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MARINE CORPS AIR STATION EL TORO, CALIFORNIA RCRA FACILITIES ASSESSMENT IMPLEMENTATION PLAN

2 NOVEMBER 1990

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 1220 Pacific Highway
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THROUGH:
 CONTRACT #N68711-89-D-9296
 CTO #0099
 DOCUMENT CONTROL NO:
 CLE-C01-01F099-B1-0001

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1.0 INTRODUCTION

This document presents an Implementation Plan (IP) for CTO #0099, Installation Restoration RCRA Facility Assessment (RFA) at Marine Corps Air Station (MCAS) El Toro under the Comprehensive Long Term Environmental Action Navy (CLEAN) program, Contract No. N68711-89-D-9296.

This IP provides a detailed scope of work for CTO #0099, which is based on a Navy Scope of Work dated 27 August 1990 and information obtained during the following scope review meetings conducted to prepare an Interim Scoping Matrix (ISM):

- | | |
|---------------|--|
| 2 October 90 | Meeting with the Navy Remedial Project Manager (RPM) - Larry Nuzum, the Assistant Navy RPM - Christopher Kyburg, and the Jacobs Engineering Group (JEG) Project Manager (PjM) - Mike Arends. |
| 22 October 90 | Meeting with the RPM, PjM, and the Technical Reviewer for CTO #0099. |
| 26 October 90 | Meeting to review the ISM with the RPM, Walter Sandza of SOUTHWESTDIV, the Activity Point of Contact (POC) - Mike Rehor, and the PjM. |

A copy of the final ISM is presented in Appendix A.

1.1 Objective

The objective of this IP is to present the technical approach, cost estimate, and schedule necessary for:

- o Preliminary Review (PR) including records search and data review to identify Solid Waste Management Units (SWMUs), sewers, and underground storage tanks at MCAS El Toro
- o Visual Site Inspection (VSI)
- o RFA Sampling Visit (SV) Work Plan
- o Meetings and monthly reports

1.2 Project Organization

Jacobs has identified Mr. Michael Arends as the Project Manager for this CTO. Other project management and lead technical personnel include:

- o Project Engineer - Bijan Hagh
- o Senior Technical Consultant - Ed Rogan

1.3 Background

The Navy has negotiated a Federal Facilities Agreement (FFA) with the Environmental Protection Agency (EPA), which has set a deadline of 15 March 1991 for submittal of the results of the PR, the VSI, and the SV Work Plan. Under planned Remedial Investigation/Feasibility Study (RI/FS) work at MCAS El Toro, 22 sites are identified for investigation. The purpose of the RFA at MCAS El Toro will be to identify SWMUs other than these 22 sites to be evaluated further within the RI/FS program. At this time, it is envisioned that the following sites will be considered for inclusion as SWMUs or areas of concern at MCAS El Toro:

- o Some 35 sites identified by the Regional Water Quality Control Board (RWQCB).
- o All underground storage tanks (USTs) at the facility. It is anticipated that only USTs that store or have stored waste oil, wastewater, or other hazardous wastes will be identified as SWMUs.
- o The sewer lines associated with the abandoned wastewater treatment plant. (These lines are under consideration for inclusion into Operable Unit 4 of the RI/FS program at MCAS El Toro.)
- o All other sewer lines including industrial and municipal sewers, whether operational or abandoned.
- o Firing ranges.
- o Golf course.

- o Abandoned wells.
- o Past and present hazardous waste accumulation areas.
- o Any other SWMUs resulting from activities described in Sections 2.1, 2.2, and 2.3.

It is possible that some sites may be able to be grouped together into a single SWMU if they are located sufficiently close to be investigated together. It is also possible that additional SWMUs will be identified during the PR.

It should be noted that this CTO includes sites that would not typically be included in an RFA (e.g., all USTs) and involves submittal of interim-type deliverables that are not typical of RFA work (e.g., the Preliminary Review Report). The requests for some nontypical elements of an RFA for MCAS El Toro have been made by the Navy, in large part, to comply with regulatory requirements established in the FFA for the site.

2.0 TECHNICAL APPROACH

2.1 Task 1 (Work Element 1) - Implementation Plan

In accordance with the Scope of Work for CTO #0099, Jacobs has prepared this IP based on the following steps:

- o Discussion of the scope of work during three scope review meetings Section 1.0
- o Preparation of an ISM for review by the Navy RPM
- o Preparation of this IP based on the reviewed ISM

The IP contains the schedules, technical approach, and cost estimates for each work element identified for CTO #0099.

2.2 Task 2 (Work Element 19) - RFA Preliminary Review

The purpose of the PR is to gather and evaluate existing information on MCAS El Toro to identify and characterize potential releases. The PR will identify and gather information on SWMUs, other areas where wastes have been managed at the facility, and any other areas of concern.

2.2.1 Records and Data Review

A review of the following records for MCAS El Toro will be performed to assist in the identification of SWMUs and other areas of concern:

- o Drawings for MCAS El Toro located in San Bruno (for locating sewer lines and USTs).
- o Drawings located at MCAS El Toro.
- o Records located in San Diego.
- o Current list of USTs at MCAS El Toro developed by the station. Verification of the information on the list and completing the list will be required. (See Section 2.2.2.)
- o List of RWQCB sites and the locations of these sites. It is anticipated that a meeting with the RWQCB will be required.
- o RCRA sources of information
 - Part A and B permit applications
 - Compliance inspection reports
 - Exposure information reports
 - Biennial reports
 - Operating log

- RCRA waste manifests
- Notice to local authority

- o Other sources such as:
 - National Pollutant Discharge Elimination System (NPDES) permits and permit applications

 - Spill Prevention Control and Countermeasures (SPCC) plans

 - Installation Restoration Program reports

 - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) RI/FS studies (i.e., CTO #0018)

 - Toxic Substances Control Act/Occupational Safety and Health Act (TSCA/OSHA) Inspections

 - Clean Air Act of 1963 (CAA) permits and permit applications

 - Aerial photographs

- o Data submitted in response to the Reauthorization Statutory Interpretation (RSI) #3 submission, which may provide some information on the type and location of SWMUs at the facility.

It should be noted that although the records search will primarily focus on the above list of documents, the review of additional records discovered during the investigations at the above locations will be included as feasible.

2.2.2 Preparation of a Comprehensive List of USTs

A complete list of all USTs (including data such as year installed, capacity in gallons, dimensions, material of construction, type of liquid stored, and historical information on spills/leakage) will be developed for MCAS El Toro under this CTO. An existing list of USTs generated by the station will serve as the starting point for developing this comprehensive list of USTs. Some interviews of key station personnel may be performed to verify information.

2.2.3 Evaluating PR Information

The information reviewed and collected under subtask 2.2.1 will be used to investigate waste generation processes at MCAS El Toro, to identify SWMUs and other potential releases of concern, and to evaluate the facility's release potential. The following types of information will be evaluated under the PR:

- o Unit characteristics
- o Waste characteristics
- o Migration pathways
- o Evidence of release
- o Exposure potential

2.2.4 RFA Sites Data Base

A data base will be set up to track the RFA sites identified during the Preliminary Review.

2.2.5 Preparation of a Facility Map

A facility map will be generated for MCAS El Toro for use in both the RFA and the RI/FS work at the station. Aerial photographs will be taken over the base and used to generate an accurate, computerized map for MCAS El Toro. It is anticipated that proposed well locations for the RI/FS and possibly some SWMUs under the RFA will be marked in the field, and additional aerial photographs will be taken to provide accurate locations on the base map.

The station is currently in the process of generating a computerized base map showing utility lines. Details regarding the state of this map and its potential use as a starting point for CTO #0099 are not clear at this time. In addition, the exact requirements for the base map for CTO #0099 will need to be established through additional meetings.

