



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, Ca. 94105-3901

September 29, 1992

Stephen Chao  
Naval Facilities Engineering Command  
P.O. Box 727  
San Bruno, CA 94066

Dear Mr. Chao:

The U.S. Environmental Protection Agency has reviewed the following Site 9 Source Control Measure reports: 1) Final Field Work Plan for Startup and O&M Support Activities, 2) Response to Comments on Construction Contractor Specifications and Final Design Report, 3) Granular Activated Carbon Treatment System Procurement Statement of Work, and 4) Design Geotechnical Investigation Report. Our comments on this report, prepared by our representative, SAIC, Inc., are attached. If you have any questions, please call me at (415) 744-2385.

Sincerely,

A handwritten signature in cursive script that reads "Roberta Blank".

Roberta Blank  
Remedial Project Manager

Attachments (4)

cc: Cyrus Shabahari, DTSC  
Elizabeth Adams, RWQCB

1480

Printed on Recycled Paper

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Science Applications International Corporation  
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**Technology Services Company**

September 17, 1992

DCN: TZ4-C09015-EP-M14258

Ms. Roberta Blank (H-9-2)  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

Ref: EPA Contract No. 68-W9-0008; EPA Work Assignment No. C09015  
SAIC/TSC Project No. 06-0794-03-0630  
Site 9 Source Control Measure, Final Field Work Plan for Startup and  
O&M Support Activities

Dear Roberta:

SAIC/TSC has completed its review of this document. Items of concern from our review of the Draft Field Work Plan were satisfactorily addressed. Comment no. 3, however, was not revised as the Response to Comments states. The following deficiencies remain with regard to the Final Field Work Plan:

- Figures 5-2 through 5-4 do not show the relief containment tanks that were shown in the Draft Field Work Plan, submitted in May. What conditions have changed since the May submittal, so that the relief containment tanks are no longer necessary? Are each of the primary containment tanks (GAC Packed Columns) double-walled to contain liquids should failure or shutdown occur?
- Section 9.0, Emergency Response Plan, incorrectly cites the name of the chemical emergency response resource as CHEMTREE. The proper acronym is CHEMTREC.
- In Section 12.0, Record Keeping, Attachment 1 is not labeled and both the Field Health and Safety Training Certification and the Site Log are labeled as Attachment 3.

If you have any questions regarding these comments, please call me at (415) 399-0140.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
Technology Services Company

Fred Molloy  
Work Assignment Manager



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**Technology Services Company**

September 17, 1992

DCN: TZ4-C09015-RN-M14264

Ms. Roberta Blank (H-9-2)  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

REF: EPA Contract No. 68-W9-0008; WA No. C09015  
SAIC/TSC Project No. 06-0794-03-0630  
Review of Response to Comments on Site 9 Source Control Measure  
Construction Contractor Specifications and Final Design Report  
Naval Air Station Moffett Field, Mountain View, California

Dear Roberta:

SAIC/TSC has completed a review of the response to comments on the Site 9 Source Control Measure (SCM) Construction Contractor Specifications and the Site 9 SCM Final Design Report for Naval Air Station Moffett Field located in Mountain View, California. In addition, a comparison was made of the changes made to the documents between the May 8, 1992 submittals and the August 24, 1992 submittals.

The Site 9 SCM Construction Contractor Specifications document received more than one hundred revisions. Many of the changes were not required by any of the reviewing agencies. In the future, it would greatly ease the final review of documents if the changes could be designated in some manner, for example, underlining the changed text to indicate that a change was made. Attached are several specific comments regarding PRC's response to the previous comments and the latest submittal of the document that need to be addressed before the document can be approved.

The Site 9 SCM Final Design Report was revised little. The responses to comments and the document were generally acceptable with the following exceptions:

1. The response to comment no. 6 stated that "the TPH treatment goal was changed from 38 to 37 micrograms per liter in Table 4." This change has not been made in the current document.
2. A change was made to Section 8.0, page 56, first paragraph that deleted a sentence that discussed the disposal of test water that does not meet the Regional Water Control Board discharge requirements. A description of the disposal procedures would be appreciated.

Ms. Roberta Blank  
September 17, 1992  
Page 2



Because these requested clarifications are relatively insignificant, the Site 9 SCM Final Design Report is considered acceptable.

If you have any questions regarding these comments, please call me at 399-0140.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
Technology Services Company

A handwritten signature in cursive script, reading "Fred Molloy". The signature is written in black ink and is positioned above the typed name and title.

