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PROJECT MANAGEMENT PLAN
CONTAMINATION ASSESSMENT AND
REMEDIAL ACTIVITIES AT
NAVAL AIR STATION PENSACOLA
PENSACOLA, FLORIDA

July, 1990

Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
2155 Eagle Drive, P.O. Box 10068
Charleston, South Carolina 29411-0068

Contract Number N62467-88-C-0200



ecology and environment, inc.

316 SOUTH BAYLEN STREET, PENSACOLA, FLORIDA 32501, TEL. (904) 435-8925
International Specialists in the Environment

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1. INTRODUCTION

The purpose of this Project Management Plan is to document the planned overall approach by Ecology and Environment, Inc. (E & E) to contamination assessments and remedial activities at 37 sites of possible uncontrolled hazardous substance disposal at Naval Air Station (NAS) Pensacola, Escambia County, Florida. This work is being conducted as part of the Navy Installation Restoration Program (IRP) under Contract No. N62467-88-C-0200, Southern Division, Naval Facilities Engineering Command (SOUTADIV). The contamination assessments to be performed will include extended Site Investigations (SIs) and/or Remedial Investigations (RIs) as defined by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFIs). Remedial activities will include the development of Feasibility Studies (FSs) and Remedial Designs (RDs), and the implementation of Remedial Actions (RAs).

The Project Management Plan includes a description of the technical approach as well as the qualifications of personnel who will be directing and performing this work. Given that project conditions are expected to change throughout the course of this work, periodic updates of the Project Management Plan will be required. E & E will update this document on an as-needed basis.

Section 2 of the Project Management Plan provides background information on the Navy IRP; on previous investigations completed at NAS Pensacola under the Navy IRP; and on the future work that E & E will be performing at NAS Pensacola under the Navy IRP. Section 3 presents and discusses E & E's overall corporate organizational structure as well as the organizational structure that E & E has developed for management of the NAS Pensacola program. Section 4 discusses E & E's general approach



to project management. Section 5 details how this general approach will be implemented in managing the multi-site assessment/remediation program at NAS Pensacola. Section 6 discusses the preliminary schedule for the multi-site assessment/remediation program.

2. BACKGROUND

2.1 NAVY INSTALLATION RESTORATION PROGRAM (IRP)

The Navy IRP was established in 1986 to direct the investigation and remediation of uncontrolled hazardous waste disposal sites associated with naval operations. Prior to 1986, these investigation/remediation activities had been managed under the Navy Assessment and Control of Installation Pollutants (NACIP) program.

In accordance with the National Contingency Plan (NCP), the Navy IRP is currently being implemented in full compliance with the statutory requirements of CERCLA and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Furthermore, since CERCLA/SARA specifies the inclusion of all applicable or relevant and appropriate requirements (ARARs), the Navy IRP incorporates compliance with RCRA and the Hazardous and Solid Waste Amendments of 1984 (HSWA), where applicable.

The Navy IRP can be viewed as a five-step investigation and remediation process:

1. Site Discovery or Notification;
2. Preliminary Assessment (PA) and SI;
3. Establishment of Priorities for RA;
4. RI/FS; and
5. RD/RA.

Each of the above steps includes substeps or subdivisions.



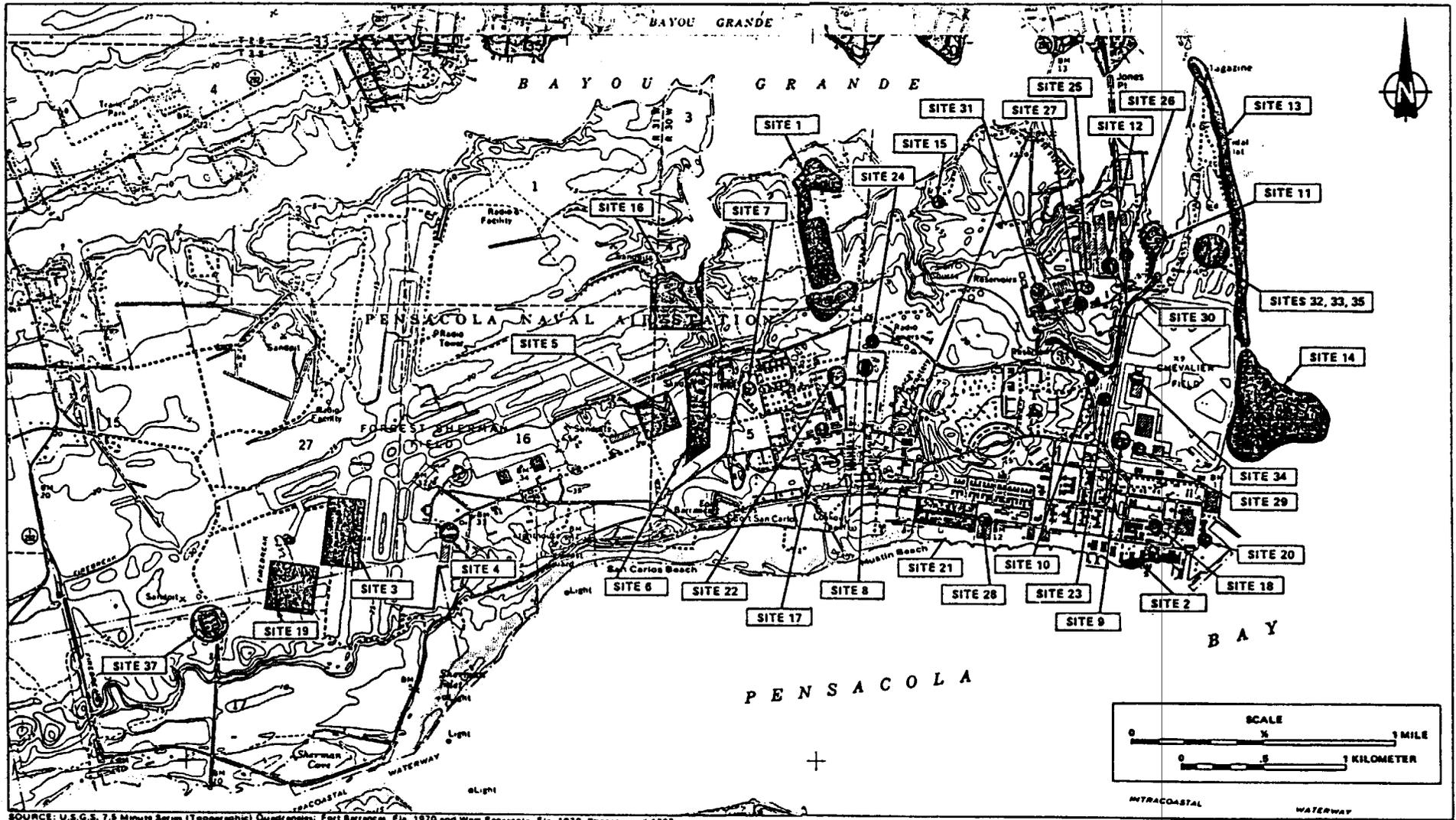
2.2 PREVIOUS INVESTIGATIONS

Three major investigation programs have been conducted at NAS Pensacola under the NACIP/Navy IRP programs: Initial Assessment Study (IAS); Verification Study (VS); and Confirmation Study (CS). The IAS (1982-1983) was conducted by the Naval Energy and Environmental Support Activity (NEESA) to identify and assess NAS Pensacola sites that could pose a potential threat to human health or the environment as a result of contamination derived from past naval operations. The VS (1984) and CS (1985-1986) were conducted by Geraghty and Miller, Inc. [(G & M)] to confirm/refute the presence of contamination at specific sites identified in the IAS, and if contamination was detected, evaluate its magnitude/extent to a degree that would allow the recommendation of remedial actions.

In addition to the above NACIP/Navy IRP programs, a RCRA Facility Assessment (RFA) has been completed at NAS Pensacola, and a RCRA/HSWA permit was issued to the installation by the U.S. Environmental Protection Agency (EPA) on July 27, 1988. A Florida RCRA permit had previously been issued to NAS Pensacola by the Florida Department of Environmental Regulation (FDER) on September 29, 1987.

Table 2-1 lists the 37 known and potential sites of environmental contamination that have been identified on NAS Pensacola. Site locations are shown on Figure 2-1. Sites 1 through 34 were identified during the IAS. Sites 1, 2, 3, 9, 11, 15, 17, 19, 22, 23, 26, 27, and 29 through 34 were investigated during the VS. Sites 1, 11, 15, 19, 26, 27, and 31 through 34 were investigated during the CS. Site 37 was not investigated during any of the previous studies but was subsequently added to the list and is currently being assessed via a treatability study. Sites 1 through 36 were classified as Solid Waste Management Units (SWMUs) in the RCRA/HSWA permit for NAS Pensacola, and 17 of these sites (1, 2, 3, 11, 15, 19, 21, 26, 27, and 29 through 36) were identified as requiring RFIs.

2-4



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangles: Fort Barranca, Fla. 1970 and West Pensacola, Fla. 1970. Photographed 1967

Figure 1 NWS PENSACOLA SITE LOCATIONS

2.3 SCOPE OF WORK

As stated in the previous section, IAS, VS, CS, and RFA investigations for NAS Pensacola have been completed. The next major phase of the Navy IRP at NAS Pensacola consists of implementing contamination assessment and remedial activities: SIs, RIs, RFIs, FSs, and RD/RAs. In January 1989, SOUTHDIV contracted with E & E to perform the RI/RFI, FS, and RD/RA phases.

The Navy IRP is directly governed by CERCLA/SARA. However, SARA specifies that ARARs be included in CERCLA activities, and many RCRA provisions represent ARARs with respect to NAS Pensacola. Consequently, E & E's work at NAS Pensacola will integrate CERCLA and RCRA requirements to the greatest extent possible. Although the administrative processes for these two statutes are somewhat different, their technical requirements are essentially the same. Hence, the CERCLA/RCRA overlap approach should not impede implementation of either the RI/RFI, FS, or RD/RA phases at NAS Pensacola.

In order to facilitate implementation of the NAS Pensacola program, E & E has clustered the 37 sites into 15 work plan groups, as shown in Table 2-2. Several criteria were employed to generate the work plan groups, including: 1) geographic proximity of sites; 2) similarity of contaminant types; 3) similarity of potential investigation methods; and 4) potential scope and complexity of the investigation. Table 2-2 also provides SOUTHDIV's investigative priority rankings for the 37 sites.

Figure 2-2 is an implementation schedule for the RI/RFI, FS, and RD/RA phases. A detailed explanation of each work element listed on Figure 2-2 is provided in the Site Management Plan. It should be understood that the generic plans apply to all sites, whereas all other work elements (presented on Figure 2-2) are group- or site-specific, as appropriate. Thus, for example, only one Project Management Plan will be produced, applying to all 37 sites; separate RI/RFI and FS work plans will be produced for each work plan group; and separate RI/RFI and FS reports will be produced for each site, unless the similarity and inter-connection between two or more sites is such that a single report for these sites would be more useful.