Since the schedule for CTO #0099 is very tight and is regulatory driven, an agreement was reached to issue the IP with a rough cost for the mapping task with the provision for revising the cost estimate at a later date when better information is obtained. For the IP, a rough order of magnitude cost of \$100,000 (approximately \$20 per acre) for generating a map from scratch is provided.

2.2.6 Preparation of PR Report

A Preliminary Draft, Draft, and Final PR Report for MCAS El Toro will be prepared. In the absence of an EPA guideline for preparing a PR report, a proposed outline will be generated for the report for review by the agencies (i.e., EPA, California Department of Health and Safety, and RWQCB). A meeting with the agencies is anticipated to discuss the proposed outline. Per the FFA for MCAS El Toro, the Draft PR must be submitted to the agencies by 15 March 1991. This report should document information sources, identify SWMUs and other areas of potential release on a facility map, and contain preliminary evaluations of the likelihood of release at each location.

2.3 Task 3 (Work Element 20) - Visual Site Inspection

The VSI is the second step in the RFA process to identify releases at RCRA facilities. The purpose of the VSI is to visually inspect the facility for evidence of releases of hazardous wastes, to ensure that all SWMUs have been identified, to fill data gaps identified in the PR, and to recommend the need for a sampling visit.

2.3.1 Site Visits

Each SWMU and area of concern will be individually visited during the VSI at MCAS EL Toro. It is anticipated that the following sites will be visited:

- o The 35 sites identified by the RWQCB.
- o All USTs identified during the Preliminary Review will be visited (420 USTs are assumed). This number of tanks is about 10 percent higher than the number of USTs on the current list, which is expected to expand after the records search.
- o The location of sewer lines will be checked in the field versus the location shown in drawings. Only surface indications of the sewer lines (e.g., manholes) will be included in this visual check.
- o Firing ranges (one existing plus one assumed previous location).
- o The golf course.
- o Five abandoned wells. (It is anticipated that the discovery of abandoned wells will occur primarily through the other site visits conducted under the VSI.)

- o A storage building where polychlorinated biphenyl (PCB) transformers had once been stored.
- o Past and present hazardous waste storage accumulation areas, assumed to be 50 per the Activity POC.

An upper limit of 600 sites will be used as the basis for the site visit task for CTO #0099. The sewer lines are considered as being equivalent to 40 sites in the upper limit number of 600 sites.

The following activities will be conducted during the VSI:

- o Make a visual observation of each SWMU (and other areas of concern at the facility).
- o Generate a plot plan for each SWMU.
- o Identify on the SWMU plot plan or on a facility map all areas of concern.
- o Document all observations in a field logbook.
- o Take photographs of all SWMUs, potential releases, and other locations of interest. Two sets of photographs plus the negatives will be placed in photo albums and supplied to the Navy. Each photograph will be labeled with the name of the

project, date, location, identity of the SWMU or area of concern, and any other relevant information.

It should be noted that some assistance from station personnel will be required in obtaining permission to take photographs of each SWMU and possibly for obtaining access to some of the sites.

2.3.2 Determining the Need for Further Action During the RFA

The results of the PR and the VSI together will provide evidence for each SWMU to determine:

- o The need for a sampling visit
- o The need for interim measures
- o The need for remedial investigation

2.3.3 Reporting of VSI Results

The results of the VSI will be included in the PR report (see Section 2.2.6).

2.4 Task 4 (Work Element 20) - RFA Sampling Visit Work Plan

A Preliminary Draft, Draft, and Final RFA Sampling Visit (SV) Work Plan will be prepared. The purpose of the SV Work Plan is to provide a description of the detailed sampling procedures proposed for those SWMUs where additional information is needed to fill data gaps that remain

upon completion of the PR and the VSI. The work plan will include information on each of the following topics:

- o Field operation
- o Sampling locations and rationale
- o Analytical requirements
- o Sample handling
- o Quality assurance/quality control
- o Equipment decontamination
- o Chain-of-custody
- o Disposal of waste materials

An upper limit of 85 sites will be used as the basis for developing the SV Work Plan. This upper limit of 85 sites includes 35 RWQCB sites, 25 USTs that have stored or are storing hazardous waste (about half of the currently identified) and 25 additional sites (about 5 percent of the remaining sites). The sampling at these sites will be proposed to simply confirm the possibility of a release, not to assess the extent of potential contamination.

The SV Work Plan will also include an evaluation of methods for assessing the condition of the sewer lines associated with the abandoned wastewater treatment plant and the potential for release from these lines. First, a determination of the accuracy of available drawings in locating these lines will need to be made. If there is a low level of confidence in the location of these sewer lines, line location work (e.g., magnetometer testing, smoke testing, or other methods) may be recommended. Second, a method for assessing the condition of sewer lines and the likelihood for release will need to be evaluated and proposed for implementation. Methods such as running a camera down the lines or excavating portions of the lines may be required to verify

structural integrity. In addition, a soil sampling program may need to be developed for assessing these lines.

A Health and Safety Plan (HSP) will need to be developed for the sampling activities conducted under the RFA. The existing HSP for the RI/FS work at MCAS El Toro (i.e., CTO #0018) will be used as a basis for developing this document. Incorporation of site-specific information for the RFA sites into this existing HSP will be required.

The Draft SV Work Plan must be submitted to the agencies by 15 March 1991 per the FFA.

2.5 Task 5 - Attend Meetings

2.5.1 Monthly Meetings

Monthly meetings will be held between the Navy RPM and the JEG PjM during the course of the project. It is assumed that half of the meetings will be held in San Diego and that the other half will be held in Orange County either at the station or at the office of CH2M HILL in Santa Ana. A total of seven monthly meetings is assumed.

2.5.2 Interim Review Meetings

A meeting to discuss the proposed outline for the PR report with the agencies is anticipated. A meeting with the RWQCB will be required to discuss the 35 sites listed by this agency for inclusion into the RFA. In addition, a meeting will be held approximately 30 days into the 75-day

agency review period to provide a forum for questions and answers on the documents under review. A total of three meetings is anticipated.

2.6 Monthly Progress Reports

Two copies of monthly progress reports will be provided to the RPM and MCAS El Toro for the duration of this CTO as outlined in the CLEAN contract.

3.0 SCHEDULE

Appendix B identifies each of the activities necessary to complete the CTO. The schedule shows the start and finish dates with applicable logical ties. Using the IP approval date as a starting point, the schedule calls for the delivery of all plans/reports in accordance with the requirements specified in the CTO as revised by the ISM agreement.

According to the attached schedule the following dates have been established for the deliverables.

DELIVERABLE TITLE	DELIVERABLE DUE DATE
Implementation Plan	3 November 1990
IP Approval	22 November 1990
Preliminary Draft PR Report	29 January 1991
Navy Review Completed	19 February 1991
Draft PR Report	12 March 1991 ¹
Agency Review Completed	26 May 1991
Final PR Report	16 June 1991
Preliminary Draft SV Work Plan	29 January 1991
Navy Review Completed	19 February 1991
Draft SV Work Plan	12 March 1991 ¹
Agency Review Completed	26 May 1991
Final SV Work Plan	16 June 1991

Note:

¹Navy to submit deliverable to EPA by 15 March 1991.

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4.0 COST

The cost estimate is provided in Appendix C. It identifies lead technical personnel and functional code personnel by functional code category, contract rate category, unit rate, hours and total cost required to complete CTO #0099. Additionally, anticipated specialty subcontractor costs, travel expenses, and other direct costs are provided in the enclosed exhibits.

The Navy's budget provided in CTO #0099 is \$100,000. The Jacobs estimated cost, is \$380,563, which is about 280 percent over the Navy's authorized budget. The Jacobs budget was created by developing the detailed activities and the associated budget necessary to accomplish each activity, which would provide a high level of detail for review by the Navy.

