QUALITY CONTROL PLAN (QCP)
FOR THE
ASBESTOS ABATEMENT OF BUILDING 401
NIAGARA FALLS STORAGE SITE
LEWISTON, NEW YORK

PREPARED FOR:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BUFFALO DISTRICT
BUFFALO, NEW YORK
CONTRACT DACW49-00-D-0007

Prepared by:

Jacobs Engineering Group, Inc. - Federal Operations
13723 Riverport Drive
Maryland Heights, MO. 63043

October 2001
Revision 1 – January 2002

ROUTING OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE FOR APPROVAL

(Used to route ENG Form 4025 with items attached. Not to become a part of the Contractor's Record.)

	TO:	FROM:	DATE
1	Stephen Yaksich	Todd Kufel	17-Jan-02

The attached items listed on ENG Form 4025 are forwarded for approval action.

CONTRACT NUMBER	CONTRACTOR
DACW49-00-D-0007	Jacobs Engineering
TRANSMITTAL NUMBERS	**PROJECT TITLE AND LOCATION**
[redacted]	NFSS Building 401 Asbestos Abatement

COMMENTS (Attach additional sheet, if necessary.)

Revised work plan. All PDT comments have been resolved.

NO. OF INCL.	TYPED NAME AND TITLE	SIGNATURE
7	Todd Kufel, Project Engineer	Todd C Kufel

	TO:	FROM:	DATE
2			

COMMENTS (Attach additional sheet, if necessary.)

NO. OF INCL.	TYPED NAME AND TITLE	SIGNATURE

	TO:	FROM:	DATE
3			

COMMENTS (Attach additional sheet, if necessary.)

NO. OF INCL.	TYPED NAME AND TITLE	SIGNATURE

	TO:	FROM:	DATE
4	Judith Leithner	Stephen Yaksich	1/18/02

The following action codes are given to items listed on ENG Form 4025:

ACTION CODES

A - APPROVED AS SUBMITTED.
B - APPROVED, EXCEPT AS NOTED ON DRAWINGS. RESUBMISSION NOT REQUIRED.
C - APPROVED, EXCEPT AS NOTED ON DRAWINGS. REFER TO ATTACHED SHEET, RESUBMISSION REQUIRED.
D - WILL BE RETURNED BY SEPARATE CORRESPONDENCE.
E - DISAPPROVED (SEE ATTACHED)
F - RECEIPT ACKNOWLEDGE
G - OTHER (specify).

ACTION CODES TO BE INSERTED IN COLUMN G, SECTION I, ENG FORM 4025 (Attach sheets, when required.)

ITEM NO. *(Taken from ENG Form 4025)*	1.3a							
CODE GIVEN	A							

REMARKS

Item No. 1.3a - Approved as submitted.

NO. OF INCL.	TYPED NAME AND TITLE	SIGNATURE
1	Stephen Yaksich, Chief, Engineering Division	S Yaksich

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ENG 1 NOV 74

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JE JACOBS ENGINEERING®
Engineers and Constructors

Jacobs Engineering Group, Inc. - Federal Operations
13723 Riverport Drive
Maryland Heights, MO. 63043

October 2001
Revision 1 – January 2002

☒ APPROVAL RECOMMENDED — Initials — Date 1/16/02
☐ APPROVAL RECOMMENDED SUBJECT TO COMMENTS INDICATED — Initials — Date
☐ DISAPPROVAL RECOMMENDED — Initials — Date
APPROVED/DISAPPROVED — Signature — Date

COMPLETION OF INDEPENDENT TECHNICAL REVIEW

Jacobs Engineering Group, Inc. has completed th: Quality Control Plan for the asbestos abatement of Building 401, Niagara Falls Storage Site, Lewiston, New York. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

(Signature) — (Date)

Study/Design Team Leader and Team Members

(Signature) — 10-10-01 (Date)

Independent Technical Review Team Leader and Team Members

(Signature) — 10-10-01 (Date)

Independent Technical Review Team Leader and Team Members

(Signature) — 10/11/01 (Date)

Independent Technical Review Team Leader and Team Members

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows (Describe the major technical concerns, possible impact, and resolution):

Table of Contents is incomplete (Updated)

List of Acronyms and Section 4.0 requires formatting. (Reformatted)

Minor grammatical changes. (Changed)

Complete the EDQCP portion of the QCP. (Completed)

All concerns resulting from independent technical review of the project have been considered.

Virgil W Jansen
(Signature)

10/11/01
(Date)

(Engineer of Record)

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ABBREVIATIONS AND ACRONYMS

AAAP	Asbestos Assessment and Abatement Plan
AAP	Asbestos Abatement Plan
ACGIH	American Conference of Governmental Industrial Hygienists
ACM	Asbestos Containing Material
AHERA	Asbestos Hazard Emergency Response Act
AIHA	American Industrial Hygiene Association
ALARA	As-Low-As-Reasonably-Achievable
ALI	Annual Limit On Intake
APR	air-purifying respirator
ASHARA	Asbestos School Hazard Abatement Reauthorization Act
ASTM	American Society for Testing and Materials
BRA	Baseline Risk Assessment
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
C&D	construction and demolition
CAA	Clean Air Act
CAPE	Cape Environmental Management Inc
CEDE	Committed Effective Dose Equivalent
CERCLA	Comprehensive Environmental Response Compensation and Liability
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CHSP	Corporate Health and Safety Procedure
CIH	Certified Industrial Hygienist
CMS	Corrective Measures Study
COC	Chain of Custody
COPC	Chemical of Potential Concern
COR	Contracting Officer Representative
CRs	Carcinogenic Risk
CRZ	Contamination Reduction Zone
CWA	Clean Water Act
DA	Department of the Army
DAC	Inhalation Derived Air Concentrations
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOP	dioctylphthalate
DOT	U.S. Department of Transportation
dpm	Disintegrations Per Minute
EDC	Economic Development Conveyance Area
EDQCP	Engineering & Design Quality Control Plan
EMSL	EMSL Analytical, Inc.
EPA	U.S. Environmental Protection Agency
EZ	Exclusion Zone
F	Fahrenheit
f/cc	Fibers per cubic centimeter of air
FMEA	Failure Mode and Effects Analysis
FSP	Field Sampling Plan
GAC	Granulated Activated Carbon
GERT	General Employee Radiological Training
GFCI	Ground Fault Circuit Interrupter
HAZOP	Hazard and Operability Study
HazWOPER	Hazardous Waste Operations and Emergency Response
HEPA	High Efficiency Particulate Air

HHE	Human Health Evaluation
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HVAC	heating, ventilation, and air conditioning
IDLH	Immediately Dangerous to Life or Health
IHT	Industrial Hygiene Technician
IS	Interim Standards
JE	Jacobs Engineering
JEG	Jacobs Engineering Group
LEL	Lower Explosive Limit
LOOW	Lake Ontario Ordnance Works
LPM	liters per minute
MAP	Model Accreditation Plan
MCE	mixed-cellulose ester
MCLGs	Maximum Contaminant Level Goals
MCLs	Maximum Contaminant Levels
MDA	Minimum Detectable Activity
MED	Manhattan Engineering District
MSDS's	Material Safety Data Sheets
MSL	Mean Sea Level
NAM	Negative Air Machine
NAWQC	National Ambient Water Quality Criteria
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NFSS	Niagra Falls Storage Site
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NOB	Non-friable Organically Bound
NPDES	National Pollution Discharge Elimination System
NRC	Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
NYCRR	New York Code of Rules and Regulations
NYSDOL	New York State Department of Labor
ORISE	Oak Ridge Institute for Science and Education
OSHA	Occupational Safety and Health Administration
PACM	Presumed Asbestos Containing Materials
PAPR	Powered Air Purifying Respirator
PBC	Public Benefit Conveyance Area
PCM	Phase Contrast Microscopy
PDU	Personal Decontamination Unit
PEL	Permissible Exposure Limit
PHA	Process Hazard Analysis
PLHCP	Physician or other Licensed Health Care Professional
PLM	Polarized Light Microscopy
PPE	personal protective equipment
PRGs	Preliminary Remediation Goals
PVC	polyvinyl chloride
QAPP	Quality Assurance Plan
QC	quality control
QCR	Quality Control Reports
QLFT	Qualitative Fit Test Requirements

QNFI	Quantitative Fit Test Requirements
RA	Restricted Area
RAD	Radiation
RCA	Radiologically Controlled Areas
RCCP	Radiation Control Contingency Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RFP	Request For Proposal
RGOs	Remedial Goal Objectives
RME	Reasonable Maximum Exposure
RW II	Radiological Worker II
RWP	Radiological Work Permit
SAR	Supplied-Air Respirator
SCBA	Self-Contained Breathing Apparatus
SCS	Soil Conservation Service
SDWA	Safe Drinking Water Act
SEV	Screening Ecological Value
SHM	Safety and Health Manager
SHP	Safety and Health Plan
SMCLs	Secondary Maximum Contaminant Levels
SOP	Standard Operating Procedures
SOR	Safety Observation Report
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SSL	Soil Screening Level
STL	Severn Trent Services Laboratories
SVOCs	Semi-volatile Organic Compounds
SWMU	Solid Waste Management Unit
SZ	Support Zone
TAL	Total Analyte List
TBC	To Be Considered
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TEDE	Total Effective Dose Equivalent
TEM	Transmission Electron Microscopy
TLV	Threshold Limit Value
TSI	Thermal System Insulation
TSS	Total Suspended Solids
TWA	Time-Weighted Average
UCL	Upper Confidence Level
UCS	Unconfined Compressive Strength
UEL	Upper Explosive Limit
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Center (formerly USATHAMA)
USATHAMA	United States Army Toxic and Hazardous Materials Agency (now USAEC)
USDA	United States Department of Agriculture
VOCs	Volatile Organic Compounds
WA	Work Area (Asbestos Regulated Area)
WBGT	Wet Bulb Globe Temperature Index
WCS	Waste Containment Structure

PART 1

ENGINEERING AND DESIGN QUALITY CONTROL PLAN

1.0 INTRODUCTION

Jacobs Engineering Inc. (JE) is under contract with the U.S. Army Corps of Engineers, Buffalo District (USACE) to provide Engineering, Procurement, and Construction services including, but not limited to, the development of required work plans for the asbestos assessment and abatement of Building 401 at the Niagara Falls Storage Site (NFSS).

As a contract requirement, JE has been tasked to develop a Quality Control Plan (QCP) which consists of two sub-plans, an Engineering & Design Quality Control Plan (E&D QCP), Part 1 of the QCP, and a Contractor Quality Control Plan (CQCP), Part 2 of the QCP. This first quality control (QC) plan, the E&D QCP, has been developed as a management plan for executing a quality engineering product or service, on schedule and within budget. The E&D QCP presents the JE management philosophy, approach and structure relative to its commitment to quality. Included in the E&D QCP are cost control and scheduling tools and procedures, available design tools (computer software) typically used by JE, as well as a discussion on the methods of communication between project personnel and management. Specifically, the E&D QCP addresses the process and qualifications of JE personnel involved in preparation of the project work plans and in performing the Independent Technical Reviews (ITRs) of the plans.

1.1 SITE BACKGROUND

Niagara Falls Storage Site (NFSS) is located at 1397 Pletcher Road, Lewiston, New York. The U.S. Department of Energy (DOE) owns the site. The site consists of an engineered Waste Containment Structure (WCS), various buildings, and open areas. The site was originally a part of the Lake Ontario Ordnance Works (LOOW). The primary use of the site from early 1940s through mid 1950s was for storage, trans-shipment, and disposal of radioactive wastes from various sources.

Building 401 was initially the powerhouse for the production of TNT at LOOW, and was used to store radioactive materials in support of Manhattan Engineering District (MED) activities during World War II. The building was used for the production of Boron-10 from 1953 to 1959 and from 1965 to 1971 and then became a waste storage facility by MED. In 1971, Building 401 was gutted and its instrumentation and hardware were disposed of as surplus materials. The building has been inactive since.

Building 401 is steel frame four story structure approximately 100,000 square feet of floor area. The main structural system of the building consists of steel and concrete load bearing walls supporting the roof. There are multiple floors that contain rooms and offices and building service areas. There is a tower area and high bay. The building floor is concrete slab on grade. Elevated levels of radioactivity exist in some soils adjacent to Building 401 and radioactive residuals may be present in materials within the building.

1.2 SCOPE OF WORK

USACE has tasked JE with assessing and abating asbestos containing material (ACM) within Building 401. JE will identify any ACM requiring removal and will package, load, transport, and dispose of any non-radioactive contaminated ACM debris. If radioactive residual material is encountered, JE will segregate, package, and transport the material to a USACE-designated onsite storage area within Building 401. JE will be responsible for obtaining, executing, and submitting to USACE all required notifications, licenses, and permits, as well as any associated fees.

Remediation of NFSS is being managed by USACE under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and its implementing regulations found in the National Contingency Plan (40 CFR 300).

2.0 JE MANAGEMENT

2.1 MANAGEMENT PHILOSOPHY

JE's reputation is hard earned and its future depends on our ability to consistently apply sound, unquestionable business practices that lead to our long-term success. These business practices are captured in our policies, which are designed to equip each employee with the fundamental guidance necessary to grow, our employees, our relationships with our clients, and our company. These policies apply around the globe, wherever JE's employees are working.

Simply stated, our Corporate Quality Policy is:

> "We, the employees of Jacobs Engineering Inc., are dedicated to providing our clients with a competitive advantage through a continuous process of quality advancement in all areas of our performance."

The objectives of our Corporate Quality Policy are:

> "To be the best provider of professional services in the Engineering and Construction industry and to meet or surpass the expectations of our clients, employees and shareholders. We accomplish this in an environment that nurtures employee pride and satisfaction, and leads to continuing growth and prosperity."

In pursuit of these objectives, JE is committed to:

- Deliver high quality management, consulting, engineering, construction, environmental, and maintenance and operations services at competitive prices;
- Complete work in an efficient manner;
- Provide appropriate training to all employees;
- Plan work in an aggressive but realistic manner;
- Monitor and measure performance (the quality of service) and make adjustments accordingly;
- Accomplish all of the above with the utmost attention to the safety, morale and well being of the employees, subcontractors, and Client personnel.

The JE Quality Policy is supported by the documentation, implementation and maintenance of a formalized Quality System structured to comply with the requirements of ANSI/ISO/ASQS Q9001, *Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing*. JE's Quality System is implemented using Standard Operating Procedures (SOPs), Work Instructions (WIs), and other supporting documents. All elements and components of the Quality System are audited and evaluated by the Corporate Manager of Quality and Operations Quality Managers in a planned and systematic manner to determine whether the system is effective in achieving its stated objectives. As a result of such audits, findings, conclusions, and recommendations reached are documented for action by nominated personnel within a specified period. The implementation and verification of these actions,

together with all pertinent records, are reviewed by the Executive Quality Committee as part of an annual (as a minimum) evaluation of the effectiveness and suitability of the Quality System.

2.2 MANAGEMENT STRUCTURE

JE's CQC system will be consistent with the USACE "Construction Quality Management for Contractors" program. The Contractor Quality Control Systems Manager (CQCSM) will have attended this course and maintain valid certifications. The responsibility and authority for the development, modification, and implementation of the CQCP will rest with CQCSM and the JE project personnel.

Figure 2-1 presents a project organization chart that identifies the lines of authority and areas of responsibility of JE project management and quality control organization. The JE Project Manager will serve as the CQCSM and will coordinate all quality control activities. The CQCSM will be responsible for the overall quality control for the work. Although the CQCSM has primary responsibility for ensuring that the project work meets the contract requirements, QC is the responsibility of the entire project team. The JE project team, including subcontractors, will provide the CQCSM with input and support and will routinely review inspection results generated by the CQCSM. Resumes of key project personnel are provided in Appendix I.

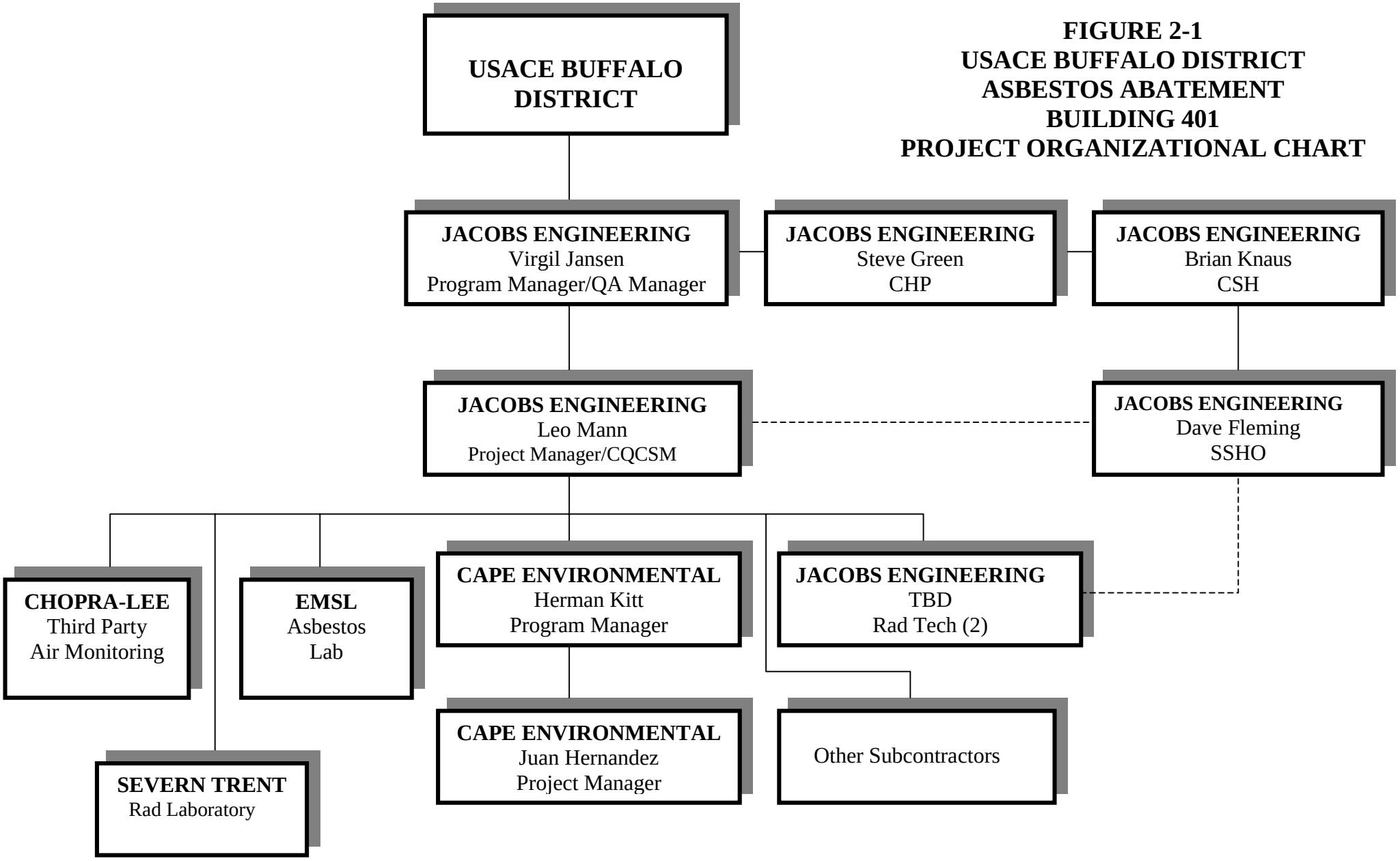
The responsibilities and authority of the contractor quality control personnel are described below:

2.2.1 Program Manager

The JE Program Manager (PgM), Virgil Jansen, is the senior JE representative on the project. The PM's responsibilities include:

- Negotiating and executing contracts and negotiations;
- Reviewing and approving the corporate procedures to be used on the project;
- Ensuring that JE QC system is appropriately applied to project activities;
- Supporting the Project Manager to ensure successful completion of the project; Maintaining contact with USACE through the work; and,
- Determining personnel assignments for this project.

FIGURE 2-1
USACE BUFFALO DISTRICT
ASBESTOS ABATEMENT
BUILDING 401
PROJECT ORGANIZATIONAL CHART



2.2.2 Project Manager/Contractor Quality Control Systems Manager

The JE Project Manager (PM), Leo Mann, is responsible for overall direction, implementation, and enforcement of delivery order requirements. The Project Manager reports directly to the Program Manager. Responsibilities include:

- Ensuring the project is being performed in a manner consistent the USACE Scope of Work, the approved planning documents, and JE Corporate Health and Safety Program;
- Ensuring that all required plans are prepared, submitted in a timely manner, and approved by USACE;
- Providing project personnel with information related to project QC and health and safety matters;
- Monitoring compliance with the delivery order requirements by JE and subcontractor personnel;
- Ensuring adequate resources are provided to the health and safety staff so that they may carry out their duties;
- Maintaining communication with the USACE authorized representative; and,
- Determining personnel assignments for this project.

As the CQCSM, Mr. Mann (refer to Appendix IV for the appointment letter) is also responsible for overall management of the CQC system and has the authority to act independently in all quality control matters. The CQCSM reports directly to the Program Manager. The specific responsibilities of the CQCSM include:

- Management of the performance of all onsite and offsite inspections and testing;
- Evaluation of the results of inspection and testing;
- Notification to the Site Superintendent regarding acceptance or rejection of the work;
- Documentation management of all inspections, testing, and project management notifications using daily CQC reports; and,
- Preparation and review of all required submittals relating to quality control, and forwarding of all submittals to the USACE Authorized Representative.

The CQCSM will have the authority to suspend work that does not meet the standards established by the work performance specifications. If modifications or revisions to the specifications relating to quality control are required, the CQCSM will prepare a request for modification or revision and submit the request to the USACE. The CQCSM will ensure that approval of the modification or revision is received prior to allowing the modifications or revisions to occur at the site.

2.2.3 CAPE Project Manager/Site Superintendent

The CAPE Environmental Management (CAPE) Project Manager/Site Superintendent, Juan Hernandez, is responsible for the general oversight of CAPE's onsite activities including temporary facilities setup and utilities hookup, containment setup, asbestos abatement, packaging, transportation and disposal. Mr. Hernandez will ensure compliance with the approved plans by coordinating and providing the necessary labor, equipment and materials for all onsite

activities. The Site Superintendent reports directly to the JE PM, who will be on site during all field activities and who will be responsible for ensuring all asbestos abatement, transportation and disposal activities conform to USACE requirements, the Asbestos Assessment and Abatement Plan (AAAP), and the Waste Management Plan (WMP).

2.2.4 Site Safety and Health Officer/Health Physicist

A full-time Site Safety and Health Officer/Health Physicist (SSHO/HP), Dave Fleming, will be assigned to the project for the duration of on-site work. Mr. Fleming is also a trained and qualified health physicist. The SSHO/HP is responsible for implementation and enforcement of the approved Safety and Health Plan (SHP). The SSHO/HP's duties will include conducting daily safety briefings, and inspecting work sites daily for compliance with the SHP.

2.2.5 Third-Party Asbestos Project Monitor

Chopra-Lee, Inc. will be the New York State-certified Asbestos Project Monitor for this project. Chopra-Lee personnel will provide visual verification and certification that the asbestos abatement work meet or exceed state requirements and will provide all third-party asbestos air monitoring during the asbestos abatement activities. The Chopra-Lee point of contact is Scott Hammond and the address and telephone/fax are:

Chopra-Lee
1850 Love Road
Grand Island, NY 14072
Tel: (716) 773-7625 Fax: (716) 773-7624

2.2.6 Asbestos Laboratory

EMSL Analytical, Inc. (EMSL) in Westmont, New Jersey will provide the asbestos testing for this project. The EMSL point of contact is John Van Voorhees. The laboratory address and telephone/fax are:

EMSL Analytical, Inc.
107 Haddon Avenue
Westmont, NJ 08108
Tel: (800) 220-3675 Fax: (856) 858-7141

2.2.7 Radiological Laboratory

Severn Trent Laboratory, Inc. (STL) located in Earth City, Missouri will perform the radiological testing for this project. The laboratory point of contact is Richard H. Mannz. The laboratory address and telephone/fax are:

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: (314) 298-8566 Fax: (314) 298-8757

2.3 MANAGEMENT APPROACH

JE will manage this project in accordance with the approved JE Quality System SOPs including, but not limited to:

- SOP 200 Management Responsibility for Project Services
- SOP 201 Control of the Company's Project Documentation
- SOP 204 Document Distribution, Filing and Archiving
- SOP 206 Project Execution
- SOP 207 Preparation of the Project Procedure
- SOP 212 Cost Control
- SOP 213 Change Control.

2.3.1 Communications

The JE Project Manager, Leo Mann, has primary responsibility for communication with the USACE. As necessary, the Program Manager, Virgil Jansen, will act as a secondary contact if the Project Manager is not immediately available. These two individuals and the JE Contract Manager, Brian Harrington, are authorized to request and receive modifications to the scope of work. All three management personnel work out of JE's Maryland Heights (Riverport), Missouri office. Table 2-1 provides the address, telephone and fax numbers, and email addresses for these personnel.

Table 2-1 Project Contacts

Name	Email	Telephone	Fax
Virgil Jansen	virgil.jansen@jacobs.com	(314) 770-4025	(314) 770-5110
Leo Mann	leo.mann@jacobs.com	(314) 770-4270	(314) 770-5110
Brian Harrington	brian.harrington@jacobs.com	(314) 770-4217	(314) 770-5110
Address: Jacobs Engineering 13723 Riverport Drive Maryland Heights, MO 63043			

All requests for contract modifications will be submitted by the JE Project Manager or Program Manager through the JE Contract Manager to the USACE Contract Administrator (CA). The modification will not be acted on until written approval of the modification has been received from the USACE CA. The USACE CA for this project is:

Brian Moore, CELRB-CO-N
U.S. Army Engineer District, Buffalo
1776 Niagra Street

Buffalo, NY 14207-3199

During performance of the work, written communications with the USACE and within JE will be the preferred method of communication. The written communications may be in the form of a letter, project note, fax, or email. If communication with USACE is accomplished via telephone (i.e., conference call), the Project Manager will prepare a project note documenting the items discussed and decisions made. A copy of the project note will be distributed to all persons on the call within 5 business days. A copy of each communication, including applicable attachments and reference materials, will be documented in the project file.

The Project Manager will provide all technical direction to JE project personnel and subcontractors. JE encourages effective communication within the project team, including subcontractors, in an effort to achieve a better product for our clients. However, the Project Manager or Program Manager will participate in all communications between the project team and USACE to ensure proper coordination and documentation.

2.3.2 Document Control

Document control will be the responsibility of the Project Manager, but will typically be performed by the Project Secretary or Document Controller. All documents that have a direct bearing on the execution or technical content of the project scope will be entered in the project document control file in accordance with JE Quality System SOP 201. Such documents include, but are not limited to:

- Plans, drawings, specification, reports
- Statements of work, technical correspondence and notes
- Contracts, subcontracts, requisitions, purchase orders
- Change orders, contract modifications, cost submittals
- Notifications, permits, licenses, training records
- Approvals, project communications, project notes, meeting minutes
- Project invoices, subcontract invoices, labor and direct costs.

2.3.3 Cost Control

Project cost control will be maintained by the Project Manager and Project Cost Engineer. The Project Manager will have primary responsibility for ensuring that costs incurred on the project are accurate and in accordance with government-required accounting practices. At the start of the project, a work breakdown structure (WBS) will be established, enabling cost tracking by task and subtask. All costs incurred on the project will require a project number and WBS code representing the task or subtask worked on. JE labor, direct, and subcontractor costs will be entered weekly into JE's Oracle-based accounting system.

On a weekly basis, the Project Manager will review all labor and direct costs incurred on the project during the previous through accounting reports in JE's Global Financial System (GFS). All items will be reviewed and any incorrect entries will be corrected in the JE system using established JE procedures.

On a monthly basis, the Project Manager, Project Cost Engineer and Operations Manager will conduct an Operational Project Review (OPR) that includes a thorough review of project costs and financials. Among the items reviewed:

- Forecast versus budget
- Original budget versus revised budget performance
- Estimate to complete versus estimate at completion
- Savings from productivity
- Subcontractor costs.

Cost information will be provided to the USACE as part of the monthly invoice. The invoice backup documentation, as approved by the USACE Project Manager, will include:

- A summary of JE labor costs by labor category
- A summary of JE direct costs, including travel costs
- Copies of subcontractor invoices.

2.3.4 Scheduling

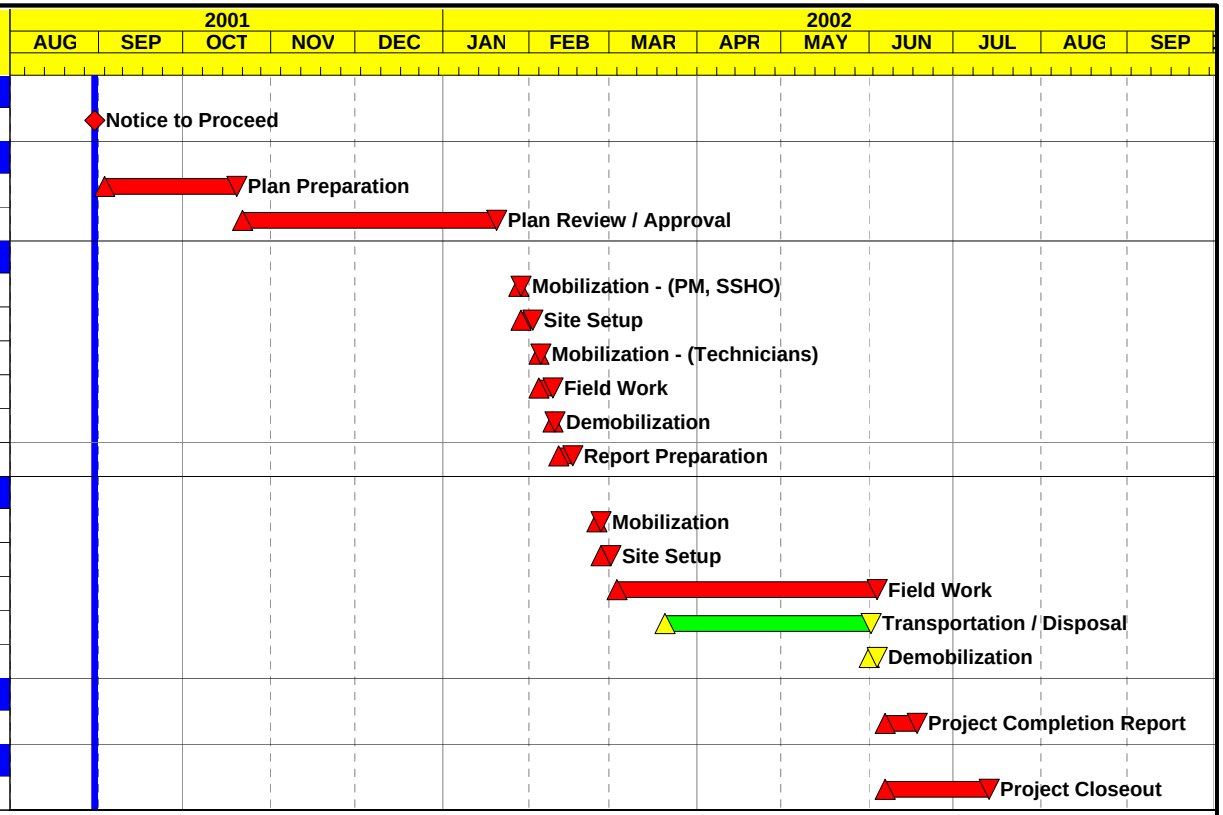
The project schedule (Figure 2-2) will be maintained using Primavera software. The Critical Path Method (CPM) project schedule includes a time-scale and time-bars for each activity anticipated in the scope of work. Using the CPM, tasks have been organized sequentially such that schedule impacts on early tasks will show potential schedule impacts for subsequent tasks on the same critical path. The project schedule will be updated at least monthly to reflect actual start and completion dates for each applicable task and schedule impacts for subsequent critical path tasks. The updated project schedule will be submitted to the USACE on a monthly basis with the invoice.