During the course of the work outlined in this document, new sites or the need for interim remedial measures may be identified. Any new



Table 2-2

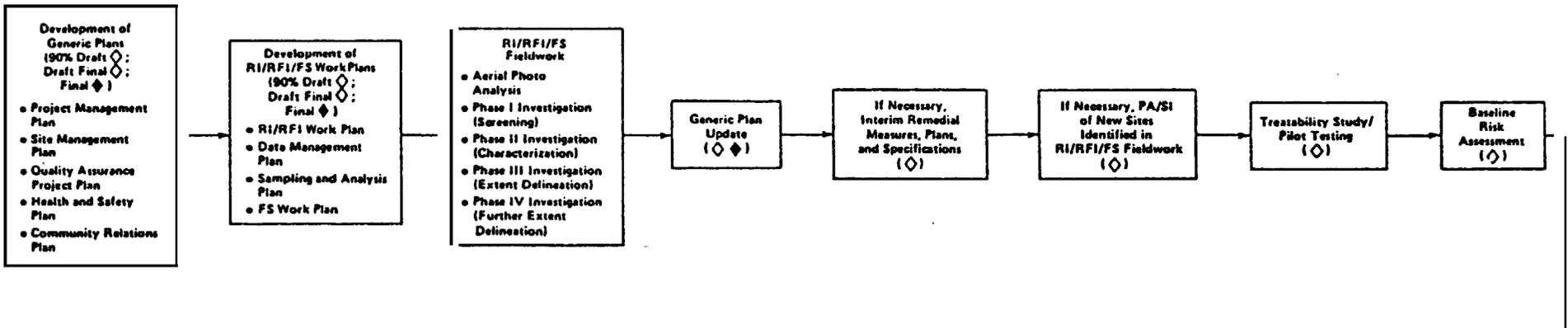
WORK PLAN GROUPS FOR NAS PENSACOLA

Work Plan Group	SOUTH DIV Investigative Priority Ranking	Site No.	Site Name
A	A	1*	Sanitary Landfill
B	A	11*	North Chevalier Disposal Area
	B	12	Scrap Bins
	A	26*	Supply Department Storage Area
C	A	2*	Waterfront Sediments Area
	C	13	Magazine Point Rubble Disposal Area
	D	14	Dredge Spoil Fill Area
D	A	15*	Pesticide Rinsate Disposal Area
	D	24	DDT Mixing Area
E	C	30*	Buildings 649 and 755
F	D	9	Navy Yard Disposal Area
	D	10	Commodore's Pond
	C	23	Chevalier Field Pipe Leak Area
	A	29*	Soil South of Building 3460
	C	34*	Solvent North of Building 3557
G	C	25	Radium Spill Area
	B	27*	Radium Dial Shop Sewer
H	C	a	Rifle Range Disposal Area
	C	22	Refueler Repair Shop
I	C	17	Transformer Storage Yard
	D	18	PCB Spill Area
	C	28	Transformer Accident Area
J	B	3*	Crash Crew Training Area
	B	19*	Fuel Farm Pipeline Leak Area
	C	37	Sherman Field Fuel Farm Area
K	D	7	Firefighting School Area
	B	20	Pier Pipe Leak Area
	B	21*	Sludge at Fuel Tanks

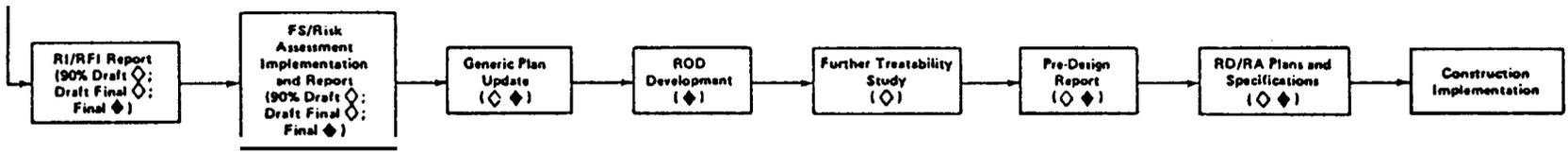
Table 2-2 (Cont.)

Work Plan Group	SOUTHDIV Investigative Priority Ranking	Site No.	Site Name
L	C	4	Amy Rubble Disposal Area
	D	5	Borrow Pit
	D	6	Fort Redoubt Rubble Disposal Area
	D	16	Brush Disposal Area
M	B	31*	Soil North of Building 648
N	A	36*	IWTP Sewer Area
O	C	32*	IWTP Sludge Drying Beds
	C	33*	WWTP Ponds
	C	35*	Hiscellaneous IWTP SWMUs

*Listed for further investigation under RCRA/HSWA permit



2-8



KEY:
 ◊ Navy Approval
 ◆ Navy/TRC Approval

Figure 2-2 SCOPE OF WORK OF RI/RFI/FS AND RD/RA, NAS PENSACOLA



sites will be routed through a PA/SI and/or RFA before being incorporated into the RI/RFI, FS, and RD/RA program outlined on Figure 2-2.

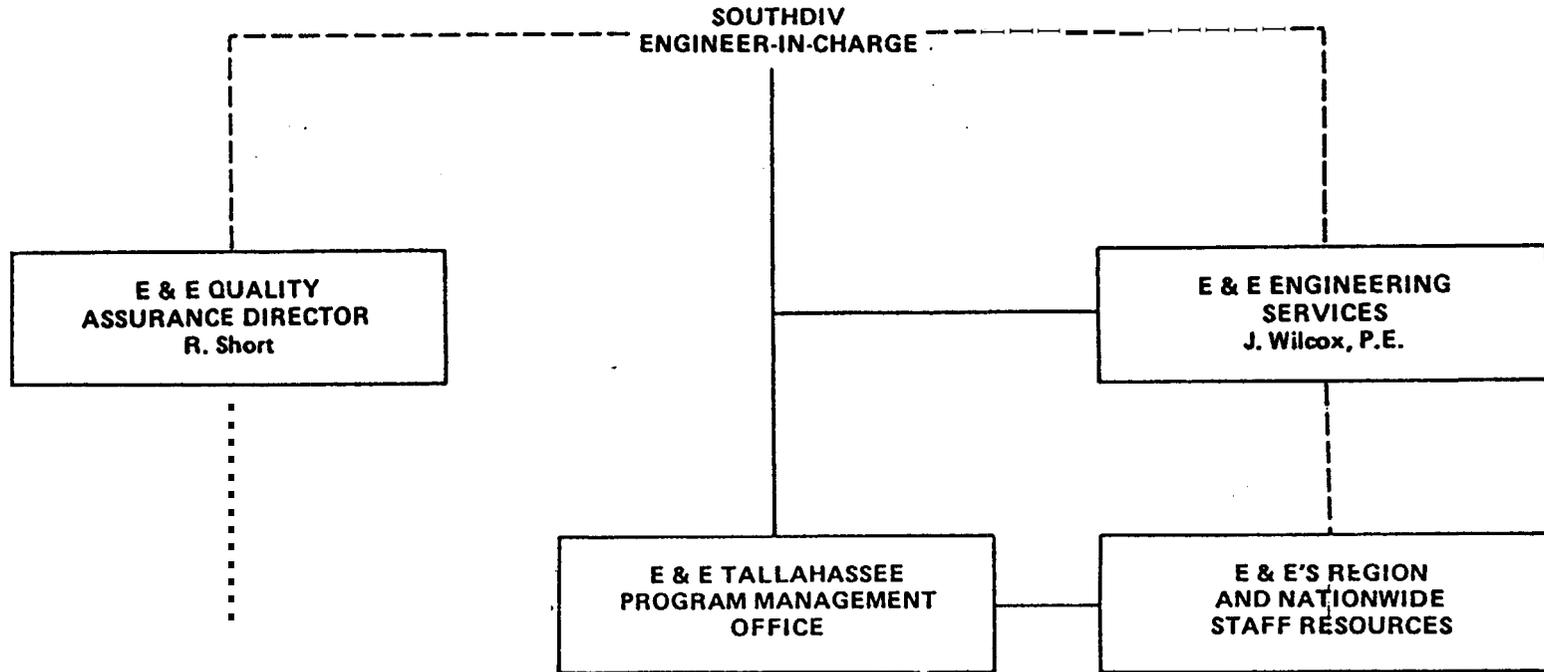
The approach outlined in this document is based on the following assumptions: review of all submittals will be completed by the Navy comments transmitted back to E & E within 60 days; review by the TRC will be completed within 120 days of completion of each phase; and allotted funding for the program will be continuous and adequate to support RI/RFI work for three to five site groups simultaneously,

[2.4 FEDERAL FACILITIES AGREEMENT

The Federal Facility Agreement (PPA) is an interagency agreement which exists between the Navy, EPA, and FDER. The FFA outlines the conditions and schedules to be followed during the course of the investigations at NAS Pensacola.

The general purposes of the PFA are to:

- o Ensure that the environmental impacts associated with past and present activities at NAS Pensacola are thoroughly investigated and appropriate CERCLA response/RCRA corrective alternatives are developed and implemented as necessary to protect the public health, welfare, and the environment;
- o Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at NAS Pensacola in accordance with CERCLA/SARA, RCRA, the National Contingency Plan (NCP), and EPA/state-issued guidance and policy relevant to remediation at NAS Pensacola; and
- o Facilitate cooperation, exchange of information, and participation of the Navy, EPA, and FDER in such actions.]



LINES OF

- AUTHORITY
- - - - COMMUNICATION
- AUDIT

Figure 3-1 PROJECT MANAGEMENT LINES OF AUTHORITY AND COMMUNICATION



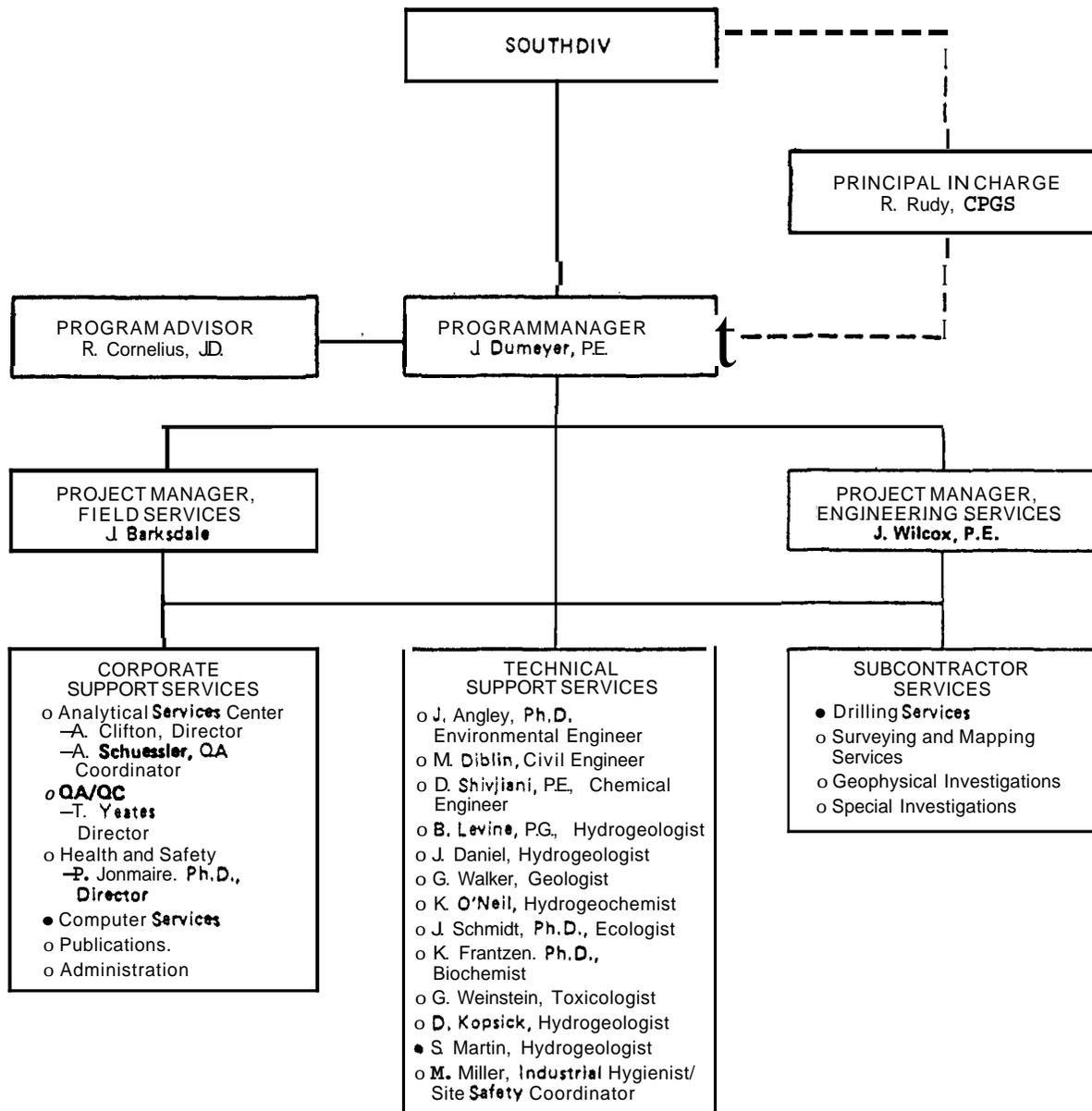


Figure 3-2 PROGRAM ORGANIZATION

on E & E's experience with similar programs, this organizational structure is designed to accommodate multiple task assignments and can be adjusted in response to changing program needs.

