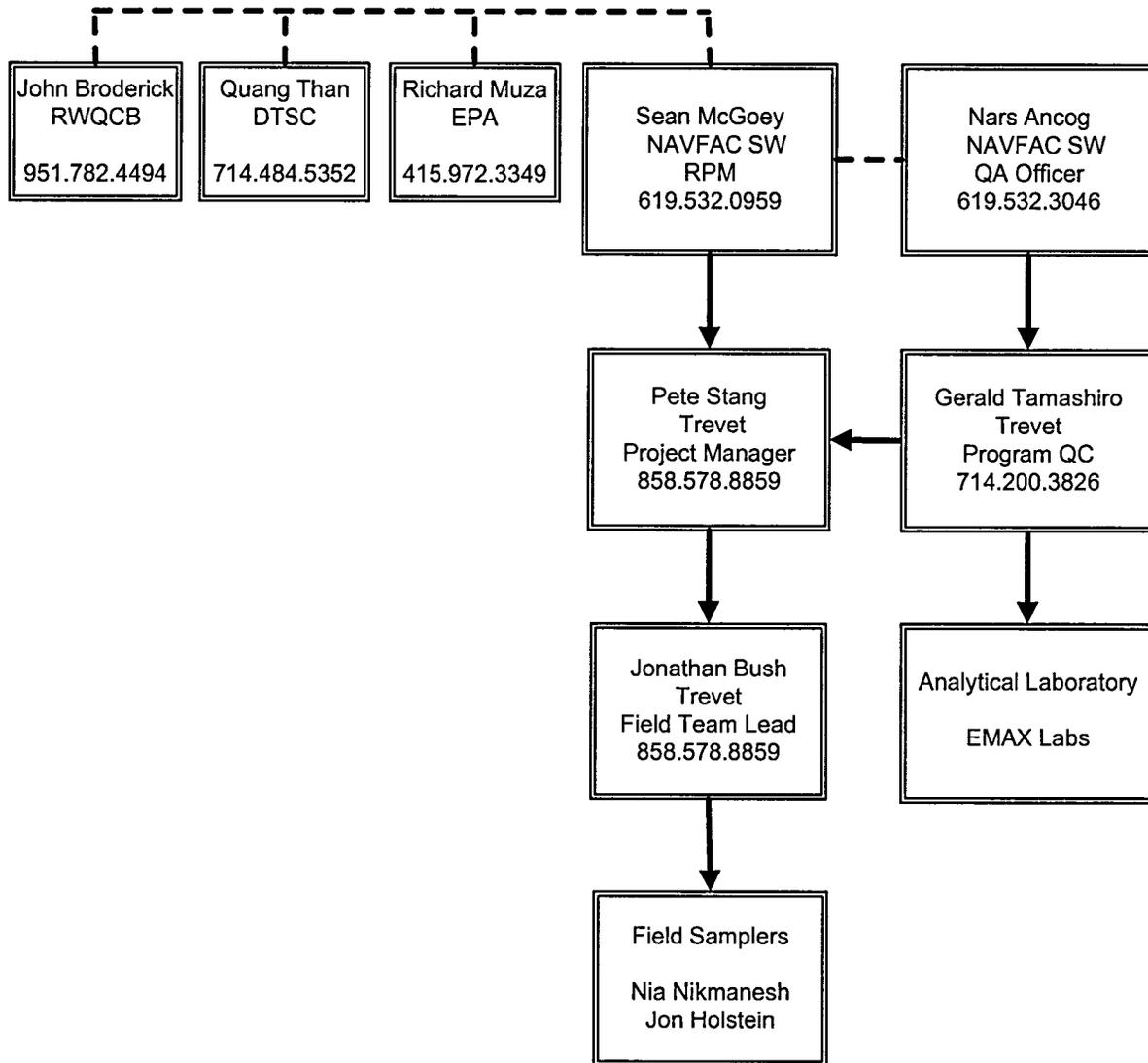
Name	Title/Role	Organizational Affiliation	Responsibilities	Education and Experience Qualifications (Optional)
Jonathan Bush	Field Team Lead	Trevet	Ensures that all fieldwork is conducted in accordance with the work plan and SAP Provides direction to field staff and subcontractors Reports field information to project manager and project chemist	

Acronyms and Abbreviations:

NAVFAC SW – Naval Facilities Engineering Command, Southwest  
 PM – Project Manager  
 QA – Quality Assurance  
 QAO – Quality Assurance Officer

QC – Quality Control  
 RPM – Remedial Project Manager  
 SAP – Sampling and Analysis Plan

Figure 2-1 SAP WORKSHEET #5 — PROJECT ORGANIZATIONAL CHART



Lines of Authority —————

Lines of Communication - - - - -

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## Section 6: Project Task Descriptions

The following section has been updated.

### 6.4 Groundwater Sampling

Table 6-2 provides the current status and recommendations for the sampling systems at each of the 37 monitoring wells. The updated Table 6-2 is on the following page.