2.3.5 Design Tools

JE use standard computer software packages for development and production of submittals, presentations, design documents, and project management. The software that will be used for this project includes:

- Word Processing — Microsoft Word
- Spreadsheets — Microsoft Excel
- Presentations — Microsoft Powerpoint/Adobe Acrobat
- Design — MicroStation J
- Estimating — MCACES
- Cost Tracking — PROLOG
- Scheduling — Primavera

Activity ID	Activity Description	Orig Dur	Rem Dur	%	Early Start	Early Finish
NOTICE TO PROCEED						
10000	Notice to Proceed	0	0	0	31AUG01	
PLAN PREPARATION / APPROVAL						
10010	Plan Preparation	47	47	0	03SEP01	19OCT01
10020	Plan Review / Approval	90	90	0	22OCT01	19JAN02
ASSESSMENT						
10030	Mobilization - (PM, SSHO)	1	1	0	28JAN02	28JAN02
10040	Site Setup	4	4	0	29JAN02	01FEB02
10050	Mobilization - (Technicians)	1	1	0	04FEB02	04FEB02
10060	Field Work	5	5	0	04FEB02	08FEB02
10070	Demobilization	1	1	0	09FEB02	09FEB02
10080	Report Preparation	5	5	0	11FEB02	15FEB02
ABATEMENT						
10090	Mobilization	1	1	0	25FEB02	25FEB02
10100	Site Setup	4	4	0	26FEB02	01MAR02
10110	Field Work	92	92	0	04MAR02	03JUN02
10120	Transportation / Disposal	73	73	0	21MAR02	01JUN02
10130	Demobilization	3	3	0	01JUN02	03JUN02
PROJECT COMPLETION REPORT						
10140	Project Completion Report	11	11	0	07JUN02	17JUN02
PROJECT CLOSEOUT						
10150	Project Closeout	37	37	0	07JUN02	13JUL02



Start Date 31AUG01
Finish Date 13JUL02
Data Date 31AUG01
Run Date 25SEP01 14:36

Early Bar
Progress Bar
Critical Activity

DO01 Sheet 1 of 1

Jacobs

D.O. #1 Asbestos Assess/Abatement

Date	Revision	Checked	Approved

3.0 INDEPENDENT TECHNICAL REVIEWS

JE will conduct an independent technical review (ITR) of all work plan submittals prior to submittal to USACE. The ITR team (ITRT) will be composed of at least three senior JE personnel that have experience in disciplines involved in the document and who were not directly involved in the document's development. A Health Physicist will be on the ITRT reviewing those plans involving health and safety and radiation control.

Issues raised as a result of the ITR will be discussed and resolved with the document author(s). All review comments and actions taken will be documented. At the completion of this process, a Statement of Technical Review will be completed for each document and submitted to USACE along with review comments and responses attached to the submittal.

3.1 INDEPENDENT TECHNICAL REVIEW TEAMS

Table 3-1 lists the work plans to be developed, their originators, and the ITRT members assigned to review each document. Resumes reflecting the levels of experience for each of the work plan originators and ITRT members can be found in Appendix I.

Table 3-1 Plan/Author/ITRT Matrix

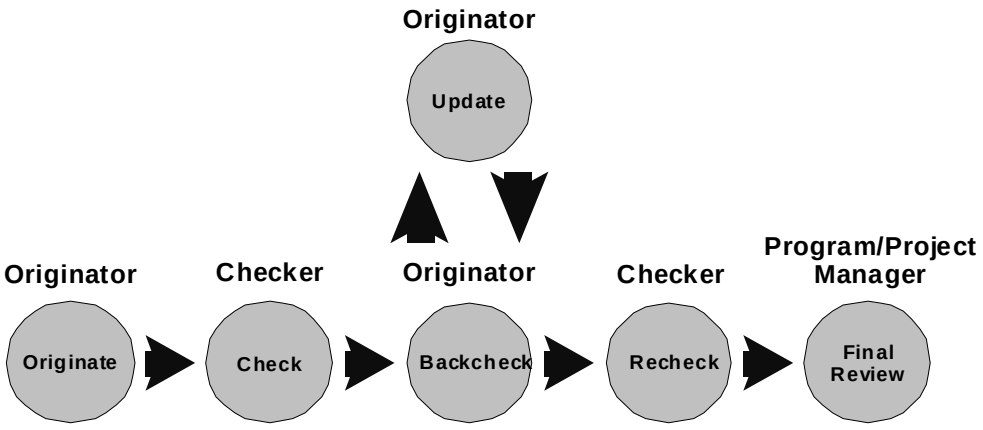
Work Plan	Originator	ITRT
Quality Control Plan	L. Ehrhard	V. Jansen, L. Mann, D. Fleming
Site Operations Plan	L. Mann, H. Kitt, J. Shannon	V. Jansen, L. Ehrhard, A. Everson
Asbestos Assessment and Abatement Plan	L. Mann, B. Ingalls, J.Shannon, M. Mount	V. Jansen, L. Ehrhard, B. Knaus
Safety and Health Plan	B. Knaus, D. Fleming	V. Jansen, T. Briggs, S. Green
Sampling and Analysis Plan	D. Fleming, A. Everson	V. Jansen, L. Mann, E. Litsey
Waste Management Plan	L. Mann, J. Shannon, M. Mount	V. Jansen, L. Ehrhard, A. Everson
Radiation Control Contingency Plan	D. Fleming	V. Jansen, B. Knaus, S. Green

The ITRT will conduct a QC review of the Work Plan project deliverables. The first review is a check of concept suitability, theory applicability, and data, and is performed by technically qualified senior personnel other than the originator. This process is graphically depicted in Figure 3-1. Those responsible for the Work Plan document preparation (project team) and the ITR process (ITR Team) will be as follows:

- **Program Manager** – Virgil Jansen, PE
- **Project Manager –** Leo Mann
- **C.I.H. –** Brian Knaus
- **C.I.H. –** Terry Briggs

- **Certified Health Physicist –** Steve Green
- **Project Chemist –** Ethan Litsey
- **Environmental Engineer –** Aaron Everson, PE
- **New York State Asbestos Project Designer –** Blair Ingalls
- **Health Physicist** – Dave Fleming
- **Professional Geologist** – Lou Ehrhard, PG
- **Cape Environmental Program Manager –** Herman Kitt
- **Cape Environmental Project Manager** – Juan Hernandez
- **Cape Environmental C.I.H. –** Michael Mount

FIGURE 3-1 Independent Technical Review Process



3.2 SCHEDULE

The document preparation and review schedule for the above referenced Work Plans are as follows:

- Notice to proceed (NTP) 8/31/01.
- Final Draft of Work Plans to Project Manager 9/26/01.
- First Check of Work Plans by ITR members 9/26/01 thru 9/28/01.
- Originator back-check and update 10/01/01 thru 10/02/01.
- Recheck by ITRT members10/02/01 thru 10/03/01.
- Final review by Program and Project Manager 10/04/01 thru 10/11/01.
- Work Plan due date (45 calendar days form NTP) 10/15/01.

3.3 SUBMITTALS

JE will prepare all documents and submittals for USACE review in accordance with the Contractor Submittal Requirements Summary (CSRS, Appendix III). The CSRS specifies the requirements for all anticipated submittals for this project. Each submittal will include a cover page and a transmittal letter listing the information required by the CSRS. JE will furnish ten (10) copies of each submittal listed in the CSRS. Additionally, an electronic copy of each document will be provided to the USACE in Adobe format on a 3.5-inch floppy disk. Whenever possible, related items will be submitted together for simultaneous review.

JE will provide all required submittals to USACE for review in accordance with the submittal schedule provided in the EDQCP. All plans submitted to USACE will follow a consistent format and will include the following:

- Title sheet
- ITR sign-off sheet
- Table of contents
- Document body using a decimal section system
- Appendices.

Upon final review and approval by the CQCSM, the documents and supporting information will be submitted to the USACE Contracting Officer's Representative:

U.S. Army Engineer District, Buffalo
Attn: CELRB-CO-N
1776 Niagra Street
Buffalo, NY 14207-3199

PART 2

CONTRACTOR QUALITY CONTROL PLAN

1.0 INTRODUCTION

Jacobs Engineering Inc. (JE) is under contract with the U.S. Army Corps of Engineers, Buffalo District (USACE) to provide Engineering, Procurement, and Construction services including, but not limited to, the development of required work plans for the asbestos assessment and abatement of Building 401 at the Niagara Falls Storage Site (NFSS).

As a contract requirement, JE has been tasked to develop a Quality Control Plan (QCP) which consists of two sub-plans, an Engineering & Design Quality Control Plan (E&D QCP) and a Contractor Quality Control Plan (CQCP). The E&D QCP, Part 1 of the QCP, has been developed as a management plan for executing a quality engineering product or service, on schedule and within budget.

This second quality control (QC) plan, the CQCP, provides the overall approach to ensuring quality for all field operations, both on-site and off-site. This CQCP has been prepared in accordance with the Statement of Work, USACE Regulation ER 1180-1-6, *Construction Quality Management*, and USACE pamphlet EP 715-1-2, *A Guide to Effective Contractor Quality Control*.

1.1 SITE BACKGROUND

Niagara Falls Storage Site (NFSS) is located at 1397 Pletcher Road, Lewiston, New York. The U.S. Department of Energy (DOE) owns the site. The site consists of an engineered Waste Containment Structure (WCS), various buildings, and open areas. The site was originally a part of the Lake Ontario Ordnance Works (LOOW). The primary use of the site from early 1940s through mid 1950s was for storage, trans-shipment, and disposal of radioactive wastes from various sources.

Building 401 was initially the powerhouse for the production of TNT at LOOW, and was used to store radioactive materials in support of Manhattan Engineering District (MED) activities during World War II. The building was used for the production of Boron-10 from 1953 to 1959 and from 1965 to 1971 and then became a waste storage facility by MED. In 1971, Building 401 was gutted and its instrumentation and hardware were disposed of as surplus materials. The building has been inactive since.

Building 401 is steel frame four story structure approximately 100,000 square feet of floor area. The main structural system of the building consists of steel and concrete load bearing walls supporting the roof. There are multiple floors that contain rooms and offices and building service areas. There is a tower area and high bay. The building floor is concrete slab on grade. Elevated levels of radioactivity exist in some soils adjacent to Building 401 and radioactive residuals may be present in materials within the building.

1.2 SCOPE OF WORK

USACE has tasked JE with assessing and abating asbestos containing material (ACM) within Building 401. JE will identify any ACM requiring removal and will package, load, transport, and dispose of any non-radioactive contaminated ACM debris. If radioactive residual material is encountered, JE will segregate, package, and transport the material to a USACE-designated onsite storage area within Building 401. JE will be responsible for obtaining, executing, and submitting to USACE all required notifications, licenses, and permits, as well as any associated fees.

Remediation of NFSS is being managed by USACE under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and its implementing regulations found in the National Contingency Plan (40 CFR 300). JE will comply with all applicable Federal, State, and local regulations for performing work under this contract including, but not limited to:

- New York State Code Rule Part 56 of Title 12, amended and effective as of November 9, 1994.
- USACE Safety and Health Requirements Manual, EM 385-1-1, September 3, 1996
- Occupational Safety and Health Agency (OSHA) General Industry and Construction standards, 29 CFR 1910 and 29 CFR 1926
- U. S. Environmental Protection Agency (USEPA) standards found in 40 CFR
- Nuclear Regulatory Commission (NRC) standards, 10CFR 20, and
- Department of Transportation (DOT) Hazardous Materials standards, 49 CFR 172.

1.3 PROJECT SCHEDULE

This project will be completed in five phases over a period of approximately eleven months. The first phase, plan preparation and approval, is expected to last approximately 4.5 months and consists of preparation, review, and approval of the contract-required planning documents. Following approval of the planning documents, the second phase, ACM assessment will be performed. The third phase of work, ACM abatement, will occur after USACE reviews the assessment report and issues a notice to proceed with the abatement activities. The period of fieldwork for this abatement phase is anticipated to require approximately three months (a level of effort based on a cursory assessment). Following completion of the fieldwork, JE will prepare the Project Completion Report in phase four. JE will complete project closeout activities as phase five of the project. A complete project schedule is provided in Figure 2-2 of the EDQCP.

2.0 CONTRACTOR QUALITY CONTROL SYSTEM

The purpose of the CQCP is to establish an effective QC system for all asbestos assessment and abatement activities to be performed at NFSS Building 401, both onsite and offsite. The QC system for this project will emphasize preventative control over the definable features of work (DFWs). The implementation of this QC system will ensure that the completed activities meet or exceed all contract-required criteria and specifications.

To achieve this objective, JE will utilize both our internal QC system and procedures as well as the USACE three-phase QC process and associated procedures and requirements. An overview of the JE Quality Policy and QC system is described in Section 2.1. The USACE three-phase QC process is presented in Section 2.2 and the contract-required contents of the CQCP are listed in Section 2.3.

2.1 JE QUALITY POLICY

JE's reputation is hard earned and its future depends on our ability to consistently apply sound, unquestionable business practices that lead to our long-term success. These business practices are captured in our policies, which are designed to equip each employee with the fundamental guidance necessary to grow, our employees, our relationships with our clients, and our company. These policies apply around the globe, wherever JE's employees are working.

Simply stated, our Corporate Quality Policy is:

> "We, the employees of Jacobs Engineering Inc., are dedicated to providing our clients with a competitive advantage through a continuous process of quality advancement in all areas of our performance."

The objectives of our Corporate Quality Policy are:

> "To be the best provider of professional services in the Engineering and Construction industry and to meet or surpass the expectations of our clients, employees and shareholders. We accomplish this in an environment that nurtures employee pride and satisfaction, and leads to continuing growth and prosperity."

In pursuit of these objectives, JE is committed to:

- Deliver high quality management, consulting, engineering, construction, environmental, and maintenance and operations services at competitive prices;
- Complete work in an efficient manner;
- Provide appropriate training to all employees;

- Plan work in an aggressive but realistic manner;
- Monitor and measure performance (the quality of service) and make adjustments accordingly;
- Accomplish all of the above with the utmost attention to the safety, morale and well being of the employees, subcontractors, and Client personnel.

The JE Quality Policy is supported by the documentation, implementation and maintenance of a formalized Quality System structured to comply with the requirements of ANSI/ISO/ASQS Q9001, *Quality Systems – Model for Quality Assurance in Design/Development, Production, Installation and Servicing*. JE's Quality System is implemented using Standard Operating Procedures (SOPs), Work Instructions (WIs), and other supporting documents. All elements and components of the Quality System are audited and evaluated by the Corporate Manager of Quality and Operations Quality Managers in a planned and systematic manner to determine whether the system is effective in achieving its stated objectives. As a result of such audits, findings, conclusions, and recommendations reached are documented for action by nominated personnel within a specified period. The implementation and verification of these actions, together with all pertinent records, are reviewed by the Executive Quality Committee as part of an annual (as a minimum) evaluation of the effectiveness and suitability of the Quality System.

2.2 THREE-PHASE QUALITY CONTROL PROCESS

JE will provide QC by implementing the USACE three-phase QC process for each DFW. A DFW is a task or subtask that is separate and distinct from others and has a specific set of control requirements. Each control phase (preparatory, initial, and follow-up) provides an opportunity to prevent or correct deficiencies that result from nonconformance. Implementation of the three-phase QC process is the responsibility of the entire project team as discussed in Section 3.0. The three-phased inspection process is described below.

The preparatory phase begins with actions before the start of actual construction. This is the time to ensure that the JE project team, including vendors and subcontractors, understand the contract requirements and standards, the SOPs and the standards of workmanship desired. The preparatory phase is a practical time to restate responsibilities, lines of authority, testing procedures (including preventive inspections), and resolving potential operational conflicts. The preparatory phase inspection is documented on the preparatory inspection form (Appendix II).

The initial phase takes place at the beginning of the actual field work activities. QC is implemented by initial inspections and testing to ensure that the early work performed meets or exceeds the established contract requirements. This is the time that standards of workmanship are established to ensure contract requirements are met. The initial inspection phase is a practical method of preventative QC by permitting any observed deficiencies observed to be resolved early in the project. The initial inspection is documented on the initial inspection form (Appendix II)

The follow-up phase involves inspection and testing as an ongoing QC effort to ensure the continuation of contract compliance and standards of workmanship established during the previous two phases. The follow-up phase is documented with the attached daily CQC report (see

Appendix II). This form reports progress of work, problems encountered, tests performed, instructions, and general remarks.

2.3 CONTRACTOR QUALITY CONTROL PLAN CONTENTS

In accordance with the USACE Scope of Work, the following items are addressed in this CQCP:

- A description of the QC organization showing lines of authority and acknowledgement that the JE QC staff will implement the three-phase control system. The staff will include a Contractor Quality Control System Manager (CQCSM) who will report to the Program Manager (Section 3.0);
- A list of the definable features of work (Section 4.1);
- Procedures for tracking preparatory, initial and follow-up control phases and control, verification, and acceptance tests including documentation (Sections 4.2 and 5.2);
- Control, verification, and acceptance testing procedures for each specific test required (Section 4.2.4);
- Procedures for tracking field work deficiencies from identification through acceptable corrective action (Section 4.2.8);
- Reporting procedures (Section 5.3); and,
- Procedures for scheduling, reviewing, certifying, and managing submittals (Section 5.4).

3.0 QUALITY CONTROL ORGANIZATION

The CQC system will be consistent with the USACE "Construction Quality Management for Contractors" program. The Contractor Quality Control Systems Manager (CQCSM) will have attended this course and maintain valid certifications. The responsibility and authority for the development, modification, and implementation of the CQCP will rest with CQCSM and the JE project personnel. The CQCP will be implemented independently of the oversight performed by representatives of the USACE.

3.1 QUALITY CONTROL STRUCTURE

Figure 2-1 of the EDQCD presents a project organization chart that identifies the lines of authority and areas of responsibility of JE project management and quality control organization. The JE Project Manager will serve as the CQCSM and will coordinate all quality control activities. The CQCSM will be responsible for the overall quality control for the work. Although the CQCSM has primary responsibility for ensuring that the project work meets the contract requirements, QC is the responsibility of the entire project team. The JE project team, including subcontractors, will provide the CQCSM with input and support and will routinely review inspection results generated by the CQCSM. Resumes of project personnel are provided in the EDQCP. A contact listing for these individuals is presented in Table 3-1.

Table 3-1 CQC System Contact List

PERSONNEL TITLE	NAME	TELEPHONE NO.
Project Manager/CQCSM	Leo Mann	(314) 770-4270
Program Manager	Virgil Jansen, PE	(314) 770-4025
Project Manager/ Site Superintendent, CAPE	Juan Hernandez	(770) 908-7200
Director of Health and Safety	Brian Knaus, CIH	(314) 770-4513
Radiological Protection Manager	Steve Green, CHP	(865) 671-1621
Site Safety and Health Officer/ Health Physicist	Dave Fleming	(636) 441-8086, ext.3575

The following sections of this CQCP detail the roles and responsibilities of the QC personnel for this project.

3.2 RESPONSIBILITIES AND AUTHORITY

The responsibilities and authority of the contractor quality control personnel are described below:

3.2.1 Program Manager

The JE Program Manager (PgM), Virgil Jansen, is the senior JE representative on the project. The PM's responsibilities include:

- Negotiating and executing contracts and negotiations;
- Reviewing and approving the corporate procedures to be used on the project;
- Ensuring that JE QC system is appropriately applied to project activities;
- Supporting the Project Manager to ensure successful completion of the project; Maintaining contact with USACE through the work; and,
- Determining personnel assignments for this project.

3.2.2 Project Manager/Contractor Quality Control Systems Manager

The JE Project Manager (PM), Leo Mann, is responsible for overall direction, implementation, and enforcement of delivery order requirements. The Project Manager reports directly to the Program Manager. Responsibilities include:

- Ensuring the project is being performed in a manner consistent the USACE Scope of Work, the approved planning documents, and JE Corporate Health and Safety Program;
- Ensuring that all required plans are prepared, submitted in a timely manner, and approved by USACE;
- Providing project personnel with information related to project QC and health and safety matters;
- Monitoring compliance with the delivery order requirements by JE and subcontractor personnel;
- Ensuring adequate resources are provided to the health and safety staff so that they may carry out their duties;
- Maintaining communication with the USACE authorized representative; and,
- Determining personnel assignments for this project.

As the CQCSM, Mr. Mann is also responsible for overall management of the CQC system and has the authority to act independently in all quality control matters. The CQCSM reports directly to the Program Manager. The specific responsibilities of the CQCSM include:

- Management of the performance of all onsite and offsite inspections and testing;
- Evaluation of the results of inspection and testing;
- Notification to the Site Superintendent regarding acceptance or rejection of the work;
- Documentation management of all inspections, testing, and project management notifications using daily CQC reports; and,

- Preparation and review of all required submittals relating to quality control, and forwarding of all submittals to the USACE Authorized Representative.

The CQCSM will have the authority to suspend work that does not meet the standards established by the work performance specifications. If modifications or revisions to the specifications relating to quality control are required, the CQCSM will prepare a request for modification or revision and submit the request to the USACE. The CQCSM will ensure that approval of the modification or revision is received prior to allowing the modifications or revisions to occur at the site.

3.2.3 CAPE Project Manager/Site Superintendent

The CAPE Environmental Management (CAPE) Project Manager/Site Superintendent, Juan Hernandez, is responsible for the general oversight of CAPE's onsite activities including temporary facilities setup and utilities hookup, containment setup, asbestos abatement, packaging, transportation and disposal. Mr. Hernandez will ensure compliance with the approved plans by coordinating and providing the necessary labor, equipment and materials for all onsite activities. The Site Superintendent reports directly to the JE PM, who will be on site during all field activities and who will be responsible for ensuring all asbestos abatement, transportation and disposal activities conform to USACE requirements, the Asbestos Assessment and Abatement Plan (AAAP), and the Waste Management Plan (WMP).

3.2.4 Site Safety and Health Officer/Health Physicist

A full-time Site Safety and Health Officer/Health Physicist (SSHO/HP), Dave Fleming, will be assigned to the project for the duration of on-site work. Mr. Fleming is also a trained and qualified health physicist. The SSHO/HP is responsible for implementation and enforcement of the approved Safety and Health Plan (SHP). The SSHO/HP's duties will include conducting daily safety briefings, and inspecting work sites daily for compliance with the SHP.

3.2.5 Third-Party Asbestos Project Monitor

Chopra-Lee, Inc. will be the New York State-certified Asbestos Project Monitor for this project. Chopra-Lee personnel will provide visual verification and certification that the asbestos abatement work meet or exceed state requirements and will provide all third-party asbestos air monitoring during the asbestos abatement activities. The Chopra-Lee point of contact is Scott Hammond and the address and telephone/fax are:

Chopra-Lee
1850 Love Road
Grand Island, NY 14072
Tel: (716) 773-7625 Fax: (716) 773-7624

3.2.6 Asbestos Laboratory

EMSL Analytical, Inc. (EMSL) in Westmont, New Jersey will provide the asbestos testing for this project. The EMSL point of contact is John Van Voorhees. The laboratory address and telephone/fax are:

EMSL Analytical, Inc.
107 Haddon Avenue
Westmont, NJ 08108
Tel: (800) 220-3675 Fax: (856) 858-7141

3.2.7 Radiological Laboratory

Severn Trent Laboratory, Inc. (STL) located in Earth City, Missouri will perform the radiological testing for this project. The laboratory point of contact is Richard H. Mannz. The laboratory address and telephone/fax are:

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314) 298-8566 Fax: (314) 298-8757

4.0 INSPECTIONS AND TESTING

The CQCSM is responsible for executing a QC monitoring, observation, and surveillance system and coordinating construction operations and testing through implementation of the three-phased process. This process includes inspections and testing for each DFW during the preparatory, initial, and follow-up phases as well as documentation and reporting of the inspections and corrective actions. At the completion of the asbestos abatement DFW, JE and the USACE authorized representative will perform both a final inspection and an acceptance inspection.

4.1 DEFINABLE FEATURES OF WORK

The following DFWs have been developed from the scope of work.

Assessment Mobilization

- Coordination meeting
- H&S orientation
- Temporary facilities setup
- Utility hookup

Asbestos Assessment

- Asbestos survey, sampling, and testing
- Radiological survey

Abatement Mobilization

- Preconstruction meeting
- H&S orientation
- Temporary facilities setup
- Utility hookup
- Containment setup

Asbestos Abatement

- Asbestos abatement
- Air monitoring
- RAD monitoring
- Abatement waste management
- Transportation and disposal

Demobilization

- Punch list
- Utility disconnect
- Temporary facilities demob

4.2 QUALITY CONTROL

At least three phases of QC will be conducted by the CQCSM for each DFW. At each inspection point within a DFW, the CQCSM will provide at least 48-hour notice to the USACE of the inspection and invite USACE to witness the inspection or testing process. Upon the completion of the asbestos abatement, both a final inspection and an acceptance inspection will be performed with the USACE authorized representative.

At any stage of the three-phased inspection process, materials, installations, or fabricated components may be rejected due to nonconformance. When nonconformance occurs, the CQCSM will meet with appropriate personnel (e.g., Site Superintendent, onsite or offsite subcontractors, etc.) to determine and implement strategies for resolving the nonconformance. Resolution may require such actions as returning materials to vendors, removing the nonconforming component, or reinstalling the construction item. These actions will reinitiate inspection of the nonconforming items.

The following sections describe the activities that will be conducted during each phase of QC. A schedule of QC inspections and tests for each DFW is provided in Tables 4-1 through 4-5. Table 4-6 provides a list of the control, verification, and acceptance tests that will be performed during the asbestos assessment and asbestos abatement DFWs.

4.2.1 Preparatory Phase

The preparatory phase will be performed prior to beginning work on each DFW, after all required plans and documents are approved and copies are present at the work site. The preparatory phase will include, at a minimum, the following:

- A review of the Scope of Work;
- A check to ensure materials and equipment have been tested, submitted, and approved;
- An examination of approved equipment and materials at the site;
- A review of the work area to ensure completion of preliminary work; and,
- A review of the activity hazard analysis to ensure safety requirements are met.

The preparatory phase QC control will be conducted by the CQCSM in the presence of an authorized representative of the USACE. Results of the meeting will be documented on the preparatory inspection form (Appendix II).

4.2.2 Initial Phase

The initial phase of QC will be conducted at the beginning of each DFW. This phase will include, at a minimum:

- A review of the meeting minutes from the preparatory phase;
- A check to ensure work is performed in accordance with the contract documents and approved plans;
- Establishment of acceptable level of workmanship;

- Resolution of any differences or deviations from approved plans;
- A verification of the adequacy of controls to ensure contract compliance; and,
- A check of compliance with the approved SHP.

The initial inspection will be documented on the initial inspection form included in Appendix II.

4.2.3 Follow-up Phase

Under the follow-up phase, daily checks will be performed to assure that QC activities, including verification testing, are providing continued compliance with the contract requirements. The daily checks will be performed until the particular DFW is completed. The final follow-up check will ensure that any deficiencies are identified and corrected prior to the start of the next DFW. Follow-up inspections will be documented on the daily CQC report form (Appendix II).

4.2.4 Testing

Control, verification, and acceptance testing will be performed during the Asbestos Assessment and Asbestos Abatement DFWs to ensure the work meets both the applicable regulatory requirements and the requirements of the SOW. Table 4-6 summarizes the required tests. The Asbestos Project Monitor personnel provided by Chopra-Lee will perform the air monitoring tests. The RAD testing and monitoring will be performed by the JE RAD technicians and/or the JE SSHO/HP. Specifics regarding sample collection, testing methods and QC procedures for each test are provided in the Sampling and Analysis Plan (SAP). Test reporting requirements and formats are also provided in the SAP.

4.2.5 Final Inspection

The JE CQCSM and the USACE authorized representative will perform a final inspection at the completion of the asbestos abatement activities. A punch list of any incomplete or unacceptable items of work will be documented and included in the daily CQC report. All items on the punch list will be corrected prior to performing the acceptance inspection.

4.2.6 Acceptance Inspection

The acceptance inspection will be performed by the JE CQCSM and the USACE authorized representative after all punch list items have been completed. Each punch list item will be reviewed for acceptance by the USACE. The completed punch list documenting the results of the acceptance inspection will be included in the daily CQC report.

4.2.7 Notification of Noncompliance

The USACE will notify JE of any detected noncompliance issues. JE will take immediate corrective action after receipt of such notice. If necessary, the CQCSM will meet and discuss the noncompliance with the USACE to resolve differences and agree to a satisfactory corrective action. The noncompliance and resulting corrective action will be fully documented in the daily CQC report.

4.2.8 Nonconformance and Corrective Actions

It is important that any nonconforming material, assembly, or construction method that is identified be corrected through systematic actions. Nonconformance includes any conditions that do not comply with drawings, specification codes, workmanship standards, or USACE contract requirements. Upon observation of a nonconformance, the CQCSM will take the following actions:

- If, at any time, materials or workmanship are observed that do not comply with drawings, specifications, codes, or acceptable construction practices, the CQCSM will notify the responsible party, vendor, or subcontractor to initiate prompt corrective action.

- The nonconforming item, if it cannot be corrected immediately, will be documented on a nonconformance report (NCR) form (Appendix II). The NCR will contain a detailed description of the item or condition that has failed to meet drawing or specification requirements with an explanation of conditions at the time of failure and its probable cause. A copy of the NCR will be submitted to the USACE with the daily CQC report.

- The CQCSM will evaluate discrepancies to coordinate the resolution and determine methods of correction that may prevent recurrence of the problem.