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Appendix A
Final ISM

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**FINAL
INTERIM SCOPING MATRIX (ISM)
CTO #0099**

October 31, 1990

This document presents an Interim Scoping Matrix (ISM) for CTO #0099, Installation Restoration RCRA Facility Assessment at Marine Corps Air Station (MCAS) El Toro. This ISM provides a detailed scope of work for CTO #0099 which is based on a Navy Scope of Work dated 27 August 1990 and information obtained during the following three scope review meetings:

- 2 October 90 meeting with the Navy Remedial Project Manager (RPM) - Larry Nuzum, the Assistant Navy RPM - Christopher Kyburg, and the Jacobs Engineering Group (JEG) Project Manager (PjM) - Mike Arends.
- 22 October 90 meeting with the RPM, PjM, and the Technical Reviewer for CTO #0099.
- 26 October 90 meeting with the RPM, Walter Sandza of SOUTHWESTDIV, the Activity Point of Contact (POC) - Mike Rehor, and the PjM.

After approval, this ISM presents the agreed-upon level of work and the tasks required for completion of the CTO. The ISM will be used as the basis for the Navy and JEG to provide independent cost estimates for the work.

The following tasks have been identified for CTO #0099:

TASK 1 IMPLEMENTATION PLAN

- 1.1) **Site Visit/Scope Review Meeting.** The first step in developing the Implementation Plan is to have a meeting with the Navy RPM and the JEG PjM to discuss the scope of work involved in the CTO. The meeting was held on 2 October 1990.
- 1.2) **Preparation of an Interim Scoping Matrix (ISM).** After the initial site visit and scope review meeting, an ISM is prepared to present details of the scope of work to be performed for this CTO based on the Navy's Scope of Work and discussions held at the meeting.
- 1.3) **Preparation of an Implementation Plan (IP).** After approval of the ISM, an IP will be prepared for CTO #0099. The IP will state the scope of work contained in the ISM and will provide JEG's cost estimate and schedule for the performance of the work. The IP will be submitted to the Navy by 1 November 1990.

TASK 2 PRELIMINARY REVIEW (PR) REPORT

The purpose of the PR is to gather and evaluate existing information on MCAS El Toro in order to identify and characterize releases or potential releases at the facility. The PR will identify and gather information on Solid Waste Management Units (SWMUs), other areas where wastes have been managed at the facility, and any other areas of concern.

The Navy has negotiated a Federal Facilities Agreement (FFA) with EPA which has set a deadline of 15 March 1991 for submittal of the results of the PR, the Visual Site Inspection (VSI), and the Sampling Visit (SV) Work Plan. Under planned RI/FS work at MCAS El Toro, 22 sites are identified for investigation. The purpose of the RFA at MCAS El Toro will be to identify SWMUs other than these 22 sites under the RI/FS program. At this time, it is envisioned that the following sites will be considered for inclusion as SWMUs or areas of concern at MCAS El Toro:

- o some 35 sites identified by the Regional Water Quality Control Board (RWQCB)
- o all underground storage tanks (USTs) at the facility. It is anticipated that only USTs that store or have stored waste oil, wastewater, or other hazardous wastes will be identified as SWMUs.
- o the sewer lines associated with the abandoned wastewater treatment plant (These lines are under consideration for inclusion into Operable Unit 4 of the RI/FS program at MCAS El Toro.)
- o all other sewer lines including industrial and municipal sewers, whether operational or abandoned
- o firing ranges
- o golf course
- o abandoned wells
- o past and present hazardous waste accumulation areas
- o any other SWMUs resulting from activities described in Sections 2.1, 2.2, and 2.3

It is possible that some sites may be able to be grouped together into a single SWMU if they are located sufficiently close to be investigated together. It is also possible that additional SWMUs will be identified during the PR.

2.1) **Records and Data Review.** A detailed review of the following records for MCAS El Toro will be performed:

- o Drawings for MCAS El Toro located in San Bruno (for locating sewer lines and USTs)
- o Drawings located at MCAS El Toro
- o Records located in San Diego
- o Current list of USTs at MCAS El Toro developed by the station. Verification of the information on the list and completing the list will be required.
- o List of RWQCB sites and the locations of these sites. It is anticipated that a meeting with the RWQCB will be required.
- o RCRA sources of information
 - Part A and B permit applications
 - compliance inspection reports
 - exposure information reports
 - biennial reports
 - operating log
 - RCRA waste manifests
 - notice to local authority
- o Other sources such as:
 - NPDES permits and permit applications
 - SPCC plans
 - IRP reports
 - CERCLA RI/FS studies (i.e., CTO #0018)
 - TSCA/OSHA Inspections
 - CAA permits and permit applications
 - aerial photographs
- o Data submitted in response to the Reauthorization Statutory Interpretation (RSI) #3 submission which may provide some information on the type and location of SWMUs at the facility.

It should be noted that although the records search will primarily focus on the above list of documents, it will not be limited to these should additional records be discovered during the investigation.

2.2) **Preparation of a Comprehensive List of USTs.** A complete list of all USTs (including data such as year installed, capacity in gallons, dimensions, material of construction, type of liquid stored, historical

information on spills/leakage, etc.) will be developed for MCAS El Toro under this CTO. An existing list of USTs generated by the station will serve as the starting point for developing this comprehensive list of USTs. Some interviews of key station personnel may be performed to verify information.

2.3) **Evaluating PR Information.** The information reviewed and collected under subtask 2.1 will be used to investigate waste generation processes at MCAS El Toro, to identify SWMUs and other potential releases of concern, and to evaluate the facility's release potential. The following types of information will be evaluated under the PR:

- o unit characteristics
- o waste characteristics
- o migration pathways
- o evidence of release
- o exposure potential

2.4) **RFA Sites Data Base.** A data base will be set up for tracking the RFA sites identified during the Preliminary Review.

2.5) **Preparation of a Facility Map.** A facility map will be generated for MCAS El Toro for use in both the RFA and the RI/FS work at the station. Aerial photographs will be taken over the base and used in generating an accurate, computerized map for MCAS El Toro. It is anticipated that proposed well locations for the RI/FS and possibly some SWMUs under the RFA will be marked in the field and additional aerial photographs will be taken to provide accurate locations on the base map.

The station is currently in the process of generating a computerized base map showing utility lines. Details regarding the state of this map and its potential use as a starting point for CTO #0099 are not clear at this time. In addition, the exact requirements for the base map for CTO #0099 will need to be established through additional meetings.

Since the schedule for CTO #0099 is very tight and is regulatory driven, an agreement was reached to issue the IP with a rough cost for the mapping task with the provision for revising the cost estimate at a later date when better information is obtained. For the IP, a rough order of magnitude cost for generating a map from scratch will be provided.

2.6) **Preparation of PR Report.** A PR Report for MCAS El Toro will be prepared. In the absence of an EPA guideline for

preparing a PR report, a proposed outline will be generated for the report for review by the agencies (i.e., EPA, DHS, and RWQCB). A meeting with the agencies is anticipated to discuss the proposed outline. Per the Federal Facilities Agreement (FFA) for MCAS El Toro, the Draft PR must be submitted to the agencies by 15 March 1991. This report should document information sources, identify SWMUs and other areas of potential release on a facility map, and contain preliminary evaluations of the likelihood of release at each location.

TASK 3 VISUAL SITE INSPECTION (VSI)

The Visual Site Inspection (VSI) is the second step in the RFA process for identifying releases at RCRA facilities. The purpose of the VSI is to visually inspect the facility for evidence of releases of hazardous wastes, to ensure that all SWMUs have been identified, to fill data gaps identified in the PR, and to recommend the need for a sampling visit.