Fred Molloy  
Work Assignment Manager

cc: J. Wenning, SAIC/TSC Regional Project Manager  
J. Settles, SAIC/TSC Regional Project Manager

TECHNICAL REVIEW OF  
RESPONSE TO COMMENTS ON  
SITE 9 SOURCE CONTROL MEASURE  
CONSTRUCTION CONTRACTOR SPECIFICATIONS  
NAVAL AIR STATION, MOFFETT FIELD  
MOUNTAIN VIEW, CALIFORNIA

SEPTEMBER 1992

SUBMITTED TO:

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 HAWTHORNE STREET  
SAN FRANCISCO, CALIFORNIA 94105

SUBMITTED BY:

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
TECHNOLOGY SERVICES COMPANY  
20 CALIFORNIA STREET, SUITE 400  
SAN FRANCISCO, CALIFORNIA 94111

EPA CONTRACT NO. 68-W9-0008  
EPA WORK ASSIGNMENT NO. C09015  
SAIC/TSC PROJECT NO. 06-0794-03-0630

TECHNICAL REVIEW OF  
RESPONSE TO COMMENTS ON  
SITE 9 SOURCE CONTROL MEASURE  
CONSTRUCTION CONTRACTOR SPECIFICATIONS  
NAVAL AIR STATION, MOFFETT FIELD  
MOUNTAIN VIEW, CALIFORNIA

SEPTEMBER 1992

SPECIFIC COMMENTS

1. Response to Comment No. 3

The text has indeed been revised so that the term "middle rails" is not referenced. However, Drawing C7 still indicates that a middle rail will be used for construction of the fences and no top or bottom rails are shown on the drawing. Please explain the discrepancy between the text and the drawing.

2. Response to Comment No. 5

The final construction specifications do not indicate that the contractor may choose one of the given methods of curing concrete. It would be helpful if Section 3.5 explicitly stated that either method could be used. Please correct this inconsistency.

3. Response to Comment No. 8

The process and instrumentation diagrams (P&IDs) included in the final construction drawings do not show the locations of the check valves that are immediately upstream of the air stripper. Drawings M2 and M5 show the proper location of these check valves. Please make the necessary changes to the P&ID drawing.

4. Section 02221, Part 1.3.4, Page 02221-3

This section has been changed to remove the compaction specification that refers to ASTM D698. During the process of removing the specification for this procedure, a new number for the percent ASTM D1557 maximum density was not specified. Please replace the blank that precedes the percent ASTM D1557 maximum density with a number.

5. Section 02221, Part 3.1.1, Page 02221-7

Shoring and sheeting should not be required at the site. In response to Comment No. 1, PRC stated "excavation during construction will involve only shallow pipe trenching." If shoring and sheeting are actually required, as implied by the inclusion of this specification in the document, then the references to Cal-OSHA regulations should be included. Please explain this apparent discrepancy.

6. Section 02221, Part 3.3.1, Page 02221-8

Shoring and sheeting should not be required at the site. See Comment No. 5 for additional details.

7. Section 02221, Part 3.6, Page 02221-10

Please explain why the percent maximum dry density for cohesionless material was reduced from 100 to 95.

8. Section 02510, Part 3.2.4.1, Page 02510-4

The specification that "mixtures having temperatures less than the minimum spreading temperature when dumped onto the area to be paved will be rejected" has been removed. This quality control requirement is highly recommended. Please justify removal of this specification.

9. Section 13209, Part 2.1, Page 13209-2

Criteria (a) indicates that the tanks will be providing a mechanism for an uncontrolled release to the environment of volatile organic compounds (VOCs). This is unacceptable. If the tanks are to be a part of the design of the system, then the tanks cannot be atmospheric. Either redesign the system excluding the tanks, redesign the tanks to be sealed, or add carbon treatment of the air effluent from the tanks. Additionally, the tanks must have designated maximum storage capacities that do not exceed the compressive strength of the foundation material underneath them.



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DCN: TZ4-C09015-EP-M14262

September 17, 1992

Ms. Roberta Blank (H-9-2)  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

REF: EPA Contract No. 68-W9-0008; WA No. C09015  
SAIC/TSC Project No. 06-0794-03-0630  
Technical Review of Site 9 Source Control Measure  
Granular Activated Carbon Treatment System Procurement Statement of Work  
Naval Air Station Moffett Field, Mountain View, California

Dear Roberta:

The Statement of Work that was prepared by PRC Environmental Management, Inc. for procurement of granular activated carbon (GAC) treatment systems for the Site 9 Source Control Measure for Naval Air Station (NAS) Moffett Field located in Mountain View, California, is very similar to Section 13000 of the document *Site 9 Source Control Measure Construction Contractor Specifications* dated May 8, 1992. Because of this similarity, a comparison was made between the two documents and a review of the response to comments for Section 13000 was made. Finally, changes made in the SOW were reviewed for technical feasibility.