- When corrective action is complete, the item will again be subject to follow-up inspection.

- Upon acceptance during the follow-up inspection, the CQCSM will note the implemented corrective actions on the NCR form and submit the completed form with the daily CQC report.

Table 4-1
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – ASSESSMENT MOBILIZATION			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
PREPARATORY 1st week of Mobilization	Review approved plans for specifications and requirements	NA	CQCSM
	Review subcontractor SOWs and vendor specifications for requirements	NA	CQCSM
	Inspect work areas for changed conditions	Note any changes that would impact work approach.	CQCSM
	Review activity hazard analysis to ensure safe operations	NA	SSHO
	Verify training requirements of personnel	Obtain current training certificates for all onsite personnel.	SHSO
	Review and discussion of coordination meeting	Note and communicate any revised procedures	CQCSM
	Review and discussion of NFSS H&S orientation	Note and communicate any special H&S concerns.	SHSO
INITIAL Upon receipt of materials and equipment at site	Observe construction and setup of temporary facilities	Correct performance that does not meet requirements.	CQCSM
	Observe utility hookups	Correct performance that does not meet requirements.	CQCSM
	Inspect all delivered materials and equipment to ensure compliance with specifications and good operation	Contact vendor to replace and equipment/materials that do not meets specifications.	CQCSM
FOLLOW-UP Following completion of setup and receipt of material and equipment	Test operation of temporary facilities and utilities	Correct facilities/ utilities that do not operate correctly.	CQCSM
	Inspect materials and equipment for proper storage	Properly label and store materials to prevent damage and hazards.	CQCSM

Table 4-2
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – ASBESTOS ASESSMENT			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
PREPARATORY 1 day prior to start of work	Review approved plans for specifications and requirements	NA	CQCSM
	Review subcontractor SOWs and vendor specifications for requirements	NA	CQCSM
	Review activity hazard analysis to ensure safe operations	NA	SSHO
INITIAL 1st day of assessment activities	Observe radiological surveys for compliance with RCCP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM/SSHO
	Observe asbestos sampling for compliance with AAAP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM/SSHO
	Review documentation of surveying and sampling activities for detail and accuracy	Correct any unsatisfactory documentation.	CQCSM
	Review calibration logs of field instruments	Recalibrate instruments as required.	CQCSM
	Observe waste management practices for compliance with the WMP	Correct any procedures that do not comply with approved WMP.	CQCSM
FOLLOW-UP At completion of assessment activities	Inspect waste containers for compliance with WMP	Correct any storage that does not comply with approved WMP.	CQCSM
	Inspect materials and equipment for proper storage	Correct any improper storage.	CQCSM
	Inspect site to ensure building and temporary facilities are secure prior to demobilization	Lock down facilities and shut off utilities as required.	CQCSM

Table 4-3
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – ABATEMENT MOBILIZATION			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
PREPARATORY 1st week of Mobilization	Review approved plans for specifications and requirements	NA	CQCSM
	Review subcontractor SOWs and vendor specifications for requirements	NA	CQCSM
	Inspect work areas for changed conditions	Note any changes that would impact work approach.	CQCSM
	Review activity hazard analysis to ensure safe operations	NA	SSHO
	Verify training requirements of personnel	Obtain current training certificates for all onsite personnel.	SHSO
	Review and discussion of pre-construction meeting	Note and communicate any revised procedures	CQCSM
	Review and discussion of NFSS H&S orientation	Note and communicate any special H&S concerns.	SHSO
INITIAL Upon receipt of materials and equipment at site	Observe construction and setup of temporary facilities	Correct performance that does not meet requirements.	CQCSM
	Observe utility hookups	Correct performance that does not meet requirements.	CQCSM
	Inspect all delivered materials and equipment to ensure compliance with specifications and good operation	Contact vendor to replace and equipment/materials that do not meets specifications.	CQCSM
FOLLOW-UP Following completion of setup and receipt of material and equipment	Test operation of temporary facilities and utilities	Correct facilities/ utilities that do not operate correctly.	CQCSM
	Inspect materials and equipment for proper storage	Properly label and store materials to prevent damage and hazards.	CQCSM

Table 4-4
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – ASBESTOS ABATEMENT			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
PREPARATORY 1 day prior to abatement activities	Confirm regulatory notifications have been made and required permits received.	Make all notifications and obtain all permits before proceeding with work.	CQCSM
	Confirm that all planning documents have been submitted and approved by USACE	Obtain any outstanding approvals prior to proceeding with work.	CQCSM
INITIAL 1st day of abatement activities	Observe asbestos abatement for compliance with AAAP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM
	Observe RAD surveys for compliance with RCCP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM
	Review documentation of surveying and sampling activities	Correct any unsatisfactory documentation.	CQCSM
	Review calibration logs of field instruments	Recalibrate instruments as required.	SHSO
FOLLOW-UP Weekly during abatement activities	Observe asbestos abatement for compliance with AAAP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM
	Observe RAD surveys for compliance with RCCP/SAP/HSP	Correct any procedures that do not comply with approved documents.	CQCSM
	Observe waste management practices for compliance with the WMP	Correct any procedures that do not comply with approved WMP.	CQCSM
	Inspect materials and equipment for proper storage	Correct any improper storage.	CQCSM
	Review asbestos and RAD personnel, work area, and outside air test results	Revise work procedures as required to ensure safe operation.	SSHO
	Review equipment and waste RAD test results	Decontaminate as required to comply with action levels.	SSHO

Table 4-4 (Cont.)
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – ASBESTOS ABATEMENT			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
FINAL Upon completion of asbestos abatement work	Review clearance asbestos and RAD testing results	Decontaminate areas as required to meet clearance requirements.	CQCSM/SSHO
	Inspect work areas and develop punchlist with USACE representative	Identify and note any incomplete or unacceptable items for completion/correction	CQCSM
ACCEPTANCE Upon resolution of punchlist items	Inspect all items on punchlist for satisfactory completion	Note corrective actions taken for each items and the date completed.	CQCSM
	Perform acceptance inspection with USACE representative	Obtain USACE approval signature of acceptance.	CQCSM

Table 4-5
DEFINABLE FEATURES OF WORK INSPECTION PROGRAM

Definable Feature of Work – DEMOBILIZATION			
Inspection Phase / Schedule	**QC Activity**	**Potential Actions**	**Inspector**
PREPARATORY 1 day prior to demobilization	Review activity hazard analysis to ensure safe operations	NA	SSHO
INITIAL 1st day of demobilization	Observe disassembly of temporary facilities and containment systems	Correct any improper or unsafe procedures	CQCSM/SSHO
	Observe utility disconnects	Correct any improper or unsafe procedures	CQCSM/SSHO
	Inspect all rental equipment for damage and proper packaging prior to shipment to vendor	Note any damaged items.	CQCSM
	Observe waste disposal practices for compliance with the WMP	Correct any improper disposal activities.	
FOLLOW-UP Last day of demobilization	Inspect site for residual materials and cleanliness	Dispose of waste according to WMP and clean site as necessary.	CQCSM
	Inspect utilities for proper disconnection	Disconnect/de-energize as required.	CQCSM

Table 4-6
DEFINABLE FEATURES OF WORK TEST SCHEDULE

Definable Feature of Work	Test	Media	Frequency/ Coverage	Action Level
Asbestos Assessment	Asbestos per 12 NYCRR 56 (PLM/TLM)	Asbestos Bulk Samples	3 per <1000 sf 5 per 1000-5000 sf 7 per >5000 sf	1% asbestos
	Alpha/Beta direct measurement verification survey	Asbestos Work Area Surfaces	20 % of work areas	NRC Regulatory Guide1.86 for Ra-226 and Th-232
	Pre-Construction final status RAD survey (alpha/beta direct and scan measurements)	Class 1 / Class 2 Survey Units	100 % scan for Class 1 50 % scan for Class 2 Direct measurements per MARRSIM Section 5.5.2.2 Guidance	NRC Regulatory Guide 1.86 for Ra-226 and Th-232
Asbestos Abatement	NIOSH Method 7400 (PCM)	Personnel Air	Daily	0.1 fiber per cc
	NIOSH Methods 7400 (PCM) and 7402 (TEM)	Work Area Air	Daily	0.1 fiber per cc
	NIOSH Methods 7400 (PCM) and 7402 (TEM)	Outside Air	Daily	0.01 fiber per cc
	USEPA TEM (40 CFR 763)	Clearance Air	Abatement Completion	70 structures per mm^2
	Beta/Gamma direct (scan) measurements	Personnel	Daily upon exit of RAD areas	Twice background levels
	USDOE EMLPM HASL-300 (gross alpha analysis)	Outside Air	Daily	2% DAC for Class W Th-232
	Alpha/Beta direct measurement	Equipment/ Waste Container Surfaces	Prior to release/shipment	NRC Regulatory Guide 1.86 for Ra-226 and Th-232
	USEPA/600-14-80-032 (gross alpha analysis)	Wastewater	Prior to discharge	10 CFR 20.2003, Appendix B, Table 3 for Th-232
	Post-Construction final status RAD survey (alpha/beta direct measurement)	Class 3 Survey Units	Abatement Completion per MARRSIM Section 5.5.2.2 Guidance	NRC Regulatory Guide 1.86 for Ra-226 and Th-232

5.0 COORDINATION, DOCUMENTATION AND REPORTING

5.1 CONTRACTOR COORDINATION

During the initial mobilization to the site prior to the asbestos assessment activities, the CQCSM will hold a coordination meeting with the USACE. The purpose of the meeting is to review the CQCP, personnel coordination, site layout, utility hookup, field activity procedures, and health and safety issues. Meeting minutes will be prepared by the JE CQCSM, distributed to all attendees, and entered into the project file. All JE and subcontractor personnel will also attend a one-hour NFSS health and safety orientation prior to performing any work within the exclusion zones.

Upon mobilization for the asbestos abatement activities, the JE CQCSM and SSHO, as well as the CAPE Project Manager/Site Superintendent and the Chopra-Lee Asbestos Project Monitor, will conduct a preconstruction meeting with the USACE Contracting Officer and authorized representative. The purpose of the preconstruction meeting is to review the CQCP and proposed approach for asbestos abatement and resolve any differences. During the meeting, a mutual understanding if the QC system details will be developed, including forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of JE QC system and USACE's quality assurance (QA). Minutes of the meeting will be prepared by the USACE and signed by both JE and the USACE Contracting Officer or authorized representative. The meeting minutes will become part of the project file.

The JE CQCSM will maintain regular contact with the USACE authorized representative while performing work at NFSS. At a minimum, the CQCSM will conduct weekly progress meetings with USACE personnel, shall provide an agenda for each meeting, and shall submit minutes of eaqch meeting to USACE indicating personnel in attendance and summarizing issues discussed and action items to be completed. The daily CQC reports will be submitted as part of the weekly updates. Additionally, the CQCSM and SSHO will hold weekly meetings with the field team to discuss quality and health and safety issues regarding the work performed the previous week and the work to be performed the following week. The USACE authorized representative is welcome to attend these meetings.

5.2 DOCUMENTATION

The CQCSM will keep a daily logbook to document observations of construction techniques and to report all other data relevant to the QC effort. Entries in the logbook and reporting forms will be factual and provide evidence that the required QC activities and tests have been performed. The entries will be made with black or blue waterproof ink. Corrections to the logbook will be made by lining through the incorrect entry, and initialing and dating the correction. Each day of entries will be signed and dated by the author. The daily logbook will be the basis of the information provided in the daily CQC report and will be archived in the project records.

Inspection forms (Appendix II) may be completed by the CQCSM directly on the applicable forms in the field. Entries on the forms will be in black or blue waterproof ink and will be legible. The CQCSM will review the forms and make any required edits or notations prior to submittal to the USACE.

Digital photographs will be taken of the work activities during the entire field work duration. A photograph log will be completed identifying the location and subject of each photograph. The photographs will be stored in both electronic and hardcopy formats in the project files. Hardcopies of the photographs will be included in the Project Completion Report.

5.3 CONTRACTOR QUALITY CONTROL REPORTS

The JE CQCSM will maintain records and submit daily reports on quality control activities to the USACE. The reports will be factual records containing data from JE's daily quality control activities and resulting actions. The reports will be submitted to the USACE Project Engineer or authorized representative using the daily CQC report forms presented in Appendix II.

Each daily CQC report will include the following information:

- Phase(s) of work underway during the time of the report.
- Type, number, and locations of inspections performed.
- Results of inspections, including the nature of any deficiencies observed and the corrective actions taken or to be taken.
- Reports of tests performed accompanied with the corresponding backup documentation will detail the results to include: failing and passing tests; relationships to the specification requirements; and any tolerance (where applicable); and remedial action taken or to be taken. When test results cannot be completed by the time the daily report is submitted, a notation will be made that the test was performed and approximate date the test results will be available. Delayed test results will be submitted with daily CQC report on the date received.
- Other information as applicable to the project such as:
    - Weather conditions
    - Subcontractor operations
    - Monitoring of materials and equipment upon arrival at the project site for compliance with approved shop drawings, damage during transit, and proper storage
    - Off-site surveillance activities
    - Job safety
    - Daily Manpower/Equipment Report showing the cumulative manpower totals and the daily equipment inventory.

5.4 SUBMITTAL REQUIREMENTS

JE will prepare all documents and submittals for USACE review in accordance with the Contractor Submittal Requirements Summary (CSRS, Appendix III). The CSRS specifies the requirements for all anticipated submittals for this project. Each submittal will include a cover page and a transmittal letter listing the information required by the CSRS. JE will furnish ten (10) copies of each submittal listed in the CSRS. Additionally, an electronic copy of each document will be provided to the USACE in Adobe format on a 3.5-inch floppy disk. Whenever possible, related items will be submitted together for simultaneous review.

JE will provide all required submittals to USACE for review in accordance with the submittal schedule provided in the EDQCP. All plans submitted to USACE will follow a consistent format and will include the following:

- Title sheet
- ITR sign-off sheet
- Table of contents
- Document body using a decimal section system
- Appendices.

JE will conduct an independent technical review (ITR) of all work plan submittals prior to submittal to USACE. The ITR team (ITRT) will be composed of at least three senior JE personnel that have experience in disciplines involved in the document and who were not directly involved in the document's development. A Health Physicist will be on the ITRT reviewing those plans involving health and safety and radiation control.

Issues raised as a result of the ITR will be discussed and resolved with the document author(s). All review comments and actions taken will be documented. At the completion of this process, a Completion of Independent Technical Review will be completed for each document and submitted to USACE along with review comments and responses attached to the submittal.

Upon final review and approval by the CQCSM, the documents and supporting information will be submitted to the USACE Contracting Officer's Representative:

U.S. Army Engineer District, Buffalo
Attn: CELRB-CO-N
1776 Niagra Street
Buffalo, NY 14207-3199

APPENDIX I

ITRT RESUMES

VIRGIL W. JANSEN, P.E.
Program Manager

EDUCATION
MS, Environmental Engineering – University of Illinois, 1972
BS, Civil Engineering – University of Illinois, 1971

LENGTH OF SERVICE
Sverdrup Hire Date: 1996
Other firms/agencies: 24 years (Entered the profession 1972)

REGISTRATIONS/CERTIFICATIONS
Registered Professional Engineer in Illinois (1975)
40-Hour HAZWOPER
Executive Enterprise Environmental Regulations Course
Lion Technology Hazardous Waste Management Workshop

BACKGROUND/EXPERTISE
Mr. Jansen has 26 years of experience in environmental engineering project management, and construction management of remediation work.

PROJECT EXPERIENCE

UST Program, Louisville District, USACE – IN. Senior Project Manager responsible for negotiation, cost estimating, management, and execution of 22 delivery orders at 10 sites in Indiana for this $12-million contract.

UST Program, Louisville District, USACE – Various Sites, KY. Project Manager responsible for all project management duties for this $6-million UST program, including oversight of site superintendent, scheduling, and cost control/cost accounting.

Navy Environmental Job Order Contract. Program Manager responsible for management of an indefinite quantity-indefinite delivery order contract for environmental remediation construction at Great Lakes Naval Training Center involving asbestos UST, wetlands restoration, and contaminated soil removal projects.

Philip Environmental Services Corporation – Columbia, IL. Construction Manager responsible for supervision of proposal and project managers in remediation contracting arena. Also, act as liaison between consulting and remediation divisions in the Columbia office. Project Management including proposal preparation, cost estimate review, subcontract negotiations, implementation of corporate special projects team. Major projects included: construction management of interim remedial measures project at former MPG facility; project management of site remediation of former open dump located din Louisville, KY; and project management of source removal action at former MGP facility.

Central States Environmental Services, Inc. – Centralia, IL. Engineering Manager responsible for technical management functions related to LUST and hazardous waste remediation projects, client and regulatory agency liaison, project cost estimation, contract

negotiation and project management for an environmental remediation contractor. Major projects include: project management of LUST projects including investigation, tank removal and soil/water remediation, regulatory agency contact on 20+ sites throughout Illinois; and project management of hazardous waste remediation sites, including engineering evaluations, cost estimation, site specific work plan, health and safety plan, client liaison, and negotiation with regulatory agencies.

Barttelbort Engineering & Excavating, Inc. – Freeburg, IL. Vice President and Project Manager responsible for all management functions, including daily office management, estimating, and overall project planning and management, liaison with project owner and/or engineer for general construction corporation. Involved in subdivision development, residential construction, utility and treatment (water and sewer) facility construction, and storm sewers systems.

Haier Plumbing & Heating, Inc. – Okawville, IL. Project Manager responsible for limited management functions, day-to-day office management, estimating and overall construction project management. Also, acted as a liaison with project owner and/or engineer for a mechanical and municipal utility construction firm.

WORK HISTORY

Jacobs Sverdrup Constructors 1996 to Present

LEO F. MANN III
Environmental Engineer - Project Manager – Asbestos and Lead Services

EDUCATION
MBA – Lindenwood University, 1996
BS, Marketing and Management – University of Missouri-St. Louis, 1983

LENGTH OF SERVICE
Jacobs/Sverdrup Hire Date: 1993
Other firms/agencies: 6 years (Entered the profession in 1987)

REGISTRATIONS/CERTIFICATIONS
Certificate, Hazardous Waste Operations and Emergency Response
Certificate, EPA AHERA Asbestos Abatement Contractor/Supervisor
Certificate, EPA AHERA Asbestos Course for Inspector Training
Certificate, EPA AHERA Asbestos Project Designer Course
Certificate, EPA Lead Inspector and Risk Assessor
Certificate, NIOSH 582 Sampling and Evaluating Airborne Asbestos Dust
Certificate, Lead Abatement Contractor/Supervisor
Red Cross First Aid/CPR
OSHA 10-Hour Construction Safety Training
License, Asbestos Supervisor, Missouri
License, Asbestos Inspector, Missouri, Illinois, North Carolina, Kentucky
License, Asbestos Project Designer, Missouri, California
License, Certified Site Surveillance Technician, California
License, Lead Inspector, Missouri

PROFESSIONAL AFFILIATIONS/AWARDS
Environmental Information Association (EIA)

BACKGROUND/EXPERTISE
With more than fourteen years of experience, Mr. Mann performs, as well as manages, a staff that provides asbestos/lead/PCB in-buildings surveys and designs, UST removal design and oversight, phase I site assessments, formulates detailed construction estimates, provides contractor project management and project oversight, and performs asbestos/lead/PCB related industrial hygiene services.

PROJECT EXPERIENCE

Parkway School District ($500K) – St. Louis County, MO Project Principle for a two-year, multi-phase, environmental consulting services contract providing professional services in conjunction with the school districts renovation activities at any of the 31 campuses within the Parkway School District. Responsibilities include survey and design, project construction estimating, contract management, subcontractor oversight, UST removal, asbestos, lead paint, PCB, and mercury-containing fluorescent light abatement services, daily and clearance air monitoring, and project closeout.

Morgan Hill Unified School District ($2 million) – San Jose, CA. Project Manager for a two-year, multi-phase, modernization project providing asbestos, lead paint, PCB, and mercury-containing fluorescent light abatement services in conjunction with $30 million renovation activities to the Live Oak High campus. Responsibilities include survey and design, project construction estimating, contract management, subcontractor oversight, daily and clearance air monitoring, and project closeout.

Santa Monica-Malibu Unified School District ($2 million) – Santa Monica, CA. Project Manager for a two-year, multi-phase, modernization project providing asbestos, lead paint, PCB, and mercury-containing fluorescent light abatement services in conjunction with $50 million renovation activities to 16 schools in the Santa Monica-Malibu Unified School District. Responsibilities include survey and design, project construction estimating, contract management, subcontractor oversight, daily and clearance air monitoring, and project closeout.

FAA Air Traffic Control Center – Honolulu, HW Project Manager providing asbestos/lead/PCB survey and abatement design in conjunction with the demolition of a 50,000 sf FAA facility located in Diamond Head crater.

Keebler Company – Louisville, KY. Project Manager responsible for providing Keebler a "turn-key" service for the demolition and disposal of an asbestos-containing 200-ft-long baking line unit during a two-week plant shutdown.

Keebler Company – Augusta, GA. Project Manager responsible for providing Keebler a "turn-key" service for the demolition and disposal of three abandoned asbestos-containing baking line units. The work was performed over a weekend while working around the clock in order to meet the facilities startup schedule.

Keebler Company – Elmhurst, IL. Project Manager providing an Asbestos Management Plan for each Keebler facility located in Louisville, Kentucky; Charlotte, North Carolina; Birmingham, Alabama; Cleveland, Tennessee; Marietta, Oklahoma; Lake Bluff, Illinois; Little Rock, Arkansas; and Augusta, Georgia.

Okaloosa County School District – Okaloosa County, FL ($3 Million). Project Manager for a three-phase, five-year project providing asbestos, lead paint, and PCB abatement services in conjunction with $140 million renovation activities to 30 schools in the Okaloosa County School District. Responsibilities include: survey and design, project construction estimating, contract management, subcontractor oversight, daily and clearance air monitoring, and project closeout.

FAA Air Traffic Control Center – Oakland, CA. Site Surveillance Technician providing industrial hygiene services for asbestos and lead during abatement activities in the occupied air traffic control center.

Concorde Brands – St. Louis, MO. Project Manager performing asbestos-containing building material abatement design for the removal of friable and non-friable materials in the single-story office building damaged as a result of fire.

Pet Building – St. Louis, MO. Project Manager performing asbestos-containing building material, lead paint, and PCB inspection of the 15-story building. Provided asbestos abatement project design, air monitoring, and oversight for the 15th floor abatement of 4,000 square feet of friable material.

Survey, Design, Industrial, Hygiene Services

IDO HTRW Contract, U.S. Army Corps of Engineers – Nashville District (Ohio River Division), KY.

- *Fort Campbell Facility, Old Hospital Complex Demolition, Fort Campbell, KY* – Project manager for a three-phase project providing industrial hygiene services for monitoring asbestos abatement work at the Old Hospital Complex (OHC) Demolition. The project includes the abatement of asbestos-containing materials from and demolition of the 54 buildings that comprise OHC.
- *Fort Campbell Facility, Demonstration Project, Fort Campbell, KY* – Developed project design, supervised the field activities of the asbestos and demolition contractors, provided environmental and clearance air monitoring, formulated the project's final report, and consulted the Fort Campbell Environmental Office in their communications with Kentucky Department of Air Quality. Project involved demonstrating the feasibility of removing and disposing of drywall and joint compound as a non-ACM homogeneous material, with no significant fiber release.

Survey, Design

DFAS – San Bernardino, CA. Project Manager performing asbestos-containing building material and lead paint inspection, and project design of two three-story, 70,000-sq-ft office buildings.

Building 5500 – Edwards AFB, CA. Project Manager performing asbestos containing building material and lead paint inspection of the three-story hospital building.

29 Palms Marine Base – 29 Palms, CA. Project Manager performing asbestos-containing building material, lead paint, and PCB inspection of nine warehouse buildings.

Pentagon Navy Annex – Arlington, VA. Project Manager performing asbestos-containing building material surveys in an occupied office building.

NASA Goddard Space Flight Center – Greenbelt, MD. Project Manager performing asbestos-containing building material surveys in six occupied buildings totaling over 500,000 square feet.

Los Angeles World Airport – Los Angeles, CA. Project Manager performing asbestos/lead/PCB/mercury containing lamps survey and abatement design for two 80,000-sq-ft air freight building.

Abatement, Project Management

Brand Environmental Services, Inc. – St. Louis, MO. Project Manager and estimator covering a territory that includes Missouri, Illinois, Kansas, Iowa, and Nebraska. Responsibilities included: coordinating subcontractors and defining their scope of work; creating job scheduling using time line software; and managing commercial and industrial jobs ranging in price to $5 million.

May Company – St. Louis MO. Project Manager for all asbestos removal work for the May Company facilities located throughout Missouri, Kansas, and Illinois.

Lambert International Airport – St. Louis, MO. Project Manager/Estimator for a one-year asbestos removal project at the main terminal of Lambert International Airport.

Union Electric – St. Louis, MO. Project Manager/Estimator for asbestos removal and insulation projects located at various Missouri power plant sites.

Monsanto Company – Sauget, IL. Project Manager for a second shift asbestos removal crew that worked seven days per week in order to complete scheduled project during Monsanto Krumrich Plant process shutdown.

Monsanto Company – St. Louis, MO. Asbestos Project Manager performing asbestos in buildings survey at the Monsanto Queeny Plant.

State Farm Regional Headquarters – Columbia, MO. Asbestos Project Manager performing asbestos in-buildings survey in an occupied office facility covering 200,000 square feet.

OMNITRANS – San Bernardino, CA. Project Manager performing an asbestos survey of a 30,000-sq-ft bus maintenance and office facility scheduled for demolition.

TECHNICAL PAPERS/PUBLICATIONS

EIA National Conference, 1995 – Presented the project design and results of the U.S. Army Corps of Engineers – Nashville District's Fort Campbell, Kentucky Demonstration Project

WORK HISTORY

Jacobs Engineering Federal Programs 1993 to Present

Brian W. Knaus, CIH, CSP
Regional Manager, Health and Safety

EDUCATION

MS, Industrial Hygiene – Central Missouri State University, 1982
BS, Chemistry and Biology (Minor) – St. Louis University, 1968

LENGTH OF SERVICE

Jacobs/Sverdrup Hire Date: 1990
Other firms/agencies: 18 years (Entered the profession in 1972)

REGISTRATIONS/CERTIFICATIONS

Certified Industrial Hygienist, 1989 (4264)
Certified Safety Professional, 1977 (5115)
Certificate, Program in General Insurance, Insurance Institute of America
Certificate, Blasting and Explosives Safety, DuPont
Certificate, Industrial Hygiene Engineering (551) NIOSH
Certificate, Sampling and Evaluating Airborne Asbestos (582) NIOSH
Certificate, Hazardous Waste Operations and Emergency Response
Certificate, Manager/Supervisor Hazardous Waste Operations and Emergency Response
Certificate, Asbestos Abatement Contractor/Supervisor, Inspector, Management Planner, Designer
Certificate, OSHA Competent Person
Red Cross First Aid Certified/CPR Certified
Licensed, Certified Asbestos Consultant, California, 1993 (93-1022)
Licensed, Asbestos Consultant, Florida, 1993 (IA0000054)
Licensed, Asbestos Abatement Project Monitor, Massachusetts, 1993 (PM02160)
Licensed, Asbestos Abatement Site Supervisor, Minnesota, 1993 (2302)
Licensed, Industrial Hygienist, Illinois, 1992 (5319042002)
Licensed, Certified Missouri Safety Consultant, Missouri 1995
Licensed, Certified Asbestos Hazard Abatement Specialist, Ohio 1997 (26418)
Licensed, Asbestos Project Manager, Illinois, 1998 (100-7548)
Licensed, Asbestos Project Designer, Illinois, 1998 (100-7548)
Licensed, Air Sampling Professional, Missouri, 1994 (7050394MOAS4)

PROFESSIONAL AFFILIATIONS/AWARDS

American Industrial Hygiene Association
Diplomat – American Board of Industrial Hygiene
Professional Member – American Society of Safety Engineers
Certified Member – Board of Certified Safety Professionals

BACKGROUND/EXPERTISE

With more than 28 years of experience, Mr. Knaus, as a Health and Safety Regional Manager, assesses site operations; conducts in-plant and environmental surveys; collects air and bulk samples to characterize of physical and chemical hazards; evaluates physical, chemical, and material handling procedures; and recommends corrective actions. He is knowledgeable concerning TSCA, RCRA, and OSHA regulations. Mr. Knaus enforces the Jacobs Health and Safety Program and performs safety and industrial hygiene services. His unique background

combines occupational health and safety with construction safety. Representative experience includes:

PROJECT EXPERIENCE

U.S. Army Corps of Engineers Nashville District (Ohio River Division) $9-million IDO HTRW Contract. Health and Safety Manager responsible for assembly of site-specific hazardous waste health and safety plans, site health and safety audits and personal air monitoring during task order assignments. To reduce the time and cost of assembling a site-specific health and safety plan for each delivery order, a comprehensive health and safety plan was developed for the program. As delivery orders were received, a site-specific addendum to the comprehensive health and safety plan was developed. These tasks included:

- Monitoring well installation at Detroit Arsenal - Detroit, MI
- Industrial hygiene services as part of asbestos abatement during the Old Hospital Complex demolition - Ft. Campbell, KY
- Site investigation at a battery burial area, Bluegrass Facility - Richmond, KY
- Phase II remedial investigation at the dry acid pond, Bluegrass Facility - Richmond, KY
- Phase II remedial investigation at the lagoon area, Bluegrass Facility - Richmond, KY
- Lead assessment for Building 4899 - Ft. Campbell, KY
- Lead assessment for the family housing units - Ft. Campbell, KY
- Pesticide sampling as part of the Old Hospital Complex buildings demolition - Ft. Campbell, KY
- Weapons shop soot analysis - Ft. Campbell, KY
- Demonstration project to abate asbestos containing drywall during the Old Hospital Complex buildings demolition - Ft. Campbell, KY
- Remedial design of contaminated soils at the CF area - Savanna, IL
- Pesticide sampling at the family housing area - Ft. Campbell, KY
- Study at the old and new landfill areas - Richmond, KY
- Study at the mustard burn and mustard trench areas - Richmond, KY
- Study at the former waste ammunition detonation area - Richmond, KY
- Remedial design at Group I site, area B/B, plating area and industrial waste lagoons - Lexington, KY
- Remedial design for pipeline system - Ft. Knox, KY

U.S. Army Corps of Engineers Tulsa District $15-million IDO HTRW Program
Longhorn Army Ammunition Plant, NM - Health and Safety Manager responsible for developing safety and health work plans. Mr. Knaus trained the site manager and site safety officer to perform air monitoring and site auditing to effectively control costs on the project.