3.1) **Site Visits.** Each SWMU and area of concern will be individually visited during the VSI at MCAS EL Toro. It is anticipated that the following sites will be visited:

- o 35 sites identified by the RWQCB
- o all USTs identified under Subtask 2.2 will be visited (420 USTs are assumed). This number of tanks is about 10 percent higher than the number of USTs on the current list, which is expected to expand after the records search.
- o the location of sewer lines will be checked in the field versus the location shown in drawings. Only surface indications of the sewer lines (e.g., manholes) will be included in this visual check.
- o firing ranges (one existing plus one assumed previous location)
- o the golf course
- o five abandoned wells. (It is anticipated that the discovery of abandoned wells will occur primarily through the other site visits conducted under the VSI.)
- o a storage building where PCB transformers had once been stored

- o past and present hazardous waste storage accumulation areas, assumed to be 50 per the Activity POC

An upper limit of 600 sites will be used as the basis for the site visit task for CTO #0099. The sewer lines will be considered as equivalent to 40 sites in the upper limit number of 600 sites.

The following activities will be conducted:

- o make a visual observation of each SWMU (and other areas of concern at the facility)
- o generate a plot plan for each SWMU
- o identify on the SWMU plot plan or on a facility map all areas of concern
- o document all observations in a field logbook
- o take photographs of all SWMUs, potential releases, and other locations of interest. Two sets of photographs plus the negatives will be placed in photo albums and supplied to the Navy. Each photograph will be labeled with the name of the project, date, location, identity of the SWMU or area of concern, and any other relevant information.

It should be noted that some assistance from station personnel will be required in obtaining permission to take photographs of each SWMU and possibly for obtaining access to some of the sites.

3.2) **Determining the Need for Further Action During the RFA.** The results of the PR and the VSI together will provide evidence for each SWMU to determine:

- o the need for a sampling visit
- o the need for interim measures
- o the need for remedial investigation

3.3) **Reporting of VSI Results.** The results of the VSI will be included in the PR report (see subtask 2.6).

TASK 4 RFA SAMPLING VISIT WORK PLAN

The purpose of the RFA Sampling Visit (SV) Work Plan is to provide a description of the detailed sampling procedures proposed for those SWMUs where additional information is needed to fill data

gaps that remain upon completion of the PR and the VSI. The work plan will include information on each of the following topics:

- o Field operation
- o Sampling locations and rationale
- o Analytical requirements
- o Sample handling
- o Quality assurance/quality control
- o Equipment decontamination
- o Chain of custody
- o Disposal of waste materials

An upper limit of 85 sites will be used as the basis for developing the SV Work Plan. This upper limit of 85 sites includes 35 RWQCB sites, 25 USTs that have stored or are storing hazardous waste (about half of those currently identified), and 25 additional sites (about 5 percent of the remaining sites). The sampling at these sites will be proposed to simply confirm the possibility of a release, not to assess the extent of potential contamination.

The SV Work Plan will also include an evaluation of methods for assessing the condition of the sewer lines associated with the abandoned wastewater treatment plant and the potential for release from these lines. First, a determination of the accuracy of available drawings in locating these lines will need to be made. If there is a low level of confidence in the location of these sewer lines, line location work (e.g., magnetometer testing, smoke testing, or other methods) may be warranted. Second, a method for assessing the condition of sewer lines and the likelihood for release will need to be evaluated and proposed for implementation. Methods such as running a camera down the lines or excavating portions of the lines may be required to verify structural integrity. In addition, a soil sampling program will need to be developed for assessing these lines.

A Health and Safety Plan (HSP) will need to be developed for the sampling activities conducted under the RFA. The existing HSP for the RI/FS work at MCAS El Toro (i.e., CTO #0018) will be used as a basis for developing this document. Incorporation of site-specific information for the RFA sites into this existing HSP will be required.

The Draft SV Work Plan must be submitted to the agencies by 15 March 1991 per the FFA.

TASK 5 ATTEND MEETINGS

5.1) **Monthly Meetings.** Monthly meetings will be held between the Navy RPM and the JEG PjM during the course of the project. It is assumed that half of the meetings will be held in San Diego and that the other half will be held in

Orange County either at the station or at the office of CH2M HILL in Santa Ana. A total of seven monthly meetings is assumed.

- 5.2) **Interim Review Meetings.** A meeting to discuss the proposed outline for the PR report with the agencies is anticipated. A meeting with the RWQCB will be required to discuss the 35 sites listed by this agency for inclusion into the RFA. In addition, a meeting will be held approximately 30 days into the 75-day agency review period to provide a forum for questions and answers on the documents under review. A total of three meetings is anticipated.

SCHEDULE OF CTO DELIVERABLES

<u>ITEM</u>	<u>ORIGINAL SCHEDULE IN NAVY SCOPE OF WORK</u>	<u>PROPOSED SCHEDULE TO MEET FFA DEADLINES</u>	<u>NUMBER OF COPIES</u>
Implementation Plan (IP)	03 Nov 90 ¹	03 Nov 90 ¹	4
IP Approval	26 Nov 90	26 Nov 90	-

Preliminary Draft PR Report	21 Jan 91	29 Jan 91	6
Navy Review Completed	11 Feb 91	19 Feb 91	-
Draft PR Report	04 Mar 91	12 Mar 91 ²	25
Agency Review Completed	18 May 91	26 May 91	-
Final PR Report	08 Jun 91	16 Jun 91	25

Preliminary Draft SV Work Plan	21 Jan 91	29 Jan 91	6
Navy Review Completed	11 Feb 91	19 Feb 91	-
Draft SV Work Plan	04 Mar 91	12 Mar 91 ²	25
Agency Review Completed	18 May 91	26 May 91	-
Final SV Work Plan	08 Jun 91	16 Jun 91	25

¹ The date for IP submittal was extended to November 3.

² The deadline for submittal to the agencies per the FFA is 15 Mar 91.