The key program personnel are the Principal-in-Charge, Program Manager, and Project Managers, Program Advisor, and QA Officer. As site-specific work assignments are given to E & E from the EIC, the Program Manager and project managers will assign a site manager to act as project manager of that particular site. Key Personnel and their responsibilities are described briefly below. Resumes are provided in Appendix A.

Principal-in-Charge. Richard Rudy, a Registered Professional Geologist (PG) will serve as Principal-in-Charge. He will have overall responsibility for insuring that the program meets SOUTHDIV objectives and E & E quality standards, and that E & E's full corporate resources are made available to the program, as needed. He will also serve, as necessary, as an intermediary between the EIC and E & E corporate management and assist the Program Manager in problem resolution/corrective action implementation.

Program Manager. John Dumeyer, P. E., will be Program Manager. He will report directly to the EIC and provide the major point of control to ensure that the program's technical, financial, and scheduling objectives are achieved.

Project Manager, Field Services. John Barksdale, a hydrogeologist, will manage field activities, including contamination assessments, site investigations, and remedial investigations.

Project Manager, Engineering Services. Jack Wilcox, P.E., will serve as project manager for program engineering tasks including feasibility studies, remedial action designs, and RFAs.

Program Advisor. Richard M. Cornelius, J.D., an expert in environmental law and its application to naval facilities, will act as program advisor to the E & E team. Mr. Cornelius will provide legal counsel, as

needed, to ensure compliance with CERCLA/SARA and RCRA as they relate to site-specific issues.

QA Officer. Tom Yeates is E & E's Corporate QA Officer. Mr. Yeates will ensure that quality standards for both fieldwork and laboratory work are strictly enforced. He will constantly interface **with the** Principal-in-Charge and Program Manager concerning any problem situations that may arise.

Technical Staff. Additional technical support is available from E & E's other offices in the southeast, including Oak Ridge, Baton Rouge, Kansas City, Houston, and Dallas, as well **as** other E & E offices, as needed, to meet specialized requirements of individual site projects. Resumes of senior-level technical staff are provided in Appendix A.

Work assignments will be staffed out of E & E's Tallahassee office, with supporting staff made available from other offices to meet any unexpected staffing needs. Several specialty components exist within E & E's corporate organization to provide support on an as-needed basis. E & E's Drilling and Testing company may be used to support fieldwork if **it** proves cost-effective or appropriate to **use** an E & E-owned drill rig rather than **to** provide such services through a subcontract. E & E's Analytical Service Center (ASC) in Buffalo is expected to provide laboratory services as specified in the contract.

4. MANAGEMENT APPROACH

This section outlines the management approach E & E will use to manage the Navy IRP program work assignments.

4.1 OVERVIEW OF MANAGEMENT CONTROL PROCESS

Each work assignment from the EIC will be assigned to a site manager who will report directly to E & E's Program Manager and project manager for field services or engineering services. The site managers will be E & E senior-level technical professionals and will define site-specific project tasks, prepare schedules and budgets, request personnel from the appropriate administrative manager, coordinate with support services such as Publications and the ASC, and be responsible for quality control on the project. Resumes of senior technical personnel are presented in Appendix A.

After personnel assignments have been made for a work assignment, the site manager will be responsible for the day-to-day technical direction of personnel assigned to the project. Weekly meetings and progress reports to the project managers and Program Manager will keep higher-level management apprised of project status on a site-specific and installation-wide basis, as well as of any potential critical situations that could require immediate program and/or corporate decisions.

4.2 MANAGEMENT CONTROL REQUIREMENTS

Work assignments will be managed within initial budgets and schedules agreed to by E & E and the EIC by dividing the scope of work into standard tasks. E & E may break these tasks down further into



subtasks. If standard methodology cannot be used to define a particular task, the site manager must contact the project manager/Program Manager regarding the selection of methods for a non-standard task.

All expenditures for this project will be approved by the Program Manager or Principal-in-Charge. The site manager will also authorize any modifications to tasks or subtasks, with the concurrence of the Program Manager and the EIC. The site manager has direct responsibility for authorizing, monitoring, and controlling all work and the expenditure of funds and hours, as well as for the successful completion of the work, including budget and schedule requirements. This will be accomplished through the development and implementation of a Work Breakdown Structure Management Plan for each site-specific project.

4.3 WORK BREAKDOWN STRUCTURE

This section describes the Work Breakdown Structure (WBS) Management Technique that will be used in organizing and performing work assignments. The WBS technique provides the technical and organizational foundation for subdividing project work, scheduling project tasks, and monitoring expenditures. The technique consists of a breakdown of the Navy-approved work plan by task and subtask. The major end products are identified, and successively subdivided until the total effort is defined by manageable tasks assignable to a project team or team member. The WBS is used to assign responsibilities for each work element, establish schedules and milestones, allocate resources, track costs against estimates, assess the status of the project effort, evaluate work performance, and determine the necessity for revision of the project effort in response to changed conditions.

Under the WBS, work is identified by a six-character letter/number code, called the project number. Two letters identify the client, and four numbers designate the project, task, and subtask, as shown below:

UH1000	Client
UH1000	Project
UH1010	Task
UH1011	Subtask

One of the major objectives of the WBS system is to give the Program Manager, project managers and site managers a tool for cost control, with the flexibility to allow for expansion in both depth and scope as the need for greater work detail arises.

4.4 TASK BUDGETS

The WBS Management Plan will include a budget breakdown by major tasks or WBS levels. Weekly costs will be calculated from the actual costs recorded for each week and printed out through the computerized Project Management System. This will allow the site manager to track budgeted hours and dollars against actual expenditures to assess progress on a weekly basis and allow the site manager to make corrections to the schedule as needed.

4.5 PROJECT MANAGEMENT SYSTEM

E 6 E operates an interactive computer software system to track projects. This Project Management System (PMS) is a tool for project managers, company administrators, senior management staff, and clients to track weekly costs and hours against projections. For this program, the project administrator, a senior-level costs analyst, will enter the particulars for each task assignment issued by the Navy on E 6 E's DEC computer system, essentially initiating the task work. At the same time, the administrator will enter the names of the assigned project manager and site manager, and the contract rates. The site manager then will enter all WBS elements including budgeted hours (based on the Navy-approved work plan), costs, planned beginning and ending dates, technical personnel for each task and subtask, and projections of planned work. Every week the site manager will update the projections of planned man-hours, and retrieve the calculated project costs from the PMS. Site managers are required to record the financial, scheduling, and technical status of their work assignments each week on the PMS. The information recorded by the site manager will then be reviewed and coordinated by the Program Manager, and then submitted in a monthly report to the EIC.

Periodic technical status reports will also be written, primarily for the Program Manager and EIC, on issues where EIC decisions or guidance are necessary to maintain deliverable schedules and budget control. Technical status reports provide an excellent way to document progress and project needs for future reference in the Record of Decision (ROD).

5. MANAGEMENT OF WORK ASSIGNMENTS

5.1 PRE-PROJECT ACTIVITIES

On receipt of a task assignment from the EIC, E & E will commence with the project start-up and WBS development and implementation. Site managers will be assigned by the project managers and Program Manager based on current individual workloads and technical expertise required. The site manager will develop the PMS for each project and estimate required manpower for scheduling purposes. Support group requests are also made in the pre-project. For major reports, the publications group will be notified as early as possible of the scheduled deadline for submission. Prior to project start-up, project documentation procedures will be implemented to maintain an accurate ROD of all activities performed during project execution.

5.2 WORK PLANS

The work plan will identify project/site objectives and propose the methodologies to accomplish each work element. E & E will present a 90% draft of each work plan to the Navy by mail for review. After receiving comments from the Navy, E & E will incorporate the comments into a draft final, which will be submitted to the Technical Review Committee (TRC). The TRC will provide formal comments on the draft final, and the Navy's response to those comments will be incorporated into the final work plan. The general submittal schedule is as follows:

<u>Work Plan</u>	<u>Submittal date</u>	<u>Navy Review</u>	<u>TRC Review</u>
90% Draft	--	60 days	

<u>Work Plan</u>	<u>Submittal date</u>	<u>Navy Review</u>	<u>TRC Review</u>
Draft Final	15 days after receipt of formal comments from EIC	45 days	120 days
Final	45 days after receipt of formal comments from TRC		

5.3 PROJECT OPERATIONS

Following approval of the initial stages of the project, actual technical work will be implemented. This will include all aspects associated with actually performing each phase of work.

5.3.1 Project Planning

The site manager and the project manager will project manpower requirements and schedule appropriate technical personnel needed to complete the project on time. The site manager's request will be channeled through corporate management during weekly manpower request meetings. These meetings are held to coordinate short-term (1- to 2-week) manpower assignments and schedule technical requests for specific projects.

Since most of the task assignments for this contract will involve laboratory analysis of samples, E & E's ASC will be informed of projected sample analysis requirements by the site manager. The need for special analyses and short turnaround times will be made known well in advance of delivery of samples to the laboratory.

Drilling and other subcontracting needs will also be coordinated by the site manager during the early stages of project start-up. Subcontracts (discussed below) will be developed for special services and scheduled by the site manager.

Regular bi-monthly staff meetings will be conducted with site managers, project manager, and the Program Manager. These meetings will primarily address critical issues, individual project status, problem areas, scheduling, and action items of the previous meeting.