U.S. Environmental Protection Agency, Alternative Remedial Contracts Strategy (ARCS) Program Regions VI, VII, and VIII. Mr. Knaus developed the overall health and safety plan for the ARCS Program, and then developed the site-specific hazardous waste health and safety plan for a RI/FS study at PAB Oil and Chemical Service, Inc. Superfund Site and Gulf Coast Vacuum Services, Inc. in Abbeville, Louisiana. He also performed personal air monitoring at Gulf Coast Vacuum Services, Inc., in coordination with the site safety officer. He conducted site health and safety meetings at all sites, and developed a decontamination plan for employees and equipment. During the site investigation at Gulf Coast Vacuum Services, Inc., personal air

monitoring was performed during simulated remedial action activities, such as the excavation of contaminants. This data was used to demonstrate to the remedial action bidders the acceptable level of personal protection required for remediation. Additional delivery orders included:

- *Midvale Slag Superfund Site, Midvale, UT.* Health and Safety Manager responsible for the assembly of the site-specific hazardous waste health and safety plan. To effectively control costs, the project's health and safety monitoring was performed by a trained site safety officer. This cost control mechanism helped the project remain under budget.
- *Denver Radium Superfund Site, Denver, CO.* Health and Safety Manager responsible for the assembly of the site-specific hazardous waste health and safety plan for the remediation of heavy metals and radium wastes. Air monitoring for heavy metals, alpha and gamma radiation was performed to verify the correct engineering controls were implemented to minimize potential exposure.
- *Cleburn Street Well Superfund Site, Grand Island, NE.* Health and Safety Manager performing on-site air monitoring and auditing. The project consisted of an RI/FS and the installation of groundwater monitoring wells, as well as an investigation of an aquifer contaminated with dense chlorinated solvents that originated from a dry cleaning operation.

Confidential Food Processing Client – Jersey City, NJ. Health and Safety Manager providing medical surveillance, personal air monitoring, and a site-specific health, safety, and emergency response plan to identify and control workplace hazards.

Times Beach Superfund Site, I-44 Corridor Remediation and Site Demolition – Times Beach, MO. Health and Safety Manager for dioxin-contaminated site. Asbestos-containing materials work included an identification survey, abatement specification preparation, environmental air monitoring, abatement contractor pre-qualification, and documentation package assembly. Because Sverdrup provided design-build services on this project, Mr. Knaus worked closely with construction personnel to verify their understanding of site conditions. He monitored subcontractors' compliance with the health and safety plan by making a number of periodic site audits/visits. He applied our experience on other projects to develop a confined space entry plan for use on this project, which addressed oxygen deficiency, combustibility, and toxicity concerns.

Stamina Mills Superfund Site Remediation – North Smithfield, RI. Health and Safety Manager responsible for monitoring site demolition and remediation activities. Assembled the health and safety plans and performed personal air monitoring and health and safety job-site audits during remediation and demolition. Responsible for development of a plan for decontamination of employees and equipment.

Bee Cee Manufacturing NPL Site – Malden, MO. Health and Safety Manager responsible for the assembly of the site-specific hazardous waste health and safety plan for remedial investigation. Performed personal air monitoring to characterize contaminant concentrations.

Demolition and Site Restoration, Lockheed Aerospace and Engineering Company – Burbank, CA. Health and Safety Manager responsible for the site health and safety for the demolition and restoration of 76-acre site for a former aerospace manufacturing facility. The project was on a fast-track schedule including demolishing existing buildings, and removing soils contaminated with metals and solvents. This project’s health and safety challenge was to

maintain adherence to health and safety procedures on a site with demolition activities and hazardous waste operations proceeding simultaneously.

Motorola, Inc. – Phoenix, AZ. Health and Safety Manager responsible for developing the site-specific health, safety, and emergency response plan. Performed personal air monitoring to characterize employee exposure to site contaminants and verify the correct level of protection was worn. Assembled the hazardous waste health and safety plan for a groundwater treatment plant and assembled a design to store flammable and toxic chemical stock and chemical waste products.

United Scrap Lead/Arcanum Superfund Sites, U.S. Army Corps of Engineers, Omaha District – Troy, OH. Health and Safety Manager responsible for developing site specific health, safety, and emergency response plan and performed personal air monitoring to characterize employee exposure to site contaminants and verify the correct level of protection was worn.

Opus Dei – New York, NY. Health and Safety Manager responsible for developing site-specific health, safety, and emergency response plan, developed and performed personal air monitoring to characterize employee exposure to site contaminants and verify the correct level of protection was worn.

World Color Press, Spartan Printing Division – Sparta, IL. Health and Safety Manager responsible for developing site-specific health, safety and emergency response plan and performed personal air monitoring to characterize employee exposure to site contaminants and verify the correct level of protection was worn.

General Services Administration – Chicago, IL. Asbestos Project Manager responsible for identifying asbestos-containing building materials, assembling an asbestos abatement specification, performing environmental air monitoring, and managing asbestos abatement for 19 months during asbestos abatement in a ten-story occupied office building. Mr. Knaus conducted informal meetings with building tenants to explain the asbestos abatement process. These proactive meetings established a level of communication that helped facilitate the remodeling and remediation tasks.

U.S. Army Corps of Engineers – Philadelphia District – New Jersey. As a Certified Industrial Hygienist and Certified Safety Professional, performed monthly audits on Helen Kramer Landfill Superfund Site, Lapari Landfill Superfund Site, and Bridgeport Rental and Oil Service Superfund Site in New Jersey. The audits verified the remediation contractors were complying with health and safety contract requirements, state and federal requirements, and interpretations of the USACE health and safety questions generated by the remediation contractors. Responsible for the identification of unsafe acts and conditions that caused injuries and illnesses, and for the recommendation of controls to reduce such injuries. Mr. Knaus increased compliance with Federal and USACE health and safety regulations, reduced the number of physical hazards, and increased control over the causes of injuries.

Frankford Elevated Reconstruction Project, Southeast Pennsylvania Transportation Authority – Philadelphia, PA. Provided industrial hygiene services to characterize the inorganic lead, cadmium, and arsenic exposures during the Frankfort Elevated Reconstruction

Project six-mile bridge renovation. Assisted Philadelphia Transit Consultants in resolving a construction claim involving federal lead regulation 29 CFR 1926.62.

Environmental Services Delivery Order Contract, World Color Press – Various Locations. As a Certified Industrial Hygienist and Certified Safety Professional, provided health, safety, and environmental audits at printing press locations nationwide. Conducted personal breathing zone air monitoring to determine employee exposure to a series of contaminants. Mr. Knaus successfully identified and recommended controls to minimize contaminant exposure.

Metrowest Water Supply Project – Boston, MA. As a Certified Industrial Hygienist and Certified Safety Professional, provided confined space entry guidance during the design of a water tunnel.

Asbestos Surveys, General Services Administration – Kansas City, MO. Asbestos Project Manager responsible for performing asbestos surveys to identify asbestos-containing materials. Prepared asbestos abatement specifications.

Asbestos Surveys, Washington National Records Center – Suitland, MD. Asbestos Project Manager responsible for performing asbestos surveys to identify asbestos-containing materials. Prepared asbestos abatement specifications.

Asbestos Survey, McMillon Reservoir, CEASA Building – Washington, DC. As Asbestos Project Manager, performed an asbestos survey to identify asbestos-containing materials. Also prepared an asbestos abatement specification.

Asbestos Management/Abatement, Kraft General Foods, Inc. – Springfield, MO. Asbestos Project Manager responsible for performing asbestos surveys, preparing asbestos abatement specifications, performing environmental air monitoring, and managing asbestos abatement.

Asbestos Management, Maxwell House Coffee Company – Jacksonville, FL. Asbestos Project Manager responsible for preparation of an asbestos abatement specification and environmental air monitoring for a roof demolition.

Asbestos Management, Rockwell International – Palmdale, CA. Asbestos Project Manager prepared an asbestos abatement specification, and performed as the environmental air monitor.

Asbestos Abatement Specification, U.S. Navy – Bremerton, WA. Asbestos Project Manager responsible for assembly of an asbestos abatement specification to remove 1,200 feet of asbestos containing building materials from a pier.

Federal Aviation Administration – Nationwide
Project executive responsible for performing asbestos containing building materials, lead containing paint and polychlorinated biphenyl (PCB) surveys, and assemble abatement specifications in Air Route Traffic Control Centers (ARTCCs) and Control Towers nationwide. Responsible for asbestos, lead, and PCB abatement monitoring and environmental air sampling during abatement projects at the Chicago ARTCC, Cleveland ARTCC, Minneapolis ARTCC, Oakland ARTCC, Los Angeles ARTCC and Indianapolis ARTCC. Abatement projects at the

ARTCCs include chiller upgrade, initial sector suite system expansion (ISSS), display system area modification (DSR), and automation wing rehabilitation (AWR).

Asbestos Containing Building Material Surveys, NASA Goddard Space Flight Center – Greenbelt, MD. Asbestos Project Manager performing asbestos-containing building material surveys in six occupied buildings.

Asbestos Containing Building Material Surveys, Pentagon Navy Annex – Arlington, VA. Asbestos Project Manager performing asbestos-containing building material surveys in an occupied office building.

United States Postal Service, Processing and Distribution Center, – Miami, FL. Certified Industrial Hygienist and Certified Safety Professional monitoring the environmental activities during installation of a Tray Management System. As the result of a potential exposure to inorganic lead, welding fume and dust during the facility renovation, Mr. Knaus was assigned to monitored the renovation activities to verify compliance with federal regulations and contract documents, and communicated hazards and controls to Postal Service employees.

McDonnell Douglas Corporation – St. Louis, MO. Industrial Hygiene Specialist responsible for the identification, evaluation and control of physical chemical, and ergonomic stresses; revising the Outside Contractor Asbestos Exposure Control Program; and monitoring all contractors performing asbestos containing materials abatement activities. Responsible for a series of environmental impact projects to reduce the volume of hazardous waste generated from aircraft production and to comply with the Clean Air Act. These projects included identifying and facilitating the elimination of lead paints used in aircraft production. As a member of a team, reviewed substitutes for 1,1,1 trichloroethane and freon as aircraft degreasing processes. A related objective was to identify a degreaser that could be regenerated or reused with minimal reprocessing. Worked as part of a team to collect, segregate and recycle aluminum and titanium metals from production processes. As a member of the F15 program and the F15 research and testing laboratories, reviewed material safety data for existing aircraft corrosion coatings, performed personal air monitoring to characterize tasks exposure to corrosion coatings during mixing and application onto aircraft and implemented engineering and personal protective equipment controls to minimize employee exposures to the coatings.

TECHNICAL PAPERS/PUBLICATIONS
NA

WORK HISTORY
Jacobs Engineering Federal Programs 1990 to Present

Office: 071
Dept.: 018
254 Code: 0300
Experience Codes:
Foreign Language(s): None

TERRY BRIGGS, PhD, CIH
Corporate Health and Safety Manager

EDUCATION
Ph.D., 1977, Industrial Hygiene with a Minor in
Environmental Management, College of Medicine,
University of Cincinnati, Ohio

M.S., 1972, Environmental Engineering,
University of Cincinnati

B.S., 1965, Chemical Engineering,
McGill University,Montreal, Canada

CERTIFICATIONS
Certified Industrial Hygienist

AFFILIATIONS
American Industrial Hygiene Association
Past Chair of Engineering Committee of American
Industrial Hygiene Association

SPECIAL TRAINING
OSHA Hazardous Waste Training (29CFR1910.120)

EXPERIENCE SUMMARY
Dr. Briggs is the Jacobs Corporate Health and Safety Manager with 20 years of experience in environmental & health & safety project and program management for industrial and remedial programs. He also has an additional ten years of experience in chemical process design, air pollution control and health and safety assessments.

Dr. Briggs developed and implemented the Jacobs Environmental Health and Safety Program Plan applicable to all phases of field environmental projects. He develops health and safety program plans for major environmental contracts, approves all contract program plans and all major site health and safety plans. He oversees environmental safety and health program implementation; and audits site procedures to ensure compliance with OSHA, and other applicable federal, state, and local regulations. Dr. Briggs is also responsible for Jacobs health physics and medical monitoring program. Contracts for which he developed health and safety programs plans include: Comprehensive Long-Term Environmental Action Navy (CLEAN) contract (Southwest), Air Force Installation Restoration Program (IRP) hazardous waste contract, Mason & Hanger & Corp of Engineers contract for DOE's Pantex plant, RI & RA programs, US Army environmental contract at Rocky Mountain Arsenal, for CERCLA RI & RA and EPA's Alternative Remedial Contracting Strategy (ARCS) contract. He has also conducted detailed health and safety audits at DOE Weldon Spring site, Fernald site, UMTRA sites and Oak Ridge project sites.
Dr. Briggs was project manager at DOE Hanford for Battelle, developing health and safety program requirements for CERCLA and RCRA projects.

He has presented an 8-hour program at the American Industrial Hygiene Conference for the past 5 years, entitled, “Chemistry & Toxicology of Petroleum Hydrocarbons”.

In previous employment with Roy F. Weston, Dr. Briggs served as Regional Manager for a major EPA Superfund emergency response and removal program for EPA Region III. He provided overall program management and managed 60 professional and technical staff members. Services included hazardous waste major removal action support and emergency response, site inspections, EE/CA’s, engineering design, major removal action support, health and safety services, and SARA Title III preparedness planning and training.

Previously, he was a Department Manager for Roy F. Weston. Projects managed by Dr. Briggs included three large asbestos assessment and abatement projects, including an evaluation of over 90 industrial and commercial structures and management of asbestos removal from a major shopping mall complex. Other projects included management of a large air impact evaluation and litigation support associated with a major fuels pipeline spill. He also managed a facility safety and risk analysis project for new chemical warfare weapons facilities for the U.S. Army.

While Corporate Manager of Industrial Hygiene for A.E. Staley Manufacturing Company, Dr. Briggs initiated the company-wide industrial hygiene program. He developed company procedures, instituted hazardous communication programs, and performed routine health and safety audits. He developed asbestos abatement procedures and initiated an abatement program.

Dr. Briggs served as Corporate Industrial Hygienist for Occidental Chemical Company. In this capacity, he was responsible for industrial hygiene program development, facility assessment, and for product safety for 20 plastics and specialty chemical plants. He conducted industrial hygiene audits of major company facilities and was also responsible for evaluation of all new engineering control systems and provided health and safety program development for hazardous waste disposal projects.

For the University of Cincinnati, Dr. Briggs was an Assistant Professor/Program Coordinator. He instituted a new university program in industrial hygiene and safety. He developed the curriculum and taught courses in industrial hygiene and industrial operations. He served as Coordinator and Lecturer of a National Institute of Occupational Safety and Health (NIOSH) short course on industrial process risk evaluation. Previously, he was assistant project manager for a prospective epidemiology research project, evaluating waste water disease transmission.

While Group Leader, and Senior Environmental Engineer for PEDCO-Environmental, Dr. Briggs was responsible for environmental and health and safety project management. Among the projects Dr. Briggs managed were an industrial-wide environmental assessment of the microelectronics industry, a diesel vehicle emission impact analysis, an evaluation of dioxin health effects and control technology, a control technology assessment of the carbon black industry, development of a coke oven emission control model and development of a community indoor air pollution impact evaluation manual.

Dr. Briggs was a Senior Engineer for UOP Process Division of Allied-Signal Corporation responsible for process design of new petroleum and petrochemical processes. Processes designs include HF alkylation, sulfolane, catalytic reforming, visbreaking, and salicylic acid production. He specialized in computer applications for special engineering design problems. He was also a

Technical Services Engineer responsible for construction inspection and start-up of new oil refinery and petrochemical processes. He was responsible for commissioning the following processes: catalytic reforming, fluid catalytic cracking, HF alkylation, and aromatics production. He also served as Pilot Plant Engineer responsible for evaluation of new petroleum processes and catalyst technology evaluation.

EMPLOYMENT HISTORY

Jacobs Engineering Group Inc. Manager of Environmental Health and Safety	1989 to date
Roy F. Weston Inc. Regional Manager & Department Manager	1986 - 1989
A.E. Staley Manufacturing Company Corporate Manager of Industrial Hygiene	1983 - 1985
Occidental Chemical Co. Corporate Industrial Hygienist	1981 - 1983
University of Cincinnati Assistant Professor and Program Coordinator	1980 - 1981
PEDCO - Environmental Inc. (now IT) Senior Environmental Engineer & Group Leader	1973 - 1980
UOP Process Division (now Allied - Signal) Senior Process Design Engineer	1965 - 1970

STEVEN GREEN
CHP

EDUCATION
MS Safety Management December 1999 University of Tennessee
ME 1983, Engineering/Radiological Health, College of Engineering, University of Florida
BS 1982, Environmental Engineering, College of Engineering, University of Florida

SPECIAL TRAINING
Current OSHA HAZWOPER
8-week Health Physics Training, Brookhaven National Laboratory, 1983
40-hour EPA Risk Assessment Course, 1988
Asbestos Hazard Emergency Response Act (AHERA) Training for Supervisors, 1993
4-hour NEPA Training, 1993
24-hour RCRA Training on Waste Characterization, Advanced Topics, and Land Ban, 1993

CERTIFICATIONS
Certified in the Comprehensive Practice of Health Physics by the American Board of Health Physics, October 1989, Recertified October 1997

AFFILIATION
National and Local Health Physics Societies

Mr. Green is an effective Project Manager. He has directed the work of professionals on five remedial action projects. He actively interfaces with EPA, DOE, and state officials and effectively interacts in public meetings. He manages cost and schedule for multiple tasks performed at several corporate offices.

Mr. Green has 17 years total experience, 15 of which have been in the remediation of sites contaminated with radioactive, chemical, and mixed radioactive/hazardous wastes. This experience spans all phases of site remediation from site characterization through NEPA/CERCLA/RCRA environmental compliance documentation to final site cleanup. Key projects include the Oak Ridge Management and Integration Contract, Comprehensive Plume Response Project at Massachusetts Military Reservation, Oak Ridge Operations Environmental Management Technical Support Contract, the Weldon Spring Site Remedial Action Project, the Anniston Army Depot, and the Uranium Mill Tailings Remedial Action (UMTRA) Project.

Mr. Green is currently the Radiological Protection Manager for the Oak Ridge Management and Integration Contract. The scope of work on this $2.5 billion project is to transition the existing Management and Operations direct hire staff to subcontracts to perform Remedial Action at Oak Ridge sites of K-25, Y-12, and Oak Ridge National Laboratory as well as the operating uranium enrichment plants in Paducah, Kentucky and Portsmouth, Ohio. Mr. Green has ultimate responsibility for radiation safety for approximately 2000 workers on this contract. He is fully responsible for daily implementation of the Bechtel Jacobs Company Radiation Protection Program in complete compliance with 10 CFR 835.

To date Mr. Green has:

- Developed the subcontract packages for Radcon technician support, instrumentation, radiological engineering, and radiation dosimetry. These subcontracts were bid and awarded one year ahead of schedule.
- Streamlined the radiological control procedures and technical basis documents achieving a reduction in command media of 40 percent. This was done by aligning the existing program solely with the requirements of 10 CFR 835, Occupational Radiation Protection, and eliminating costly, redundant, and unnecessary requirements.
- Revised the technical basis for the internal dosimetry program to allow a more accurate and sensitive determination or internal dose resulting from transuranic radionuclides, shift uranium urinalysis from more expensive alpha spectroscopy to less costly total mass determination by kinetic phosphorescent analysis, and eliminate routine urinalysis for uranium where the technical basis showed that workers were not likely to receive dose equivalents in excess of 100 mrem per year.
- Reduced the number of routine radiological contamination surveys by 50 percent by eliminating those surveys in contamination areas that historically revealed contamination routinely above the surface contamination limits and focusing on those surveys that document that contamination is not being spread to non-radiological areas.
- Introduced higher technology instrumentation that improved measurement accuracy, data collection and storage, and time required to complete the measurements.
- Implemented a program to better characterize the locations of transuranic radionuclides so that those areas could be separated from areas contaminated primarily which eliminated redundant and painstaking surveys for alpha contamination when not required.

Prior to working on the Management and Integration Contract, Mr. Green was the Director of Projects for the Oak Ridge Operations Office. He is responsible for successful execution of multiple projects with government and commercial clients and responsible for identifying and proposing on new business opportunities. Projects include Environmental Compliance at Air Combat Command bases, Technical Support to the DOE Savannah River site, remedial investigations at several air force bases under a nationwide contract with the Air Force Center for Environmental Excellence (AFCEE), and environmental sampling in a corporate alliance with Owens Corning.

Mr. Green also served as the Field Services Department Manager and Radiological Control Manager for the DOE Environmental Management Technical Support Contract

Before that, Mr. Green was the Remedial Investigations Manager for the $60 million Comprehensive Plume Response Project, the highest priority cleanup program in the Department of Defense. This full service remedial action project is being conducted for the Air Force Center for Environmental Excellence under the Jacobs Nationwide Remedial Action Contract. Work involves collecting sufficient environmental data to support remedial design and construction of five water treatment systems to contain billions of gallons of hydrocarbon-contaminated groundwater.

As Remedial Investigations Manager, Mr. Green was part of the project start up team that procured the needed equipment and supplies, awarded the subcontracts, and staffed the project from scratch to over 150 hydrogeologists, engineers, scientists, and construction personnel. Mr. Green was

directly responsible for a staff of 50 personnel involved in drilling, sampling, data management, and report preparation. He had direct management responsibility for six task orders totaling $15 million while at the same time managing a $1.5 million time and materials delivery order.

During his eight month assignment he:

- met 12 Federal Facility Agreement deliverable deadlines on or ahead of schedule;

- personally prepared the Quality Program Plan which included the Sampling and Analysis Plan, Quality Assurance Program Plan, Health and Safety Plan, and Construction Quality Plan;

- implemented an ecological sampling program, a basewide groundwater monitoring program, prepared a RI/FS work plan, and developed the scope of work for a supplemental site investigation in an active military firing range where unexploded ordnance clearing was required; and

- routinely met with affected members of the public, regulators from the EPA and Massachusetts Department of Environmental Protection, and the AFCEE Team Chief to resolve issues and chart strategy.

Prior to this assignment Mr. Green was the Deputy Program Manager for the Oak Ridge Environmental Management Technical Support Contract. This $91 million task order contract is established to achieve compliance with CERCLA, RCRA, and NEPA for the Oak Ridge sites at Y-12, Oak Ridge National Laboratory, K-25, Oak Ridge Associated Universities, and off-site contamination resulting from operation of these facilities. Also included are the uranium gaseous diffusion plants at Portsmouth, Ohio and Paducah, Kentucky, as well as the Center of Energy and Environmental Research in Puerto Rico. Work scope involves remedial investigations; integration of CERCLA/RCRA/NEPA requirements into regulatory decision documents including feasibility studies, proposed plans, and records of decision; treatability studies; general regulatory support; related environmental studies; administrative support; engineering studies and design; risk assessment; and remedial action verification.

Mr. Green was responsible for daily operations on this contract with a staff of over 230 personnel. At any one time there were over 60 active tasks ranging from $25,000 to over $3 million. He assured these tasks remained on schedule, within task scope of work, and under budget by performing task order cost/schedule reviews, making staffing decisions, allocating work among three project offices and the corporate offices of the six companies with which Jacobs has teaming agreements to execute the contract, and providing technical guidance.

Mr. Green had focused responsibilities for the two satellite offices in Portsmouth and Paducah and played a particularly key role in staffing the Portsmouth office. He took a leadership role in establishing field services capabilities including establishing subcontracts with laboratories and drillers as well as developing procedures.

For the Weldon Spring Project, Mr. Green was promoted from Radcon Manager to Manager of Environmental Safety and Health (ES&H) and then to Jacobs Senior Site Representative. This

Superfund remedial action program is being conducted to address cleanup of approximately 750,000 cubic yards of mixed radioactive and chemical waste and demolition of 44 contaminated buildings containing asbestos, radioactive, and chemical residues.

As, ES&H Manager, he had direct management responsibility for a staff of 70 professional health physicists, industrial hygienists, environmental engineers, hydrogeologists, statisticians, geologists, biologists, ecologists, and technicians. He was involved daily and directly as hazardous chemicals were drained from tanks and consolidated, over 2000 cubic yards of uranium-contaminated asbestos was abated and stored, an entire uranium refinery was decontaminated and demolished, over 5000 tons of metal was surveyed and free released, two water treatment plants were designed and operated to treat over 10 million gallons of water, over 100,000 cubic yards of radioactive mixed waste and building debris were excavated from an abandoned quarry, and facilities to store wastes in compliance with regulations were constructed and operated. He was responsible for designing and implementing a comprehensive worker safety program for several hundred subcontract workers and environmental monitoring program that included surface water, groundwater, air, soil, and biota. This involved:

- A fully DOE and OSHA compliant program for industrial hygiene including asbestos, noise, heat stress, hazardous chemicals, and hazardous atmospheres. It included programs for HAZCOM, Respiratory Protection, Hearing Conservation, Chemical Hygiene, and Bloodborne Pathogens.

-A fully DOE compliant Radcon Program including ALARA, contamination control, dosimetry, training, records, and instrumentation.

- Specification of appropriate personnel protective equipment and safety approval of subcontract design specifications.

- Surface water monitoring and management within the site confines and at seven NPDES outfalls.

- Groundwater monitoring including well installation, development, and abandonment.

- Monitoring airborne contaminants within the site confines, at the site perimeter, and at critical receptors.

- Biological monitoring including mammals, fish, water fowl, benthic invertebrates, crops, and other flora.

In his dual role as Jacobs Senior Site Representative, he oversaw administration of the $100 million Jacobs subcontract at the Weldon Spring site. He was responsible for the administrative functions of employment, personnel, expense reporting, and client invoicing. He successfully negotiated a $76 million work scope addition for Jacobs.

As Radcon Manager, he personally developed all required plans and procedures on project startup. He designed and directed the radiological characterization of soil, air, and building structures. This

involved preparation of remedial investigation sampling plans; soil sample collection; and radon gas and radon daughter working level measurements; radioactive air particulate measurements; and field radiation surveys for beta, alpha, and gamma radiation. Mr. Green directed the operation of a radiological laboratory where gamma and alpha spectrometry were performed and radiation detectors were maintained for field operation. He wrote the computer software for an NaI gamma spectrometer spectrum stripping routine. He had oversight of worker internal and external dosimetry.

In addition to his experience with radioactive materials and mixed waste, Mr. Green assisted in the preparation of the RI/FS work plan and field-sampling plan for the National Priorities Listed southeast industrial area of the U.S. Army Depot at Anniston, Alabama. This site contained 29 solid waste management units comprised of sanitary landfills; trenches; building sumps, and disposal pits contaminated with organic chemicals such as trichloroethene, phenol, PCBs, and heavy metals; and disposal pits containing sodium, asbestos, metal-contaminated abrasive dust, and other unknown wastes. Work involved interpretation of groundwater, surface water, soil, and air monitoring data in order to formulate a remedial investigation field sampling plan and feasibility study strategy.

In previous employment with Roy F. Weston on DOE's UMTRA Project, Mr. Green was promoted from Staff Health Physicist to Deputy Manager of Radiological Services. In this capacity, he was responsible for the technical accuracy and overall quality for all documents produced by a staff of nine health physics professionals. These documents included EISs, EAs, Site Characterization Reports, Remedial Action Plans, and Remedial Action Audit Reports.

As staff health physicist on UMTRA, Mr. Green designed and directed site characterizations of two low-level radioactive /mixed waste tailings sites, prepared one EIS, three EAs, four Site Characterization Reports, three Remedial Action Plans, and several Remedial Action Audit Reports. Mr. Green provided expertise in health risk assessments, statistical data analysis, radioactive source term and waste volume estimation, and radon barrier cover design for waste embankments.

Mr. Green has performed health risk assessments via use of the NRC MILDOS computer code, the NRC IMPACTS computer code, and the DOE RESRAD computer code. He wrote software for a computer-assisted design package for waste disposal embankments, and developed a computer program for calculating internal dose from inhalation of radionuclides.

Prior to his involvement in site remediation projects, Mr. Green served as Staff Engineer for the Safety and Environmental Protection Division of Brookhaven National Laboratory. His responsibilities included preparation and instruction of radiation safety training for all occupationally exposed laboratory personnel and administration of a 10-week health physics program for 20 graduate students. He also conducted reliability testing of the radiological monitoring equipment at the Brookhaven High Flux Beam Reactor, and assisted in a QA check of personnel radiation dosimeters.

EMPLOYMENT HISTORY

1987 to date
Jacobs Engineering Group, Inc.
Radiological Control Manager
Director of Projects
Remedial Investigations Manager
Deputy Program Manager
Senior Site Representative
Manager, Environmental Safety and Health
Radcon Manager

1984 - 1987
Roy F. Weston
Deputy Manager Radiological Services
Staff Health Physicist

1984-1984
Brookhaven National Laboratory
Staff Engineer

Ethan C. Litsey
Chemist

EDUCATION
BS, Chemistry, 1987

LENGTH OF SERVICE
Jacobs/Sverdrup Hire Date: 1994
Other firms/agencies: 5 years (Entered the profession in 1989)

BACKGROUND/EXPERTISE
Mr. Litsey specializes in environmental chemical analysis, data interpretation, and evaluation of hazardous waste projects, including those involving contaminated soil, sludge, groundwater, surface water, sediment, and other environmental samples. His background also includes environmental chemistry sampling and data quality assurance protocols and procedures.

PROJECT EXPERIENCE

U.S. Army Corps of Engineers - Tulsa District $15-million Indefinite Delivery Order Contract

- *Longhorn Army Ammunition Plant, Phase II RCRA Facility Investigation, Karnack, TX* - Project Chemist providing data interpretation and validation, lab coordination, and subcontracting for a RCRA Facility Investigation including soil gas surveys, surface geophysical investigations, monitoring well installation, soil borings, down-hole geophysics, and exploratory excavations.
- *Lackland Air Force Base, UST Site Investigation, San Antonio, TX* - Project Chemist responsible for data validation and interpretation, research on fate and transport and degradation of volatile organic compounds, and review of field testing protocol.

U.S. Army Corps of Engineers - Nashville District (Ohio River Division) $9-million Indefinite Delivery Order Contract. Project Chemist for Nashville District Indefinite Delivery Order Contract, responsible for chemical data interpretation, validation, and quality evaluation. Additional responsibilities include preparation and submittal of final specifications, compilation of data for Risk Assessments, cost estimating, sample coordination, and lab coordination, as well as the preparation of technical work plans (SAP) and reports. Mr. Litsey has served in this capacity for delivery orders such as:

- *Lexington-Bluegrass Army Depot, Group I Sites, Lexington, KY* - Project Chemist for Remedial Design Investigation for RCRA cap and cover system for Old Landfill, New Landfill, and Industrial/Sanitary Waste Landfill.
- *Lexington-Bluegrass Army Depot, Industrial Waste Lagoons, Lexington KY* - Project Chemist for Remedial Design Investigation.
- *Bluegrass Facility, Combined Sites, Richmond, KY* - Project Chemist for Site Investigations at the Temporary H Storage Site, Paint Filter Disposal Site, Electrolyte Storage Area, DRMO Storage Facility and the Former Shell Washout Facility.