During the initial review of Section 13000 of the construction specifications, only one applicable comment was generated regarding any problems with the design. The comment pertained to the procedure to be used for emptying the relief containment tanks that were to be connected to the GAC vessels. The design of the treatment system has been modified to require dual contained GAC vessels and no relief containment tanks. This is a satisfactory response to the comment.

The only other major change to the GAC treatment system is a modification in the sizing of the GAC vessels. In the previous document, the vessel was required to be charged with sufficient GAC to ensure that contaminant breakthrough did not occur in less than 30 days. The SOW has changed this requirement to 20 days.

Ms. Roberta Blank  
September 17, 1992  
Page 2



A review of the testing frequency of the primary GAC unit effluent may need to be performed.

If you have any questions regarding these comments, please call me at 399-0140.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
Technology Services Company

A handwritten signature in cursive script that reads "Fred Molloy". The signature is written in black ink and is positioned above the typed name and title.

Fred Molloy  
Work Assignment Manager

cc: J. Wenning, SAIC/TSC Regional Project Manager  
J. Settles, SAIC/TSC Regional Project Manager

**SAIC**  
 Science Applications International Corporation  
 An Employee-Owned Company  
**Technology Services Company**

September 17, 1992

DCN: TZ4-C09015-RN-M14221

Ms. Roberta Blank (H-9-2)  
 U.S. Environmental Protection Agency  
 Region IX  
 75 Hawthorne Street  
 San Francisco, CA 94105

Ref: EPA Contract No. 68-W9-0008; EPA Work Assignment No. C09015  
 SAIC/TSC Project No. 06-0794-03-0630  
 Site 9 Source Control Measure Design Geotechnical Investigation  
 Report

Dear Roberta:

Enclosed is SAIC/TSC's technical review of the Site 9 Source Control Measure Design Geotechnical Investigation Report. This review was performed by Richard Brown, geologist, with assistance from Garrett Turner, engineer. Scott Kinderwater, soils scientist, performed the quality assurance/quality control technical review of this document.

The most obvious deficiency with this report is its failure to thoroughly consider the possible effects of dewatering saturated clays and silts in the vicinity of the extraction wells. These materials would experience the most compaction.

If you have any questions on these comments, please call me at (415) 399-0140.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
 Technology Services Company

*Fred Molloy*  
 Fred Molloy  
 Work Assignment Manager

FM/kw

DCN: TZ4-C09015-RN-M14221

TECHNICAL REVIEW OF  
SITE 9 SOURCE CONTROL MEASURE DESIGN  
GEOTECHNICAL INVESTIGATION REPORT  
NAVAL AIR STATION, MOFFETT FIELD  
MOUNTAIN VIEW, CALIFORNIA

SEPTEMBER 1992

SUBMITTED TO:

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 HAWTHORNE STREET  
SAN FRANCISCO, CALIFORNIA 94105

SUBMITTED BY:

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION  
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EPA CONTRACT NO. 68-W9-0008  
EPA WORK ASSIGNMENT NO. C09015  
SAIC/TSC PROJECT NO. 06-0794-03-0630

TECHNICAL REVIEW OF  
SITE 9 SOURCE CONTROL MEASURE DESIGN  
GEOTECHNICAL INVESTIGATION REPORT  
NAVAL AIR STATION, MOFFETT FIELD  
MOUNTAIN VIEW, CALIFORNIA

GENERAL COMMENTS

1. It is important to note that PRC prepared this investigation report using the following key policy-related assumptions:
  - The purpose of source control measure (SCM) activities at Site 9 is to reduce, to the extent feasible and in a timely manner, the lateral and vertical migration of the contaminants of concern within the A1 permeable zone at identified source areas until a comprehensive cleanup plan can be developed and implemented;
  - The SCM is not intended to restore groundwater and does not address vadose zone soils contamination;
  - The SCM will only address A1 permeable zone contamination;
  - Groundwater treatment goals can be based on the acceptance criteria for point source discharges to storm sewers established by the Regional Water Quality Control Board (RWQCB) in the San Francisco Bay Basin Region Water Quality Control Plan (Basin Plan);
  - The concentrations of metals, pesticides, herbicides, phenols, and creosols in extracted (untreated) groundwater will meet NPDES permit discharge criteria;
  - Off-gas treatment is not required.