**Appendix B
Schedule**

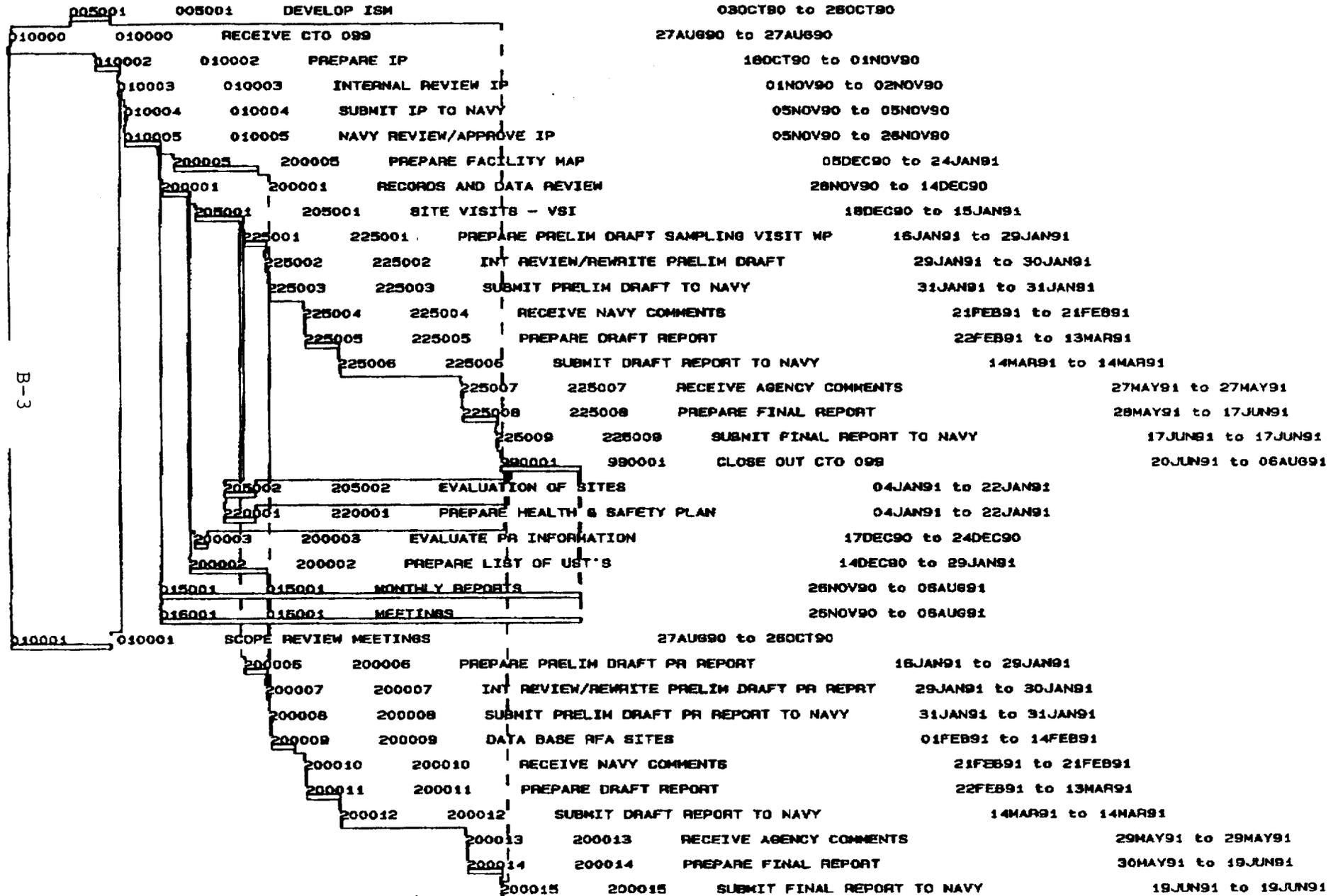
IP'CTO99

CLE-C01-01F099-B1-0001

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RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

90					91					92															
SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT



B-3

Nov 2, 90 8:58 NO.004 F.13

TEL NO. 818-578-6880

@JACOB\$[HTM]PAS-CA

IT: ACT88

ACTIVITY LISTING by ACTIVITY NUMBER

REPORT DATE: 1NOV90

PROJECT: CTO099

RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

TIME NOW: 01AUG90

ACTIVITY	REM ORIG DUR DUR	DESCRIPTION	CODE 1	CODE 2	EARLY START	EARLY FINISH	LATE START	LATE FINISH	TOTAL FLOAT
005001	18	18 DEVELOP ISM			03OCT90	26OCT90	27MAY91	19JUN91	168
010000	1	1 RECEIVE CTO 099			27AUG90	27AUG90	27AUG90	27AUG90	0
010001	45	45 SCOPE REVIEW MEETINGS			27AUG90	26OCT90	30AUG90	31OCT90	3
010002	11	11 PREPARE IP			18OCT90	01NOV90	18OCT90	01NOV90	0
010003	2	2 INTERNAL REVIEW IP			01NOV90	02NOV90	01NOV90	02NOV90	0
010004	1	1 SUBMIT IP TO NAVY			05NOV90	05NOV90	05NOV90	05NOV90	0
010005	16	16 NAVY REVIEW/APPROVE IP			05NOV90	26NOV90	05NOV90	26NOV90	0
015001	182	182 MONTHLY REPORTS			26NOV90	06AUG91	26NOV90	06AUG91	0
016001	182	182 MEETINGS			26NOV90	06AUG91	26NOV90	06AUG91	0
200001	13	13 RECORDS AND DATA REVIEW			28NOV90	14DEC90	28NOV90	14DEC90	0
200002	33	33 PREPARE LIST OF UST'S			14DEC90	29JAN91	14DEC90	29JAN91	0
200003	6	6 EVALUATE PR INFORMATION			17DEC90	24DEC90	12JUN91	19JUN91	127
200005	37	37 PREPARE FACILITY MAP			05DEC90	24JAN91	05DEC90	24JAN91	0
200006	10	10 PREPARE PRELIM DRAFT PR REPORT			16JAN91	29JAN91	16JAN91	29JAN91	0
200007	2	2 INT REVIEW/REWRITE PRELIM DRAFT PR REPR			29JAN91	30JAN91	29JAN91	30JAN91	0
200008	1	1 SUBMIT PRELIM DRAFT PR REPORT TO NAVY			31JAN91	31JAN91	31JAN91	31JAN91	0
200009	10	10 DATA BASE RFA SITES			01FEB91	14FEB91	01FEB91	14FEB91	0
200010	1	1 RECEIVE NAVY COMMENTS			21FEB91	21FEB91	21FEB91	21FEB91	0
200011	14	14 PREPARE DRAFT REPORT			22FEB91	13MAR91	22FEB91	13MAR91	0
200012	1	1 SUBMIT DRAFT REPORT TO NAVY			14MAR91	14MAR91	14MAR91	14MAR91	0
200013	1	1 RECEIVE AGENCY COMMENTS			29MAY91	29MAY91	29MAY91	29MAY91	0
200014	15	15 PREPARE FINAL REPORT			30MAY91	19JUN91	30MAY91	19JUN91	0
200015	1	1 SUBMIT FINAL REPORT TO NAVY			19JUN91	19JUN91	19JUN91	19JUN91	0
205001	21	21 SITE VISITS - VSI			18DEC90	15JAN91	18DEC90	15JAN91	0
205002	13	13 EVALUATION OF SITES			04JAN91	22JAN91	03JUN91	19JUN91	106
220001	13	13 PREPARE HEALTH & SAFETY PLAN			04JAN91	22JAN91	03JUN91	19JUN91	106
225001	10	10 PREPARE PRELIM DRAFT SAMPLING VISIT WP			16JAN91	29JAN91	13MAR91	26MAR91	40
225002	2	2 INT REVIEW/REWRITE PRELIM DRAFT			29JAN91	30JAN91	26MAR91	27MAR91	40
225003	1	1 SUBMIT PRELIM DRAFT TO NAVY			31JAN91	31JAN91	28MAR91	28MAR91	40
225004	1	1 RECEIVE NAVY COMMENTS			21FEB91	21FEB91	18APR91	18APR91	40
225005	14	14 PREPARE DRAFT REPORT			22FEB91	13MAR91	19APR91	08MAY91	40
225006	1	1 SUBMIT DRAFT REPORT TO NAVY			14MAR91	14MAR91	09MAY91	09MAY91	40
225007	1	1 RECEIVE AGENCY COMMENTS			27MAY91	27MAY91	27MAY91	27MAY91	0
225008	15	15 PREPARE FINAL REPORT			28MAY91	17JUN91	30MAY91	19JUN91	2
225009	1	1 SUBMIT FINAL REPORT TO NAVY			17JUN91	17JUN91	19JUN91	19JUN91	2
90001	34	34 CLOSE OUT CTO 099			20JUN91	06AUG91	20JUN91	06AUG91	0