- *Bluegrass Facility, Battery Burial Site, Richmond, KY* - Project Chemist for a Site Investigation and Remedial Design Investigation at a site where batteries reportedly were buried prior to 1970.
- *Bluegrass Facility, Dry Acid Pond, Richmond, KY* - Project Chemist for a Phase II RCRA Facility Investigation.
- *Bluegrass Facility, Old TNT Lagoons, Richmond, KY* - Project Chemist for a Phase II RCRA Facility Investigation
- *Bluegrass Facility, Old and New Landfill Sites, Richmond, KY* - Project Chemist for Interim Remedial Action Plan studies involving the evaluation of groundwater contamination from landfill operations.
- *Savanna Army Depot, CF Area, Savanna, IL* - Project Chemist for Remedial Design on an explosives contaminated site. Remedial Design focused on composting TNT-contaminated soils with horse manure, alfalfa hay, and horse feed using windrow composting technology based on results obtained at the Umatilla Depot Activity in Oregon.
- *Detroit Arsenal, Drum Storage Area, Warren, MI* - Project Chemist for the Remedial Action Plan at this site.
- *Fort Campbell, World War II Buildings and Family Housing Areas, Fort Campbell, KY* - Project Chemist for pesticide sampling.

Omaha District USACE $20-million Indefinite Delivery Term Contract – Various Locations. Project Chemist responsible for cost estimating and subcontracting of labs, as well as preparation of Chemical Data Acquisition Plan.

U.S. EPA ARCS Program, Regions VI, VII, and VIII

- *Midvale Slag Superfund Site, Midvale, UT* - Researched sources of potential contamination resulting from processing of metal ores.

World Color Press – Various Locations. Project Chemist providing lab coordination for soil remediation and groundwater and soil investigation.

Cummings Gateway, Inc. – St. Louis, MO. Project Chemist providing data validation and interpretation, as well as lab coordination and subcontracting.

TECHNICAL PAPERS/PUBLICATIONS

NA

WORK HISTORY

Jacobs Engineering Federal Programs 1994 to Present

AARON J. EVERSON, P.E.
Environmental Engineer

EDUCATION
BS, Geological Engineering – University of Missouri - Rolla, 1994

LENGTH OF SERVICE
Jacobs/Sverdrup Hire Date: 1994
Other firms/agencies: 0 years (Entered the profession in 1994)

REGISTRATIONS/CERTIFICATIONS
Professional Engineer – MO, 2001
OSHA Hazardous Waste Health and Safety Course (29 CFR 1910.120)
OSHA 8-Hour Annual Updates
AHERA (TSCA Title II) Building Inspector Course (40 CFR 763)
AHERA EPA Approved Inspector Refresher
AHERA EPA Asbestos Contract/Supervisor Course (40 CFR 763)
AHERA EPA Approved Asbestos Contract/Supervisor Refresher
AHERA EPA Asbestos Project Designer (40 CFR 763)
AHERA EPA Approved Asbestos Project Designer Refresher
Certified Contractor/Supervisor – Various States
Certified as an Asbestos Inspector – Various States
Lead Risk Assessor
Lead Inspector

BACKGROUND/EXPERTISE
Mr. Everson has experience in inspection, assessment, abatement, and design development in dealing with eliminating asbestos hazards encountered in a construction environment and has experience dealing with contaminated soil and groundwater.

PROJECT EXPERIENCE

Okaloosa School District – Okaloosa County, Florida. Environmental Engineer responsible for services dealing with asbestos, lead-based paint, and PCB abatement at multiple schools in Okaloosa County, Florida. Responsibilities included survey and design, contract management, subcontractor oversight, daily and clearance air monitoring, and project closeout.

St. Louis Development Corporation – St. Louis, MO. Project Manager responsible for the survey and design to remediate an 11-acre site including 14 different buildings. Responsibilities include the site inspection to check locations and quantities of ACBM, lead containing paint, PCB's, unknown chemicals, UST, to develop specifications and drawing to remediate the site, specification and drawings for the demolition of 4 building and various structures on the 11 acres, and to coordinate the plans and specifications to meet state requirements to qualify for state reimbursement funds.

Federal Aviation Administration – Nationwide. Project Manager responsible for surveys to identify ACBM, lead containing paint and PCB's at 19 Air Route Traffic Control Centers throughout the United States. The project includes developing technical specifications and drawings for the removal and disposal of these materials.

Federal Aviation Administration – Nationwide. Project Manager responsible for surveys to identify ACBM, lead containing paint and PCB's at various Air Traffic Control Towers throughout the United States. The project included developing survey reports and technical specifications and drawings for the renovation of the Air Traffic Control Towers.

Federal Aviation Administration - Aurora, IL. Environmental Engineer responsible for oversight of asbestos abatement contractor at an Air Route Traffic Control Center allowing the facility continual uninterrupted operation and meeting the stringent requirements of the FAA concerning asbestos hazards.

Federal Aviation Administration – Kansas City, KS. Project Manager responsible for oversight of asbestos abatement contractor at an Air Route Traffic Control Center allowing the facility continual uninterrupted operation and meeting the stringent requirements of the FAA concerning asbestos and lead hazards.

Kiel Auditorium - St. Louis, MO. Deputy Project Manager for conducting an inspection for the identification and spread of lead containing paint during the renovation of the Kiel Center.

General Services Administration, Federal Building - Chicago, IL. Project Manager for overseeing the abatement of asbestos containing floor tile and pipe insulation during a floor renovation of a 10-story office building.

Venture – Nationwide. Environmental Engineer responsible for conducting surveys at various department stores to detect for the presence of asbestos before renovation of the stores. Oversight of asbestos contractors using heat methods to remove asbestos containing floor tiles during renovations allowing the owner to reduce abatement cost and meet the strict time schedules required for the project.

Keebler Company – Nationwide. Environmental Engineer responsible for conducting Phase I investigations and performed asbestos abatement contractor oversight at various facilities throughout the country.

US Corps of Engineers - Lexington-Bluegrass Army Depot. Environmental Engineer responsible for performing surface water, groundwater, and soil sampling, and groundwater pumping tests at an army ammunition base to determine the extent of contamination.

US Corps of Engineers - Richmond-Bluegrass Army Depot. Environmental Engineer responsible for performing surface water, groundwater, and soil sampling at an army ammunition base to determine the extent of contamination.

US Corps of Engineers – Former Glasgow Air Force Base – Montana. Environmental Engineer responsible for performing sampling, isolation, and identification of unknown substances in unidentified drums.

WORK HISTORY
1994 to Present
Jacobs Engineering Federal Programs

BLAIR L. INGALLS
Senior Project Manager, Building Sciences

CURRENT ROLE

- Performs environmental consulting to include risk assessment and facilities management programs
- Responsible for implementation and overseeing of hazardous materials risk assessment and environmental monitoring of hazardous materials remediation projects
- Develop and provide OSHA compliance training and NYSDOL/DOH asbestos related disciplines
- Develop and implement hazard communication and Respiratory Protection Programs
- Prepare Asbestos Specifications and cost estimates

EXPERIENCE

Prior to starting at Chopra-Lee, Inc. Mr. Ingalls had a 30 year career as a Chemical Engineer specializing in asbestos formulation, usage and properties. His career has seen him work for a fortune 100 corporation for 22 years as a research providing technical support to specialty minerals research and product development groups, conducted feasibility studies for new business ventures representing potential commercial sales, developed new test method that provided recurring cost savings, presented technical and sale presentation to clients and professional trade associations, supervised laboratory research and development investigations. Additional experience saw him manage a cosmetic production facility and manage environmental field service activities for a newly formed analytical light optics laboratory.

EDUCATION

State University of Maine – Bachelor of Science in Chemical Engineering

PROFESSIONAL TRAINING

OSHA 40 hours Hazardous Waste site Worker
OSHA 10 hour Construction Safety
NYS Restricted Asbestos Handler II Air Sampling Technician (16 hours)
NYS Restricted Asbestos Handler III Building Inspector (24 hours)
EPA NYS asbestos Handler and Abatement Worker (24 hours)
EPA NYS Approved Instruction/Training Programs
EPA NYS Asbestos Management Planner
EPA NYS Asbestos Project Designer
Red Cross First Aid and CPR

DAVID L. FLEMING
Health Physicist

EDUCATION

Coursework Completed for MS Environmental Engineering, Health Physics Emphasis, Northwestern University, Evanston, Illinois
BS, 1986, Physics, Bradley University, Peoria, Illinois

EXPERIENCE SUMMARY

Mr. Fleming has over thirteen years of experience in environmental health physics. He has worked at the DOE Weldon Spring Site Remedial Action Project for twelve of these thirteen years. He is currently the ES&H Department Worker Protection Group Supervisor responsible for all programmatic aspects of WSSRAP radiation protection and industrial hygiene programs, including the site 10 CFR 835 PAAA Coordinator position. He is also the Jacobs corporate radiation safety officer, providing advice and guidance on radiation protection issues to Jacobs offices as needed.

Mr. Fleming has prepared environmental documents in support of the NEPA/CERCLA process, has developed project documents as required by DOE Orders and federal regulations, and has participated in numerous health physics field activities in support of WSSRAP project needs. Mr. Fleming had previously held the ES&H Field Operations Supervisor position for over three years. He was responsible for ES&H oversight and support for the WSSRAP radioactive/mixed waste disposal cell, and was active in all phases of site remediation including initial characterization, building demolition, asbestos abatement, contaminated soils removal, and disposal cell operations. He supervised a staff of up to 20 ES&H technicians during various phases of the project.

Mr. Fleming's WSSRAP experience in technical report writing includes:

- Development and revision of the WSSRAP Radiological Control Manual
- Development of the WSSRAP Radiation Protection Program required by 10 CFR 835
- The WSSRAP Internal Dosimetry Technical Basis Manual
- The Weldon Spring Quarry Radon Emissions Modeling Report
- The Weldon Spring Chemical Plant Buildings Radiological Characterization Report
- Soil contamination sections of both the Weldon Spring Site and the Weldon Spring Quarry Remedial Investigation reports
- Technical review of subcontract documents, NEPA/CERCLA related documents, health and safety plans, characterization reports, and standard operating procedures.

His operational health physics experience at Weldon Spring includes:

- Former Field Operations Group Manager. Managed a staff of 20 environmental safety and health technicians providing field support of remediation activities
- Preparation of radioactive material shipments in accordance with DOT requirements

- Radiation protection health and safety support
- Radiological data acquisition for soils, buildings, and equipment characterization, as well as environmental monitoring data acquisition
- Radiation Protection Training Instructor
- Currently providing technical guidance and support to ongoing remediation activities as required.

Mr. Fleming's experience also includes one year as Project Engineer at the DOE Argonne National Laboratory in Argonne, Illinois, where he was responsible for field oversight of a radioactive decontamination and decommissioning project. This work involved removal and disposal of radioactively contaminated water, mixed waste sediment, activated metal objects, and radioactively contaminated cast iron pipes and concrete.

Mr. Fleming's duties included developing and implementing sampling plans for characterization of the various waste streams, reviewing work plans, daily field oversight of subcontractor work activities, coordination with other Argonne National Laboratory departments to accomplish support tasks for the project, and ensuring compliance with work procedures and health and safety plan requirements.

EMPLOYMENT HISTORY

1994 to date
Jacobs Engineering Group Inc.
Health Physicist

1993 - 1994
Espo Engineering
(Subcontractor to Argonne National Laboratory)
Project Engineer

1988 - 1993
Jacobs Engineering Group Inc.
Health Physicist

Name: **LOUIS E. EHRHARD, PG**

Title: **Project Manager**

Education:
M.S., 1986, Geochemistry, State University of New York, Stony Brook
B.A., 1982, Geology and Environmental Studies, Macalester College, St. Paul, Minnesota

Special Training:
OSHA 40-hour Health and Safety with Annual Refresher
OSHA 8-hour Health and Safety Training for Managers
RCRA Corrective Action Management Unit Workshop, 1993
RCRA Toxicity Characteristic Workshop, 1990
RCRA Land Disposal Restrictions Workshop, 1990
Total Quality Management Training, 1990
Environmental Site Assessments for Property Transfers, 1989
Revised Hazard Ranking System Scoring, 1989
Leak Detection Methods for Underground Storage Tanks, 1988
Superfund RI/FS Workshop, 1988
Hazard Ranking System Scoring for Federal Facilities, 1987
Red Cross Standard First Aid and Adult CPR with Annual Refresher

Registration:
Licensed Professional Geologist, Illinois No. 196-00976
Registered Professional Geologist, Tennessee No. 3560

Certification: Certified DOE Radiation Worker II

Affiliations:
American Institute of Professional Geologists
Association of Engineering Geologists

Mr. Ehrhard has 18 years of experience in geology, hydrogeology and geochemistry. His primary areas of expertise include RCRA and CERCLA site investigations and remediation, hydrogeologic investigations, RCRA permitting and compliance, underground storage tank (UST) removals and remediation, and environmental site assessments (ESAs).

With Jacobs, Mr. Ehrhard is a Project Manager for commercial and government hazardous waste management projects nationwide. He is responsible for client contact, preparing proposals, work plans and cost estimates, tracking project schedules and budgets, scheduling field personnel for on-site field activities, reviewing deliverables, and preparing monthly status reports and manpower forecasts. Mr. Ehrhard also served as the Deputy Program Manager for the Air Force Center for Environmental Excellence (AFCEE) Remedial Action Contract (RAC) at Chanute AFB, Technical Services Manager for Jacobs' Chicago office, and managed a basic ordering agreement for environmental investigation, permitting, and remediation support at DOE's Argonne National Laboratory.

Mr. Ehrhard has taken a lead technical role in over ten RI/FSs and RFI/CMSs in the Midwest, and has made significant technical contributions to several others. As a function of these projects he has prepared and reviewed work plans, Sampling and Analysis Plans (SAPs) and various technical reports for EPA and state approval, assisted in consent order negotiations, and participated in various EPA-required public meetings. Mr. Ehrhard has extensive knowledge of monitoring well network design, drilling, sampling and field investigation techniques, and analytical methods. He has designed groundwater monitoring systems and implemented multimedia sampling programs at sites under a variety of federal and state regulatory authorities. He has an extensive understanding of RCRA/HSWA regulations and has presented several RCRA training courses to regulators and the regulated community.

Mr. Ehrhard's project assignments and activities with Jacobs have included the following:

- AFCEE RAC at Gentile AFS, Kettering, Ohio, Project Manager of $3M delivery order for non-time critical removal actions at an unpermitted disposal area and creek to facilitate property transfer. Performed waste characterization of the 1.5 acre disposal area mass, excavated over 25,000 CY of soil and material, segregated soil for reuse based on characterization and screening, transported approximately 4,500 tons of waste and contaminated soil to industrial, RCRA, and TSCA landfills. Performed post-excavation soil sampling to ensure remaining concentrations of contaminants are below risk-based levels and backfilled footprint with clean fill. For the creek, removed and stabilized PAH, pesticide and lead contaminated sediments from up to 6-foot depth along 1,600 feet of creek. Transported the stabilized sediment to an industrial waste landfill for disposal, collected post-excavation samples for risk assessment, and back-filled the creekbed with clean fill. Prepared reports for both removal actions for regulatory agency approval
- AFCEE RAC at Chanute AFB, Rantoul, Illinois. Deputy Program Manager of $20M base-specific contract and Project Manager for remedial activities at several sites on the base. Attended BCT meetings and advised the Air Force regarding regulatory requirements, investigative strategies and remedial alternatives, oversaw development of proposals, project quality program plans and reports, and performed quality reviews. Projects included:
  - time-critical removal actions at a fire training area: removed above-ground control tower, pumphouse and support structures, as well as 4,600 feet of underground fuel distribution piping, prepared OSC report
  - EE/CAs and non-time critical removal actions of soils at a fire training area and fuel handling facility: conducted site characterization using CPT/UVF and immunoassay screening techniques, DPT soil sampling for laboratory analyses, and geotechnical and hydrogeologic testing; prepared EE/CAs and received approvals from regulatory agencies for removal and off-site disposal of 70,000 CY of impacted soil; prepared planning documents for the non-time critical removal actions
  - UST groundwater plume remediation: determined extent of contaminant plume, designed/constructed/operated a groundwater collection and treatment system, and prepared annual O&M reports and closure documentation
  - closure of a RCRA storage area: performed historical review, closure sampling, and prepared documentation required for RCRA closure

- AFCEE RAC at Whiteman AFB in Missouri, Project Manager for the soil and groundwater investigations and remediations at a fire training area, an UST site, a landfill, and two firing ranges. Under the AFCEE Installation Restoration Program (IRP II) contract, managed the groundwater monitoring program for 12 sites at the base. This program consisted of collecting soil and groundwater samples to investigate the nature and extent of contamination at recently identified sites, and quarterly groundwater monitoring at sites with documented groundwater contamination. As on the RAC, provided technical interface with the Air Force and regulators, and managed the development of the sampling and analysis plan, construction quality plan, and the health and safety plan

- DOE Argonne National Laboratory in Illinois. Technical Manager for an interim action, part of an RFI, at the 319 area landfill that was leaching radioactive and chemical constituents into a nearby stream. Supervised the design and construction of a slurry wall and leachate/groundwater collection and discharge system to contain and control this discharge. The system consisted of a 275-foot long by 30-foot deep bentonite slurry wall, an 80-foot long by 5-foot deep leachate collection trench, four shallow groundwater recovery wells, an above-ground contaminated water piping and discharge system, and three shallow groundwater monitoring wells. In addition, over 100 cubic yards of contaminated debris from a disposal trench extending from the landfill were excavated, characterized, consolidated by placing into the landfill, and capped. Interfaced with the client and managed Jacobs and subcontractor resources to keep this fast-track project on schedule through system start up and submittal of the final interim action report

- Stoughton City Landfill RI/FS, Wisconsin. Project Manager for a post-ROD groundwater investigation to further characterize site geology, hydrogeology and contaminant fate-transport and supplement the RD/RA for the groundwater operable unit. The investigation focused on defining the off-site concentrations of halomethanes and other volatile organic contaminants, and determining whether the contaminants were discharging to the adjacent Yahara River or threatening nearby municipal supply wells just across the river. Supervised the completion of the groundwater investigation work plan and the QAPP. Upon EPA approval of the plans, directed the two-month field program including construction of access roads; drilling of soil borings using dual-wall reverse-circulation techniques; management, sampling, and discharge of drilling-generated groundwater to a POTW; sampling of groundwater from soil borings with 24-hour analysis to identify zones of contamination; and placement and installation of monitoring wells. Following two rounds of groundwater sampling for TAL, TCL, and halomethanes, oversaw preparation of a report summarizing the analytical results and detailing the off-site groundwater flowpaths

- Reserve Environmental Services (RES) RFI/CMS in Ashtabula, Ohio. Managed technical oversight of the project for the EPA. RES treated and disposed of high and low pH inorganic liquids and sludges, as well as organic sludges, in surface impoundments and landfills. Soil, groundwater, surface water, and sediments were contaminated with DNAPLs and dissolved organics and inorganics. Responsibilities included reviewing and providing detailed comments on all technical plans and documents for compliance with the consent order and EPA guidance; providing field oversight of all investigative activities including soil borings, contaminant-source area borings, monitoring well installation, slug tests, and multimedia sampling; assisting EPA during negotiations with RES; and reviewing data and providing recommendations for a phase II RFI and interim measures. As part of an

enforcement action against the facility, provided critical review of RCRA compliance issues and worked with ORC and DOJ attorneys developing the case. Also oversaw development of a community relations fact sheet and participated as the RFI technical expert during two public meetings. As a subject matter expert under a subsequent sole-source contract with EPA, provided additional historical, technical, and regulatory support during review of the RFI report

- Koppers facility in Carbondale, Illinois. Managed the technical oversight of the RFI/CMS for the largest wood treating facility in the nation. Through past operations, the soil, groundwater, surface water and sediments at the Koppers facility became contaminated with DNAPL and dissolved creosote, pentachlorophenol, and inorganic constituents. Responsible for: technically reviewing the RFI report, CMS, interim measures work plan, interim groundwater monitoring program, and QAPP; coordinating field oversight of drilling, well installation and sampling activities; and providing technical and regulatory support to EPA during negotiations. Assigned as a subject matter expert for EPA to provide technical and regulatory evaluations of a proposed corrective action management unit, DNAPL remedial alternatives, groundwater cleanup objectives, and to assist in the preparation of the statement of basis (SOB) and the proposed alternative public meeting
- General Electric RFI/CMS in Coshocton, Ohio. Provided technical support to the EPA for the CMS and during CMI negotiations. Operations at the GE electromaterials facility, which produced laminated circuit boards, resulted in polynuclear aromatics contamination of the soils, and phenols and arsenic in the groundwater. Evaluated the CMS and RFI which argued that elevated concentrations of arsenic in the groundwater were from reduction and mobilization associated with aerobic biodegradation of the phenols. Assisted in the preparation of the SOB for attenuation of arsenic via natural re-oxidation of the aquifer and presented technical and regulatory background during the proposed alternative public meeting. Upon approval of the SOB, participated in negotiations of the first CMI consent order signed in Region V
- Weldon Spring Site Remedial Action Project, Missouri. Participated in several contaminant characterization studies of the former DOE/DOD weapons facility. Managed the field investigation of the primary offsite surface water drainage from the site, including radiological surveys and soil/sediment sampling for chemical and radioactive parameters. Conducted the initial soil boring and sampling program at the site identifying areas with elevated concentrations of nitroaromatics and radioisotopes. As part of the groundwater investigation, supervised the installation of shallow and bedrock monitoring wells at the site. Also performed groundwater and surface water sampling activities
- DOE Fernald Environmental Management Project, Fernald, Ohio. Reviewed RCRA waste stream characterizations for this DOE mixed waste (hazardous/radioactive) Superfund site. The review process included conducting process knowledge research, reviewing analytical data, incorporating applicable exemptions and exclusions, identifying applicable treatment standards and technologies, providing narrative support for determinations, and revising material evaluation forms. Other tasks at the site, which is undergoing an RI/FS under joint CERCLA/RCRA authorities, included researching and developing treatment technologies currently used for some of the TC-hazardous mixed wastes prior to shipment off-site

- Amoco Oil Company refinery in Wood River, Illinois. Technical Manager for the preparation of a RCRA Part B post-closure permit application. Reviewed facility's operational and regulatory history and local hydrogeologic conditions, and Amoco's groundwater remediation activities, and provided technical and regulatory guidance to Amoco on technical elements of the permit application. Prepared the groundwater monitoring plan and sampling and analysis plans for post-closure groundwater monitoring at the facility, and technically reviewed, edited, and assembled the permit application for submittal to the Illinois EPA (IEPA). Upon submittal of the original permit application, assumed the role of Technical Manager on the project and was responsible for permit application revisions, client contact, and assisting Amoco during negotiations with IEPA

- U.S. Silica Corp. Performed phase I ESAs at mining operation across the nation. Entailed reviews of operational and regulatory histories, title searches and site inspections followed by a report summarizing the findings. Conducted investigation of a past oil pipeline release at the plant area of the Millville, New Jersey sand mine. Soil borings were hand auger due to the multitude of underground utilities present, monitoring wells installed, and soil and groundwater samples collected for select chemical analyses, in accordance with New Jersey Department of Environmental Protection (NJDEP) requirements. Prepared a report for "no action" required for the site

- Southeast Industrial Center, Gary, Indiana. Project Manager for an UST removal and remediation project. Five USTs at the property required removal; two of these were 50,000-gallon oil tanks under more than three feet of reinforced concrete. The USTs were removed and excavations sampled for the required parameters. Installed monitoring wells and implemented a groundwater investigation at two excavations where releases to the shallow groundwater were observed. To remove the source of the groundwater contaminants, 2,600 cubic yards of contaminated soil were dewatered, excavated, and stockpiled. Contaminant concentrations in the stockpiled soil were reduced after a year of passive bioremediation/aeration and the leaking UST remediation was completed and approved by the Indiana Department of Environmental Management (IDEM)

- Hawthorne Works site in Cicero, Illinois, a former telephone switchboard manufacturing facility. Conducted ESAs at two properties as part of real estate transactions. After negotiating the scope of the investigations with the buyer, seller and their contractor, conducted a surface and subsurface soils investigation, as well as lead dust and PCB oil spills assessments. Reviewed the analytical data, prepared a report, and represented the seller during further negotiations with the buyer. As a result of these discussions, elevated levels of lead dust in one room were remediated. For an adjacent property, previously remediated by another contractor, technically reviewed the site remediation and represented the current property owner during discussions with lending institutions and attorneys

- EPA Regions V and VII. Identified releases from solid waste management units. Performed 16 RCRA facility assessments (RFAs) at TSD facilities throughout the regions. The RFAs, the first phase of RCRA corrective action, were conducted on a variety of interim status facilities including solvent recyclers, petroleum refineries, secondary smelters, paint and automobile manufacturers, government installations, and various types of hazardous waste land disposal facilities. Developed and implemented multimedia sampling

programs to verify releases to the environment. Upon review of the analytical data, proposed further investigative and remedial measures as necessary

- Regulatory inspections. Performed over 50 RCRA compliance inspections in EPA Regions V and VI. Performed inspections at both generator and TSD facilities, including compliance evaluation inspections (CEIs), land disposal restrictions (LDR), minimum technological requirements and toxicity characteristic inspections. Additionally, participated in development and presentation of EPA-sponsored RCRA training courses presented in EPA Regions V, VI, VIII, and IX. Technical Editor of the RCRA sampling procedures handbook and the RCRA comprehensive groundwater monitoring evaluation (CME) handbook. Also contributed to training programs as an Instructor at the CME, CEI, and RCRA sampling procedures training courses for state and federal inspectors, and provided technical support for an LDR seminar presented to the regulated community
- Hazard ranking system (HRS). Scored five DOD facilities for inclusion on the National Priorities List (NPL) using HRS. Facilities included Edwards AFB in California and Bangor Naval submarine base in Washington. Determined aquifers and populations potentially threatened by on-site contamination. Under a contract with the Florida Department of Environmental Regulation (FDER), developed the HRS II reporting requirements and format used for scoring hazardous waste sites in the State of Florida.

Prior to joining Jacobs, Mr. Ehrhard was a Staff Geologist with the New York Geological Survey (NYSGS). He participated in the DOE-funded crystalline rock project in the Adirondack Mountains, New York. The purpose of the project was to identify a geologically suitable location for construction of a nuclear waste repository. Mr. Ehrhard's responsibilities included identifying and evaluating petrologic and structural characteristics of a large area of the central Adirondacks, mapping the surficial and bedrock geology, and presenting the findings to NYSGS and DOE staff.

EMPLOYMENT HISTORY

1987 to date
Jacobs Engineering Group Inc.
Project Manager
Senior Hydrogeologist /
Technical Services Manager 1992-1995
Geologist /
Regional Health and Safety Coordinator 1987-1992

1984
New York State Geological Survey, Albany
Staff Geologist

HERMAN KITT
Program Manager, Industrial Hygiene Abatement

EDUCATION

- BS, Science Biology (Environmental Science), Auburn University, GA, 1983

PROFESSIONAL REGISTRATIONS

- EPA/AHERA Abatement Supervisor (expires12/30/00)
- EPA/AHERA Asbestos Inspector/Management Planner (expires 9/22/00)
- Lead Abatement for Supervisors and Contractors, 1992

CERTIFICATIONS/SPECIALIZED TRAINING

- Environmental Compliance Audits/Site Assessments, 1989
- NIOSH 582 Sampling and Evaluating Airborne Asbestos Dust, 1984
- RMDs LPA-1 Lead Paint Inspection Systems, 1996
- Lead Abatement Supervisor: EPA Target Housing and Child-Occupied Facilities, 1997
- Construction Management, 1983
- Contract Review & Revision/Professional Liability, 2000
- Interactive Planning Workshop, 1989
- Hazardous Materials and Waste Management for Project Environmental Managers, 1998
- 40-Hour OSHA HazWOPER Training, 1999
- 8-Hour OSHA HazWOPER Refresher Training, 2000

SUMMARY OF EXPERIENCE

Herman has 17 years of hazardous materials experience including 14 years of management experience. His primary focus in industrial hygiene has been in construction management with additional experience in bulk sampling, air sampling and analysis, project administration, and program management. He is familiar with all phases of construction activities including submittal approvals and final clearance inspections and approvals. Herman provides oversight and direction as needed on bulk sampling, air sampling and analysis, and construction-related tasks. Herman has also co-authored a technical paper on Asbestos Final Clearance Using Transmission Electron Microscopy. Herman has a bachelor's degree in science biology (environmental science) from Auburn University.

EXPERIENCE

1992–present CAPE, Atlanta, GA

As Program Manager of Industrial Hygiene Abatement Services, Herman provides oversight and direction as needed on bulk sampling, air sampling and analysis, and construction-related tasks. He has managed multiple DOs totaling in excess of $11M.

SOUTHDIV, ID/IQ Remediation, NAS Cecil Field, FL, Mar 99 –Sep 00. Project Manager. Projects at Cecil Field, associated with the BRAC effort, involved identifying suspect, damaged friable ACM at multiple facilities, and required that materials either be removed as necessary or repaired where feasible. Some replacement of materials was also required where removal was performed.

SOUTHDIV, Friable Asbestos Abatement, NAS Jacksonville, FL, May 98 –Mar 99. Project Manager for the abatement of damaged friable asbestos materials in nine buildings throughout the base. Materials included pipe insulation on steam lines, duct insulation, floor tiles, ceiling tiles, window glazing, and contaminated soil. More than 100,000 sf of soil was removed and disposed of in an approved landfill. The project required working closely with the ROICC, Navy Environmental Department, and the building's tenant to coordinate the work schedules in an effort to minimize disruptions to building operations and activities. CAPE's work assisted SOUTHDIV in meeting its client's needs.

SOUTHDIV, Damaged Friable Asbestos Abatement, NAS Cecil Field, FL, Oct 99–Dec 99. Project Manager for a site that was on the base closure list (BRAC); therefore, damaged friable ACM was required to be removed and/or brought into good repair before transfer. As part of this project, five buildings were included and involved materials such as thermal system insulation and vinyl floor tile/mastics. Re-placement materials were installed where complete abatement was required. The project scheduling was particularly challenging as old tenants moved out and new ones were scheduled to move into spaces as they became available.