If, at a later date, any of these assumptions is found to be invalid, this source control measure may need to be reevaluated. At present, it is not known if all of these criteria can be met.

2. The most obvious deficiency in this report is the omission of any discussion of the implications of dewatering saturated clays and, possibly, silts in the vicinity of the extraction wells. Settlement of structures as a result of this dewatering should be thoroughly considered at Site 9.

3. Some apparent problems with quality assurance/quality control (QA/QC) lead to discrepancies between data discussed and/or tabulated in the text and the corresponding data as listed in the appendices. These QA/QC errors need to be corrected. (See Specific Comment No. 3)

#### SPECIFIC COMMENTS

1. Section 1.2.1, Page 4

Investigations at Sump 91, also at the northern end of Building 88, have been performed this year. Is contamination, if found, from Sump 91 also to be included with the Site 9 SCM? If not, please explain why not.

2. Section 2.1, Page 5

If the values listed for the plasticity index in Table 1 are representative for the uppermost two feet of soils, then the clays are classified as medium to highly plastic. The standard ranges for plasticity are as follows:

Plasticity Index Range	Description
0-3	Nonplastic
3-15	Slightly plastic
15-30	Medium plastic
31 or more	Highly plastic

This table was published in a standard geotechnical engineering textbook entitled *Introductory Soil Mechanics and Foundations: Geotechnical Engineering* by George F. Sowers. The values for the plasticity index in Table 1 are all greater than or equal to 15 and a preponderance of them are greater than 30. Unless additional data are available, it would appear that the previous investigations were correct in their assumptions.

Furthermore, two (SB9-110 and SB9-111) of the four PRC soil borings are listed as having high plasticity and the third (SB9-112) is listed as having low to medium plasticity. Only soil boring SB9-113 in the South Area is listed as a sandy clay mixture.

3. Table 1, Page 6

A comparison between the values entered in this table and the backup data provided in Appendices A and B reveals the following discrepancies:

- Borehole logs for the four PRC soil borings, SB9-110 through SB9-113, were not included in Appendix A. Please correct this oversight.
- The values entered for liquid limit and plasticity index for the two CW-1 borings are not in either appendix. Please provide backup for these values.
- The value entered for the moisture content for boring CW-1 with a depth of 3.0 feet appears to be an average of the two values listed on the boring log. Please verify this assumption.
- The value entered for the plasticity index for boring TB-32 with a depth of 5.0 feet seems to be incorrect. Appendix B shows a value of 25 for the plasticity index for this boring. Please correct the table to reflect this.
- The value entered for the depth of boring TB-33 is 1.0 feet, while Appendix B shows a value of 0-1.5 feet. Please clarify which value

is correct. Additionally, the USCS symbol listed in the table, MH-ML, is different from the value in Appendix B, OH. Please correct this discrepancy.

4. Section 2.2, Page 8

According to the designed pumping rates that were determined after several aquifer pumping and step-drawdown tests, it is expected that a dewatered zone will exist around each of the extraction wells. The second paragraph on this page should be rewritten to reflect this expectation. If a dewatered zone is not created around the extraction wells, then the pumps have been sized incorrectly.

5. Section 2.2, Page 8

The anticipated drawdown for each of the extraction wells (as shown in Table 2) indicates that dewatering of the clays above the aquifer is expected in most cases. Consolidation and settlement problems are usually greater when fine-grained soils like silts and clays are dewatered than when the more coarse-grained soils that constitute the aquifer are dewatered. Please explain why the consolidation and settlement of these fine-grained soils is not considered a problem.

Upon further evaluation of the consolidation and settlement of the finer-grained soils, it is recommended that a map be drawn indicating potential zones of surface subsidence. This map should include building structures that may be impacted by settlement. Please indicate locations and structures that are recommended for monitoring per your preliminary subsidence monitoring plan outlined on pages 10 and 12.

6. Section 2.3, First Paragraph, Page 12

Although an isolated "hot spot" of the metals arsenic and lead was analyzed in a soil boring from well W9-28(A2), it is essentially correct that fuel-related contamination and chlorinated volatile organic compounds are the main contaminants present at Site 9. (It should be noted that arsenic and lead are both chemicals of concern for the A1 aquifer.)