R T: ACTPRED

ACTIVITY PREDECESSOR LISTING by ACTIVITY NUMBER

REPORT DATE: 1NOV90

PROJECT: CTO099

RCRA FACILITY ASSESSMENT NCAS EL TORO, CA

TIME NOW: 01AUG90

ACTIVITY	REM DUR	ORIG DUR	DESCRIPTION	CODE		<--PREDECESSOR-->		EARLY START	EARLY FINISH	TOTAL FLOAT
				1	2	ID	TYPE LAG			
005001	18	18	DEVELOP ISM			010000	FS 26	03OCT90	26OCT90	168
010000	1	1	RECEIVE CTO 099					27AUG90	27AUG90	0
110001	45	45	SCOPE REVIEW MEETINGS			010000	FS -1	27AUG90	26OCT90	3
110002	11	11	PREPARE IP			010000	FS 37	18OCT90	01NOV90	0
J10003	2	2	INTERNAL REVIEW IP			010002	FS -1	01NOV90	02NOV90	0
						010001	FS 0			
110004	1	1	SUBMIT IP TO NAVY			010003	FS 0	05NOV90	05NOV90	0
110005	16	16	NAVY REVIEW/APPROVE IP			010004	FS -1	05NOV90	26NOV90	0
015001	182	182	MONTHLY REPORTS			010005	FS -1	26NOV90	06AUG91	0
1	182	182	MEETINGS			015001	SS 0	26NOV90	06AUG91	0
200001	13	13	RECORDS AND DATA REVIEW			010005	FS 1	28NOV90	14DEC90	0
00002	33	33	PREPARE LIST OF UST'S			200001	FS -1	14DEC90	29JAN91	0
200003	6	6	EVALUATE PR INFORMATION			200001	FS 0	17DEC90	24DEC90	127
000005	37	37	PREPARE FACILITY MAP			010005	FS 6	05DEC90	24JAN91	0
00006	10	10	PREPARE PRELIM DRAFT PR REPORT			205001	FS 0	16JAN91	29JAN91	0
200007	2	2	INT REVIEW/REWRITE PRELIM DRAFT PR REPT			200006	FS -1	29JAN91	30JAN91	0
						200002	FS -1			
						200005	FS 2			
200008	1	1	SUBMIT PRELIM DRAFT PR REPORT TO NAVY			200007	FS 0	31JAN91	31JAN91	0
00009	10	10	DATA BASE RFA SITES			200008	FS 0	01FEB91	14FEB91	0
00010	1	1	RECEIVE NAVY COMMENTS			200009	FS 4	21FEB91	21FEB91	0
200011	14	14	PREPARE DRAFT REPORT			200010	FS 0	22FEB91	13MAR91	0
00012	1	1	SUBMIT DRAFT REPORT TO NAVY			200011	FS 0	14MAR91	14MAR91	0
200012	1	1	RECEIVE AGENCY COMMENTS			200012	FS 53	29MAY91	29MAY91	0

OPEN PLAN

Jacobs Engineering Group

PAGE: 2

REPORT: ACTPRED

ACTIVITY PREDECESSOR LISTING by ACTIVITY NUMBER

REPORT DATE: 1NOV90

PROJECT: CTO099

RCRA FACILITY ASSESSMENT NCAS EL TORO,CA

TIME NOW:01AUG90

ACTIVITY	REM DUR	ORIG DUR	DESCRIPTION	CODE		PREDECESSOR		EARLY START	EARLY FINISH	TOTAL FLOAT
				1	2	ID	TYPE LAG			
200014	15	15	PREPARE FINAL REPORT			200013	FS 0	30MAY91	19JUN91	0
200015	1	1	SUBMIT FINAL REPORT TO NAVY			200014	FS -1	19JUN91	19JUN91	0
205001	21	21	SITE VISITS - VSI			200001	FS 1	18DEC90	15JAN91	0
205002	13	13	EVALUATION OF SITES			205001	FS -8	04JAN91	22JAN91	106
205001	13	13	PREPARE HEALTH & SAFETY PLAN			205002	FS 0	04JAN91	22JAN91	106
225001	10	10	PREPARE PRELIM DRAFT SAMPLING VISIT WP			205001	FS 0	16JAN91	29JAN91	40
225002	2	2	INT REVIEW/REWRITE PRELIM DRAFT			225001	FS -1	29JAN91	30JAN91	40
225003	1	1	SUBMIT PRELIM DRAFT TO NAVY			225002	FS 0	31JAN91	31JAN91	40
225004	1	1	RECEIVE NAVY COMMENTS			225003	FS 14	21FEB91	21FEB91	40
225005	14	14	PREPARE DRAFT REPORT			225004	FS 0	22FEB91	13MAR91	40
225006	1	1	SUBMIT DRAFT REPORT TO NAVY			225005	FS 0	14MAR91	14MAR91	40
225007	1	1	RECEIVE AGENCY COMMENTS			225006	FS 11	27MAY91	27MAY91	0
225008	15	15	PREPARE FINAL REPORT			225007	FS 0	28MAY91	17JUN91	2
225009	1	1	SUBMIT FINAL REPORT TO NAVY			225008	FS -1	17JUN91	17JUN91	2
990001	34	34	CLOSE OUT CTO 099			225009	FS 0	20JUN91	06AUG91	0
						005001	FS 0			
						016001	FF 0			
						015001	FF 0			
						200003	FS 0			
						200015	FS 0			
						220001	FS 0			
						205002	FS 0			

REPORT: ACTRELS

PREDECESSOR and SUCCESSOR REPORT

REPORT DATE: 1NOV90

P. JT: CTO099

RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

TIME NOW: 01AUG90

PRECEDING				SUCCEEDING					
ACTIVITY	TYPE	LAG	DESCRIPTION	ACTIVITY	DESCRIPTION	ACTIVITY	TYPE	LAG	DESCRIPTION
100010	FS	0	RECEIVE NAVY COMMENTS	=> 200011	PREPARE DRAFT REPORT	=> 200012	FS	0	SUBMIT DRAFT REPORT TO
200011	FS	0	PREPARE DRAFT REPORT	=> 200012	SUBMIT DRAFT REPORT TO NAVY	=> 200013	FS	53	RECEIVE AGENCY COMMENTS
00012	FS	53	SUBMIT DRAFT REPORT TO	=> 200013	RECEIVE AGENCY COMMENTS	=> 200014	FS	0	PREPARE FINAL REPORT
00013	FS	0	RECEIVE AGENCY COMMENTS	=> 200014	PREPARE FINAL REPORT	=> 200015	FS	-1	SUBMIT FINAL REPORT TO
200014	FS	-1	PREPARE FINAL REPORT	=> 200015	SUBMIT FINAL REPORT TO NAVY	=> 990001	FS	0	CLOSE OUT CTO 099
00001	FS	1	RECORDS AND DATA REVIEW	=> 205001	SITE VISITS - VSI	=> 205002	FS	-8	EVALUATION OF SITES
						225001	FS	0	PREPARE PRELIM DRAFT SA
						200006	FS	0	PREPARE PRELIM DRAFT PR
15001	FS	-8	SITE VISITS - VSI	=> 205002	EVALUATION OF SITES	=> 220001	SS	0	PREPARE HEALTH & SAFETY
						990001	FS	0	CLOSE OUT CTO 099
15002	SS	0	EVALUATION OF SITES	=> 220001	PREPARE HEALTH & SAFETY PLAN	=> 990001	FS	0	CLOSE OUT CTO 099
205001	FS	0	SITE VISITS - VSI	=> 225001	PREPARE PRELIM DRAFT SAMPLING	=> 225002	FS	-1	INT REVIEW/REWRITE PREL
	FS	-1	PREPARE PRELIM DRAFT SA	=> 225002	INT REVIEW/REWRITE PRELIM DRAF	=> 225003	FS	0	SUBMIT PRELIM DRAFT TO
225002	FS	0	INT REVIEW/REWRITE PREL	=> 225003	SUBMIT PRELIM DRAFT TO NAVY	=> 225004	FS	14	RECEIVE NAVY COMMENTS
225003	FS	14	SUBMIT PRELIM DRAFT TO	=> 225004	RECEIVE NAVY COMMENTS	=> 225005	FS	0	PREPARE DRAFT REPORT
225004	FS	0	RECEIVE NAVY COMMENTS	=> 225005	PREPARE DRAFT REPORT	=> 225006	FS	0	SUBMIT DRAFT REPORT TO
225005	FS	0	PREPARE DRAFT REPORT	=> 225006	SUBMIT DRAFT REPORT TO NAVY	=> 225007	FS	11	RECEIVE AGENCY COMMENTS
225006	FS	11	SUBMIT DRAFT REPORT TO	=> 225007	RECEIVE AGENCY COMMENTS	=> 225008	FS	0	PREPARE FINAL REPORT
225007	FS	0	RECEIVE AGENCY COMMENTS	=> 225008	PREPARE FINAL REPORT	=> 225009	FS	-1	SUBMIT FINAL REPORT TO
225008	FS	-1	PREPARE FINAL REPORT	=> 225009	SUBMIT FINAL REPORT TO NAVY	=> 990001	FS	0	CLOSE OUT CTO 099
225009	FS	0	SUBMIT FINAL REPORT TO	=> 990001	CLOSE OUT CTO 099	=>			*FINISH*
01001	FS	0	DEVELOP ISM						
016001	FF	0	MEETINGS						
01001	FF	0	MONTHLY REPORTS						
20003	FS	0	EVALUATE PR INFORMATION						
200015	FS	0	SUBMIT FINAL REPORT TO						
220001	FS	0	PREPARE HEALTH & SAFETY						
20002	FS	0	EVALUATION OF SITES						