**Table 6-2 GMP Monitoring Wells and Sampling System Status**

Monitoring Well	Screened Interval (feet bgs)	Sampling System
<b>Site AA 3</b>		
AA3MW01	16.5-46.5	ID = 4 inches, dedicated pump system in place
AA3MW02	21-51	ID = 4 inches, dedicated pump system in place
AA3MW06	20-40	ID = 4 inches, dedicated pump system in place
AA3MW08	25-55	ID = 4 inches, dedicated pump system in place
AA3MW11	22-37	ID = 4 inches, dedicated pump system in place
AA3MW12	24-39	ID = 4 inches, dedicated pump system in place
<b>IRP Site 1</b>		
01-MW102	95-135	dedicated pump system in place
01-MW201	27-57	dedicated pump system in place
01-MW202	10-35	dedicated pump system in place
01-MW203	33-58	dedicated pump system in place
01-MW204	24-54	dedicated pump system in place
01-MW209	25-45	dedicated pump system in place
01-MW211	50-60	ID = 4 inches, dedicated pump system in place
01-MW215	35-50	ID = 4 inches, dedicated pump system in place
01-MW218	45-60	ID = 4 inches, dedicated pump system in place
01-MW219	40-55	ID = 4 inches, dedicated pump system in place
01-MW223	35-70	ID = 4 inches, dedicated pump system in place
01-PZ01	65-90	ID = 2 inches, dedicated pump system in place
01-PZ06	55-80	ID = 2 inches, dedicated pump system in place
01-PZ07	30-55	ID = 2 inches, dedicated pump system in place
01-PZ08	55-80	ID = 2 inches, dedicated pump system in place
01-PZ09	30-55	ID = 2 inches, dedicated pump system in place
01-PZ11	35-60	ID = 2 inches, dedicated pump system in place
01-PZ12	70-95	ID = 2 inches, dedicated pump system in place
01-PZ21A	21-46	ID = 2 inches, dedicated pump system in place
01-EW03	40-70	ID = 2 inches, dedicated pump system in place
<b>IRP Site 2</b>		
02_NEW02	75-95	dedicated pump system in place
02_NEW07	103-143	ID = 5 inches, dedicated pump system in place
02_NEW08A	84-104	dedicated pump system in place
02_NEW11	45-65	dedicated pump system in place
02_NEW16	25-65	dedicated pump system in place
02_NEW19	86-113	dedicated pump system in place
02_NEW26	70-95	ID = 4 inches, dedicated pump system in place
02_NEW28	60-70	ID = 4 inches, dedicated pump system in place
02_NEW29	47-67	ID = 4 inches, dedicated pump system in place
02PZ04	60-80	ID = 2 inches, dedicated pump system in place
02PZ12	70-100	ID = 2 inches, dedicated pump system in place

Acronyms and Abbreviations:

AA 3 – Anomaly Area 3  
 bgs - below ground surface  
 ID – inner diameter  
 IRP – Installation Restoration Program  
 MW – monitoring well  
 PZ - piezometer

## References

CDM Federal Programs Corporation (CDM). 2007a. *Revised Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Project Plan), Groundwater Monitoring at AA 3 and IRP Sites 1 and 2, Former Marine Corps Air Station El Toro, Irvine, California*. November.

\_\_\_\_\_. 2007b. *Revised Final Groundwater Monitoring at Anomaly Area 3 (AA 3) and Installation Restoration Program (IRP) Sites 1 and 2 Work Plan, Former Marine Corps Air Station El Toro, Irvine, California*. November.

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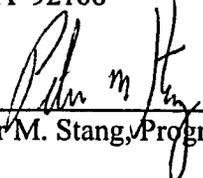
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**TRANSMITTAL/DELIVERABLE RECEIPT**

Document Control No. TRVT-0607-0000-0013

TO: Contracting Officer  
 BRAC PMO  
 Ms. Karen Barba  
 1220 Pacific Highway  
 San Diego, CA 92108

DATE: November 19, 2009  
 Contract #: N62473-09-C-0607  
 LOCATION: Former MCAS El Toro

FROM:   
 Peter M. Stang, Program Manager

DESCRIPTION: Final Addendum I to the Revised Final Sampling and Analysis Plan,  
Groundwater Monitoring and Associated Activities, IRP Sites 1, 2, and  
AA 3, Former MCAS El Toro, Irvine, CA  
Dated: 09 November 2009

TYPE:  Contract Deliverable  CTO Deliverable  Change Notice/Project Note

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Trevet Project No. 10044  
Contract No. N62473-09-C-0607

**REF: TRVT-0607-0000-0013**

November 19, 2009

Contracting Officer  
BRAC Program Management Office  
Ms. Karen Barba  
1455 Frazee Road, Suite 900  
San Diego, California 92108

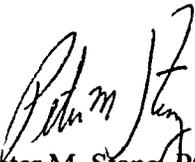
Attention: Mr. Sean McGoey

**Subject: Final Addendum I to the Revised Final Sampling and Analysis Plan for  
Groundwater Monitoring and Associated Activities, IRP Sites 1, 2, and AA3  
Former MCAS El Toro  
Dated: November 9, 2009**

Dear Mr. McGoey:

We are pleased to submit the FINAL version of the Addendum I to the Revised Final Sampling and Analysis Plan for Groundwater Monitoring and Associated Activities at IRP Sites 1, 2, and Anomaly Area (AA) 3 at former MCAS El Toro. This Addendum I was prepared as directed by the Navy Remedial Project Manager. If you have any questions or comments, please contact me at (858) 578-8859, extension 108, or Bob Breglio at (858) 578-8859, extension 103.

Sincerely,



Peter M. Stang, PG  
Project Manager

Enclosure