SOUTHDIV, Charleston Housing Units X and W, Charleston Naval Shipyard, SC, Jun 99–Jul 99. Project Manager for project involving six historical houses (formerly officers' quarters) identified as containing LBP. The LBP was present throughout the interior walls, ceilings, wood trim, and around windows. Herman served as PM to remove LBP where it was flaking and peeling and on chewable surfaces. The exterior of the buildings also contained LBP. The project was challenging in that historical preservation of the structures was paramount. Therefore any materials replaced would have to be replaced with like substitutes subject to approval. The houses ranged in size from 8,000 sf to 15,000 sf. The abatement process generated some hazardous waste, thus a temporary hazardous waste storage facility had to be established. The client benefited because the scheduled base closure process was facilitated through our efforts to effectively meet the project objectives.

SOUTHDIV, Asbestos Abatement Building S-241, Millington TN, Oct 99–Jul 00. Project Manager. Direct interface with SOUTHDIV Headquarters as well as the field office. This project involved the removal of asbestos materials such as vinyl asbestos tiles (VAT), pipe insulation/fitting, transite wallboard and duct insulation. Project challenges included working around the needs/requirements of the tenants and in some instances the HVAC system could not be completely isolated. Some phased shutdowns of the system during off-peak times were allowed. The desired abatement was completed as planned to allow for building upgrades that were long overdue.

LANTDIV, DTA Harvey Point (Oct 97–Nov 97) and NSGA Chesapeake (Oct 99–Nov 99). Project Manager. Managed two DOs in LANTDIV's footprint. Both projects involved complete removal and replacement of ACM in designated areas. Abatement services performed in sensitive areas of facilities required close coordination with building occupants and unique phasing requirements associated with removing ACM from a plenum.

GSA Region IV, Asbestos Surveys, Atlanta Area, GA, Aug 90–Jun 92. Project Manager. Conducted baseline surveys for the presence of suspect ACMs in the Metro Atlanta area. He generated the final deliverables to the client that outlined the survey findings.
GSA Region IV, Asbestos Surveys, Southeastern US, Aug 90–Jun 92. Project Manager. Herman served as PM for a comprehensive asbestos survey of 11 GSA buildings in the Southeast region.
BellSouth Telecommunications, Southeastern US, Apr 92–Jul 99. Project Manager. Served as PM for a variety of environmental services procured via three contracts. Services were provided throughout the nine-state footprint for BST. As PM, Herman was responsible for interacting and coordinating with BST environmental managers, the facility manager, and approved contractors. Tasks included developing SOWs, designing projects, and documenting project activities.
BellSouth Telecommunications, Asbestos Survey of Georgia and North Carolina Buildings, May 95–Aug 96. Project Manager. Served as PM for 3-year reinspections as well as baseline surveys of selected buildings for BST. He provided reports for generation of asbestos databases to include drawings illustrating the location of ACM in building with the corresponding ACM quantities. The reports allowed BellSouth to more effectively track and plan renovation projects throughout the region.
Tuskegee University, Environmental Services Contract, AL, Jun 92–present. Program Manager for multiple TOs over an 8-year period. Projects include asbestos demolition surveys, lead paint abatement, asbestos abatement, and cost estimating. Projects involve facilities that registered as National Historical Sites thus preservation of these facilities is critical.
VA Hospitals, GA, NC, AL, WY,IL, and IA, Mar 92–Sep 95. Project Manager for abatement projects for VA Hospitals in Dublin, GA; Salisbury, NC; Tuscaloosa, AL; Sheridan, WY; Marion, IL; and Iowa City, IA.
Lufthansa Airlines, Atlanta, GA, Aug 90–Feb 92. Project Manager responsible for developing air sampling strategy at headquarters building during 3-year asbestos abatement program. Also served in a construction management role.

1990–1992 Cavin Analytical, Norcross, GA

Managed and staffed asbestos and lead abatement projects. Responsible for allocating and managing resources necessary to complete industrial hygiene services during abatement projects.

1983–1990 McCrone Environmental Services, Norcross, GA

Conducted asbestos abatement industrial hygiene surveillance during abatement of more than 150 schools in Alabama and Georgia. Responsible for performing inspections and documentation throughout completion of abatement.

REGULATORY EXPERIENCE

Herman has extensive experience in working with federal and state regulators in performing industrial hygiene services in accordance with EPA/AHERA, OSHA, and state and local asbestos and lead regulations. He has performed work in GA, IL, FL, TN, TX, LA, SC, NC, AL, WY, MD, as well as Washington, DC.

PUBLICATIONS

- Kitt, Herman, and Nicks, Matthew R. Asbestos Final Clearance Using Transmission Electron Microscopy. Georgia Tech Asbestos Symposium, Atlanta, GA.

REFERENCES

Archie Browder, REM, Environmental Protection Specialist
Southern Division, Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, SC 29419
(843) 820-5516
Fax: (843) 820-7465
E-mail: abbrowder@efdsouth.navfac.navy.mil
Sandy Anderson, Environmental Technical Program Manager
BellSouth Telecommunications
675 W. Peachtree Street, SU-42
Atlanta, GA 30375
(404) 927-7785
Fax: (404) 524-7618

JEFF SHANNON

Project Manager

EDUCATION

- BS, Environmental Health, University of Georgia, GA, 1987

PROFESSIONAL REGISTRATIONS

- Licensed Asbestos Abatement Contractor in GA (1996), FL (1997), MS (1997), AL (1998), KY (1997), NC (1997), SC (1997), TX (1996)
- Licensed Lead Supervisor, 1997
- EPA Management Planner, Lead Abatement Supervisor, Inspection and Assessment, 1998
- Ohio-Certified Asbestos Hazard Abatement Specialist, 1999

CERTIFICATIONS/SPECIALIZED TRAINING

- NIOSH 582 Sampling and Evaluating Airborne Asbestos Dust, 1987
- 40-Hour OSHA HazWOPER Training, 1999
- 40-Hour OSHA Respiratory Protection Training, 1997
- 8-Hour OSHA HazWOPER Supervisor Training, 1999
- 8-Hour OSHA HazWOPER Refresher Training, 1999

SUMMARY EXPERIENCE

Jeff has 13 years of experience in managing industrial hygiene, asbestos, and lead surveys and abatements. He has experience managing multitask remediation projects ranging in value from $100K to $9M. He is responsible for scheduling, staffing, coordinating, and overall managing field staff activities for asbestos and lead abatement projects. Jeff has a bachelor's degree in environmental health and is a licensed asbestos abatement contractor, a licensed lead supervisor, and is an EPA-certified management planner, lead abatement supervisor, inspector, and assessor.

EXPERIENCE

1994–present CAPE, Atlanta, GA

As PM, Jeff manages multitask remediation projects ranging in value from $100K to $9M. He is responsible for scheduling, staffing, coordinating, and overall managing field staff activities for asbestos and lead abatement projects.

SOUTHDIV, Naval Weapons Industrial Reserve Plant, McGregor, TX. PM for asbestos abatement of mechanical systems insulation throughout the facility.

SOUTHDIV, Naval and Marine Corps Reserve Center, Bessemer, AL, 1998 – 1998. PM for the cleanup of lead dust from the facility firing range. He received a commendation letter for this project.

SOUTHDIV, Asbestos Abatement, NAS Jacksonville, FL. Project Manager. Managed a large-scale asbestos abatement project that encompassed the removal of TSI and VAT, as well as the cleanup of asbestos-contaminated crawl spaces and soil from various buildings throughout the installation. He received a commendation letter for this project.

SOUTHDIV, Marine Corp Reserve Center, Rome, GA, 1998 – 1998. Project Manager. Managed an abatement team for the cleanup of lead dust from the firing range at the facility.

SOUTHDIV, Navy Exchange Consolidation, Orlando, FL. Site Superintendent for asbestos abatement and air monitoring services at this facility.

SOUTHDIV, Defense Testing Activity, Harvey Point, NC, 1997 – 1998. Project Manager. Managed an asbestos abatement team for abatement of designated asbestos-containing TSI throughout the facility. Project included unique phasing requirements associated with asbestos removal while maintaining normal base operations. He received a commendation letter for this project.
SOUTHDIV, NAS Cecil Field, Jacksonville, FL. Project Manager for abatement of TSI at Buildings 617 and 626 of the installation as part of BRAC process.
SOUTHDIV, Lakeside Naval Support Facility, Pascagoula MS, 1997 – 1997. PM for large-scale removal of VAT and associated mastic in this multistory, occupied facility. The project was undertaken as part of extensive renovations being performed at the facility. Asbestos abatement was successfully coordinated with renovation efforts and caused no disruptions to the flow of services provided to fleet sailors. Jeff received a commendation letter for this project.
SOUTHDIV, NAS Jacksonville, FL. PM for asbestos abatement and the subsequent demolition of five small buildings to facilitate the expansion of a golf course at this installation.
SOUTHDIV, NAS Dallas, TX. PM of an asbestos abatement team for work performed at several sites on this facility.
North Carolina Federal Center, Charlotte, NC, 1999 – 1900. PM for asbestos abatement at this facility. The abatement consisted of interior demolition, removal of spray-applied fireproofing, and the subsequent reapplication of new fireproofing in this multistory high-rise occupied facility. The project consisted of abatement of 14 floors and was valued at $3.5M. The project was completed on schedule and with a high degree of client satisfaction.
Polk General Hospital, Cedartown, GA. PM for an asbestos abatement team for an abatement performed in conjunction with the replacement of a boiler and associated renovations.
Tuskegee University, Tuskegee, AL. PM for a removal project performed in conjunction with renovations of the Chiller Plant.
Alabama Department of Transportation, AL, 1996 – 1997. PM for removal operations performed in buildings scheduled for demolition in various DOT work zones throughout the state.
U.S. Postal Service, ACM Abatement, Dover, DE, 1997–1997. Site Supervisor for removal of asbestos-containing floor tile. Saved client time and money on subsequent floor tile abatement by performing an NEA associated with core drillings through the floor tile. Results of the NEA allowed USPS personnel to conduct drilling with minimized setup, reducing costs associated with hiring an outside contractor. Also provided onsite training for USPS employees associated with the core drilling through asbestos-containing floor tile.

1990–1994 MCT Catalytic Corporation

Managed and staffed asbestos and lead abatement projects. Supervised 35 employees and managed the activities of 10 subcontractors.

1987–1990 McCrone Environmental, Atlanta, GA

Conducted lead and asbestos surveys. Responsible for managing air monitoring/industrial hygiene projects. Supervised 3 employees.

MIKE MOUNT, CIH, OHST
Safety and Health Manager

EDUCATION

- BS, Environmental Science, Troy State University, Troy, AL, 1982

PROFESSIONAL REGISTRATIONS

- Certified Industrial Hygienist #CP7228, ABIH, 1996
- Occupational Health and Safety Technologist #963, ABIH/BCSP, 1989
- Licensed Florida Asbestos Consultant, Certification # AX-0000039, 1997

CERTIFICATIONS/SPECIALIZED TRAINING

- EPA/AHERA Abatement Supervisor, 1994 and 1999
- EPA/AHERA Building Inspector & Management Planner, 1997 and 2000
- NIOSH 582 Sampling and Evaluation Airborne Asbestos Dust, 1984
- TEM Asbestos Analysis, McCrone Research Institute, October 1993
- Lead Paint Inspector Training, 1998
- Lead-Based Paint Risk Assessor Training, 1998
- 40-Hour OSHA HazWOPER Training, 1992
- 8-Hour OSHA HazWOPER Refresher Training, 2000
- Comprehensive Review for Industrial Hygiene Professionals, 1994
- Radiation Safety Training—XRF Instrumentation, 2000
- Indoor Air Quality Diagnostics, 1987

SUMMARY OF EXPERIENCE

Mike has developed several corporate health and safety programs including programs for PPE, medical monitoring, confined space, and respiratory protection. He has also developed, reviewed, and implemented SSHPs, sampling plans, and monitoring programs for a variety of hazardous waste projects. Mike reviewed safety plans for a UST tank replacement project at approximately 100 sites in five states.

Mike has 7 years of experience with RCRA, TSCA, AHERA, and OHSA regulations. He has managed the safety and health aspects of three SOUTHDIV contracts for CAPE. These contracts had no safety violations or accidents during fieldwork. He is also familiar with EPA Region 3, 4, and 5 requirements having worked across the Eastern and Southeastern U.S., predominately in NC, SC, FL, GA, and AL. He has also worked in IL, PA, VA, IN, IA, OH, and Washington, DC.

EXPERIENCE

Feb 95–present CAPE Environmental

Mike's duties include developing, implementing, and enforcing all elements of SSHPs; training and supervising field staff and specialty subcontractors; interfacing with clients and regulators; reviewing daily reports and S&H programs; and preparing safety and health management reports.

Department of State, Building 646 Demolition Project, Charleston Naval Complex, Jun 2000. Mike supervised the removal and repair of a submerged pump on a project involving the remediation of a building containing hazardous and toxic waste.

Southeastern Pennsylvania Transportation Authority, General Engineering Contract (GEC). Mike has performed as the consulting CIH for the hazardous materials management services under the GEC. Work on this contract has included coordination of multiple asbestos, lead-containing paint, PCB and underground storage tank management projects.

Southeastern Pennsylvania Transportation Authority, Girard Avenue Light Rail Infrastructure Renewal Project. As the consulting CIH on this contract, Mike is responsible for the successful management of hazardous materials investigation and design services. Services have included the survey, assessment and design for lead-containing paint, asbestos, contaminated soils and surface coating materials. This contract also included manhole and duct bank investigations.

Southeastern Pennsylvania Transportation Authority, Broad Street Subway. Mike provided consulting CIH services for this renovation contract. Projects involve the investigation, assessment and abatement design for hazardous materials including asbestos, lead-containing paint, PCB, and mercury at various Broad Street Subway Stations.

Southeastern Pennsylvania Transportation Authority, Wayne Avenue Station Rehabilitation. Mike consulted with the Project Manager who was responsible for the coordination and management of the field investigation for asbestos, PCBs and lead-containing paint. He also provided an abatement design, cost estimates, and specifications.

SOUTHDIV, Navy Marine Corps Reserve Center, Rome, GA. Mike served as Safety & Health Manager for an air monitoring and clearance sampling project during and after lead abatement. His responsibilities included developing the site safety plan; overseeing air and hazardous waste sample collection; final air, wipe, and TCLP data interpretation; and developing the written final report.

SOUTHDIV, Navy Marine Corps Reserve Center in Bessemer, AL. As Safety & Health Manager, Mike managed an air monitoring and clearance sampling project during and after lead abatement. His responsibilities included developing the site safety plan; overseeing air and hazardous waste sample collection; final air, wipe, and TCLP data interpretation; and developing the written final report.

SOUTHDIV, NAS Jacksonville, FL. As Safety & Health Manager, Mike managed an asbestos survey. His responsibilities included developing a site safety plan, and overseeing sample collection, cost estimating, and data interpretation. He developed written reports and established the O&M Program.

SOUTHDIV RAC. Mike currently acts as CAPE's CIH for the Navy SOUTHDIV contract that includes work across the Great Lakes region. For this con-tract, he developed, implemented, and now monitors SSHPs that address confined space, shoring and trenching, heavy equipment, electrical, solvents, heavy metals, organic vapors, asbestos, lead, and PCBs. Personnel protection on this contract has varied from Level B to Level D.

SOUTHDIV, Charleston Navy Shipyard Family Housing, Charleston, SC. As S&H Manager, Mike managed an exposure assessment with air monitoring, clearance sampling, and hazardous waste characterization activities during a lead abatement project in residential housing. The abatement was performed using chemical removal and wet scraping procedures.

Metropolitan Atlanta Transit Authority, Atlanta, GA. As Safety & Health Manager, Mike supervised site safety during inspections of buildings with suspect ACM and LBP. There were no safety violations or accidents during fieldwork.

BellSouth Telecommunications, Headquarters Building, Atlanta, GA. Performed indoor air quality investigation to determine source of intermittent foul odor in multi-story high-rise building associated with abandoned plumbing lines. Managed project throughout investigation and Remediation.

BellSouth Telecommunications, Executive Park, Building No. 7 Asbestos Abatement, Atlanta, GA. As Safety & Health Manager, Mike developed and managed an air-sampling program during an asbestos abatement project that occurred over a communication system that was enclosed within the work area. The communication system was kept in operation throughout the 4-week project. Mike also reviewed site safety plans for an ongoing tank replacement program for more than 100 sites located throughout the Southeast.

General Service Administration, GA and SC. As Safety & Health Manager, Mike performed supervised safety requirements for CAPE personnel during GSA facility surveys across the Southeast region. The surveys included interviewing building occupants, collecting air samples, documenting environmental conditions, and inspecting HVAC systems. To date, no safety violations or accidents have occurred on the project.

USACE, Ft. Stewart Fire Pit Remediation, GA. Mike developed all SSHPs including atmospheric monitoring with OVA-FID, combustible gas meters, and emergency medical stations. He conducted daily tailgate safety meetings, and reviewed and prepared reports of chemical exposure collected during the project.

General Services Administration, Indoor Air Quality Survey, Orangeburg, SC, Apr 97. General Service Administration. Performed indoor air quality survey at a GSA facility housing social security and IRS offices. The survey included interviewing building occupants, collecting air samples, documenting environmental conditions, and inspecting HVAC systems. The data was analyzed and a report written with recommendations to correct the differences noted in the HVAC system.

USACE, Mobile District, MacDill AFB, FL. Mike served as Site Safety & Health Officer for the MacDill AFB UST Removal and Replacement Project. He prepared an approved SSHP. The primary health and safety concerns were confined space entry, explosion hazards, and chemical exposure. He conducted daily tailgate safety meetings, and reviewed field data and laboratory reports for chemical exposure.

Institute of Paper Science and Technology. Mike's responsibilities for the Institute of Paper Science and Technology included development of sampling plans for formaldehyde, data interpretation, and final report preparation

Federal Republic of Germany, Washington, DC, German Embassy. As Safety & Health Manager for various asbestos removal projects, Mike oversaw safety and health activities for the removal of ACM from this embassy. He selected the SSHO for the project, and reviewed and approved the site safety and health plan.

GSA Region IX, Western U.S. Performed indoor air quality surveys at federally operated offices for GSA throughout the southeast.

Institute of Paper Science and Technology, Atlanta, GA. Project Manager for worker exposure survey of a bulk paper plant. Developed sampling plans, oversaw field execution, evaluated data, and prepared the final report.

Beaulieu of America, Noise Survey, Bridgeport, AL, July 1997. Performed a noise survey and sound frequency analysis at a nylon manufacturing operation to determine feasibility of abatement and selection of noise reduction techniques and materials.

Mar 92–Feb 96 MVA, Inc., Norcross, GA

Duties included sampling and analysis of hazardous and toxic materials during to determine chemical composition, and the sampling of toxic chemicals.

Private Client, 1994. Responsibilities included sample collection of settled dust from indoor environments at a USEPA Superfund site contaminated with lead arsenate.

Bell and Pannell, PC, 1993. Developed and executed sampling plan to determine extent of contamination of fly ash containing heavy metals throughout a residential indoor environments that surrounded a hazardous waste site.

BellSouth Telecommunications, Inc, 1994. Performed indoor air quality survey at a telecommunications switching office. Scope included ventilation system inspection and measurements, VOC sampling, and particle sampling in settled dust and air.

Laboratory Safety Manager, MVA Inc., 1992-1996. Responsibilities included developing, implementing, and managing the safety program of an analytical microscopy laboratory that utilized high voltage electron microscopes for determining molecular composition of known and unknown materials.

Laboratory Analyst, MVA Inc., 1992-1996. Performed light microscopy and transmission electron microscopy analysis on various asbestos air and dust samples to quantification purposes.

August 90–March 92Azimuth, Inc., Norcross, GA

Managed Atlanta office for a Charleston, SC-based industrial hygiene consulting firm. Responsibilities included performing industrial hygiene monitoring and safety surveys, environmental audits, indoor air quality surveys, and asbestos surveys; managing and supporting field staff during abatement projects; and analyzing asbestos air samples using phase contrast.

Winter Environmental Services, 1991-1992. Managed industrial hygiene services during a multi million-dollar renovation/asbestos abatement project of a public mall located in Atlanta, GA.

Emory University, 1990-1992. Managed asbestos abatement projects in various campus buildings (Biology, geology, and psychology). Services included asbestos-containing materials survey, design of asbestos abatement project and construction management/air monitoring services during asbestos abatement.

February 84–August 90 McCrone Environmental Services Inc., Norcross, GA

Performed industrial hygiene monitoring and safety surveys, environmental audits, indoor air quality surveys, and asbestos surveys; managing and supporting field staff during abatement projects; and analyzing asbestos air samples using phase contrast microscopy.

Furman University, Greenville, SC, Mar 87. Responsibilities included collection of suspect asbestos-containing bulk samples, documentation of the condition and location of the samples, recommended response actions and cost estimates.

United Telephone of Florida, Naples, FL, Apr 87–Aug 1987. Industrial Hygienist. Responsibilities included developing a sampling plan and supervised air monitoring during asbestos abatement of a multi-story office building.

Southern Bell Telephone Company, 1987–1990. Various indoor air quality investigations in small office buildings.

REGULATORY EXPERIENCE

Mike has 14 years of experience with RCRA, TSCA, AHERA, and OSHA regulations and has worked extensively in US EPA Regions III and IV.

PUBLICATIONS

- Millette, J. R. and Mount, M. D. Many Non-School Projects Adopting AHERA Guidelines, Council Currents, Vol. 1, No. 4, p. 3, 1988
- Millette, J. R., Brown, R. S., Barnett, J., and Mount, M.D., Scanning Electron Microscopy of Post-it ™ Notes Used for Environmental Sampling, NAC Journal, pp. 32-35, Spring 1991
- Millette, J. R., Mount, M.D., A Study determining Asbestos Fiber Release During the Removal of Valve Packing, Appl. Occup. Environ. Hyg., Vol. 8(9), pp. 790-793, September 1993
- Brown, R. S., Millette, J. R. and Mount M. D., Application of Scanning Electron Microscopy for Pollution Particle Source Determination in Residential Dust and Soil. Scanning, 17(5):302-305, 1995
- Millette, J. R., Mount, M. D., Hays, S. M., Releasability of Asbestos Fibers from Asbestos-containing Gaskets. EIA Technical Journal, 3(2):10-15, 1995
- Millette, J. R., Brown, R. S. and Mount, M. D., Lead Arsenate. Microscope 43(4):187-191, 1995
- Millette, J. R., Mount, M.D. Hays, S. M., Asbestos-containing Sheet Gaskets and Packing. Chapter 6. In: Sourcebook on Asbestos Diseases, Vol. 12 Asbestos Health Risks. G. A. Peters and B. J. Peters, Eds., Michie, Charlottesville, VA. pp. 153-188. 1996

PROFESSIONAL LIABILITIES

- Member of Local and National American Industrial Hygiene Association since 1990

SECURITY CLEARANCE

- Not Applicable

APPENDIX II

INSPECTION AND DAILY CQC REPORT FORMS

JACOBS FIELD INSPECTION REPORT	
DATE	**CONTRACT DAY NO.**
WEATHER	**BID ITEM**
SUBCONTRACTOR	**SUBCTR. REP.**
WORK DESCRIPTION:	
INSTRUCTIONS TO SUBCONTRACTOR:	
REQUESTS BY SUBCONTRACTOR:	
UNUSUAL OF UNSATISFACTORY CONDITIONS:	
DELAYS (LENGTH & REASON)	
SUBCONTRACOR'S FORCES AND EQUIPMENT:	
SAFETY AND QC ISSUES:	
INSPECTOR'S NAME	
SIGNATURE	**DATE**

JACOBS FIELD INSPECTION REPORT				
BID ITEM_____		**CONTRACT DAY NO._____**		
SCHEDULE MONITORING				
EVENT NUMBER	**DESCRIPTION OF WORK ELEMENT**	**STARTED TODAY**	**FINISHED TODAY**	**PERSONNEL A.M. P.M.**

ITEMS CONTINUED FROM FRONT

JACOBS STANDARD FORM
DAILY QUALITY CONTROL REPORT

Daily Report No: _____ Date: _____
Contract No: _____ Page __ of ___

Project Title & Location: _____
Weather: _____
Precipitation: _____ in. High Temp. _____ Low Temp. _____

Contractor area of responsibility:

Equipment:

Work Performed Today:

Daily Quality Control Report

Results of control activities:(Indicate whether P – Preparatory, I-Initial, or F-Follow-up Phase:

Test performed as required by work plans:

Material Received:

Job Safety: (Report violations; corrective instructions given; corrective actions taken)

Remarks: (Instructions received or given)

General Remarks:

Contractor's verification: On behalf of the Contractor, I certify this report is complete and correct, and that inspections and testing indicate that materials and equipment used and work performed during this reporting period are in compliance with the Contract Work Plans, to the best of my knowledge, except as noted above.

Authorized CQC Rep at Site: _____

Date: _____

JACOBS
PREPARATORY PHASE CHECKLIST

CONTRACT NO: _____ DATE: _____

DEFINABLE FEATURE: _____

PERSONNEL PRESENT:

NAME	**POSITION**	**COMPANY/ORGANIZATION**

SUBMITTALS: Have all submittals been approved? If no, what items have not been approved?

Are all equipment and materials on hand? If no, what items are missing?

Check approved submittals against delivered material. (Should be done as materials arrive)

MATERIAL STORAGE: Are materials stored properly? Yes ___ No

If No, what action is taken?

WORK PLANS:

Review each paragraph of work plans, discuss procedure for accomplishing the work, and clarify any differences.

PRELIMINARY WORK AND PERMITS:
Ensure preliminary work is correct and permits are on file.
If not, what action is taken?

TESTING:

Identify test to be performed, frequency, and by whom. _____
_____
_____
_____
_____

When required? _____
_____

Where required? _____
_____

Review appropriate Work Plans? _____
_____
_____

Has test facilities been approved? _____
_____

SAFETY:

Review applicable portion of Safety and Health Plan. _____

Activity Hazard Analysis approved? **Yes** ___ **No** ___

JACOBS
INITIAL PHASE CHECKLIST

CONTRACT NO: _____ DATE: _____

DEFINABLE FEATURE: _____

PERSONNEL PRESENT:

NAME	**POSITION**	**COMPANY/ORGANIZATION**

Initial Phase Checklist

Identify full compliance with procedures identified at Prep Phase meeting.

Preliminary Work:
Ensure preliminary work is complete and correct. If not, what action is taken?

Establish Level of Workmanship:

Where is the work located?

Resolve any Differences:

Check Safety:
Review job conditions and Safety and Health Plan

APPENDIX III

CONTRACTOR SUBMITTAL REQUIREMENTS SUMMARY

ENCLOSURE I

CONTRACTOR SUBMITTAL REQUIREMENTS SUMMARY

CLAUSE 1 - SUBMITTAL REQUIREMENTS

Contractor shall furnish ten (10) copies of all submittals (such as drawings, data, catalog cuts, and samples) in accordance with the technical specifications and Contractor Submittal Requirements Summary (CSRS) and this clause.

All submittals prepared for this Contract shall have a cover sheet indicating the following information in or near the title block:

- Project Name and Phase
- USACE Contract Number
- Date
- Submittal Title and Number

With each separate submittal, a copy of the attached Contractor Submittal Requirements Summary (CSRS) form shall be included and "Submittal Title" of item(s) being submitted shall be circled or highlighted. Also, the Contractor shall include a letter of transmittal detailing the following:

- Contract number
- A description of contents per the CSRS Form (e.g., NFSS, CADD Design Files)
- Number and type of items (floppies, etc.)
- Note if the submittal is a resubmittal

Whenever possible, related items shall be submitted together to permit simultaneous review. When such submittal is not possible, submittals shall be in an appropriate sequence to ensure that necessary information is available for reviewing such item as it is received.

USACE reserves the right to request any submittal not included on the CSRS form or any new submittal requirement.

All work plan submittals shall be submitted in both hardcopy and electronic Adobe formats.

CLAUSE 2 - SUBMITTAL RECIPIENTS

Submittals of all documents as identified on the CSRS shall be made directly to the individuals noted below.

a) The Contracting Officer's Representative's address is:

U.S. Army Engineer District, Buffalo
Attn: CELRB-CO-N
1776 Niagara Street
Buffalo, NY 14207-3199

CLAUSE 3 - TYPES OF SUBMITTALS

Documents

Each submittal shall be an unfolded, direct reading, first-generated copy the same size as the original. The minimum size of submittals shall be 8-1/4 inches by 11 inches. Each submittal shall be of a sufficient quality to produce

clearly legible/readable third-generation copies using either diazo or electrostatic (Xerox-type) processes and clearly legible/readable microfilm and copies from the microfilm.

Submittals 11 inches by 17 inches or smaller shall be black-on-white, or color copies; bond paper is acceptable.

Submittals larger than 11 inches by 17 inches shall be dark line on translucent or transparent material suitable for diazo reproduction and shall be rolled and inserted into mailing tubes.

Drawing Requirements

All drawings and diagrams shall be prepared in accordance with the latest applicable American National Standard Institute Drafting Manual, ANSI-Y14.

Each drawing submitted shall have a separate drawing number. When a drawing is revised, revision numbers must be clearly legible and easily distinguishable from the drawing number and should be as close as possible to the title block. A short description of the nature of the revision must be included, and revised areas on the drawing shall be circled and identified with the revision number.

"Typical," "standard," or "off-the-shelf" drawings will be acceptable only if they have all non-applicable sections either removed or noted on each drawing.

Magnetic Storage Media

1. Data submitted on magnetic storage media shall be accompanied by a hardcopy list of the media contents and a letter of transmittal.

2. Electronic Digital Media may consist of any of the following:

- 3-1/2 inch high-density floppy disks (1.44 Mb formatted)
- Compact disc read-only memory (CD-ROM) with International Standards Organization (ISO)-9660 format
- Writable CD

Floppy disks shall be 3-1/2" (1.44 MB), DOS 5.0 or higher, with DOS backup for files greater than 1.44 MB.

Samples

Submittal of sample materials, such as bentonite, geomembrane, or geotextile swatches, etc., shall be of the size and type as noted in the technical specifications.

CLAUSE 4 - SUBMITTAL STATUS AND RETURN BY USACE

A copy of documents submitted requiring review will be returned by USACE with status (code) marked in accordance with ENG FORM 4025.

Permission to proceed does not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by the Contractor/supplier, and does not relieve the Contractor/supplier from full compliance with contractual obligations or release any "holds" placed on the contract.

Work shall not proceed until submittals requiring prior review (see CSRS) have been reviewed and approved by USACE. The Contractor shall provide a disposition of each comment and incorporate changes as required by comments on submittals and resubmit corrected submittals for review. Submittals that have been given a code notation by USACE shall not be changed without notification to USACE. If changes are required, affected submittals shall be resubmitted to USACE for review. A minimum of thirty (30) days review time shall be allocated for USACE review of all submittals. Extended review time may be needed for certain submittals depending upon the distribution and review requirements.