ACTIVITY IDENTIFIER	ACTIVITY DESCRIPTION	ORIG DUR	- - WORKING - -		IMPOSED DATE	- - - - RESOURCE - - - -		
			START	FINISH		TYPE	HH	\$
200-005	PREPARE FACILITY MAP	37	05DEC90	24JAN91	PROFESSIONAL 4	20	1976	
					PROFESSIONAL 2	40	2339	
					SPECIALITY SUBCONTRACT		100000	
200-006	PREPARE PRELIM DRAFT PR REPORT	10	16JAN91	29JAN91	PROFESSIONAL 4	32	3161	
					PROFESSIONAL 2	120	7014	
					PROFESSIONAL 1	120	6453	
					CLERICAL	40	1260	
200-007	INT REVIEW/REWRITE PRELIM DRAFT PR REPR	2	29JAN91	30JAN91	PROFESSIONAL 4	24	2371	
					PROFESSIONAL 2	24	1402	
					PROFESSIONAL 1	24	1290	
					CLERICAL	16	505	
					PROJECT MANAGER	4	281	
M,D 200-008	SUBMIT PRELIM DRAFT PR REPORT TO NAVY	1	31JAN91	31JAN91				
200-009	DATA BASE RFA SITES	10	01FEB91	14FEB91	PROFESSIONAL 4	4	395	
					PROFESSIONAL 2	24	1402	
					PROFESSIONAL 1	80	4301	
					CLERICAL	4	125	
A 200-010	RECEIVE NAVY COMMENTS	1	21FEB91	21FEB91				
200-011	PREPARE DRAFT REPORT	14	22FEB91	13MAR91	PROFESSIONAL 4	12	1185	
					PROFESSIONAL 2	24	1402	
					PROFESSIONAL 1	24	1290	
					CLERICAL	16	505	
M,D 200-012	SUBMIT DRAFT REPORT TO NAVY	1	14MAR91	14MAR91				
A 200-013	RECEIVE AGENCY COMMENTS	1	29MAY91	29MAY91				
200-014	PREPARE FINAL REPORT	15	30MAY91	19JUN91	PROFESSIONAL 4	12	1185	
					PROFESSIONAL 2	24	1402	
					PROFESSIONAL 1	24	1290	
					CLERICAL	16	505	
M,D 200-015	SUBMIT FINAL REPORT TO NAVY	1	19JUN91	19JUN91				
205-001	SITE VISITS - VSI	21	18DEC90	15JAN91	PROFESSIONAL 4	60	5927	
					PROFESSIONAL 2	300	17534	
					PROFESSIONAL 1	300	16132	
					TRAVEL		450	
205-002	EVALUATION OF SITES	13	04JAN91	22JAN91	PROFESSIONAL 4	20	1976	
					PROFESSIONAL 2	40	2339	
					PROFESSIONAL 1	40	2152	
220-001	PREPARE HEALTH & SAFETY PLAN	13	04JAN91	22JAN91	PROFESSIONAL 4	8	790	
					PROFESSIONAL 2	24	1402	
					PROFESSIONAL 1	24	1290	
					CLERICAL	12	379	
225-001	PREPARE PRELIM DRAFT SAMPLING VISIT WP	10	16JAN91	29JAN91	PROFESSIONAL 4	32	3161	
					PROFESSIONAL 2	80	4675	
					PROFESSIONAL 1	80	4301	
					CLERICAL	40	1260	
					TECHNICIAN 2	120	5991	

M Denotes Milestone

D Denotes Deliverables

A Denotes Navy/Agency Action Required

OPEN-PLAN
TASK: CTO099

PROJECT MILESTONE TARGET REPORT WORKPACKAGE SCHEDULE
RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

PAGE: 3
RUN DATE: 01NOV90
DATA DATE: 01AUG90

ACTIVITY IDENTIFIER	ACTIVITY DESCRIPTION	ORIG DUR	- - WORKING - -		IMPOSED DATE	- - - - RESOURCE - - - - -				
			START	FINISH		TYPE	MM	\$		
225-002	INT REVIEW/REWRITE PRELIM DRAFT	2	29JAN91	30JAN91	PROFESSIONAL 4		20	1976		
								PROFESSIONAL 2	24	1402
								PROFESSIONAL 1	24	1290
								CLERICAL	16	505
								PROJECT MANAGER	4	281
M,D 225-003	SUBMIT PRELIM DRAFT TO NAVY	1	31JAN91	31JAN91						
A 225-004	RECEIVE NAVY COMMENTS	1	21FEB91	21FEB91						
225-005	PREPARE DRAFT REPORT	14	22FEB91	13MAR91	PROFESSIONAL 4		12	1185		
								PROFESSIONAL 2	24	1402
								PROFESSIONAL 1	24	1290
								CLERICAL	16	505
								TECHNICIAN 2	8	401
M,D 225-006	SUBMIT DRAFT REPORT TO NAVY	1	14MAR91	14MAR91						
A 225-007	RECEIVE AGENCY COMMENTS	1	27MAY91	27MAY91	27MAY91					
225-008	PREPARE FINAL REPORT	15	28MAY91	17JUN91	PROFESSIONAL 4		12	1185		
								PROFESSIONAL 2	24	1402
								PROFESSIONAL 1	24	1290
								CLERICAL	16	505
								TECHNICIAN 2	8	401
M,D 225-009	SUBMIT FINAL REPORT TO NAVY	1	17JUN91	17JUN91						
M 990-001	CLOSE OUT CTO 099	34	20JUN91	06AUG91	PROFESSIONAL 4		12	1185		
								COST ENGINEERING	9	460
								ACCOUNTING	12	266
								WORD PROCESSOR	7	160

M Denotes Milestone

D Denotes Deliverables

A Denotes Navy/Agency Action Required

**Appendix C
Cost Summary**

IPCTO99

CLE-C01-01F099-B1-0001

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SCHEDULE A
 SUMMARY OF COSTS BY TASK
 CTO# 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

WORK ELEMENT	WORK ELEMENT DESCRIPTION	WORK ELEMENT MANHOURS	WORK ELEMENT DOLLARS
-----	-----	-----	-----
005	DEVELOP ISM	110	\$ 7,620
010	IMPLEMENTATION PLAN WORK ELEMENT 1	141	\$ 10,729
015	MONTHLY REPORTS	450	\$ 40,062
016	MEETINGS	120	\$ 9,874
200	BACKGROUND COLLECTION/REVIEW WORK ELEMENT 20	1,366	\$ 208,295
205	VISUAL SITE INSPECTION WORK ELEMENT 20	760	\$ 55,689
220	HEALTH AND SAFETY PLANS WORK ELEMENT 19	68	\$ 4,631
225	RFA SAMPLING WORK PLAN WORK ELEMENT 19	608	\$ 41,247
990	CLOSE OUT CTO 099	40	\$ 2,417
	TOTALS	3,663	\$ 380,563

NAVY CLEAN PROJECT

JACOBS ENGINEERING GROUP INC.

CONTRACT NO. N68711-89-D-9296

CONTRACT TASK ORDER: 0099

RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

Run Date 11/01/90

Run Time 14:29:09

JACOBS ENGINEERING GROUP, INC.