5.3.2 Subcontracting Procedures

E & E's subcontracting program utilizes a comprehensive list of vendors, generic contracts, and standard policies and procedures developed for hazardous substance management and remediation programs. Subcontracting (drilling, surveying and mapping, geophysical and special investigations, etc.) will be coordinated and directed by the Program Manager in accordance with E & E standard subcontracting procedures and will be subject to government approval. Only the contract types enumerated in the Federal Acquisition Regulations (FAR), Subchapter D, part 16, are developed and used for all subcontractors for the IRP program. Selection of contract type is based on factors such as: scope of work to be performed, adequacy of specifications, technical capability, prior service experience, and urgency of requirements. Generally, one of the following types of subcontracts is used:

- o Corporate Purchase Order
- o Firm Fixed Price
- o Time and Materials
- o Letter Agreement

If subcontracting is needed, a technical statement of work and cost estimate will be prepared and discussed with the EIC. Any special provisions or evaluation criteria by which subcontractor bids or proposals may be judged will be included. Solicitations of all substantial subcontracts are normally sent out to four or five firms selected on the basis of previous similar work experience, proximity to the area of work, and health and safety qualifications. Ten working days are allowed for preparation of responses. This process may be enhanced through the use of verbal solicitations to meet urgent SOUTHDIV schedule requirements.

The site manager and Program Manager, in coordination with the EIC, will review the technical merit of each bid and proposal in accordance with the evaluation criteria contained in the bid package. Reference checks will be made, and for those potential subcontractors determined to be technically qualified, costs will be evaluated for accuracy and

6

reasonableness. Selection will be based on technical qualifications and previous similar work experience, prior experience with similar materials, appropriately trained (e.g., [Occupational Safety and Health Administration (OSHA)]) personnel, and costs.

After selection of a subcontractor, a subcontract information package is prepared for EIC review and approval. Subcontracts will be reviewed for approval with the EIC. Upon receipt of the approved subcontract package from the Program Manager, the corporate Subcontracting Manager will execute and issue the subcontract.

A project manager and the site manager will monitor the technical performance of subcontractors to assure that: subcontractors adhere to work plans and specified health and safety protocols; excessive materials are not used; and unnecessary delays do not occur. Daily logs of progress and expenditures will be maintained and tracked for invoice validation.

Cost tracking by site will be performed on a weekly basis for all subcontracting activity. The site manager will review and approve all invoices for content and detail before forwarding them to the Program Manager for payment authorization. The **PMS** allows for incorporation of subcontractor cost and schedule data in an efficient manner.

5.3.3 Quality Control and Quality Assurance

Three distinct approaches will be used to ensure product quality under this project. The QA program, Quality Control (QC) program, and QA Project Plans (QAPPs) will be used to complement each other in implementing a comprehensive system for data generation, and product preparation, review, and approval.

In-house QA is the responsibility of the Program Manager, the Principal-in-Charge, and the QA officer. The QA officer is responsible directly to higher company management.

QC responsibility lies primarily with the site manager. The site manager is the individual closest to the job, and as such is the person most capable of controlling the overall quality of the work product.

A QAPP is a detailed implementation plan prepared for individual projects which spells out techniques, procedures, data and analytical requirements, replicate requirements, peer review procedures, and other

procedures that will assist the project team in obtaining information and data at the desired level of confidence. The QAPP is essentially the working document governing data collection, and field and laboratory principles of sample collection and analysis. Project-specific QAPPs will be prepared and reviewed for individual work assignments, according to a standard format dependent upon the project type. In general, the QAPP will follow the guidelines and formats specified by EPA and FDER publications and amendments. These will include "Interim Guidance and Specifications for Preparing Quality Assurance Project Plans,"(EPA, QAMS 005/80, EPA-600/4-83-004) and others, as issued.

5.3.4 Field Operations Support Functions

The site manager is responsible for specifying and requesting equipment necessary for each field operation under the Navy program. The site manager, assisted by the Site Safety Coordinator (SSC) and the equipment coordinator, determines the types and amounts of equipment needed to execute the fieldwork, based on the work plan, site safety plan, and QAPP. The SSC must approve the site manager's proposed list of safety equipment before field operations at a site may begin. The equipment required for work under the Navy program will be classed as either expendable or non-expendable. The project manager will audit for proper use of equipment.

The site manager will determine the type and number of analyses necessary for execution of a project, based on the work plan and QAPP. Additional health monitoring analyses may also be required under the health and safety plan.

Chemical analyses will be performed at the ASC. The facility is located in Buffalo, N.Y., adjacent to the Buffalo International Airport. The ASC is in the process of obtaining approval by the Navy to conduct analyses associated with the NACIP program.

E & E's ASC is chemically and biologically certified, staffed by full-time scientists and technicians, and equipped with state-of-the-art instrumentation for the full range of water, air, biota, and soil quality parameters. Laboratory work will be performed in accordance with guidelines and protocol established by EPA, FDER, the Water Pollution Control Federation, and the American Society for Testing and

Materials (ASTM), where appropriate/available. Methods will be developed for other tests which may be required for site-specific conditions, and undergo the same rigorous QA/QC checks as established procedures. QA and QC programs are conducted for instruments and analytical procedures.

For initial stages of sampling, the ASC will provide analytical screening capabilities. Analytical screening will consist of soil, sediment, and water analyses for hazardous substances on a qualitative basis. Subsequent verification analyses of environmental and QA/QC samples will be performed at the ASC according to standard approved methods.

5.3.5 Health and Safety Procedures

The project manager is assisted by a Health and Safety Officer responsible for overseeing the health and safety program in conjunction with this project. For more information concerning the health and safety program for this contract, please refer to the project General Health and Safety Plan (GHSP).

5.3.6 Additional Support Services

Additional technical and management support functions may be required in certain situations. These services are tasked on a case-by-case basis, and are most often assigned individually to support ongoing efforts for the various work phases at each site. Five basic task items fall into this category, as follows: remedial oversight support, community relations support, data management support, analytical support, and other technical support (e.g., publications).

Corporate Publications Group support will provide technical review, editing, and graphics needed to complete RI, RFI, and FS, Risk Assessment, and any other major reports. Progress reports will be edited and reviewed by the publications support staff in the E & E Tallahassee office.

Other support services include drafting/blueprint development, computer services/programming/software applications, computer-aided drafting and design (CADD) services, and literature/information computer searches.

5.3.7 Report Approval Process

A 90% draft, draft final, and final of RI, RFI, FS, and Risk Assessment reports will be submitted. These reports will include a copy of all data, and will describe, discuss, evaluate, and interpret the data, and make recommendations. The 90% draft will be presented to the Navy for review. After receiving formal comments from the Navy, E & E will **incorporate the comments into a draft final for delivery to TRC** members. At a meeting with the TRC, E & E will discuss and review comments and the Navy's responses in the draft final. Table 5-1 lists members of the TRC who will receive submittals. Following discussion of comments with the TRC on the draft final, appropriate comments will be incorporated into the final report. The following is a general summary of the report production schedule.

<u>Report</u>	<u>Submittal Date</u>	<u>Navy Review</u>	<u>TRC Review</u>
90% Draft	--	60 days	
Draft Final	15 days after receipt of formal comments from EIC	45 days	120 days
Final	45 days after discussion of formal comments with TRC		



Table 5-1

CLIENT AND REGULATORY STAFF TO RECEIVE REPORT SUBMITTALS

- A. SOUTHDIV Commanding Officer
(Attn: Code 11433)
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive, P.O. Box 10068
Charleston, SC 29411-0068

- B. NAS PENSACOLA Commanding Officer
Naval Air Station, Pensacola
(Attn: Mr. DeWayne Ray)
Building 1754, Code 18220
Pensacola, FL
(904) 452-4515

- C. EPA Environmental Protection Agency
Federal Facilities Coordinator
Region IV (Attn: Mr. Author Linton)
345 Courtland Street N.E.
Atlanta, GA 30365

- D. FDER
(Headquarters) Florida Department of
Environmental Regulation
Twin Towers Office Building
(Attn: Eric Nuzie)
2600 Blair Stone Road
Tallahassee, FL 32361
(904) 488-0190

- E. FDER Florida Department of
Environmental Regulation
(Attn: Mr. Bill Kellenberger)
160 Governmental Center
Pensacola, FL 32501
(904) 436-8300

6. SCHEDULE

[The overall project schedule is contained in the Federal Facilities Agreement Site Management Plan (PPASHP) for the **NAS** Pensacola project. The project schedule in the FPASHP will be updated yearly to reflect factors such as progress of the investigations, changes in available funding, changes in existing site conditions, or the discovery of new sites which require investigation. The individual work plans contain group- or site-specific project schedules.]

APPENDIX A

BIOGRAPHICAL SUMMARIES



EDUCATION:

M.S., Urban Environmental Geology, University of Missouri at Kansas City
B.S., Geology, University of Missouri at Kansas City
A.A., Haple Woods Community College

EXPERIENCE:

Mr. Rudy is a Registered Professional Geologist in Florida as well as a Certified Professional Geological Scientist (American Institute of Professional Geologists). Since mid-1988, he has been the manager of E & E's Tallahassee office, responsible for E & E operations in Florida and the southeastern United States. He has both led and participated in over 100 hydrogeologic investigations at hazardous waste, underground storage tank (UST), and other bulk storage facility sites nationwide. During these investigations, Mr. Rudy has managed geophysical surveys and developed ground water monitoring networks directed toward the physical and chemical hydrogeologic characterization of aquifer systems.

As E & E's project director for major projects in the southeastern United States, Mr. Rudy has overall responsibility for study design, application of appropriate field and analytical techniques, resolution of technical problems, attainment of QA/QC objectives, and meeting of schedule/cost guidelines. He makes certain that client needs have been met by the technical teams assigned to each project, and provides E & E project managers with direct access to any additional, specialized, in-house expertise that may be needed during the course of a project.

As principal in charge for E & E's major contract to provide petroleum product UST-related services to the Florida Department of Environmental Regulation (FDER), Mr. Rudy holds responsibility for all contractual issues as well as all technical work. This work is being conducted concurrently at multiple locations throughout Florida. As program manager for E & E's ongoing nationwide petroleum product assessment/environmental audit contract with Ryder Truck Rental, Inc., and hazardous waste site services contract with FDER, Mr. Rudy directs all work assignments, including those for contamination assessments (CAs), remedial investigations (RIs), feasibility studies (FSs), engineering design, and remedial construction services.

As project manager for the Petroleum Products Corporation Superfund Site RI/FS and Silvex Solvent Spill Site CA, he supervised characterization of soil and ground water contamination, modelling of hydrogeologic conditions, and provision of information concerning available remedial technologies and associated costs. As project hydrogeologist for the Sapp Battery Superfund Site RI/FS, Mr. Rudy successfully developed the necessary data base required to support his subsequent modelling of contaminant migration in the highly complex karstic multi-aquifer system underlying the site.

EDUCATION:

H.S., Hydrology, University of Arizona
B.S., Geology, magna cum laude, University of Arizona

EXPERIENCE:

Hr. Dumeyer, a registered Professional Engineer and Professional Geologist, has 22 years' experience in hazardous waste site investigation, interdisciplinary remedial investigation/feasibility study (RI/FS) management, and water pollution control. Both as a project engineer/manager and as manager of the water resources section of a consulting engineering firm, his project leadership responsibilities have encompassed daily technical operations, quality assurance and quality control, and schedule and cost control for engineering design and field operations. He has led the development/implementation of groundwater investigations, managed studies of groundwater and surface water interrelationships, and designed and supervised the construction of monitoring-well networks.

For several major oil companies (e.g., Mobil Oil and Tenneco Corporation) at facilities throughout Florida, Mr. Dumeyer led 18 contamination assessments and hydrogeological investigations of groundwater pollution derived from leaking underground petroleum tanks, including the emergency recovery of free product and design/implementation of remedial actions to pump and treat contaminated groundwater. As project manager for the design and construction of a 3,200-foot municipal wastewater injection well for the City of Hargate, Florida, he was responsible for permit acquisition, remedial design, development of plans and specifications, liaison with the Florida Department of Environmental Regulation Technical Advisory Committee, bidding and contract processing, construction inspection and management, and schedule and cost control.