ENCLOSURE I
CONTRACTOR SUBMITTAL REQUIREMENTS SUMMARY

SUBMITTAL SCHEDULE

- s Prior to Shipment
- B Prior to Balance of Payment
- A Per S/C Schedule
- M Prior to Mobilization
- W Prior to Commencing Work
- Y Prior to Progress Payment For Each Specific Task
- Z As Required

SUBMITTAL TYPE REQUIRED

- O Original
- P Print/Photocopy
- T Transparency
- M Microfilm
- PH Photograph
- E Electronic Format
- S Sample

CLASSIFICATION

- FIO For Information Only
- GA Government Approval

NOTICES

1. ***To each item submitted, attach a copy of this form and circle the title of the item being submitted.***
2. ***Failure to submit required submittals as delineated on this form may result in withholding of payment in accordance with provisions of the contract.***
3. ***The Contract Administrator is responsible for distributing submittals to the requesting Department (e.g., Construction). The Department is responsible for further distributions (e.g., Site Superintendent).***

Item No./ Submittal Titles		Scope of Work (SOW) Paragraph	Classification	Submittal Codes	
				Schedule	(No.) and Type
1.1	Estimate of ACM and Debris that will require removal	3.1	GA	W	E, O
1.2	Meeting Minutes	3.3.4	FIO	5 calendar days after each meeting	E, O
1.3	Quality Control Plan	4.2	GA	10 calendar days after NTP	E, O
1.4	Site Operations Plan	4.3	GA	20 calendar days after NTP	E, O
1.5	Asbestos Assessment and Abatement Plan	4.4	GA	20 calendar days after NTP	E, O
1.6	Safety and Health Plan	4.5	GA	20 calendar days after NTP	E, O
1.7	Sampling and Analysis Plan	4.6	GA	20 calendar days after NTP	E, O
1.8	Waste Management Plan	4.7	GA	20 calendar days after NTP	E, O
1.9	Radiation Control Contingency Plan	4.8	GA	20 calendar days after NTP	E, O
1.10	Preconstruction Radiological Survey of Work Areas	3.1	FIO	Prior to Commencing Field Work	E, O
1.11	Results of ACM bulk sample testing, along with corresponding photos	3.2.3	FIO	Within 48 hours of sampling	E, O
1.12	Results of all testing and sampling conducted	3.4.11	FIO	Within 48 hours of sampling	E, O

FUSRAP **Asbestos Abatement of Building 401 Niagara Falls Storage Site**	**Project Number**		**Subcontract Number**	**Date: 4/6/2001**

ENCLOSURE I
CONTRACTOR SUBMITTAL REQUIREMENTS SUMMARY

SUBMITTAL SCHEDULE

- s Prior to Shipment
- B Prior to Balance of Payment
- A Per S/C Schedule
- M Prior to Mobilization
- W Prior to Commencing Work
- Y Prior to Progress Payment For Each Specific Task
- Z As Required

SUBMITTAL TYPE REQUIRED

- O Original
- P Print/Photocopy
- T Transparency
- M Microfilm
- PH Photograph
- E Electronic Format
- S Sample

CLASSIFICATION

- FIO For Information Only
- GA Government Approval

NOTICES

1. ***To each item submitted, attach a copy of this form and circle the title of the item being submitted.***
2. ***Failure to submit required submittals as delineated on this form may result in withholding of payment in accordance with provisions of the contract.***
3. ***The Contract Administrator is responsible for distributing submittals to the requesting Department (e.g., Construction). The Department is responsible for further distributions (e.g., Site Superintendent).***

Item No./ Submittal Titles	Scope of Work (SOW) Paragraph	Classification	Submittal Codes	
			Schedule	(No.) and Type
1.13 Waste profile sheets for all waste streams	3.5.7	GA	Prior to waste disposal	E, O
1.14 Waste manifests and/or bills of lading for all waste streams	3.5.7	GA	Prior to waste disposal	E, O
1.15 Post-construction Radiological Survey of Work Areas	3.1	FIO	Prior to demobilization	E, O
1.16 Equipment radiological decontamination verification surveys	3.5.7	GA	Prior to equipment leaving site	E, O
1.17 Project Completion Report	6.0	GA	B	E, O

FUSRAP **Asbestos Abatement of Building 401** **Niagara Falls Storage Site**	**Project Number**		**Subcontract Number**	**Date: 4/6/2001**

APPENDIX IV

CQCSM APPOINTMENT LETTER

JACOBS ENGINEERING®
Engineers and Constructors

Jacobs Engineering Group Inc. - Federal Operations
13723 Riverport Drive
Maryland Heights, Missouri 63043 U.S.A.
1.314.436.7600 Fax 1.314.770.5110

October 1, 2001

Leo Mann III
Jacobs Engineering
13723 Riverport Dr.
Maryland Heights, MO 63043

Subject: Delivery Order #1
USACE – Buffalo District
DACA49-00-D-0007
Contractor Quality Control Manager and Site Superintendent

Dear Mr. Mann:

You have been appointed as the Contractor Quality Control Manager and Superintendent to be performed under the subject Contract. Your years of experience in the construction industry working on projects similar in type and scope meets the specified requirements for these positions.

You will be responsible for ensuring that the project is performed in accordance with the Work Plan, CQC Plan, and the Sampling and Analysis Plan. Your presence on site is required whenever work is in progress and you have full authority to suspend work at any time if you determine that it is not being performed in compliance with the Project Plans, Specifications, or Contract.

Sincerely,

JACOBS ENGINEERING – FEDERAL PROGRAMS

Virgil W. Jansen
Program Manager

Cc: Project File

APPENDIX V

CERTIFICATIONS

Central States

Environmental Services, Inc.

Certificate of Completion

presented to

VIRGIL W. JANSEN

in recognition of satisfactory completion
of the course of instruction entitled

40 HOUR
HAZARDOUS MATERIALS HANDLING AND RESPONSE

July 6-10, 1992

Date(s) of Instruction

Philip R. Richardson

Instructor

Jacobs Engineering Group, Inc.

Certificate of Completion

presented to

Virgil Jansen

in recognition of satisfactory completion
of 8-hours of refresher training

Hazardous Waste Operations and Emergency Response
29 CFR 1910.120 / 29 CFR 1926.65

November 15, 2000
Date of Instruction

Maryland Heights, MO
Location

Brian Knaus

Brian Knaus, CIH, CSP
Regional Manager, Health and Safety

Certificate of Training

awarded to

Virgil Jansen

in compliance with

29 CFR 1910.120 Hazardous Waste Operations
and
Emergency Response
8 Hour Refresher Course for Supervisors in
Radiation Health Safety

December 27, 1994

BURLINGTON
ENVIRONMENTAL

Scott K. Welsm

Health & Safety Certification

11/15/2000

LAST NAME JANSEN
FIRST NAME VIRGIL

FIT TEST REPORT

Fit Test Report

ID NUMBER	352442348		
LAST NAME	JANSEN	CUSTOM1	
FIRST NAME	VIRGIL	CUSTOM2	
COMPANY	JEG	CUSTOM3	
LOCATION	RIVERPORT	CUSTOM4	
NOTE	WEARS GLASSES AND INSERTS		
TEST DATE	11/15/2000	PORTACOUNT S/N	40744
TEST TIME	10:36	N95 COMPANION	N
DUE DATE	11/15/2001		
RESPIRATOR		PROTOCOL	DEFAULT 29CFR1910.134
MANUFACTURER	3M	PASS LEVEL	500
MODEL	7800S		
MASK STYLE	FFP		
MASK SIZE	LARGE		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	60	234000	Y
DEEP BREATHING	60	237000	Y
HEAD SIDE TO SIDE	60	114000	Y
HEAD UP AND DOWN	60	74600	Y
TALKING	60	113000	Y
GRIMACE	30	28400	X
BEND AND TOUCH TOES	60	74300	Y
NORMAL BREATHING	60	74600	Y
OVERALL FF		105000	Y

FIT TEST OPERATOR Sid Hockel DATE 11/15/00
HOCKEL

NAME Virgil W Jansen DATE 11/15/00
VIRGIL JANSEN

JACOBS ENGINEERING GROUP INC.
PHYSICIAN'S EXAMINATION SUMMARY

This form must be thoroughly completed by the examining physician ***only***. Please print.

Employee: Virgil W Jansen **SS #:** 352-44-2348

Office: Maryland Heights, MO

Clinic/Location: St. Louis, Missouri **Date of Exam:** 01/30/01

Type of Examination:

X Baseline/Initial ___ Interim Medical Review ___ Periodic Medical Exam

___ Baseline/Initial (Using Previous Employment Exit Exam.) ___ Special* ___ Baseline/Exit

*Explain any special examination procedures and/or additional testing procedures performed:

Ability to Wear a Respirator: Complete for Baseline (Initial) and Periodic Exam *only*. **Exception**: California Clinics complete for *Interim Medical Reviews* also.

___The Ability to Wear a Respirator Exam was administered according to JEG instructions and the following was determined:

✓ May wear a respirator during work duty — Did not bring in respirator because has not worn one for 7 years

___ May not wear a respirator during work duty

Restrictions/Recommendations/Comments on the employees ability to wear a respirator:

Personal Physician Referrals: ___Yes ✓ No

Reason ___

ENTER File

(Please Complete Opposite Side)

Recommendations:

__✓__ Fit for Work Duty, No Limitations

____ Fit for Work Duty, Minor Limitations, explain e.g., must wear glasses, etc.

____ Fit for Work Duty, Major Limitations explain in detail

____ Unfit for Work Duty, explain

Interim Medical Review (Only):

____ No Significant Changes Since Last Exam

____ Significant Changes Since Last Exam, explain

Explanation:

_____

_____

_____

_____

Any Other Comments:

_____

_____

_____

Employee Notification:

__✓__ Yes, the employee was sent a letter outlining the results of the examination. A copy of the laboratory results were included with the letter.

Examining Physician: Leeba Hewtel Telephone #: 314-747-5800

Signature: Leeba Hewtel Date: 2/8/01

Please complete this form after review of the laboratory analyses and return within one week of the physical examination to:

Mirna Ramirez
Health and Safety
Jacobs Engineering Group Inc.
1527 Cole Boulevard, Bldg. #2
Golden, CO 80401

The Envelope Must be Marked "Confidential"

Certificate No.: 1075

Certificate of Training

This is to certify that

Leo F. Mann III

has completed the Forty Hour Training Program for:

Hazardous Waste Site Activity

In Compliance with OSHA 29 CFR 1910.120

Course Dates: January 20, 21, 22, 23, & 24, 1992

Date of Expiration: January 24, 1993

D. W. Ryckman, SC.D., P.E., Diplomate AAEE,
President

HEACT® environmental engineers

2208 Welsch Industrial Court St. Louis, MO 63146 800-325-1398

Jacobs Engineering Group, Inc.

Certificate of Completion

presented to

Leo F. Mann III

in recognition of satisfactory completion
of 8-hours of refresher training

Hazardous Waste Operations and Emergency Response
29 CFR 1910.120 / 29 CFR 1926.65

November 15, 2000
Date of Instruction

Maryland Heights, MO
Location

Brian Knaus

Brian Knaus, CIH, CSP
Regional Manager, Health and Safety

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

Leo F. Mann III

has successfully completed and passed the course examination with a minimum score of 70% for re-accreditation under AHERA (TSCA Title II)

Asbestos Building Inspector Refresher

Class Date: January 11, 2001
Exam Date: January 11, 2001
Number: SSS011101-578ABIR
Expires: January 11, 2002
Student SSN: 496-66-6136

Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

BCSP
DOUGLAS L. MUELLER
13006
CERTIFIED SAFETY PROFESSIONAL

This training course is accredited by the Missouri Department of Natural Resources and the Illinois Department of Public Health

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

LEO F. MANN, III

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS PROJECT DESIGNER**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Missouri Department of Natural Resources
and the Illinois Department of Public Health
and is approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA).

Soc.Sec.No:	496-66-6136
Course Date:	03/30/01
Exam Date:	03/30/01
Certificate #:	7-017-033001MOPD/03
Expires:	03/30/02

Jeanine S. Arright, CET
DIRECTOR

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

LEO F. MANN III

has successfully completed

The **AHERA** Annual Asbestos Refresher Course for **CONTRACTOR / SUPERVISOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Illinois Department Of Public Health and
the Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 496-66-6136
Course Date: 01/17/01
Exam Date: 01/17/01
Certificate #: 7-017-011701MOCS/15
Expires: 01/17/02

Jeanine S. Arrighi, CET
DIRECTOR

PROGRESSIVE TRAINING CONSULTANTS, INC.

P T C

LEAD ABATEMENT CONTRACTOR/SUPERVISOR
Initial Training Course

LEO MANN
496-66-6136

has successfully completed and passed the examination for the Lead Abatement Contractor/Supervisor Training Course conducted by Progressive Training Consultants, Inc., 4380 N. Greenbay Avenue, Milwaukee, WI, 53209, 800-353-2641/414-562-8162.

Location: *St. Lous, MO*

Course Date: April 10-13, 1995

Examination Date: April 13, 1995

Richard W. Bowles

Director of Training

Control No. 95PB508

Training Provider of Record:
Environmental Training Center
1988 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1988 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

LEO F. MANN III

has successfully completed

The **EPA-MODEL** 24 Hour Initial Lead Course for **INSPECTOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the States of Missouri and Illinois.

Soc.Sec.No:	496-66-6136
Course Date:	10/19/98 to 10/21/98
Exam Date:	10/21/98
Certificate #:	7-ETCSL-101998LI/04
Expires:	08/21/00

Jeanine S. Arrighi, CET
DIRECTOR

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

LEO F. MANN III

has successfully completed

The 8 Hour Refresher Lead Course for **INSPECTOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the States of Missouri and Illinois.

Soc.Sec.No: 496-66-6136
Course Date: 10/25/00
Exam Date: 10/25/00
Certificate #: 7-ETCSL-102500LIR/03

Jeanine S. Arrighi, CET
DIRECTOR

306

11/15/2000

LAST NAME MANN
FIRST NAME LEO

FIT TEST REPORT

Fit Test Report

ID NUMBER	496666136		
LAST NAME	MANN	CUSTOM1	
FIRST NAME	LEO	CUSTOM2	
COMPANY	JEG	CUSTOM3	
LOCATION	RIVERPORT	CUSTOM4	
NOTE	WEARS GLASSES		
TEST DATE	11/15/2000	PORTACOUNT S/N	40744
TEST TIME	10:52	N95 COMPANION	N
DUE DATE	11/15/2001		
RESPIRATOR		PROTOCOL	DEFAULT 29CFR1910.134
MANUFACTURER	3M	PASS LEVEL	500
MODEL	7800S		
MASK STYLE	FFP		
MASK SIZE	LARGE		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	60	13600	Y
DEEP BREATHING	60	33500	Y
HEAD SIDE TO SIDE	60	16500	Y
HEAD UP AND DOWN	60	11800	Y
TALKING	60	28900	Y
GRIMACE	30	50500	X
BEND AND TOUCH TOES	60	27700	Y
NORMAL BREATHING	60	24100	Y
OVERALL FF		19400	Y

FIT TEST OPERATOR Keith Hockel DATE 11/15/00
HOCKEL

NAME Leo Mann III DATE 11-15-00
LEO MANN

JACOBS ENGINEERING GROUP INC.
PHYSICIAN'S EXAMINATION SUMMARY

This form must be thoroughly completed by the examining physician ***only***. Please print.

Employee: Leo F. Mauw **SS #:** 496-66-6136

Office: St. Louis

Clinic/Location: St. Louis **Date of Exam:** 7/12/01

Type of Examination:

___ Baseline/Initial ___ Interim Medical Review ___✓___ Periodic Medical Exam

___ Baseline/Initial (Using Previous Employment Exit Exam.) ___ Special* ___ Baseline/Exit

*Explain any special examination procedures and/or additional testing procedures performed:

_____

_____

Ability to Wear a Respirator: Complete for Baseline (Initial) and Periodic Exam *only*. **Exception**: California Clinics complete for *Interim Medical Reviews* also.

___✓___ The Ability to Wear a Respirator Exam was administered according to JEG instructions and the following was determined:

___ May wear a respirator during work duty ___ May not wear a respirator during work duty

Restrictions/Recommendations/Comments on the employees ability to wear a respirator:

Personal Physician Referrals: ____Yes ____No

Reason_____

(Please Complete Opposite Side)

Recommendations:

Interim Medical Review (Only):

✓ Fit for Work Duty, No Limitations

____ Fit for Work Duty, Minor Limitations, explain e.g., must wear glasses, etc.

____ Fit for Work Duty, Major Limitations explain in detail

____ Unfit for Work Duty, explain

_____ No Significant Changes Since Last Exam

_____ Significant Changes Since Last Exam, explain

Explanation:

_____

_____

_____

_____

Any Other Comments:

_____

_____

_____

Employee Notification:

✓ Yes, the employee was sent a letter outlining the results of the examination. A copy of the laboratory results were included with the letter.

Examining Physician: Lee B. Hewlett Telephone #: 314-747-5800

Signature: Lee B Hewlett Date: July 26, 2001

Please complete this form after review of the laboratory analyses and return within one week of the physical examination to:

Mirna Ramirez
Health and Safety
Jacobs Engineering Group Inc.
1527 Cole Boulevard, Bldg. #2
Golden, CO 80401

The Envelope Must be Marked "Confidential"

INTERNATIONAL TECHNOLOGY CORPORATION

CONGRATULATES

BRIAN KNAUS

ON THE COMPLETION OF THE 40 HOUR COURSE OF STUDY PRESCRIBED BY 29 CFR 1910.120 IN

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE

FOR HAZARDOUS WASTE SITE AND EMERGENCY RESPONSE PERSONNEL

COMPLETED ON THIS DATE APRIL 22, 1988

ISSUED AND ATTESTED BY Kristin K Baker

EDUCATION SERVICES
IT CORPORATION

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

BRIAN KNAUS

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS PROJECT DESIGNER**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Missouri Department of Natural Resources
and the Illinois Department of Public Health
and is approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA).

Soc.Sec.No: 324-38-1952
Course Date: 02/26/01
Exam Date: 02/26/01
Certificate #: 7-017-022601MOPD/03
Expires: 02/26/02

Jeanine S. Arrighi, CET
DIRECTOR

Certificate of Training

This is to certify that

Brian Knaus

has successfully completed 4 hours of formal training entitled

AHERA Management Planner Refresher

as approved by the California Division of Occupational Safety and Health and
as certified by the Environmental Protection Agency and approved by AHERA under TSCA Title II
presented by

Design For Health
Training Center

3574 Kettner Blvd.
San Diego, CA 92101
Phone: (619) 291-1777 Fax: (619) 291-4318

By Virginia L. Shefa
Virginia L. Shefa, B.S., M.N.Sc.

DOSH Approval # CA-011-08
Certificate #301MPR8528
Course Date: 03/13/01
Exam Date: N/A

This is an annual certification. It must be renewed by: 03/13/02

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

BRIAN KNAUS

has successfully completed

The **AHERA** Annual Asbestos Refresher Course for **CONTRACTOR / SUPERVISOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Illinois Department Of Public Health and
the Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 324-38-1952
Course Date: 02/10/01
Exam Date: 02/10/01
Certificate #: 7-017-021001MOCS/03
Expires: 02/10/02

Jeanine S. Arrighi, CET
DIRECTOR

Certificate of Training

This is to certify that

Brian Knaus

has successfully completed 8 hours of formal training entitled

AHERA Contractor Supervisor Refresher

as approved by the California Division of Occupational Safety and Health and
as certified by the Environmental Protection Agency and approved by AHERA under TSCA Title II

presented by

Design For Health
Training Center

3574 Kettner Blvd.
San Diego, CA 92101
Phone: (619) 291-1777 Fax: (619) 291-4318

By Virginia L. Shefa
Virginia L. Shefa, B.S., M.N.Sc.

DOSH Approval #CA 011-04
Certificate #301CSR8497
Course Date: 3/12/01
Exam Date: N/A

This is an annual certification. It must be renewed by: 3/12/02

Certificate of Training

This is to certify that

Brian Knaus

has successfully completed 8 hours of formal training entitled

AHERA Project Designer Refresher

as approved by the California Division of Occupational Safety and Health and
as certified by the Environmental Protection Agency and approved by AHERA under TSCA Title II

presented by

Design For Health
Training Center

3574 Kettner Blvd.
San Diego, CA 92101
Phone: (619) 291-1777 Fax: (619) 291-4318

By Virginia L Shefa
Virginia L. Shefa, B.S., M.N.Sc.

DOSH Approval #CA-011-10
Certificate #301PDR8533
Course Date: 03/14/01
Exam Date: N/A

This is an annual certification. It must be renewed by: 03/14/02

Certificate

of

Completion

JACOBS ENGINEERING GROUP INC.

Brian Knaus

has satisfactorily completed 8-hour Health and Safety Hazardous Waste Site Operations and Emergency Response Refresher Training in compliance with OSHA regulations 29 CFR 1910.120 and 29 CFR 1926.65.

Terry Briggs, Ph.D., CIH, H & S Jacobs Engineering Group Inc.

January 17, 2001

Certificate of Training

This is to certify that

Brian Knaus

has successfully completed 4 hours of formal training entitled

AHERA Building Inspector Refresher

as approved by the California Division of Occupational Safety and Health and
as certified by the Environmental Protection Agency and approved by AHERA under TSCA Title II

presented by

Design For Health
Training Center

3574 Kettner Blvd.
San Diego, CA 92101
Phone: (619) 291-1777 Fax: (619) 291-4318

By Virginia L. Shefa
Virginia L. Shefa, B.S., M.N.Sc.

DOSH Approval #CA-011-06
Certificate #301BIR8513
Course Date: 03/13/01
Exam Date: N/A

This is an annual certification. It must be renewed by: 03/13/02

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

BRIAN KNAUS

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS INSPECTOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by Illinois Department Of Public Health and
Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 324-38-1952
Course Date: 02/07/01 (FOUR HOURS)
Exam Date: 02/07/01
Certificate #: 7-017-020701MOBI/05
Expires: 02/07/02

Jeanine S. Arrighi, CET
DIRECTOR

106

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

BRIAN KNAUS

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS MANAGEMENT PLANNER**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by Illinois Department Of Public Health and
Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 324-38-1952
Course Date: 02/07/01 (8 Hrs. Incl. Insp.)
Exam Date: 02/07/01
Certificate #: 7-017-020701MOMP/02
Expires: 02/07/02

Jeanine S. Arrighi, CET
DIRECTOR

108

12/12/2000

LAST NAME KNAUS
FIRST NAME BRIAN

FIT TEST REPORT

Fit Test Report

ID NUMBER	324381952		
LAST NAME	KNAUS	CUSTOM1	
FIRST NAME	BRIAN	CUSTOM2	
COMPANY	JEG	CUSTOM3	
LOCATION	RIVERPORT	CUSTOM4	
NOTE	WEARS GLASSES		
TEST DATE	12/12/2000	PORTACOUNT S/N	40744
TEST TIME	08:05	N95 COMPANION	N
DUE DATE	12/12/2001		
RESPIRATOR		PROTOCOL	DEFAULT 29CFR1910.134
MANUFACTURER	3M	PASS LEVEL	500
MODEL	7800S		
MASK STYLE	FFP		
MASK SIZE	LARGE		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	60	100000	Y
DEEP BREATHING	60	101000	Y
HEAD SIDE TO SIDE	60	96500	Y
HEAD UP AND DOWN	60	23900	Y
TALKING	60	32400	Y
GRIMACE	30	25100	X
BEND AND TOUCH TOES	60	104000	Y
NORMAL BREATHING	60	105000	Y
OVERALL FF		57400	Y

FIT TEST OPERATOR Aaron Everson DATE 12-12-00

EVERSON

NAME Brian Knaus DATE 12-12-00

BRIAN KNAUS

JACOBS ENGINEERING GROUP INC.
PHYSICIAN'S EXAMINATION SUMMARY

This form must be thoroughly completed by the examining physician ***only***. Please print.

Employee: BRIAN KNAUS **SS #:** 324 38 1952

Office: ST. LOUIS

Clinic/Location: BARNES CARE - ST. LOUIS **Date of Exam:** 11-16-00

Type of Examination:

☒ Baseline/Initial ☐ Interim Medical Review ☑ Periodic Medical Exam

☐ Baseline/Initial (Using Previous Employment Exit Exam.) ☐ Special* ☐ Baseline/Exit

*Explain any special examination procedures and/or additional testing procedures performed:

Ability to Wear a Respirator: Complete for Baseline (Initial) and Periodic Exam *only*. **Exception**: California Clinics complete for *Interim Medical Reviews* also.

☑ The Ability to Wear a Respirator Exam was administered according to JEG instructions and the following was determined:

☐ May wear a respirator during work duty ☐ May not wear a respirator during work duty

Restrictions/Recommendations/Comments on the employees ability to wear a respirator:

Personal Physician Referrals: ☐ **Yes** ☑ **No**

Reason ____

(Please Complete Opposite Side)

Form 3a

Recommendations:

__✓__ Fit for Work Duty, No Limitations

____ Fit for Work Duty, Minor Limitations, explain e.g., must wear glasses, etc.

____ Fit for Work Duty, Major Limitations explain in detail

____ Unfit for Work Duty, explain

Interim Medical Review (Only):

_____ No Significant Changes Since Last Exam

_____ Significant Changes Since Last Exam, explain

Explanation:

_____

_____

_____

_____

Any Other Comments:

_____

_____

_____

Employee Notification:

__✓__ Yes, the employee was sent a letter outlining the results of the examination. A copy of the laboratory results were included with the letter.

Examining Physician: Lee B. Hewtel Telephone #: 314-747-5800

Signature: Lee B. Hewtel MD Date: 2/12/00

Please complete this form after review of the laboratory analyses and return within one week of the physical examination to:

Mirna Ramirez
Health and Safety
Jacobs Engineering Group Inc.
1527 Cole Boulevard, Bldg. #2
Golden, CO 80401

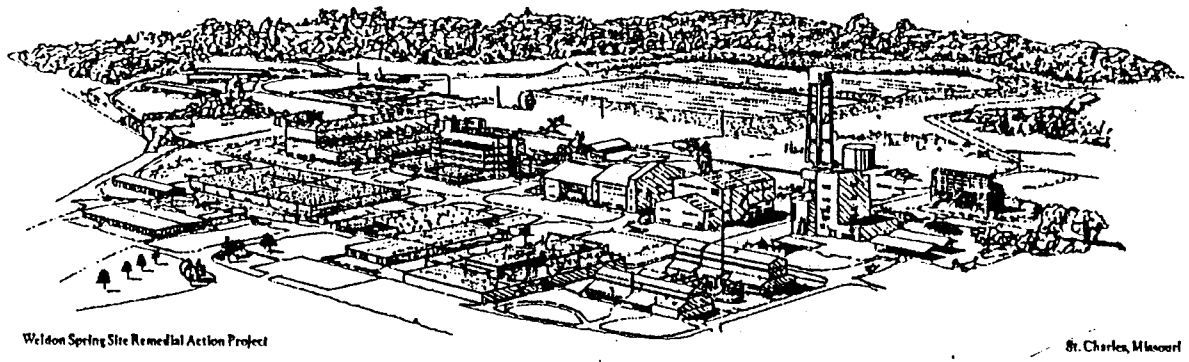
The Envelope Must be Marked "Confidential"

Weldon Spring Site Remedial Action Project

MK-Ferguson Company
Jacobs Engineering
Project Management Contractor

this is to certify that

Dave Fleming



Weldon Spring Site Remedial Action Project — St. Charles, Missouri

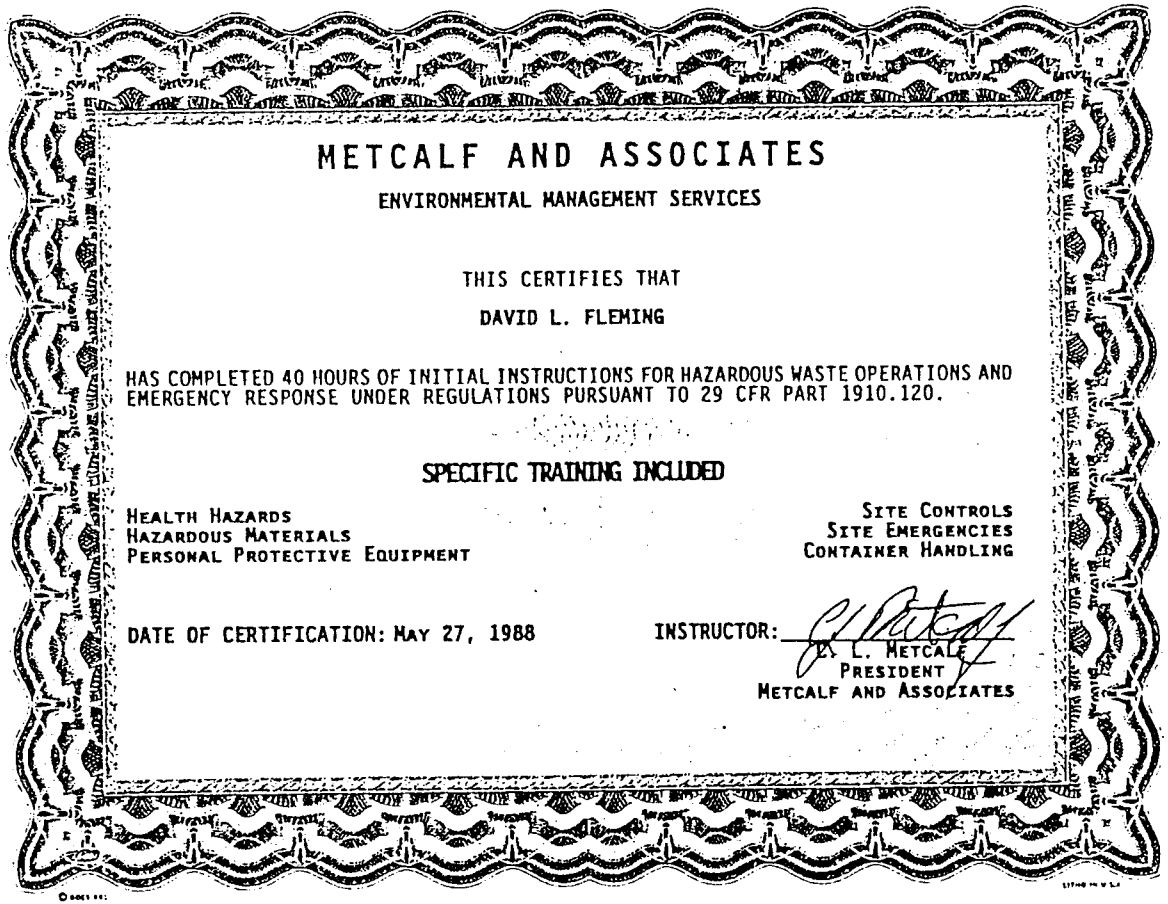
has completed 8 hours of annual Health and Safety Refresher Training
in accordance with the
OSHA Hazardous Waste Operations and Emergency Response Standard 29 CFR 1910.120.
This training also included topics relevant to ongoing activities at the
Weldon Spring Site.