EXHIBIT 1 TO SCHEDULE B

SPECIALTY SUB-CONTRACTORS

CTOW 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

ACTIVITY ID	DESCRIPTION	VALUE
.....
Z00005	MAP SUBCONTRACTOR	\$ 100,000

TOTAL COST	\$	100,000

NAVY CLEAN PROJECT

JACOBS ENGINEERING GROUP INC.

CONTRACT NO. N68711-89-D-9296

CONTRACT TASK ORDER: 0099

RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

Run Date 11/01/90

Run Time 14:29:09

JACOBS ENGINEERING GROUP, INC.

EXHIBIT 2 TO SCHEDULE B

OTHER DIRECT COSTS

CTO# 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

	AMOUNT		RATE	TOTAL
	-----		----	-----
COMMUNICATION	302	@	0.21	63.42
MAINFRAME COMPUTER	302	@	0.36	108.72
MISCELLANEOUS	302	@	0.46	138.92
PERSONAL COMPUTER	135	@	5.00	675.00
POSTAGE/FREIGHT	302	@	0.44	132.88
REPRODUCTION	302	@	0.70	211.40
TOTAL ODC'S				1,330.34

SCHEDULE D

-->CH2MHILL<--

M.ARENDS

CONTRACT RATE CATEGORY	RES CODE	FUNCTIONAL CATEGORY	TOTAL HOURS	RATE	TOTAL COST
PROFESSIONAL 4	P4		544	37.00	20,128
PROFESSIONAL 3	P3	PROFESSIONAL 3	0	22.05	0
PROFESSIONAL 2	P2	PROFESSIONAL 2	1,237	21.89	27,078
PROFESSIONAL 1	P1	PROFESSIONAL 1	1,048	20.14	21,107
TECHNICIAN 3	T3	TECHNICIAN 3	0	0.00	0
TECHNICIAN 2	T2	TECHNICIAN 2	136	18.70	2,543
TECHNICIAN 1	T1	TECHNICIAN 1	0	10.48	0
CLERICAL	CL	CLERICAL	396	11.80	4,673
SUBTOTAL TECHNICAL			3,361	\$	75,529
TOTAL CH2MHILL LABOR			3,361	\$	75,529
COMPOSITE INDIRECT RATE				\$	126,133
SPECIALTY SUBCONTRACTOR (EXHIBIT 1-SCH D)				\$	0
ODC COST (EXHIBIT 2-SCH D)				\$	9,512
TRAVEL COST (EXHIBIT 3-SCH D) NON FEE BEARING				\$	1,247
FIXED FEE				\$	6,333
AWARD FEE				\$	12,734
TOTAL COSTS:					-----
RCRA FACILITY ASSESSMENT MCAS EL TORO, CA				\$	231,490

CONTRACT NO. W68711-89-D-9296
CONTRACT TASK ORDER: 0099
RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

CH2MHILL
EXHIBIT 3 TO SCHEDULE D
TRAVEL EXPENSES
CTOW 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

3 TRIP(S) FROM: SANTA ANA, CA TO: SAN DIEGO
1 PERSON(S) DATE: TBD DURATION: 1 DAY /TRIP
ID#: 016001 PURPOSE: MEETINGS

0 AIRFARE @ \$ 0/Each \$ 0
0 DAYS CAR RENTAL @ \$ 0/Day \$ 0
0 DAYS HOTEL @ \$ 0/Day \$ 0
0 DAYS PER DIEM @ \$ 0/Day \$ 0
480 MILES @ \$ 0.24/Mile \$ 115

TOTAL TRIP \$ 115

6 TRIP(S) FROM: SANTA, ANA TO: EL TORO
1 PERSON(S) DATE: TBD DURATION: 1 DAY/ TRIP
ID#: 016001 PURPOSE: MEETINGS

0 AIRFARE @ \$ 0/Each \$ 0
0 DAYS CAR RENTAL @ \$ 0/Day \$ 0
0 DAYS HOTEL @ \$ 0/Day \$ 0
0 DAYS PER DIEM @ \$ 0/Day \$ 0
150 MILES @ \$ 0.24/Mile \$ 36

TOTAL TRIP \$ 36

1 TRIP(S) FROM: SANTA, ANA TO: RIVERSIDE
1 PERSON(S) DATE: TBD DURATION: 1 DAY/ TRIP
ID#: 016001 PURPOSE: MEETINGS

0 AIRFARE @ \$ 0/Each \$ 0
0 DAYS CAR RENTAL @ \$ 0/Day \$ 0
0 DAYS HOTEL @ \$ 0/Day \$ 0
0 DAYS PER DIEM @ \$ 0/Day \$ 0
90 MILES @ \$ 0.24/Mile \$ 22

TOTAL TRIP \$ 22

CH2MHILL
EXHIBIT 3 TO SCHEDULE D
TRAVEL EXPENSES
CTOW 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

1 TRIP(S) FROM: SANTA ANA, CA TO: SAN BRUNO
1 PERSON(S) DATE: TBD DURATION: 2 DAYS
ID#: 200001 PURPOSE: RECORDS AND DATA REVIEW

1 AIRFARE	@	\$ 330/Each	\$ 330
2 DAYS CAR RENTAL	@	\$ 45/Day	\$ 90
1 DAYS HOTEL	@	\$ 54/Day	\$ 54
2 DAYS PER DIEM	@	\$ 26/Day	\$ 52
0 MILES	@	\$ 0.24/Mile	\$ 0
TOTAL TRIP			\$ 526

1 TRIP(S) FROM: SANTA ANA TO: SAN DIEGO
1 PERSON(S) DATE: TBD DURATION: 1 DAY
ID#: 200001 PURPOSE: RECORDS AND DATA REVIEW

0 AIRFARE	@	\$ 0/Each	\$ 0
0 DAYS CAR RENTAL	@	\$ 0/Day	\$ 0
0 DAYS HOTEL	@	\$ 0/Day	\$ 0
0 DAYS PER DIEM	@	\$ 0/Day	\$ 0
160 MILES	@	\$ 0.24/Mile	\$ 38
TOTAL TRIP			\$ 38

10 TRIP(S) FROM: SANTA ANA TO: EL TORO
1 PERSON(S) DATE: TBD DURATION: 1 DAY
ID#: 200001 PURPOSE: RECORDS AND DATA REVIEW

0 AIRFARE	@	\$ 0/Each	\$ 0
0 DAYS CAR RENTAL	@	\$ 0/Day	\$ 0
0 DAYS HOTEL	@	\$ 0/Day	\$ 0
0 DAYS PER DIEM	@	\$ 0/Day	\$ 0
250 MILES	@	\$ 0.24/Mile	\$ 60
TOTAL TRIP			\$ 60

NAVY CLEAN PROJECT

JACOBS ENGINEERING GROUP INC.

CONTRACT NO. N68711-89-D-9296

CONTRACT TASK ORDER: 0099

RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

CH2MHILL

EXHIBIT 3 TO SCHEDULE D

TRAVEL EXPENSES

CTOW 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA

75 TRIP(S) FROM: SANTA ANA, CA TO: EL TORO, CA
 1 PERSON(S) DATE: TBD DURATION: 1 DAY
 ID#: 205001 PURPOSE: SITE VISITS - VSI

0 AIRFARE	@	\$	0/Each	\$	0
0 DAYS CAR RENTAL	@	\$	0/Day	\$	0
0 DAYS HOTEL	@	\$	0/Day	\$	0
0 DAYS PER DIEM	@	\$	0/Day	\$	0
1,875 MILES	@	\$	0.24/Mile	\$	450
TOTAL TRIP				\$	450

TOTAL TRAVEL COSTS FOR CH2MHILL \$ 1,247
 CTOW 0099 RCRA FACILITY ASSESSMENT MCAS EL TORO, CA