Hr. Dumeyer designed the cleanup system for gasoline-contaminated groundwater as part of E & E's environmental contamination assessment, hydrogeological investigation, and corrective action planning for leaking underground storage tanks at three sites in Wacissa, Florida. This work, conducted for the Florida Department of Environmental Regulation, involved pumping to recover free product and contain the contaminant plumes and extraction of contaminants from the aquifer to comply with state-specified criteria.

As manager of the interdisciplinary RI/FS for the MidSouth National Priorities List (NPL) hazardous waste site in Arkansas, Mr. Dumeyer was responsible for project schedule and cost control, coordination of work with engineering subcontractors, preparation of status reports, and presentation of the monthly and three major summary reports to the United States Environmental Protection Agency (EPA). In addition, in Florida, he managed the development, for EPA, of an RI/FS work plan for the Pepper Steel NPL site in Miami, which was contaminated with waste oil containing polychlorinated biphenyls.

EDUCATION:

B.S., Environmental Engineering, Purdue University

EXPERIENCE:

Mr. Wilcox leads E & E's engineering group, responsible for hazardous waste management, environmental engineering studies, and engineering design services. His projects have included design strategies addressing both surface and subsurface contamination and site closure plans. A registered Professional Engineer, he has evaluated hazardous material storage and handling operations at landfills, bulk storage tank areas, pesticide manufacturing facilities, and lagoons and has provided recommendations for regulatory compliance and corrective action. He led the development of E & E's Remedial Action Technology Management Information System (RATMIS) computer data base, which provides up-to-date information concerning the latest, state-of-the-art hazardous waste mitigation technologies. In addition, Mr. Wilcox provides quality assurance (QA) for specific projects.

Mr. Wilcox directed and provided QA for E & E's multimillion-dollar management contract with the Commonwealth of Pennsylvania to develop remedial action master plans and work plans for Superfund sites located throughout the state, procure contractors to implement initial remedial measures and perform remedial investigations/feasibility studies, and subsequently provide overall management of contractor activities. For the United States Army Corps of Engineers, Mr. Wilcox is E & E's project manager for a full-scale field reconnaissance, remedial design, and construction project at the National Priorities List site in Bridgeport, New Jersey, involving the single largest Superfund allocation to date, totalling over \$55 million. The project entails the surface cleanup of over 90 tanks, process vessels, drums, and tank trucks; the cleanup and incineration of waste oils, waters, and sediments located in a 13-acre lagoon area; and long-term monitoring of local groundwater and surface water.

Mr. Wilcox directed E & E's multidisciplinary engineering team providing QA at the Hyde Park landfill in Niagara Falls, New York. He reviewed and assisted in developing plans, specifications, and construction documents for treatment, storage, and disposal facilities, including a permanent leachate storage, separation, and transfer facility; an aqueous leachate treatment facility utilizing an activated carbon purification system; and a temporary on-site containment system for nonaqueous-phase leachate. In addition, for the State of Florida, Mr. Wilcox managed E & E's feasibility study (including evaluation of over 50 technologies, risk analysis, conceptual design, cost-effectiveness analysis, and community relations) for the cleanup of the Whitehouse Oil Pits, a National Priorities List site containing polychlorinated biphenyls.

EDUCATION:

B.A., Anthropology, Florida State University

EXPERIENCE:

Mr. Barksdale has five years' experience in the hydrogeologic investigation, geophysical logging, and groundwater modeling for hazardous and solid waste sites and sites containing leaking underground storage tanks (USTs) in the southern United States, including Florida and Mississippi. He has extensive experience in assessing the geologic factors affecting the variability/distribution of hydraulic conductivities.

Hr. Barksdale was E & E field team leader for investigations to determine the extent of petroleum contamination from leaking UST sites at trucking terminals in Miami, Florida; and Bridgeport, Connecticut. He developed the environmental assessment work plans, conducted pump and slug tests to determine aquifer characteristics, supervised the installation of groundwater monitoring wells, supervised the tightness testing of several USTs and associated piping, and coordinated the efforts of cleanup contractors for the removal of diesel-fuel contaminated soil.

For the United States Army Corps of Engineers, Hr. Barksdale managed E & E site investigations in Columbia, South Carolina; and Gadsden, Hississippi. His duties entailed development of quality assurance project plans, health and safety plans, and sampling work plans; field supervision of the sampling; and preparation of reports.

For the Northwest Florida Water Management District, Mr. Barksdale assisted in the hydrogeologic investigation of 40 solid waste landfills. His work included site inspection, monitoring-well sampling, and completion of a hydrogeologic assessment of each landfill's potential to contaminate groundwater. He also evaluated remedial options for five of the landfills: the Blue Mountain Landfill in Walton County, Port St. Joe Landfill in Gulf County, Wright Landfill in Okaloosa County, Santa Rosa Central Landfill in Santa Rosa County, and Chipley Landfill in Washington County. Mr. Barksdale also directed a two-month groundwater tracer study in southern Leon County in a fractured karst aquifer setting, in order to determine the impacts of surface water recharge through a sinkhole on groundwater quality in the Floridan Aquifer. He conducted a multiwell aquifer test on the Floridan Aquifer in the vicinity of Quincy, Florida. In addition, Mr. Barksdale operated the District's borehole geophysical logging unit and designed/implemented an ambient groundwater monitoring network, which included the design/contracting for installation of monitoring wells, collection of geologic samples while drilling, performance of aquifer tests, and interpretation of geophysical logs and water quality data. His other assignments for the District included groundwater flow and contaminant transport modeling, assessing the vulnerability of the various aquifer systems to contamination (DRASTIC mapping), and coordinating the activities of field personnel.

EDUCATION:

L.L.H., Environmental Law, George Washington university School of Law
J.D., William and Mary College of Law
B.A., Government, American University

EXPERIENCE:

Mr. Cornelius has served as the United States Navy's lead environmental advisor for the past 12 years. During the past five years, he has been the Navy's chief legal advisor for all legal policy and litigation involving the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). As the environmental legal advisor to the Secretary of the Navy, he was the Navy's representative in all negotiations involving the United States Department of Defense and United States Environmental Protection Agency regarding compliance issues arising under CERCLA and RCRA. He has worked closely with the Headquarters and all Engineering Field Divisions (EFDs) of the Naval Facilities Engineering Command (NAVPACENGCOCM) on the resolution of complex hazardous waste problems on a site-specific basis. In particular, Mr. Cornelius has worked closely with NAVFACENGCOCM Western Division personnel on projects such as the litigation at Naval Weapons Station Concord, a complex hazardous waste site; and with regard to the hazardous waste site problems at Hunter's Point Naval Shipyard, Marine Corps Air Station Tustin, and Naval Air Station Moffit Field. He also has experience with the complex RCRA issues associated with the generation of hazardous waste at all Navy and commercial shipyards in California. In addition, Mr. Cornelius recently completed the preparation of the Navy's compliance manual for CERCLA and SARA. This manual delineates Navy policy guidance concerning the Navy's Installation Restoration Program.

As the Department of the Navy's chief environmental lawyer, Mr. Cornelius has directed the overall environmental law program, including the hazardous waste policy, land use management, and energy and natural resource management. His litigation experience since 1977 includes briefing two of the Navy's major environmental cases for the United States Supreme Court, and assisting the Solicitor General in the preparation for oral arguments. Mr. Cornelius also has handled all aspects of several cases involving environmental law before four different United States Circuit Courts of Appeals. He has tried dozens of environmental law cases in 18 United States Federal District Courts.

Re also worked for two years as the assistant counsel to the Navy's Supervisor of Shipbuilding (SUPSHIP), responsible for advising SUPSHIP regarding environmental law, government contract law, and labor law. He prepared Navy negotiating positions on several issues involving \$750-million claims, including environmental costs. He also was responsible for environmental litigation and administrative hearings regarding equal opportunity employment and labor law issues.

EDUCATION:

B.A., Chemistry, Illinois College

EXPERIENCE:

Mr. Yeates' 31-year background encompasses all facets of administration and quality assurance (QA) for major hazardous waste investigation/remediation programs and analytical laboratory operations. At E & E, he leads the development, review, and approval of standard operating procedures affecting all data collection activities; directs the development of QA policies and procedures; and oversees the preparation, review, and approval of hazardous waste site QA project plans. Supported by an interdisciplinary staff of technical personnel, health and safety specialists, cost analysts, and contract specialists, Mr. Yeates reports directly to E & E's president. He leads independent field and office QA reviews/audits of project development/implementation and provides coordination with client project officers to discuss/resolve difficulties.

During nine years as deputy director of the Region V Environmental Services Division of the United States Environmental Protection Agency, (EPA) in Chicago, Mr. Yeates directed a multidisciplinary staff of 150 professionals that provided QA, environmental monitoring, data management/analysis, specialized technical support, and laboratory services. He also managed the \$16.5-million Region V Superfund hazardous waste site field investigation team contract that involved the full-time participation of 60 engineers and scientists. He was a major contributor to the development of the performance-based (award-fee) contractor evaluation system that was implemented nationwide for EPA Superfund contractors. He also participated EPA Headquarters task forces to address Superfund program issues and developed a planning and accountability system that resulted in better resource utilization and higher performance results for division personnel.

For three years with EPA's Management Division in Chicago, Mr. Yeates directed a staff of 99 professionals providing planning/evaluation, personnel, budgeting, automated data management, financial management, and purchasing support for the Region V staff of about 850 people. He also streamlined operations to improve quality and maintain the division's level of service while enabling a 20% reduction in staff.

In addition, for three years, Mr. Yeates directed EPA's first Central Regional Laboratory in Region V, a state-of-the-art facility providing complete analytical services for environmental samples. He organized, staffed, and equipped the facility, motivating the 35 personnel to achieve program results that far surpassed upper-management expectations. He oversaw the development of new analytical methods that had agencywide application. The laboratory received the Bronze Medal Award from the Regional Administrator, was cited as a "Center of Excellence," and became the model for other EPA regional laboratory facilities.



EDUCATION:

Ph.D., Environmental Engineering Sciences, University of Florida'
M.S., Environmental Engineering Sciences, University of Florida
B.A., Biology, cum laude, Bowdoin College

EXPERIENCE:

Dr. Angley, a Certified Hazardous Materials Manager (CHMM), specializes in water chemistry and solid and hazardous waste engineering management. For E & E's hazardous waste site engineering assignments, he assists in the identification, evaluation, screening, development, and design of remedial alternatives; prepares bid documents and specifications; and assists in subcontractor evaluation, selection, and monitoring. He also is a member of E 6 E's biotechnology working group, responsible for coordinating information concerned with the in-situ bioremediation of contaminated aquifers.

Dr. Angley has participated in site inspection, remedial investigation (RI), and feasibility study (FS) activities at over 30 sites in the mid-western and southern United States. His responsibilities have included work plan development, multimedia sampling, data interpretation, risk assessment, remedial alternative evaluation, and report preparation. Dr. Angley managed a remedial investigation, designed a waste lagoon system, and supervised its construction for a major trucking firm in New York. During construction, he conducted on-site gas chromatograph analyses for selected environmental pollutant indicator parameters. At the Love Canal Superfund site in Niagara Falls, New York, he led the 11-person field team that collected dioxin-contaminated soil samples. His responsibilities included team mobilization, coordination of the sampling effort with Region II of the U.S. Environmental Protection Agency, data interpretation, report preparation, and quality assurance/quality control (QA/QC) maintenance.

At the University of Florida at Gainesville, Dr. Angley was a research associate for an aquifer restoration project that required his detailed supervision and performance of chemical and biological analyses of ground water and soil samples; training of project staff, and direction of the QA/QC program. This project gave him "hands-on" experience in a variety of investigation-related areas, including monitoring well installation/development, hydrogeologic characterization, analytical method development, gas chromatograph/mass spectrometer (GC/MS) analysis, nutrient analysis, and the determination of microbial activity and enumeration. A staff scientist for the Florida Temik Project--a statewide program conducted by the university under a grant from the U.S. Environmental Protection Agency--he collected samples and implemented QA for the monitoring of Temik in municipal water supplies.

EDUCATION:

M.S., Geology, University of Florida
B.S., Earth/Space Sciences, State University of New York at Stony Brook

EXPERIENCE:

Mr. Levine has 14 years' experience in hydrogeological evaluation, hazardous waste site investigation and remediation, and technical writing. His work at E & E entails the development and installation of groundwater monitoring networks throughout the State of Florida; collection of groundwater, surface water, sediment, and soil samples; completion of sample field screening and soil-gas surveys using portable field instrumentation; performance of geophysical investigations involving magnetometer, electromagnetic conductivity, resistivity, and ground-penetrating radar surveys; interpretation and evaluation of analytical laboratory data; computer-assisted hydrogeological analysis; determination of site hydrogeological conditions, including the nature of contamination, surface and subsurface migration pathways, and sensitive receptors; and participation in the selection, evaluation, and design of appropriate remedial measures.

Mr. Levine was E & E's project manager for the site screening contract with the Florida Department of Environmental Regulation. He was responsible for the management of 25 site investigations throughout Florida to be completed within 120 days. The work included development of work plans, quality assurance project plans, and health and safety plans; and subsequent sampling at the sites to obtain data necessary to calculate federal Hazard Ranking System site scores to determine priorities for cleanup.

Mr. Levine was hydrogeological task leader for E & E's full-scale site characterizations and studies of the extent of contamination at several hazardous waste sites in Florida, including the Silvex site near St. Augustine, a petrochemical facility and the Petroleum Products Corporation site in Miami, and the pesticide-contaminated Southern Crop Services site in Delray Beach.

While employed by the Florida Department of Environmental Regulation, Mr. Levine managed state activities involving the Construction Grants Priority List for Wastewater Treatment Works. As part of this function, he led evaluations of resource conservation and public health hazard claims used in developing the annual priority list; assisted in the revision of the Construction Grants Program Rule, Chapter 17-50 of the Florida Administrative Code; and reviewed and edited state environmental information documents and federal environmental assessments.

EDUCATION:

Ph.D., Biochemistry, University of Nebraska at Lincoln
M.S., Plant Pathology, Kansas State University
B.S., Biology, University of Nebraska at Omaha

EXPERIENCE:

Dr. Frantzen specializes in the application of biotechnology to hazardous waste problems, development/oversight of treatability studies, and toxicological and risk/endangerment assessments. He has reviewed toxicological and biochemical data concerning contaminant concentration and persistence at hazardous waste sites; provided quality control; and recommended appropriate mitigative measures and full-scale corrective actions, including biological treatment. He has developed bioassays to measure toxic response; radiotracer assays to evaluate toxin migration, bioaccumulation, and degradation; and associated analytical chemical methods to determine metabolic rates and effects on vital enzymatic functions. He also has provided expert consultation on the toxicological/pathological dangers associated with the use of bacteria to treat contaminated surface soil.

Dr. Frantzen was E & E task leader for a risk assessment of groundwater contamination by hexavalent chromium (Cr VI) at a site in California and provided support to the remedial investigation/feasibility study engineering team concerning the chemodynamics of chromium in the environment. The risk assessment and associated sampling/analyses addressed concern over use of the groundwater for irrigation of alfalfa, the watering of dairy cattle, and various other domestic activities that had the potential for human exposure. Because field workers also used the groundwater for bathing, E & E also set up a shower with a cascade impactor to measure Cr VI concentrations in variously sized aerosol droplets generated during bathing. In addition, Dr. Frantzen was responsible for monitoring subcontracted services of a veterinarian for the gross pathological examination of dairy cattle and associated tissue analyses for Cr VI.

For the United States Army Corps of Engineers, Alaska Division, he was E & E project manager/lead toxicologist for an assessment of the potential human health risks associated with a site on Fort Wainwright, Alaska, that contained polycyclic aromatic hydrocarbons, benzene, and very high levels of nickel and barium.

In addition, Dr. Frantzen managed E & E's review of the design and implementation of *in-situ* bioremediation to clean up a 30,000-gallon gasoline spill at a large manufacturing site near St. Louis, MO. The project included his independent review of all site characterization, hydrogeological, and treatability study data; review of design plans and cost estimates; and development of a mathematical model to predict the clean-up time frame.

EDUCATION:

B.S., Chemistry, cum laude, University of Sussex, Great Britain

EXPERIENCE:

As director of E & E's Analytical Services Center (ASC), Mr. Clifton has overall responsibility for the facility's operation as a multifunctional, high-quality environmental laboratory. He directs a staff of over 40 professional chemists and ensures that the laboratory quality assurance/quality control (QA/QC) program, laboratory and field sample chain-of-custody documentation and reporting procedures, and laboratory safety protocol continuously incorporate the most current methodologies.

Hr. Clifton was instrumental in attaining the ASC's participation in the United States Environmental Protection Agency Contract Laboratory Program (CLP) for the organic analysis of Superfund site samples. For this contract, Hr. Clifton is responsible for maintaining the ASC's state-of-the-art capabilities in gas chromatograph/mass spectrometer (GC/MS) and GC/electron capture detection instrumentation, and for insuring that the laboratory produces data that will withstand scrutiny in administrative and judicial proceedings. In the three years that E & E has participated in the CLP, the ASC has always placed among the top 10 laboratories nationwide. In fact, since 1984, the ASC has received a 96.7% average proficiency rating and was the only such facility in the country to score 100% on its 1988 first-quarter proficiency inspection.

With 18 years' experience as an analytical chemist, Hr. Clifton has managed and performed analyses of environmental samples for routine indicators of pollution as well as for specific pollutants such as pesticides, polychlorinated biphenyls and other toxic organics, and heavy metals. He was the manager of the environmental and analytical laboratory operated by E & E for the Royal Commission for Jubail and Yanbu at Madinat Yanbu Al-Sinaiyah, Saudi Arabia, where he was responsible for the analysis of seawater, groundwater, sanitary and industrial wastewater, and drinking water using atomic absorption, autoanalysis, GC/MS, and classical laboratory techniques. He conducted ambient air and upper air monitoring using state-of-the-art automatic air quality instrumentation and meteorological equipment. As laboratory manager, he provided QC and appropriate sample chain of custody, and he conducted and directed laboratory data computation and report preparation activities. In addition to his laboratory duties, he assisted in the extensive underwater biological surveys conducted at Yanbu.

EDUCATION :

M.E., Science Education, State University of New York at Buffalo
B.S., Chemistry, State University of New York at Buffalo

EXPERIENCE:

Ms. Schuessler, a Certified Hazardous Materials Manager (senior level) with eight years' experience, leads E & E's quality assurance (QA) team in the development/review of hazardous waste site QA project/program plans and review/interpretation of associated analytical data using United States Environmental Protection Agency (EPA) Contract Laboratory Program protocol and E & E QA guidelines. She has both technical and managerial experience in working with state agencies in the development/implementation of remedial investigation/feasibility study (RI/FS) activities. Her work has involved the use of a wide range of field and laboratory analytical methods and instrumentation, including gas chromatographs, mass spectrometers, inductively coupled argon plasma units, atomic absorption spectrometers, and classical wet chemical methods; as well as the use of specialized computer analysis programs. She has investigated the chemical and biochemical effects of hazardous and toxic substances and performed organic and inorganic analyses of water, sediment, soil, and sludge.

Hs. Schuessler was E & E project manager for an RI/FS conducted for the New York State Department of Environmental Conservation at the Madison Wire site in Buffalo, New York. For the RI, she led the implementation of field activities including the installation of 11 monitoring wells; completion of 40 soil borings; performance of eight constant-head pumping tests; and collection of sediment, surface water, groundwater, and building material samples. She validated and interpreted analytical results and prepared a contaminant assessment and a final RI report. For the FS, she managed the formulation and screening of remedial technologies, risk assessment, and development of the conceptual design for the recommended alternative.

Ms. Schuessler assisted the Pennsylvania Department of Environmental Resources in the development of technical and managerial rationale for site-specific RI/FS work plans, remedial action master plans, and QA project plans prepared in accordance with the National Oil and Hazardous Substances Contingency Plan and Superfund guidelines, as part of E & E's support to the state for the state/EPA cooperative agreement. She also managed E & E's oversight of the implementation of RI/FSs for the Berks Sand Pit site, Havertown Pentachlorophenol site, Welsh Road/Barkman Landfill, East Mount Zion Landfill, Dorney Road landfill, and Voortman Farm sites. In addition, she participated in the development and implementation of the community relations program for Pennsylvania state Superfund sites.

EDUCATION:

Ph.D., Environmental Health, University of Cincinnati College of Medicine
BA., Biology, Canisius College

EXPERIENCE:

As corporate director of toxicology/health and safety, Dr. Jonmaire is responsible for all E & E health and safety programs, including the personnel medical monitoring program, respiratory protection program, and training programs for both hazardous substance site investigation and emergency response. He oversees all health and safety-related equipment management activities and directs the operation and maintenance of the medical-toxicological (HED-TOX) computer data base. In addition to his five years with E & E, he has six years' background in toxicology with the chemical industry, establishing protocol and providing quality control for the performance of toxicological testing by contract laboratories; and developing appropriate strategies for legal proceedings based on the results of toxicological analyses, hazard and risk assessments, and determinations of compliance with applicable government standards and regulations.

For the Hyde Park, New York, federal Superfund site, Dr. Jonmaire was a major contributor to the comprehensive environmental and human health risk assessment of potential exposure to industrial workers and the public, including individuals ingesting contaminated fish or drinking water. The results of the risk assessment were used to determine the extent of remediation required for the landfill wastes; to select, screen, and identify the most appropriate remedial alternatives for Bloody Run; and to identify the most appropriate mitigative technologies for on- and off-site monitoring, treatment, and disposal.

Dr. Jonmaire also was a special advisor to the United States Environmental Protection Agency regarding the analysis of worker and public health and safety risks posed by potential airborne exposure to hazardous chemicals from the Hyde Park landfill. As part of this Requisite Remedial Technology program, he directed the preparation of the Industrial Protection Program (IPP) to address chemical volatilization from the overburden and surface drainage areas into nearby industrial facilities. The IPP included a detailed air toxics inspection/survey and the recommendation of alternative abatement actions to eliminate risks. Dr. Jonmaire also participated in the development of the Gorge Face Seep Program and the Residential/Community Monitoring Program.

For an active UNOCAL site in Florida, Dr. Jonmaire managed E & E's delineation of hazardous waste constituents under the Resource Conservation and Recovery Act, developed exposure scenarios, and applied computer modeling to complete the site risk assessment.

EDUCATION:

B.S., Industrial Hygiene/Environmental Toxicology, Clarkson University

EXPERIENCE:

Hs. Hiller is regional safety coordinator for E 6 E's Tallahassee office. In this role, she keeps detailed records of personnel training histories, conducts fit-testing for respirator usage, and schedules and holds annual refresher training programs. Ms. Hiller also participates in E & E's industrial hygiene surveys and evaluations, public health and environmental endangerment and risk assessments, and toxicological evaluations. She uses E 6 E's medical/toxicological (MED-TOX) data base to determine the characteristics and potential effects of substances involved in spills and detected at hazardous waste disposal sites.

Hs. Hiller was responsible for site safety during E 6 Es remedial investigation (RI) of 18 sites at the 2,003-acre Norton Air Force Base in California. The sites included bulk petroleum, waste oil, and chemical storage facilities; suspected spill areas; fire response training sites; and former waste disposal areas. Ms. Hiller monitored ambient air using portable instrumentation and ensured that the sample collection teams used the appropriate protective clothing and safety equipment.

Ms. Hiller also served as site safety officer during the RI at the Bridgeport Rental and Oil Services Superfund Site in New Jersey. She monitored air quality and safety procedures, held daily meetings to ensure that site personnel were familiar with the site safety plan, and assisted in decontamination procedures.

Hs. Hiller also was a site safety officer at Cove Canal, New York, where she was responsible for implementing the site safety plan as a member of the sampling team. She collected, packaged, and documented dioxin samples according to protocol established by the U.S. Environmental Protection Agency. Hs. Hiller also worked as a survey team member at this site, responsible for locating and documenting sample locations. Her previous sampling experience includes work at the BDT facility in Clarence, New York; and at Porter Air Force Base in Lewiston, New York.

Hs. Hiller has worked on several E & E asbestos survey and abatement projects. For example, she was project manager for an asbestos sampling survey conducted in Buffalo, New York; and she was site safety officer, responsible for implementation of the site safety plan and air monitoring for asbestos during removal activities, during work conducted on behalf of the Williamsville, New York, School District.

EDUCATION:

M.S., Environmental Science (Health), George Washington University
B.S., Chemistry, Carnegie-Mellon University

EXPERIENCE:

With 15 years' experience in toxicology, chemistry, biometry, and environmental transport modeling, Hr. Weinstein specializes in toxicological risk and endangerment assessment. He has led over 30 comprehensive risk assessments for hazardous waste sites, incinerators, and chemical process emergencies. He systematically interprets the results of field investigation data to screen media-specific contaminants of concern, transport routes, human populations at risk, and sensitive environmental receptors. Using procedures that he has personally developed, as well as guidance documents, he systematically identifies/evaluates the most significant risks and derives toxicity-based cleanup goals.

Hr. Weinstein led assessments of human health risks posed by dioxins, polychlorinated biphenyls (PCBs), metals, and other pollutants at the Hyde Park and Bloody Run federal Superfund sites in New York. For the Sapp Battery and Petroleum Products federal Superfund sites in Florida--as well as the Silvex and SCS state Superfund sites in Florida, the Dead Creek sites in Illinois, and the Chatham Brothers Barrel site in California--he conducted comprehensive, multimedia human health and environmental risk assessments for lead and other heavy metals, petroleum products, and related compounds. Human exposure routes evaluated included ingestion and inhalation of contaminated soil particles and ingestion of contaminated drinking water and fish. Based on the assessments, Mr. Weinstein developed media-specific cleanup criteria that were used for the selection, screening, and design of remedial alternatives.

He conducted similar risk assessments involving potential human health threats posed by heavy metals and organic chemicals at sites being investigated under contract to the United States Air Force. For example, he performed a risk assessment for Whiteman Air Force Base (AFB), where E 6 E conducted a confirmation study of 14 sites: two low-level radioactive waste disposal areas; five landfills; and areas for underground fuel storage tanks, chlordane application, and drum storage. He also managed the risk assessment of 20 separate sites on Norton AFB.

In addition, Mr. Weinstein prepared E & E's comprehensive risk assessment for the Swanson River Field, a controversial site containing elevated levels of PCBs and located on the Kenai National Wildlife Refuge in Alaska. For this project, he completed a comprehensive review of toxicological data and United States Environmental Protection Agency (EPA) guidelines. The resulting recommended, well-documented cleanup level based on site-specific risks served as the basis for the Record of Decision between EPA, the United States Fish and Wildlife Service, the State of Alaska, and E 6 E's client.

EDUCATION:

M.B.A., Rutgers University

B.S., Civil Engineering, magna cum laude, Lehigh University

EXPERIENCE:

A registered Professional Engineer with 17 years' experience, Mr. Whitman is E & E design manager, responsible for coordinating engineering evaluations and design activities for hazardous waste facilities, including handling, treatment, storage, and disposal operations. He directs the development, screening, and selection of site-specific alternatives; completion of conceptual designs for preferred alternatives; completion and evaluation of associated cost estimates; and preparation of plans/specifications and evaluation/selection of site contractors. As E & E construction services manager, Mr. Whitman is responsible for contract administration, review of contractor submissions, ensuring contractor compliance with contract documents, resolution of problems that develop in the field, and coordination between design personnel and field inspection personnel. He has managed construction projects requiring a diverse knowledge of many engineering fields, including earthwork, rock excavation, tunneling, rock support, grouting, concrete construction, water and wastewater piping, electrical systems, automated controls, and various mechanical systems; as well as computer-assisted modeling and design applications;

Mr. Whitman is E & E's civil projects coordinator for the LaSalle Electrical Utilities (LEU) Phase I abatement program, a \$20-million construction project to remediate polychlorinated biphenyl (PCB) contamination of soil and groundwater at an abandoned electrical equipment manufacturing site in a residential neighborhood. For this high-visibility, sensitive project conducted under short time constraints, Mr. Whitman developed, screened, and selected site-specific alternatives; completed conceptual designs for the preferred alternative (incineration, storage, transportation, and disposal of PCB-contaminated soil and incineration residues, followed by site restoration); completed and evaluated associated cost estimates; and supervised the interdisciplinary team preparation of plans/specifications and evaluation/selection of site contractors. In all, approximately 32,000 cubic yards of contaminated soil will be incinerated and 27 residences will be decontaminated. For these activities, Mr. Whitman is assisting the on-site engineering inspectors in construction oversight activities.

Mr. Whitman also is managing LEU Phase II, which entails thermal destruction of soil; the collection, treatment, and disposal of contaminated groundwater; excavation of a creekbed; and cleaning of contaminated sewers. Under his aegis, E & E is designing and developing plans/specifications for this work. The design activities include computer modeling of groundwater flow and contaminant transport, design of a groundwater interception system and air-stripper treatment, and effluent testing.

EDUCATION:

H.S., Chemical Engineering, University of Toledo, Ohio
B.S., Chemical Engineering, Indian Institute of Technology, Bombay,
India

EXPERIENCE:

Hr. Shivjiani, a registered Professional Engineer (Florida), provides engineering support to E & E investigations of hazardous waste sites. He develops, evaluates, and recommends alternative remedial designs, as well as associated cost estimates and bid specifications, as part of remedial investigation/feasibility studies (RI/FSs).

As E & E project manager for the FS for the Silvex hazardous waste site in St. John's County, Florida, Mr. Shivjiani developed/evaluated alternatives and prepared associated cost estimates for the remediation of soil and groundwater contamination caused by a variety of priority pollutant metals and organics.

Mr. Shivjiani was responsible for all facets of project management for E & E's waste system, regulatory, and engineering evaluations for a petrochemical storage and distribution terminal in Miami, Florida--a UNOCAL site used for the distribution of nonhalogenated solvents and petroleum derivatives, as well as halogenated solvents--where there was concern for groundwater contamination by solvents and heavy metals including zinc, chromium, and copper. He provided liaison with federal, state, and county agencies to obtain operating permits for the oil/water separator; assessed the extent of contamination; and reviewed the best available technology, including associated cost estimates for soil and groundwater treatment as part of the FS, to assure compliance of the facility's discharge with current effluent limitations imposed by the United States Environmental Protection Agency.

For the State of Florida Department of Environmental Regulation, Hr. Shivjiani was project engineer for E & E investigations of six facilities containing leaking gasoline/petroleum product underground storage tanks (USTs) in Marion and Holmes counties, Florida. He evaluated corrective actions and completed a fast-track design to mitigate soil and groundwater contamination at four facilities. He also was team leader for E & E's soil sampling activities at Wacissa, Florida, to characterize the extent of contamination from leaking USTs.

In addition, for E & E's RI/FS for the Petroleum Products National Priorities List site in Florida, Mr. Shivjiani developed, screened, and evaluated a range of remedial alternatives; led the full-scale treatability study with tests for incineration, solubility, soil washing, and other treatment techniques; and developed a bench-scale test to determine the effects of the selected alternative (soil washing).

EDUCATION :

B.S., Civil Engineering, with honors, University of Florida

EXPERIENCE:

Ms. Diblin participates in background research, field investigations, regulatory compliance audits, permit acquisition assistance, and engineering design projects for hazardous waste sites, sites containing underground storage tanks, and industrial facilities in the southeastern United States. Her fieldwork includes sampling of soil, sediment, surface water, and groundwater; ambient air monitoring; and the monitoring of drilling and remedial contractors to ensure cost-effectiveness, timeliness, and compliance with contract stipulations and applicable permits and regulations.

Ms. Diblin is enrolled in the master's degree program in environmental and water resource engineering at the University of Texas at Austin. Her thesis, in process, concerns the computer modeling of pollutant transport in estuaries using a random-walk method. As part of her research, she implemented this method with the United States Army Corps of Engineers program GLVHT2, and developed a Fortran computer code to compare the random-walk with conventional methods. The results of this comparison were presented at the 1988 Convection-Diffusion Forum at the Massachusetts Institute of Technology. At the university, Ms. Diblin also assisted in field data acquisition to determine reaeration coefficients of Lavaca Bay, Texas.'

As an engineer assistant, she worked with Northwest Florida Water Management District engineers in reviewing dam permit applications, performing dam inspections, gathering data for morphometry studies of northern Florida lakes, and surveying drainage basins.

EDUCATION:

B.S., Petroleum/Natural Gas Engineering, Pennsylvania State University

EXPERIENCE:

With seven years' experience in the design, construction, and operation of water treatment programs, injection and production facilities, and fluid transfer systems, Hr. Hicks is proficient in the performance of engineering feasibility studies (FSs) and designs, development of engineering cost estimates, preparation of plans and specifications, coordination/supervision of contractors, and regulatory compliance.

As a field operations engineer in Big Spring, Texas, Hr. Hicks was responsible for drilling, production, regulatory compliance, and operational safety on 82 oil leases owned by Texaco, Inc. (Texaco). He designed oil and water production facilities and injection plants, prepared capital and expense budgets, supervised facility construction projects and remedial work on wells, and managed chemical treatment programs. He also was responsible for regulatory compliance.

As a Texaco division evaluation engineer in Denver, Colorado, Mr. Hicks was responsible for the evaluation of solicited and unsolicited purchase offers on properties located throughout the Rocky Mountain and central areas of the United States. He evaluated lease profitability, cash flow, development/exploration potential, gas contract specifics and market, future expenditures, and the tax consequences of sales.

Hr. Hicks also worked as a division development engineer with Texaco, responsible for the geologic and economic evaluation of drilling prospects. He investigated pressure, production, and decline histories; reviewed infill drilling results; predicted the size of reserves; and completed gas market analyses. He also evaluated farmout proposals, answered lessor demand letters, and prepared development plans. As a district reservoir engineer, Mr. Hicks calculated reserve size, conducted pressure build-up and flow test analyses, and completed and fieldwide profit improvement studies. His assignments included the scouting of coal-bed degasification projects in the San Juan Basin in New Mexico and the Piceance Basin in Colorado, and a water influx study for an 18,000-foot high-pressure sour gas reservoir in Sweetwater County, Wyoming.

As a Texaco area production engineer in Duncan, Oklahoma, Hr. Hicks was responsible for production operations for 150 oil wells. He designed rod, submersible, and transfer pump installations and recommended remedial work as needed. He wrote specifications for and supervised the construction of a \$10-million polymer injection/production facility and was responsible for the FS and design of an injection plant fuel gas dehydration system.

EDUCATION:

B.S. , Zoology, Arkansas State University

EXPERIENCE:

Hr. Hieber has investigated more than 40 hazardous waste sites throughout Florida, Texas, Louisiana, Arkansas, Oklahoma, New Mexico, California, and Alaska. He has served as site manager and safety officer for E & E's work at hazardous waste sites and landfills, and has led and conducted site sampling efforts and environmental assessments. Hr. Hieber has also provided ground water sampling and drilling supervision for E & E's remedial investigations to confirm and quantify contamination at 18 sites on the 2,003-acre Norton AFB in California; and he assisted the Air Force in leak detection and testing of several underground waste oil and solvent storage tanks.

Mr. Hieber participated in E & E's remedial investigation of a former petroleum product reprocessing facility in Pembroke Park, Florida, and at a pesticide-contaminated active crop-dusting maintenance facility in Delray Beach, Florida. At the IVC site in Fort Smith, Arkansas, he participated in site sampling for organic solvents, pesticides, and heavy metals; conducted the ecological assessment; and assisted in preparation of the technical report. He has also served as field team supervisor on underground storage tank (UST) investigations at 11 sites in Florida.

At McClellan Air Force Base (AFB) in Sacramento, California, Mr. Hieber was field project manager for E & E's identification of abandoned UST sites. In this capacity, he supervised the removal and closure of inadequate tanks, and assisted in the local permitting of 150 viable tanks. Mr. Hieber has also provided monitoring well installation/development and ground water sampling supervision during E & E's remedial investigation of 18 sites on the 2,003-acre Norton AFB in California.

In addition to his hazardous-waste-related experience, Mr. Hieber has completed numerous ecological and environmental assessments. For example, he spent several weeks in Puerto Rico and U.S. Virgin Islands conducting fieldwork for E & E's preparation of an environmental assessment regarding naval training operations. Hr. Hieber also conducted a water quality monitoring program at the Naval Air Station in Key West, Florida.

EDUCATION:

B.S., Geology, Ohio University

EXPERIENCE:

Mr. Walker has extensive experience in the geologic, hydrologic, and geophysical investigation of hazardous waste sites. He has conducted geophysical surveys; positioned and installed monitoring well networks; collected multimedia samples; performed hydrogeologic testing; evaluated the results of laboratory analyses to determine the nature, extent, migration pathways, and ultimate environmental fate of contaminants; and prepared reports. Hr. Valker provides geological and hydrologic input to E & Es design of remedial measures and monitors the work of on-site contractors for cost-effectiveness, adherence to contract stipulations, and compliance with applicable regulations and quality assurance/quality control requirements.

Hr. Walker was project manager for E & Es contamination assessment at the Reliable Circuits Solvent Spill Site in Clearwater, Florida. This investigation encompassed performance of a soil headspace survey to delineate areas of excessive soil contamination, collection of soil and ground water samples (from the existing monitoring well network) for quantitative analysis, slug tests on selected monitoring wells, data interpretation, and report preparation. This investigation revealed two previously undetected ground water contaminant plumes, possibly reflecting the drawdown effects of a multiwell recovery system that had operated at the site as part of an earlier remediation program.

Hr. Valker has also served as site manager for the six northeast Florida sites included in E & E's Superfund Site Screening Investigation contract with the Florida Department of Environmental Regulation. As part of this program, Hr. Valker was responsible for the installation of shallow and intermediate monitoring wells, multimedia sampling, data evaluation, and report preparation. He was also a member of the field team that assessed the extent of contamination from leaking underground storage tanks at several sites in Marion County, Florida. For these studies, he performed surface conductivity and magnetometer surveys, and supervised monitoring well installation, development, and sampling.

Hr. Valker worked as a site geologist and driller for the installation of an extensive monitoring-well network in Voburn, Massachusetts, where contamination covered 10 square miles. He also performed the geological assessments for several contaminated sites located within the City of Buffalo, Nev York. As a site geologist and mud logger in Ohio, Mr. Walker recorded lithologic descriptions and interpreted gas traces during the drilling of oil and gas wells. In Guysville, Ohio, he was responsible for sample collection using the Ohio University drill rig and maintained the university geology department's well sample library.

EDUCATION:

Ph.D., Biological Science, Florida State University
H.S., Biology, University of Bridgeport
B.S. , Marine Biology, Southeastern Massachusetts University

EXPERIENCE:

At E 6 E, Dr. Schmidt manages and participates in a variety of projects involving interdisciplinary ecological and environmental assessments. His responsibilities include personnel scheduling, field coordination, report preparation, and client representation before government agencies. Dr. Schmidt has a strong background in experimental design, statistical analysis, wetland evaluation, aquatic sampling, species identification, and the development of environmental management plans.

At Florida State University (FSU), Dr. Schmidt managed a project to delineate and characterize nearshore seagrass communities that was conducted for the United States Environmental Protection Agency. He assisted in the project sampling design and execution; provided logistical coordination of sampling activities; participated in the sampling of fish, plankton, benthic macroinvertebrates, and water quality; and led the sample identification and data analysis. He currently is working with colleagues at FSU to develop a three-year trophodynamic data base for use in the evaluation of man-made impacts on benthic communities.

While an undergraduate student at Southeastern Massachusetts University, Dr. Schmidt spent several summers working at the Woods Hole Oceanographic Institute. He participated in the daily sampling and sample sorting conducted as part of research on the treatment/application of wastewater to wetlands in the Great Sippewissett Salt Marsh, Massachusetts. For these studies, he also measured plant biomass, benthic invertebrates, and fish populations; conducted water quality sampling; and assisted in the application of treated sewage sludge to experimental plots.

Dr. Schmidt also has conducted field studies of the nearshore and offshore marine communities of Bermuda; the Florida Keys and Indian River Lagoon; Catalina Island, California; the San Juan Islands, Washington; and Long Island Sound. His work has encompassed investigation/evaluation of salt marshes, mangrove forests, coral reefs, kelp forests, soft sediment bottoms, and rocky intertidal communities. In these communities, he has conducted manipulative field experiments to evaluate processes of invertebrate recruitment, studies to determine the effects of sedimentation and pollutants (pesticides) on benthic invertebrate population structures, and population and baseline studies.

EDUCATION:

B.S., Biology, University of West Florida
A.A., Computer Science, Gulf Coast Community College

EXPERIENCE:

Ms. Bowman participates in investigations and remedial activities involving hazardous waste and water contamination. Her fieldwork includes the sampling of soil, sediment, surface water, and groundwater; air monitoring and sample field screening using portable instrumentation; and the monitoring of on-site contractors to ensure compliance with contract stipulations and applicable regulations and permits.

In addition, Ms. Bowman conducts background literature and site file searches and interviews with persons having site-specific knowledge, including agency representatives, local residents, and past and current facility employees.

At Florida State University, Ms. Bowman is pursuing a master's degree in public administration with a specialization in environmental management. She is a registered Clinical Laboratory Technologist (American Society of Clinical Pathology).

EDUCATION:

M.S., Geology, Texas A&M University
B.S., Geology, University of Southwestern Louisiana
B.S., Business Administration, University of Southern Mississippi

EXPERIENCE:

Mr. Daniel applies his background and training in geology, hydrology, geophysics, and engineering geology to the investigation/evaluation of hazardous waste sites. He conducts geophysical surveys; participates in the planning/implementation of sampling plans for soil, sediment, and surface water; plans, monitors drilling/installation of, and samples groundwater monitoring-well networks; and provides sample screening using portable field instrumentation. He provides geologic and hydrologic interpretations of core samples and remotely sensed data for application in site characterizations and the development/evaluation of site-specific remedial measures. Mr. Daniel also participates in environmental audits and impact assessments.

With an Austin-based firm, he assisted in the planning for and implementation of groundwater and seismic refraction investigations, conducted background literature searches to obtain information concerning site histories and regulatory compliance status, and contacted state agencies to obtain hydrologic data and remotely sensed imagery.

With John E. Chance and Associates, a surveying and engineering firm, Mr. Daniel was a geologist and supervised/provided troubleshooting for the operation of three geophysical survey data systems. For the United States Geological Survey, he conducted surveying using single-color laser and satellite-assisted techniques. Mr. Daniel also worked as a geologist with a consulting firm in Austin, Texas.

At Texas A&H University, he was an instructor for physical geology laboratory courses and participated in geological research. For the University of Southwestern Louisiana, he was an instructor in the structural geology laboratory and a teaching assistant for a geology field camp in Wyoming.

EDUCATION:

H.S., Environmental Engineering Sciences, University of Florida
B. S., Geology,, University of Illinois at Urbana-Champaign
B.S., Finance, University of Illinois at Urbana-Champaign

EXPERIENCE:

Ms. O'Neil is a geochemist whose specialty is identification of the transport and fate characteristics of contaminants in ground water and surface water systems. This expertise, in combination with her experience in computer modelling (ground water flow, aquifer drawdown, solute transport, vadose zone transport, and fugacity-based ecosystem distribution), has made Ms. O'Neil a valuable contributor to E & E's hydrogeologic and geochemical evaluations of numerous hazardous waste and underground storage tank sites in Florida and nationwide. As part of E & E's hydrogeologic assessment/feasibility study in Theresienfeld, Austria, Ms. O'Neil assisted in development of a contaminant transport model to delineate the migration of trichloroethylene and other solvent plumes moving downgradient from the landfill source and toward the water supply wells for the City of Vienna.

In Florida, Ms. O'Neil has developed contamination assessment plans and ground water flow/solute transport models for sites having complex mixtures of organic and inorganic contaminants (e.g., the Silvex Solvent Spill Site in St. Augustine) and for sites contaminated with floating free product and dissolved petroleum constituents from leaking underground storage tanks (e.g., the Ryder Truck Rental 21st Terrace Site in Miami; the Valker Grocery Site in Wacissa; and the Sparr and Old 441 sites in Marion County). She has participated in multitask field investigations at a variety of sites, during which she directed monitoring well installation, multimedia sampling, and hydrogeologic assessments. Ms. O'Neil has also been actively involved in the interpretation and reporting of the data from these investigations.

Ms. O'Neil provided technical assistance in the development of the remedial investigation/feasibility study work plan and quality assurance project plan for Whiteman Air Force Base (AFB) in Missouri. As field hydrogeologist for E & E's investigation at Norton AFB in California, she directed the performance of pump tests and monitoring well installation activities. Ms. O'Neil has also conducted soil and ground water sampling at an abandoned landfill in Wisconsin.

At the University of Florida, Ms. O'Neil participated in research to identify and analyze potential toxic contaminants in Florida aquatic systems. She collected sediment samples from lakes and rivers across Florida and analyzed them for pesticides and base/neutral extractables. She also assisted in the development of a sediment extraction/cleanup method involving use of vacuum-assisted solid-phase extraction columns.