December 7, 2000
Issue Date

Site Training Coordinator/Instructor

ID# R8-705-12-2000

OSHA-cert-6/98



METCALF AND ASSOCIATES

ENVIRONMENTAL MANAGEMENT SERVICES

THIS CERTIFIES THAT

DAVID L. FLEMING

HAS COMPLETED 40 HOURS OF INITIAL INSTRUCTIONS FOR HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE UNDER REGULATIONS PURSUANT TO 29 CFR PART 1910.120.

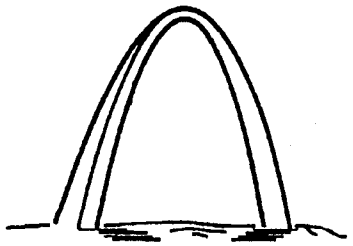
SPECIFIC TRAINING INCLUDED

HEALTH HAZARDS
HAZARDOUS MATERIALS
PERSONAL PROTECTIVE EQUIPMENT

SITE CONTROLS
SITE EMERGENCIES
CONTAINER HANDLING

DATE OF CERTIFICATION: MAY 27, 1988

INSTRUCTOR: _____
J. L. METCALF
PRESIDENT
METCALF AND ASSOCIATES



PSH inc - Training Center

St. Louis, Missouri

This Certifies That

David L. Fleming

Has successfully completed an 8-hour
Manager/Supervisor course of instruction under

29 CFR 1910.120

Hazardous Waste Operation and Emergency Response

Class Date: *June 29, 1995*
Exam Date: *June 29, 1995*
Number: *PSH062995-024HWMS*
Expires: *June 29, 1996*
SSN: *361-58-3094*

Carol E. Hoag, President

Course Provider: **PSH inc**

440 North 4th Street, Suite 203, St. Louis, Missouri 63102-2650
(314) 231-7774

Weldon Spring Site Remedial Action Project

RESPIRATOR FIT TESTING RECORD

Form ES&H 3.2.2.1, Rev. 4, 7/98

Today's Date: 07/18/01

Employee Name: David (First) L. (MI/Nickname) Fleming (Last/Jr./Sr.)

Next Fit Test Due: 071801 Social Security #: 361-58-3094

Employer: Jacobs Medical Records Verified By: David

RESPIRATOR USED IN FIT TEST

[X] SURVIVAIR BLUE 1	[ ] SMALL	[X] STANDARD	
[ ] MSA ULTRA-TWIN	[ ] SMALL	[ ] MEDIUM	[ ] LARGE
[ ] MSA ULTRAVIEW(SCBA)	[ ] SMALL	[ ] MEDIUM	[ ] LARGE
[ ] OTHER		SIZE	

FIT TEST METHOD

POKE/ACCOUNT:	Pass [X]	Fail [ ]	Not Applicable [ ]
IRRITANT SMOKE:	Pass [ ]	Fail [ ]	Not Applicable [X]
MISC. ISSUES:	Spectacles [ ]	Contact lens [X]	No Corrective Lens [ ]

WAS THE RESPIRATOR ADEQUATELY COMFORTABLE TO WEAR FOR A COUPLE OF HOURS?

YES NO (Circle One)

I certify that I have been instructed in the proper use and limitations of air purifying respirators and that I have been successfully fit-tested and am authorized to wear the above defined respirator:

I understand that I am responsible for maintaining this respirator in proper working condition. I also understand that any problem with respirator fit or with respirator malfunction will be reported immediately to my supervisor and to the ES&H Department. In order to ensure proper fit, I acknowledge that this respirator will be worn in the same manner as it was worn during testing.

Signature of Employee: David Fleming

Signature of Instructor: David

TO BE COMPLETED BY PHYSICIAN ok 4-5-00 AJ

WELDON SPRING SITE REMEDIAL ACTION PROJECT
MEDICAL EVALUATION REPORT

ESAH 33.12, Rev. 5, 1998

PATIENT'S NAME: DAVID C FLOYING

DATE OF EXAMINATION: 03-15-00

TYPE OF EXAMINATION: ☐ BASELINE ☒ ANNUAL ☐ EXIT ☐ SPECIAL

☒ *I hereby certify that the above named patient has completed a medical examination on the date indicated above in accordance with that specified by the MK Ferguson Company and the applicable OSHA standard(s) cited below. Based upon my examination, I certify that the above named individual:*

☒ IS QUALIFIED TO WEAR AIR PURIFYING AND AIR SUPPLIED RESPIRATORS IN ACCORDANCE WITH 29 CFR 1910.134.

☒ IS MEDICALLY QUALIFIED FOR WORK AT HAZARDOUS WASTE SITES, INCLUDING WEARING OF RESPIRATORS AND CHEMICAL PROTECTIVE CLOTHING, IN ACCORDANCE WITH 29 CFR 1910.120.

☐ IS MEDICALLY QUALIFIED FOR ASBESTOS ABATEMENT WORK, INCLUDING THE USE OF RESPIRATORS AND PROTECTIVE CLOTHING, IN ACCORDANCE WITH 29 CFR 1926.58.

☐ SHOULD BE RESTRICTED FROM THE FOLLOWING ACTIVITIES:

PLEASE CHECK THE FOLLOWING COMPONENTS INCLUDED AS PART OF THE MEDICAL EXAMINATION:

☒ IN DEPTH MEDICAL HISTORY	☐ CHEST X-RAY (?)	☒ VISION	☐ JCA (Optional)
☒ IN DEPTH OCCUPATIONAL HISTORY	☒ URINALYSIS	☐ EKG (?)	
☒ FULL PHYSICAL EXAMINATION	☒ COMPLETE BLOOD COUNT	☒ ARSENIC-URINE	
☒ VITAL SIGNS	☒ BLOOD CHEMISTRY PROFILE	☒ PCB-SERUM	
☒ AUDIOMETRY	☐ TETANUS IMMUNIZATION 1998	☒ BLOOD LEAD (Optional)	
☒ SPIROMETRY	☐ CARDIAC STRESS TEST	☐ CADMIUM-LEAD AND URINE (Optional)	

PHYSICIANS COMMENTS AND/OR RECOMMENDATIONS FOR FURTHER MEDICAL EVALUATION BY PERSONAL PHYSICIAN: See his doctor for his Cholesterol

Have to re-check his Blood Pressure at work

PHYSICIAN'S SIGNATURE

Shelley Kapsner
PRINT NAME OF PHYSICIAN

3/26/00
DATE

Certificate No.: 1127

Certificate of Training

This is to certify that

AARON J. EVERSON

Social Security #: 487-74-1273
has completed the Forty Hour Training Program for:

Hazardous Waste Operations and Emergency Response Training Program

In Compliance with OSHA 29 CFR 1910.120

Course Dates: January 3 through 7, 1994 Date of Expiration: January 7, 1995

Stewart Ryckman, President

REACT® environmental engineers

2208 Welsch Industrial Court St. Louis, MO 63146 1-800-325-1398

Jacobs Engineering Group, Inc.

Certificate of Completion

presented to

Aaron Everson

in recognition of satisfactory completion
of 8-hours of refresher training

Hazardous Waste Operations and Emergency Response
29 CFR 1910.120 / 29 CFR 1926.65

December 12, 2000
Date of Instruction

Maryland Heights, MO
Location

Brian Knaus

Brian Knaus, CIH, CSP
Regional Manager, Health and Safety

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

AARON J. EVERSON

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS INSPECTOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by Illinois Department Of Public Health and
Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 487-74-1273
Course Date: 02/28/01 (FOUR HOURS)
Exam Date: 02/28/01
Certificate #: 7-017-022801MOBI/05
Expires: 02/28/02

Jeanine S. Arrighi, CET
DIRECTOR

106

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

AARON J. EVERSON

has successfully completed

The **AHERA** Annual Refresher Course for **ASBESTOS PROJECT DESIGNER**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Missouri Department of Natural Resources
and the Illinois Department of Public Health.

Soc.Sec.No:	487-74-1273
Course Date:	05/31/01
Exam Date:	05/31/01
Certificate #:	7-017-053101MOPD/02
Expires:	05/31/02

Jeanine S. Arrighi, CET
DIRECTOR

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

AARON J. EVERSON

has successfully completed

The **AHERA** Annual Asbestos Refresher Course for **CONTRACTOR / SUPERVISOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Illinois Department Of Public Health and
the Missouri Department of Natural Resources and
approved by EPA under Section 206 of the Toxic Substances Control Act (TSCA)

Soc.Sec.No: 487-74-1273
Course Date: 02/27/01
Exam Date: 02/27/01
Certificate #: 7-017-022701MOCS/02
Expires: 02/27/04

Jeanine S. Arrighi, CET
DIRECTOR

FIT TEST REPORT

Fit test information

ID NUMBER	487741273		
LAST NAME	EVERSON	CUSTOM1	
FIRST NAME	AARON	CUSTOM2	
COMPANY	JEG	CUSTOM3	
LOCATION	RIVERPORT	CUSTOM4	
NOTE	WEARS CONTACTS		
TEST DATE	05/15/2001	PORTACOUNT S/N	40744
TEST TIME	10:50	N95 COMPANION	N
DUE DATE	05/15/2002		
RESPIRATOR		PROTOCOL	DEFAULT
MANUFACTURER	3M	PASS LEVEL	100
MODEL	7300		
MASK STYLE	HF		
MASK SIZE	M/L		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	80	398000	Y
DEEP BREATHING	80	65300	Y
HEAD SIDE TO SIDE	80	52200	Y
HEAD UP AND DOWN	80	34400	Y
TALKING	80	3570	Y
GRIMACE	80	3680	X
BEND AND TOUCH TOES	80	6770	Y
NORMAL BREATHING	80	482	Y
OVERALL FF		2720	Y

FIT TEST OPERATOR Brad Knaus DATE 5-15-01

KNAUS

NAME Aaron Everson DATE 5/15/01

AARON EVERSON

FIT TEST REPORT

Fit test information

ID NUMBER	487741273		
LAST NAME	EVERSON	**CUSTOM1**	
FIRST NAME	AARON	**CUSTOM2**	
COMPANY	JEG	**CUSTOM3**	
LOCATION	RIVERPORT	**CUSTOM4**	
NOTE	WEARS CONTACTS		
TEST DATE	05/15/2001	**PORTACOUNT S/N**	40744
TEST TIME	10:13	**N95 COMPANION**	N
DUE DATE	05/15/2002		
RESPIRATOR		**PROTOCOL**	DEFAULT
MANUFACTURER	3M	**PASS LEVEL**	500
MODEL	7800S		
MASK STYLE	FF		
MASK SIZE	LARGE		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	80	6980	Y
DEEP BREATHING	80	5320	Y
HEAD SIDE TO SIDE	80	7240	Y
HEAD UP AND DOWN	80	22300	Y
TALKING	80	5540	Y
GRIMACE	80	5400	X
BEND AND TOUCH TOES	80	12800	Y
NORMAL BREATHING	80	10600	Y
OVERALL FF		8080	Y

FIT TEST OPERATOR Brad Knaus DATE 5-15-01

KNAUS

NAME Aaron Everson DATE 5/15/01

AARON EVERSON

Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

AARON J. EVERSON

has successfully completed

The 24 Hour Initial Lead Course for **INSPECTOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the States of Missouri and Illinois.

Soc.Sec.No: 487-74-1273
Course Date: 10/18/99 to 10/20/99
Exam Date: 10/20/99
Certificate #: 7-ETCSL-101899LI/02

Jeanine S. Arrighi, CET
DIRECTOR

Certificate of Achievement

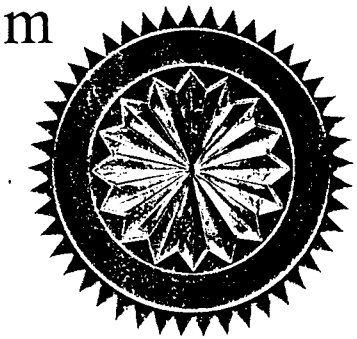
This is to certify that

Aaron Everson
of Suerdrup Environmental, Inc.

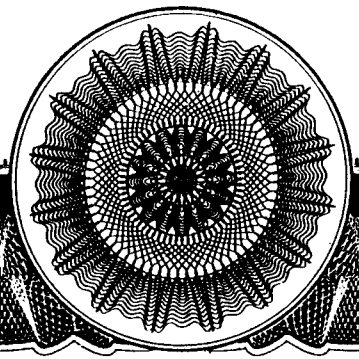
on the 3rd day of March 1995 successfully completed the factory training for

RMD's LPA-1 Lead Paint Inspection System

including, but not limited to, the topics of Radiation Safety
and the Proper Use of the Instrument.



Jacob Paster, Vice-President of RMD
44 Hunt St., Watertown, Massachusetts



Training Provider of Record:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

ENVIRONMENTAL Training Center

Training Location:
Environmental Training Center
1986 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114-5760
Tel. (314) 428-7020

Certifies that

AARON J. EVERSON

has successfully completed

The Initial Lead Course for **RISK ASSESSOR**
and has passed the required examination in that discipline
with a minimum score of at least 70%.
This Course is accredited by the Illinois Department of Public Health
and the Missouri Department of Health.

Soc.Sec.No: 487-74-1273
Course Date: 10/21/99 to 10/22/99
Exam Date: 10/22/99
Certificate #: 7-ETCSL-102199RA/03

Jeanine S. Arrighi, CET
DIRECTOR

307

JACOBS ENGINEERING GROUP INC.
PHYSICIAN'S EXAMINATION SUMMARY

This form must be thoroughly completed by the examining physician ***only***. Please print.

Employee: Aaron Everson **SS #:** 487-74-1273

Office: Maryland Heights, MO 63043

Clinic/Location: St. Louis, Missouri **Date of Exam:** 7/26/01

Type of Examination:

___ Baseline/Initial ___ Interim Medical Review ___✓___ Periodic Medical Exam

___ Baseline/Initial (Using Previous Employment Exit Exam.) ___ Special* ___ Baseline/Exit

*Explain any special examination procedures and/or additional testing procedures performed:

_____

_____

Ability to Wear a Respirator: Complete for Baseline (Initial) and Periodic Exam *only*. **Exception**: California Clinics complete for *Interim Medical Reviews* also.

___✓___ The Ability to Wear a Respirator Exam was administered according to JEG instructions and the following was determined:

___ May wear a respirator during work duty ___ May not wear a respirator during work duty

Restrictions/Recommendations/Comments on the employees ability to wear a respirator:

Personal Physician Referrals: ____Yes ____No

Reason_____

(Please Complete Opposite Side)

Recommendations:

✓ Fit for Work Duty, No Limitations

____ Fit for Work Duty, Minor Limitations, explain e.g., must wear glasses, etc.

____ Fit for Work Duty, Major Limitations explain in detail

____ Unfit for Work Duty, explain

Interim Medical Review (Only):

____ No Significant Changes Since Last Exam

____ Significant Changes Since Last Exam, explain

Explanation:

_____

_____

_____

_____

Any Other Comments:

_____

_____

_____

Employee Notification:

✓ Yes, the employee was sent a letter outlining the results of the examination. A copy of the laboratory results were included with the letter.

Examining Physician: Lee B. Hewlett Telephone #: 314-747-5800

Signature: Lee Hewlett Date: 8/21/01

Please complete this form after review of the laboratory analyses and return within one week of the physical examination to:

Mirna Ramirez
Health and Safety
Jacobs Engineering Group Inc.
1527 Cole Boulevard, Bldg. #2
Golden, CO 80401

The Envelope Must be Marked "Confidential"

1st Environmental Information Systems

CERTIFICATE OF COMPLETION

40 HOUR HAZARDOUS MATERIALS COURSE

THIS IS TO CERTIFY THAT

Jeff Neumann

has completed a 40 Hour Hazardous Materials Course
in compliance with OSHA 29 CFR 1910.120 &1926.65.

Barbara J Miller

Instructor
#5 Falcon Ridge Ct Defiance, MO 63341

29 May 1998
Date Completed
Certificate Number: 29059802

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

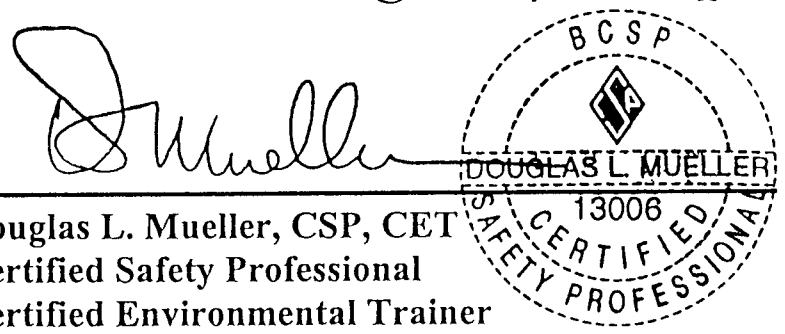
Jeff S. Neumann

has successfully completed an eight hour refresher course of instruction for re-accreditation under

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date:	December 22, 2000
Exam Date:	December 22, 2000
Number:	SSS122200-861HWR
Expires:	December 22, 2001
Student SSN:	591-18-4291



Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

Jeffrey S. Neumann

has successfully completed and passed the course examination with a minimum score of 70% for accreditation under AHERA (TSCA Title II)

Asbestos Building Inspector

Class Date:	November 6-8, 2000
Exam Date:	November 8, 2000
Number:	SSS110800-206ABI
Expires:	November 8, 2001
Student SSN:	591-18-4291

Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

This training course is accredited by the Missouri Department of Natural Resources and the Illinois Department of Public Health

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

Jeff Neumann

has successfully completed and passed the course examination with a minimum score of 70% for accreditation under AHERA (TSCA Title II)

Asbestos Contractor/Supervisor

Class Date:	November 13-17, 2000
Exam Date:	November 17, 2000
Number:	SSS111700-861ACS
Expires:	November 17, 2001
Student SSN:	591-18-4291

Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

This training course is accredited by the Missouri Department of Natural Resources and the Illinois Department of Public Health

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

Jeff S. Neumann

has successfully completed and passed the course examination with a minimum score of 70% for accreditation under 77 Illinois Administrative Code Part 845 and Missouri 19 CSR 30-70

Lead Inspector

Class Date:	**December 18-20, 2000**
Exam Date:	**December 20, 2000**
Number:	**SSS122000-198LI**
Expires:	**December 20, 2001**
SSN:	**591-18-4291**

Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

BCSP
DOUGLAS L. MUELLER
13006
CERTIFIED SAFETY PROFESSIONAL

This training course is accredited by the Missouri Department of Public Health and the Illinois Department of Public Health

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

1410 South Jefferson Avenue
St. Louis, Missouri 63104
Phone: (314) 773-4747

Does hereby certify that

Jeff S. Neumann

has successfully completed and passed the course examination with a minimum score of 70% for accreditation under 77 Illinois Administrative Code Part 845 and Missouri 19 CSR 30-70

Lead Risk Assessor

Class Date:	**December 21-22, 2000**
Exam Date:	**December 22, 2000**
Number:	**SSS122200-214LRAI**
Expires:	**December 22, 2001**
Student SSN:	**591-18-4291**

Douglas L. Mueller, CSP, CET
Certified Safety Professional
Certified Environmental Trainer

BCSP
DOUGLAS L. MUELLER
13006
CERTIFIED SAFETY PROFESSIONAL

This training course is accredited by the Missouri Department of Public Health and the Illinois Department of Public Health

FIT TEST REPORT

Fit Test Report

ID NUMBER	591184291		
LAST NAME	NEUMANN	CUSTOM1	
FIRST NAME	JEFF	CUSTOM2	
COMPANY	JACOBS	CUSTOM3	
LOCATION	RIVERPORT	CUSTOM4	
NOTE	NONE		
TEST DATE	03/22/2001	PORTACOUNT S/N	40744
TEST TIME	11:16	N95 COMPANION	N
DUE DATE	03/22/2002		
RESPIRATOR		PROTOCOL	DEFAULT
MANUFACTURER	NORTH	PASS LEVEL	10
MODEL	7700		
MASK STYLE	HF		
MASK SIZE	LARGE		
APPROVAL	NIOSH		
EFF. < 99%	N		

EXERCISE	DURATION (SEC)	FIT FACTOR	PASS
NORMAL BREATHING	80	20500	Y
DEEP BREATHING	80	47600	Y
HEAD SIDE TO SIDE	80	65400	Y
HEAD UP AND DOWN	80	12600	Y
TALKING	80	2840	Y
GRIMACE	80	11500	X
BEND AND TOUCH TOES	80	11900	Y
NORMAL BREATHING	80	55500	Y
OVERALL FF		11300	Y

FIT TEST OPERATOR Brian Knaus DATE 03-22-01
KNAUS

NAME Jeff Neumann DATE 03-22-01
JEFF NEUMANN

JACOBS ENGINEERING GROUP INC.
PHYSICIAN'S EXAMINATION SUMMARY

This form must be thoroughly completed by the examining physician ***only***. Please print.

Employee: Jeffrey S. Neumann **SS #:** 591-18-4291

Office: Barnes Corporate Health Services

Clinic/Location: St. Louis, Missouri **Date of Exam:** 11/21/00

Type of Examination:

☑ Baseline/Initial ___ Interim Medical Review ☑ Periodic Medical Exam

___ Baseline/Initial (Using Previous Employment Exit Exam.) ___ Special* ___ Baseline/Exit

*Explain any special examination procedures and/or additional testing procedures performed:

Ability to Wear a Respirator: Complete for Baseline (Initial) and Periodic Exam *only*. **Exception**: California Clinics complete for *Interim Medical Reviews* also.

☑ The Ability to Wear a Respirator Exam was administered according to JEG instructions and the following was determined:

___ May wear a respirator during work duty ___ May not wear a respirator during work duty

Restrictions/Recommendations/Comments on the employees ability to wear a respirator:

Personal Physician Referrals: ___ **Yes** ☑ **No**

Reason ___

(Please Complete Opposite Side)

ENTERED ✓

Recommendations:

__✓__ Fit for Work Duty, No Limitations

____ Fit for Work Duty, Minor Limitations, explain e.g., must wear glasses, etc.

____ Fit for Work Duty, Major Limitations explain in detail

____ Unfit for Work Duty, explain

Interim Medical Review (Only):

_____ No Significant Changes Since Last Exam

_____ Significant Changes Since Last Exam, explain

Explanation:

_____

_____

_____

_____

Any Other Comments:

_____

_____

_____

Employee Notification:

__✓__ Yes, the employee was sent a letter outlining the results of the examination. A copy of the laboratory results were included with the letter.

Examining Physician: Lee B. Hewlett Telephone #: 314-747-5800

Signature: Lee Hewlett Date: 12/17/00

Please complete this form after review of the laboratory analyses and return within one week of the physical examination to:

Mirna Ramirez
Health and Safety
Jacobs Engineering Group Inc.
1527 Cole Boulevard, Bldg. #2
Golden, CO 80401

The Envelope Must be Marked "Confidential"

MUST BE CARRIED ON ASBESTOS PROJECTS

ADDRESS CORRESPONDENCE TO:
(include certificate number)
NYS Department of Labor
DOSH - License and Certificate Unit
PO Box 687, New York, NY 10014-0687

CERTIFICATE NUMBER	
AH 92-13553	
EXPIRES	
SOCIAL SECURITY NUMBER	
071-70-7240	
EYES	HAIR
BRO	BRO
WEIGHT	HEIGHT
210 lbs.	5 ft. 10 in.

1590950

DOSH-442 (01/91)

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

ASBESTOS HANDLING CERTIFICATE
AUTHORIZED CLASSES

C - SAMPLING TECHNICIAN (11/01)
D - INSPECTOR (11/01)
H - PROJECT MONITOR (11/02)

LOUIS J GIARDINA
2619 SENECA ST
WEST SENECA, NY 14224

RICHARD CUCOLO, Director - For the Commissioner of Labor

DOSH-442 (01/91)

Chopra-Lee, Inc.
1741 Baseline Road, Grand Island, New York 14072

RESPIRATOR FIT TEST FORM

NAME Giardina Louis S.S. NO. 071 -70 -7240
LAST FIRST MI

RESPIRATOR TYPE: (Half Face, Full Face...)	BRAND NAME (3M, MSA, Wilson,...)	Model No.	Size (Lg/Med/Sm)	NIOSH/MSHA (Approval Number)
1/2	Wilson		LG	TC- -

EXPECTED USES

DEPARTMENT Field SUPERVISOR IAN Harnden

SIGNATURE OF EMPLOYEE [signature] Date 8/6/01

TYPE OF TEST:

Qualitative Fit Test (Circle One)	(Irritant Smoke) / Banana Oil / Sodium Saccarin

TEST STEPS:

(Check Each)	
Breath Normally	✓
Breath Deeply	✓
Turn Head Side to Side	✓
Move Head Up and Down	✓
Talk Aloud (rainbow passage)	✓
Jog in Place	✓

TEST RESULT:

(Circle One) (PASS) / FAIL

COMMENTS

FITTING AND TRAINING BY [signature] 8/6/01

Rev. 2.3

Occupational Health Services
of Western New York, Inc.

51 Webster Street N. Tonawanda, N.Y. 14120-6106 (716) 692-6541

FINAL FIT FOR DUTY

EMPLOYEE Lou Giardina **SS#** 071-70-7240

EMPLOYER Chopra Lee

JOB DESCRIPTION Environmental Tech

TYPE OF EXAM: PRE-PLACEMENT___ **ASBESTOS** X **COKE OVEN**___ **OTHER** X Lead Respirator Clearance

1. Does the employee have any physical limitations which may preclude him/her from working in the job described above?

YES_____ NO X

2. Does the employee have any medical conditions that would put him/her at an increased risk of exposure related disease?

YES_____ NO X

3. Does the employee have any limitations on the use of personal protective equipment?

YES_____ NO X

4. Does the employee hae any physical limitations which must be considered in performing the above job?

YES_____ NO X

CHECK BELOW IF APPLICABLE:

_____Vision impairment - must wear corrective lenses

_____Hearing impairment - must wear hearing protection when exposed to noise levels above 85db.

_____Other:_____

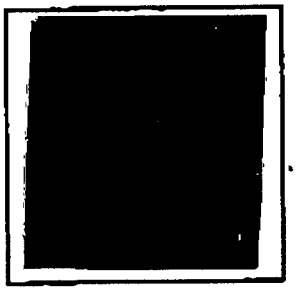
COMMENTS: _____

****

THE INDIVIDUAL NAMED ABOVE IS X **/IS NOT**____ **FOUND TO BE PHYSICALLY FIT TO PERFORM WORK WHERE RESPIRATORY PROTECTION DEVICES MUST BE WORN.**

PHYSICIAN Jerome J. Maurizi, M.D. DATE OF DETERMINATION 3/9/01

MUST BE CARRIED ON ASBESTOS PROJECTS



CERTIFICATE NUMBER AH 95-10544	
EXPIRES	
SOCIAL SECURITY NUMBER 133-68-6472	
EYES BLU	HAIR BLN
WEIGHT 205 lbs.	HEIGHT 6 ft. 00 in.

ADDRESS CORRESPONDENCE TO:
(include certificate number)
NYS Department of Labor
DOSH - License and Certificate Unit
PO Box 687, New York, NY 10014-0687

160463C

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

ASBESTOS HANDLING CERTIFICATE
AUTHORIZED CLASSES

C - SAMPLING TECHNICIAN (11/01)
D - INSPECTOR (11/01)
H - PROJECT MONITOR (11/01)

SCOTT D HAMMOND
751 WEST RIVER
GRAND ISLAND NY 14072

RICHARD CUCOLO, Director - For the Commissioner of Labor
DOSH-442 (01/91)

Chopra-Lee, Inc.
1741 Baseline Road, Grand Island, New York 14072

RESPIRATOR FIT TEST FORM

NAME Hammond Sam S.S. NO. 133 - 68 - 6772
LAST FIRST MI

RESPIRATOR TYPE: (Half Face, Full Face...)	BRAND NAME (3M, MSA, Wilson,...)	Model No.	Size (Lg/Med/Sm)	NIOSH/MSHA (Approval Number)
Half face	Wilson		Lg	TC- -

EXPECTED USES

DEPARTMENT Field SUPERVISOR Dan Harnden

SIGNATURE OF EMPLOYEE [signature] Date 8/6/01

TYPE OF TEST:

Qualitative Fit Test (Circle One)	(Irritant Smoke) Banana Oil Sodium Saccarin

TEST STEPS:

(Check Each)	
Breath Normally	✓
Breath Deeply	✓
Turn Head Side to Side	✓
Move Head Up and Down	✓
Talk Aloud (rainbow passage)	✓
Jog in Place	✓

TEST RESULT:

(Circle One)
PASS
FAIL

COMMENTS

FITTING AND TRAINING BY [signature] 8/6/01

Rev. 2.3

Occupational Health Services
of Western New York, Inc.

51 Webster Street N. Tonawanda, N.Y. 14120-6106 (716) 692-6541

FINAL FIT FOR DUTY

EMPLOYEE HAMMOND, SCOTT SS# 133-68-6472

EMPLOYER CHOPRA- LEE

JOB DESCRIPTION PROJECT MANAGER

TYPE OF EXAM: PRE-PLACEMENT___ ASBESTOS X COKE OVEN___ OTHER Respirator Clearance

1. Does the employee have any physical limitations which may preclude him/her from working in the job described above?

YES____ NO X

2. Does the employee have any medical conditions that would put him/her at an increased risk of exposure related disease?

YES____ NO X

3. Does the employee have any limitations on the use of personal protective equipment?

YES____ NO X

4. Does the employee hae any physical limitations which must be considered in performing the above job?

YES____ NO X

CHECK BELOW IF APPLICABLE:

_____Vision impairment - must wear corrective lenses

_____Hearing impairment - must wear hearing protection when exposed to noise levels above 85db.

_____Other:_____

COMMENTS: _____

****

THE INDIVIDUAL NAMED ABOVE IS X /IS NOT____ FOUND TO BE PHYSICALLY FIT TO PERFORM WORK WHERE RESPIRATORY PROTECTION DEVICES MUST BE WORN.

PHYSICIAN HC [signature] DATE OF DETERMINATION 5/25/01

Gordon Steinagle, D.O., M.P.H.

U.S. ARMY CORPS OF ENGINEERS

PROFESSIONAL DEVELOPMENT SUPPORT CENTER
HUNTSVILLE ALABAMA

CERTIFICATE

This is to certify that

HOWARD MARK GIFFORD

has completed the Corps of Engineers Training Course

CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS

Given at *Concord, MA* (Location) By *New England 18 October 2001* (Instructional District / Date)

MAURICE BEAUDOIN
508 990-2550 Facilitator

Chief, USACE Professional Development Support Center

THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE