QUALITY CONTROL PLAN
CONTINUED REMEDIAL INVESTIGATION ACTIVITIES
GAMMA RADIATION WALKOVER SURVEY
AND
WASTE CONTAINMENT STRUCTURE CHARACTERIZATION
FOR THE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

NIAGARA FALLS FUSRAP SITE
LEWISTON, NEW YORK

Prepared for:
U.S. Army Corps of Engineers
Buffalo District

Prepared by:
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Contract: DACW49-00-R-0027

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ACRONYMS AND ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRF	Central Records Facility
CX	Center for Expertise
DOE	Department of Energy
FT	Feet
FS	Feasibility Study
FUSRAP	Formerly Utilized Sites Remedial Action Plan
GIS	Geographic Information System
GPS	Global Positioning System
HTRW	Hazardous, Toxic, Radiological Waste
ITR	Independent Technical Review
LOOW	Lake Ontario Ordinance Works
MED	Manhattan Engineer District
NCRs	Nonconformance Reports
QAAP	Quality Assurance Administrative Procedures
QAPP	Quality Assurance Program Plan
QA/QC	Quality Assurance/Quality Control
QATP	Quality Assurance Technical Procedures
QCP	Quality Control Plan
Ra	Radium
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
Th	Thorium
U	Uranium
USACE	U.S. Army Corps of Engineers
WCS	Waste Containment Structure

1.0 INTRODUCTION

The activities discussed in this Quality Control Plan (QCP) detail the effort required to conduct and document the Gamma Radiation Walkover Survey and Geophysical Survey of the Waste Containment Structure (WCS) of the Niagara Falls Storage Site (NFSS). These activities satisfy site and project strategies in support of the ongoing Remedial Investigation/Feasibility Study (RI/FS) and in accordance with the CERCLA process. This project involves the gamma radiation walkover survey and documentation to help define the nature and extent of radioactive contaminants in the surface soils. This QCP will also detail the effort required to evaluate the structural integrity of the 10 acre WCS and characterize the entire NFSS property. This will be accomplished using one or more non-intrusive field investigation methods with the capability of detecting anomalies in the 10-acre waste containment area along with the surrounding 200 feet on each side. The USACE has requested that SAIC also execute the optional task of characterizing the entire site using geophysics. The information attained from this characterization will be used to support the RI/FS of the NFSS. These activities and reports will be submitted to the U.S. Army Corps of Engineers (USACE), Buffalo District in support of their mission to complete a CERCLA closure of the NFSS under Formerly Utilized Sites Remedial Action Plan (FUSRAP).

To ensure the objectives of this delivery order are met and the products will be of acceptable quality, SAIC is submitting this QCP. Field activities will be performed in a manner conforming to applicable federal, state, and local regulations. All submittals will be complete and concise, conforming to applicable USACE guidelines and regulatory requirements for format and content.

1.1 Project Description

The NFSS is located at 1397 Pletcher Road in Lewiston, New York, 10 miles north of the city of Niagara Falls. In 1944, NFSS was used by the Manhattan Engineering District (MED) for storing radioactive residues and wastes from uranium ore processing conducted during the development of the atomic bomb. The 191-acre site, located on part of the former Lake Ontario Ordnance Works (LOOW), consists of three buildings (a fourth building, Building 403, was recently demolished), and a 10-acre engineered WCS. The site is bounded to the north by a RCRA landfill operated by Chemical Waste Management and to the east by a municipal landfill, Modern Landfill. The land to the west and south of the site is privately owned.

Mallinckroft Chemical Works in St. Louis, Missouri, began extracting uranium from pitchblende (uranium ore) in 1942 in support of the MED. High activity residues containing Radium 226 (Ra-226) and Thorium 230 (Th-230) were generated as a result of the extraction process. The residues were returned to the ore supplier until April 1949, after which time they were sent to LOOW for storage. The residues were initially stored in drums and classified on the triuranium octoxide (U3O8) content of the ores from which they were extracted. The highest activity residues (K-65 residues) were first stored in a large silo located in the northeast part of the site and later moved to the WCS with other pitchblende residues. The portion of the LOOW site on which this activity took place is now known as the NFSS.

In 1981, an environmental monitoring program was initiated under the FUSRAP program. USACE was given authority in 1997 to remediate radiological contaminants at the site, although U.S. Department of Energy (DOE) maintains ownership. Bechtel National, Inc. administered the program until 1997. In 1997, Congress awarded oversight of NFSS to the USACE Buffalo District, which included implementation of the CERCLA process and the maintenance of the environmental surveillance program. USACE, Buffalo District took over the environmental monitoring program and in March of 1999, initiated a Remedial Investigation (RI).

Battelle Columbus Laboratory performed a comprehensive radiological characterization of the site for USDOE, in 1979. The contaminated soils were consolidated on site and on vicinity property by Bechtel National, Inc. from 1981 to 1986. The contaminated soils were placed in the WCS at the same time as the wastes and residues were deposited.

The WCS was built to minimize infiltration of rainfall, radon emissions, gamma emissions, erosion, frost and heat damage, and prevent pollution of the groundwater for up to 25 years. The WCS covers roughly 10 acres and measures approximately 975 ft long by 450 ft wide.

In 1991, additional soil with residual radioactivity from a vicinity property and 60 drums containing radioactive material were added to the WCS. In December 1991, Bechtel National, Inc. identified some non-radioactive contaminants on site. Boron, magnesium, lead, thallium, and zinc were found in soil and surface water samples. Trichloroethene, tetrachloroethane, and 1,2-dichloroethane were detected at moderately elevated levels in soil gas samples. Sediment samples had elevated levels of zinc and fluoride and groundwater contained elevated levels of calcium and magnesium.

An annual performance monitoring system was implemented following construction to evaluate the effectiveness of the containment facility. Grid surveys, visual inspections, and aerial surveys were used to detect weaknesses developing in the WCS. Monitoring wells in the vicinity of the WCS were sampled as part of the environmental surveillance program. The environmental surveillance program also includes monitoring the radon flux emitted from the WCS and air monitoring for radon gas and gamma radiation at the site perimeter. A chain link fence was installed to provide security to the site. No significant waste material settling, erosion, desiccation cracking, or unwanted plant growth has been observed.

Constituents of concern at the site that are expected at higher concentrations are Th-230, Ra-226, and Rn-222. Constituents of concern that are expected at lower concentrations are the daughter products of Uranium series (U-238) and to some extent the actinium series Uranium-235 (U-235).

1.2 Scope of Work

The details of the project tasks identified in the Scope of Work (SOW) to conduct and document a site-wide gamma walkover survey of the NFSS and the WCS characterization are presented in Table 1.1.

Table 1.1. Delivery Order Detailed Task Descriptions

Task Number	Task Description Gamma Radiation Walkover Survey
1.	Clear vegetation as necessary to facilitate access for conducting the site survey
2.	Create site grid reference system using Global Positioning System (GPS) and visual markers
3.	Collect geo-coded background gamma walkover survey data using GPS
4.	Collect geo-coded site gamma walkover survey data using GPS, where practical
5.	Where use of GPS is not practical, collect geo-coded site gamma walkover survey data by other means, such as, conventional land survey and data recording
6.	Flag areas of elevated activity for visual reference
7.	Perform differential correction of GPS data, as necessary
8.	Incorporate all gamma walkover data into GIS application
9.	Perform data analysis to identify areas warranting collection of samples to support RI efforts
10.	Process spatial and radiological data into multi-color depictions
11.	Overlay processed data onto geo-referenced image(s) of the site
12.	Overlay processed data onto geo-referenced hardcopy drawing(s) of the site
13.	Generate report detailing all activities, findings and conclusions associated with gamma walkover survey
14.	Generate project file containing all collected data and supporting information for submission to USACE
Task Number	**Task Description Waste Containment Structure Characterization**
1.	Locate buried equipment, drums, debris, and building foundations
2.	Map building foundation limits and contents
3.	Infer areas of increased water saturation; determine if water is pooled underneath WCS
4.	Identify bedrock macrofractures, faults, or other potential seismic pressure points to determine seismic susceptibility of WCS
5.	Detect voids, potential sinkholes, and caverns such as sand lenses under WCS or immediate vicinity
6.	Map bedrock and soil stratigraphy
7.	Illustrate and characterize the landfill; identify contents of waste pile, determine existence of rebar in floor of buried buildings
8.	Map the top of the bedrock
9.	Locate sand and gravel channels
10.	Locate possible buried wells
11.	Locate contaminant plumes
12.	Identify areas of fracture on the WCS
13.	Locate pipes, utilities, etc. in the waste containment area
14.	Use generated survey data and previous site data, including photographs, to identify and map the locations of objects/anomalies that are named above

The USACE has requested that SAIC execute the option to include all 191 acres of the NFSS. Additional objectives for the characterization of the entire NFSS site are presented in Table 1.2.

Table 1.2. Delivery Order Detailed Task Descriptions for Additional Objectives

Task Number	Task Description Optional Objectives Outside the WCS
1.	Locate buried equipment, drums, debris, and building foundations
2.	Map building foundation limits
3.	Locate piping network, utilities, etc
4.	Identify bedrock fractures, faults, or other potential seismic pressure points
5.	Detect voids, potential sinkholes, and caverns
6.	Map bedrock and soil stratigraphy
7.	Locate manholes
8.	Map the top of the bedrock
9.	Locate sand and gravel channels
10.	Locate possible buried wells
11.	Locate contaminant plumes

The geophysical technologies to be used in this investigation are the following;

- Focused Magnetometer Survey
- Ground Penetrating Radar (GPR) – using sonar waves
- Electromagnetic Survey
- Electrical Imaging
- Seismic Survey
- Magnetotelluric Survey
- Seismic Refraction and Reflection Surveys

The SAIC Project Manager is responsible to see that the draft and final deliverables are submitted on time and in the quantities requested. The tentative dates of deliverables are presented in Table 1.3.

Table 1.3 Tentative Dates of Draft and Final Deliverables

Deliverable	Draft		Final	
	Tentative Due Date	Number of Copies	Tentative Due Date	Number of Copies
Memos and Status Reports		5		
Quality Control Plan	10/16/00	15	2/07/01	20
Work Plan	11/22/00	15	3/02/01	20
Site Specific Health & Safety Plan	11/22/00	15	3/02/01	20
Data Summary		15		20
Characterization Report	6/25/01	15	8/31/01	20
Gamma Walkover Report	6/25/01	15	8/31/01	20
Public Meeting Support				

2.0 MANAGEMENT PHILOSOPHY

Science Applications International Corporation (SAIC) is dedicated to providing its clients unequaled quality works with ongoing Quality Assurance/Quality Control (QA/QC) measures. The full SAIC QA/QC program consists of the Quality Assurance Program Plan (QAPP) and the Quality Assurance Administrative Procedures (QAAPs). SAIC's existing USACE proven and audited QA/QC plan, and its supplemental design quality control plan, includes plan requirements and corresponding procedures. SAIC is committed to meet or exceed our clients' expectations with respect to quality.

2.1 Management Approach

A major objective of SAIC is to achieve and maintain the highest standards of quality in all areas. To meet this objective, SAIC has an internal QAPP that has been developed to delineate the quality controls and procedures necessary to help ensure the consistency, integration, and disciplined control of work which will deliver the quality required by our clients, our management and our stakeholders. Achieving this objective requires a sustained and consistent effort on the part of all personnel. All SAIC staff and subcontractors performing work are responsible for the quality of their work, and for implementing applicable sections of this QCP and the SAIC QAPP. All management level personnel will ensure that applicable QA program requirements are adhered to and will encourage staff to identify technical or administrative problems and participate in their resolution. The SAIC QA program has the complete approval and support of the SAIC senior management, including the resources necessary to ensure its implementation.

The QA program will provide control over activities to an extent consistent with risk, complexity, duration, importance, health and safety considerations, and USACE expectations. SAIC will provide indoctrination and training of personnel to the extent necessary to perform their assigned tasks, and to ensure that proficiency is achieved and maintained.

SAIC senior management is responsible for the scope and implementation of the QA program. The program and project managers are responsible for delivering cost-effective, high quality products, on time within the scope of the contract. Each individual is responsible for the quality of his or her work.

2.2 Management Structure

The organization chart illustrated in Figure 2-1 outlines the management structure that will be used to implement the project. The functional responsibilities of the key SAIC personnel are described in the following parts of this plan. The assignment of personnel to each project position is based on a combination of (1) experience in the type of work to be performed, (2) experience working with government personnel and procedures, (3) a demonstrated commitment to high quality and timely job performance, and (4) staff availability. The key project personnel have been assigned based upon the minimum education and qualification requirements for each assigned position, as shown in Table 2.1. In the event that personnel identified in Figure 2-1 and Table 2-1 must be replaced after issuance of these documents, SAIC will provide the names and

resumes for the replacement individuals to the USACE Buffalo District Project Manager prior to mobilization for field work.

Table 2.1 Key SAIC Personnel Assignments and Qualifications for the Continued RI Activities at the Niagara Falls Storage Site in Lewiston, New York

Project Assignment	Minimum Degree Requirements	Minimum Qualifications
Project Manager Michael Giordano	B.S. Chemical Engineering	16+ years experience in HTRW projects including site investigations and related environmental evaluations / studies.
RI Task Manager Jeff Dick	B.S. Civil Engineering, Geology, or related field	7+ years of experience in HTRW projects including site investigations and related environmental evaluations/studies.
Health & Safety Manager Steve Davis	M. S. Public Health	15+ years experience in HTRW projects including data management for site investigations.
Radiation Safety Officer Claude Laney	B.S. Health Physics or Radiation Engineering	7+ years of experience in HTRW projects including site investigations and engineering studies associated with radiological contamination.
QA/QC Officer Steve McBride	B.S. Science, Engineering or related field	5+ years of experience in HTRW projects including site investigations and related environmental evaluations/studies.
Geophysics Field Manager Rick Hoover	B.S., Geophysics, Geology, or Physics	6+ years of experience in HTRW projects including management of field projects for site investigations, remedial investigations, and related environmental evaluations/studies.
ITR Reviewer – Geophysicist Scott Wendling	B.S. or M.S. in Geology	7+ years of experience in HTRW projects including geophysics and hydrogeology evaluations/studies
ITR Reviewer – Engineer George Butterworth	B.S. Engineering	15+ years of experience in HTRW projects including engineering and management of related environmental evaluations/studies
ITR Reviewer – Risk assessor Hallie Sarezin	B.S. or M.S. in Environmental Toxicology	7+ years of experience in HTRW projects including risk assessments and related environmental evaluations/studies
ITR Reviewer – Certified Health Physicist Claude Laney	B.S. Health Physics	7+ years of experience in HTRW projects including development of radiation protection programs and evaluating release of radiological contaminated sites

2.2.1 Key Personnel Responsibilities

2.2.1.1 SAIC Project Manager

The SAIC Project Manager has responsibility for oversight of all project activities, including work plan development, field activities, data management, and data reporting. This individual also will provide the overall financial management of the project, and serve as the point of contact with the USACE-Buffalo District Project Manager (Dr. Judith Leithner) and USACE-Buffalo District Project Engineer (Michelle Rhodes). The SAIC Project Manager also will develop, monitor, and fill project staffing needs, delegate specific responsibilities to project team members, and coordinate with administrative staff to maintain a coordinated and timely flow of project activities.

The SAIC Project Manager is responsible for the timely submittal of all draft and final deliverables in the quantities requested (See Table 1.3). If at any time, adhering to the schedule will compromise the quality of the deliverable, the SAIC Project Manager will give the USACE

Project Manager sufficient notice of the delay and justify the need for an extension by explaining the impact to the project/deliverable.

2.2.1.2 SAIC RI Task Manager

The SAIC RI Task Manager is responsible for implementing field activities conducted during the project in accordance with the project SAP. This individual is responsible for proper technical performance of QA/QC field procedures, coordination of field personnel activities, field documentation, and preparation of Field Change Orders if required. The SAIC RI Task Manager reports directly to the SAIC Project Manager, except with regard to significant QA/QC matters that are reported directly to the SAIC QA/QC Officer. Also, significant health and safety matters that are reported directly to the SAIC Site Safety and Health Officer (SSHO).

2.2.1.3 SAIC Health and Safety Manger

The SAIC Health and Safety Manager is responsible for managing the EEMG health and safety program. This includes establishing health and safety policies and procedures, supporting project and office activities, and verifying safe work practices and conditions. This individual, in coordination with the SAIC Site Safety and Health Officer, will have the authority to halt work if health and/or safety issues arise that are not immediately resolvable in accordance with the project Sit Safety and Health Plan. The SAIC Health and Safety Manager reports directly to the SAIC Project Manager, but will inform the SAIC RI Task Manager of all information and decisions reported.

2.2.1.4 SAIC Radiation Safety Officer

The SAIC Radiation Safety Officer is responsible for confirming that radiation safety procedures designed to protect personnel are maintained throughout the field activities conducted for the project. This will be accomplished by strict adherence to the project Radiation Protection Plan (RPP). This individual, in coordination with the SAIC Health and Safety Officer (SHSO), will have the authority to halt field work if health and/or safety issues, as they apply to radiological issues, arise that are not immediately resolvable in accordance with the project SSHP. The SAIC Radiation Safety Officer reports directly to the SAIC RI Task Manager, but will inform the SAIC Managers, as appropriate of all information and decisions reported.

2.2.1.5 SAIC Quality Assurance/Quality Control Officer

The SAIC QA/QC Officer is responsible for the project QA/QC in accordance with the requirements of the project QAPP, other work plan documentation, and appropriate management guidance. This individual will be responsible for participating in the project field activity readiness review; approving variances during field activities before work continues; approving, evaluating, and documenting the disposition of Nonconformance Reports (NCRs); overseeing and approving any required project training; and designing audit/surveillance plans followed by supervision of these activities. The SAIC QA/QC Officer reports directly to the SAIC RI Task Manager, but will inform the SAIC Managers, as appropriate of all information and decisions reported.

2.3 Design Tools

The SOW does not require design work for the Gamma Radiation Walkover Survey and the WCS Characterization at the NFSS. However, if the need arises for design work to be folded into this project, SAIC will submit a list and description of the design tools necessary to complete the project. The proposed software packages needed to complete this project are the following; AutoCAD, ArcView, Microsoft Word, Microsoft Excel, Microsoft Access, and FoxPro.

2.4 Project Schedule

The project schedule, per the SOW, for this delivery order is presented in Figure 2-2. SAIC is currently developing a modified, expedited schedule. This may allow fieldwork to initiate sooner and thereby have fieldwork completed before any adverse weather. Successful completion of this schedule will require close coordination by all parties. SAIC will attempt to minimize impacts to this schedule as a result of external project delays. This schedule will be re-baselined as necessary or when requested by USACE.

2.5 Cost Control

Financial management tools and client reports will be developed to track project cost information for submittal to USACE. Budgets have been prepared on a task order basis to allow for close control and tracking of project costs. The project manager is directly responsible for cost and schedule control. Prior to the start of each task, the project manager will meet with the project team to discuss the budget or level of effort required for each task. This will help to ensure a clear understanding of the scope and effort for each task prior to beginning work.

2.6 Construction Cost Estimate Control

This section is not currently applicable to the SOW for the Gamma Radiation Walkover Survey and the WCS Characterization SOW at the NFSS. However, if the need arises for construction cost estimate controls to be established, SAIC will submit a description of the construction cost estimate controls necessary to complete the project.

2.7 Communication

Communications with the USACE and SAIC will consist of the following:

- During field activities, daily field reports (including documentation of safety briefings) will be provided to the USACE on-site representative.
- During field activities, weekly memoranda summarizing the work performed the previous week, expected work to be performed the following week, work being performed for the current week, outstanding issues, and any other pertinent information will be prepared. This schedule may be modified based on the level of effort for the project each week.
- Monthly Cost/Schedule Reports will be submitted to USACE.

- Project decisions shall be documented by correspondence from the SAIC manager to the USACE Project Engineer and USACE Project Manager. This correspondence shall be issued no later than 5 days after a decision has been made.

The individuals involved in this communication include:

• USACE Project Manager/Project Engineer	Dr. Judith Leithner
• USACE Assistant Project Engineer	Michelle Rhodes
• SAIC Project Manager	Michael Giordano
• SAIC RI Task Manager	Jeff Dick
• SAIC Field Manager (as appropriate)	Rick Hoover (Geophysics) Doug Haas (Gamma Walkover)

2.8 Project Team

The project team will be comprised of SAIC personnel under the direction of the USACE, Buffalo District Project Engineer and Project Manager for the Gamma Radiation Walkover Survey and the WCS Characterization at the NFSS. The Project Team is identified in Table 2.2.

Table 2.2 Project Team Identification

Name	Position/Role	Phone	Fax	Organization
Michael Giordano	Project Manager	(614) 791-3345, (513) 659-1900	(614) 793-7620	SAIC
Jeff Dick	RI Task Manager	(330) 405-9810	(330) 405-9811	SAIC
Steve Davis	Health and Safety Manager	(423) 481-4755	(423) 482-7257	SAIC
Dave King	Radiation Safety Officer	(314) 422-4308 (865) 481-4782	(423) 482-7257 (865) 481-4757	SAIC
Steve McBride	QA/QC Officer	(614) 791-3383	(614) 793-7620	SAIC
Rick Hoover	Geophysics Field Manager	(717) 901-8835	(717) 901-8103	SAIC
Doug Haas	Gamma Walkover Survey	(314) 422-4308	(423) 482-7257	SAIC
Rose Echols	Project Controls	(423) 481-4620	(423) 481-4774	SAIC
See Team Member, Table 2.1	Independ. Tech. Review	(614) 793-7600 c/o M. Giordano	(614) 793-7620	SAIC
Bill Farino	Contract Officer	(717) 901-8100	(717) 901-8107	SAIC
Melissa Cunkle	Purchasing Officer	(717) 901-8100	(717) 901-8107	SAIC
Diana Leffler	Document Production	(614) 791-3364	(614) 793-7620	SAIC

Table 2.3 USACE Buffalo Project Team Identification

Name	Position/Role	Phone	Fax	Organization
Judy Leithner	Project Manager & Project Engineer	(716) 879-4234	(716) 879-4355	USACE Buffalo District
Michelle Rhodes	Assistant Project Engineer & Chemical Engineer	(716) 879-4198	(716) 879-4355	USACE Buffalo District
Dennis Rimer	Site Superintendent	(716) 879-4444	(716) 879-4355	USACE Buffalo District
Mat Masset	Assistant Site Superintendent & Chemist (field)	(716) 879-4448	(716) 879-4355	USACE Buffalo District
Dick Leonard	Assistant Site Superintendent & Soil Scientist	Varies	(716) 879-4355	USACE Buffalo District
Fred Kozminski	Chemist (Technical)	(716) 879-4270	(716) 879-4355	USACE Buffalo District
Tony Cappella	Health/Safety/IH	(716) 879-4173	(716) 879-4355	USACE Buffalo District
Craig Rieman	Rad Protection (Technical)	(716) 879-4131	(716) 879-4355	USACE Buffalo District
Steve Bousquet	Rad Protection (Site Support)	(716) 879-4129	(716) 879-4355	USACE Buffalo District
Arleen Kreusch*	Public Affairs Specialist	(716) 879-4438	(716) 879-4434	USACE Buffalo District

* If you are approached by the News Media, private citizens or activists, please refer them to our Public Affairs Office

2.9 Independent Technical Review (ITR) Team

In order to ensure criteria and standard details appropriate for this project's requirements, draft submittals for this delivery order will have an independent technical review (ITR) before being submitted to the customer. An ITR team consisting of a senior geologist, senior risk assessor, senior engineer, and senior health physicist has been assembled to perform the ITR reviews on documents prior to submittal to USACE-Buffalo for review. All four team members have performed work associated with FUSRAP sites in the last year. The review will be performed by a single member of the team, or a combination of members based on the technical nature of the document. At a minimum, the ITR for deliverables that have a radiation component will include the health physicist.

The ITR team for the Continued Remedial Investigation Activities will be called into play for documents going to regulators and for reviews of future documents and planning sessions until the completion of the RI activities. The current ITR is an SAIC-based senior technical review

team for ongoing RI activities. The reviewers may play a technical role in upcoming FS activities, but will not participate in ITR activities during the FS phase of the project. Likewise, the diversified ITR will be staffed with professional with experience in FS activities for the work initiated with future tasks. The current ITR team members, except for Claude Laney and possible Hallie Serazin, will be replaced with persons of FS experience. These may or may not be SAIC employees.

The Statement of Independent Technical Review (Figure 2-3) and Certification of Independent Technical Review (Figure 2-4) will be included with all products submitted for this project to the USACE. This Statement will be signed by the ITR reviewer(s) and Project Manager, and state that they have reviewed the product and resolved all internal comments and that the product is ready for release to the USACE. Comments generated by the ITR reviewer(s) and the resolution of these comments will be submitted with statement of ITR and Certification of ITR. The Certificate will be completed by the ITR reviewer and Project Manager, and will be signed by a Principal of SAIC.

The technical reviews also will be conducted in accordance with SAIC Quality Assurance Administrative Procedure QAAP 3.1, "Document Review", as shown in Figure 2-5. The peer reviewer will indicate acceptance of the final product by signing the signature page of submitted reports.

3.0 CUSTOMER INVOLVEMENT

The primary customer for the services provided through this delivery order is the USACE, Buffalo District. This information will also be reviewed by USACE CX and by various regulatory organizations. Representatives of these organizations will be involved in meetings pertaining to implementation of delivery order activities and in review of draft documents generated in the process.

4.0 IDENTIFICATION OF QUALITY INDICATORS

SAIC Procedures QAAP 15.1, "Control of Nonconforming Items and Services," and QAAP 16.1, "Corrective Action," shall be used to identify, track, and correct items and services that could have a potentially adverse effect on the quality of the work to be performed. Nonconformance issues shall be tracked and managed using nonconformance reports.

SAIC Procedure QAAP 17.1, "Records Management," will be used for the collection, control, processing, storage, and retrieval of critical project records submitted to Central Records Facility (CRF). SAIC Procedure QAAP 3.1, "Document Review," will be implemented to document and track both technical and editorial review of draft submittals. Document review records will be maintained in the Project File and CRF.

SAIC Procedure QAAP 18.4, "Client Assessments," will be implemented by the SAIC Project Manager to ensure SAIC performance under this delivery order is meeting client expectations and to identify areas for improvement.

Where not superseded by upper-tier (USACE) requirements, field, data, and engineering processes will be governed by SAIC Quality Assurance Technical Procedures (QATP) contained in QATP Volume I Data Management, QATP Volume II Field Standard Operating Procedures, and QATP Volume III Engineering. Three field procedures have been selected from the SAIC EEMG Health Physics Manual as being applicable to this task:

- SAIC EEMG HP-405 "Radiological Surveys"
- SAIC EEMG HP-108 "Operation of Portable Radiation Survey Instruments"
- SAIC EEMG HP-004 "Quality Control of Radiation Monitoring Equipment"

Delivery Order Status Reports shall be prepared and submitted to the SAIC Project Manager by the 5th working day of each month. The status report is used to track the financial, technical, and administrative issues and actions.

5.0 PROVISIONS FOR FEEDBACK AND LESSONS LEARNED

Documented feedback from the client is obtained through regular communication and client assessment of SAIC performance. Client assessments will be performed by the SAIC Project Manager in accordance with SAIC Procedure QAAP 18.4 "Client Assessments."

Lessons learned are communicated at scheduled monthly status meetings attended by delivery order managers performing work for the USACE Buffalo District. Lessons learned are also documented through the SAIC monthly reporting process and the Engineering and Environmental Management Group Lessons Learned database.

Figure 2.1

Organization Chart for the Gamma Walkover Survey and Waste Containment Storage Structure Characterization at the Niagara Falls Storage Site, Lewiston, New York

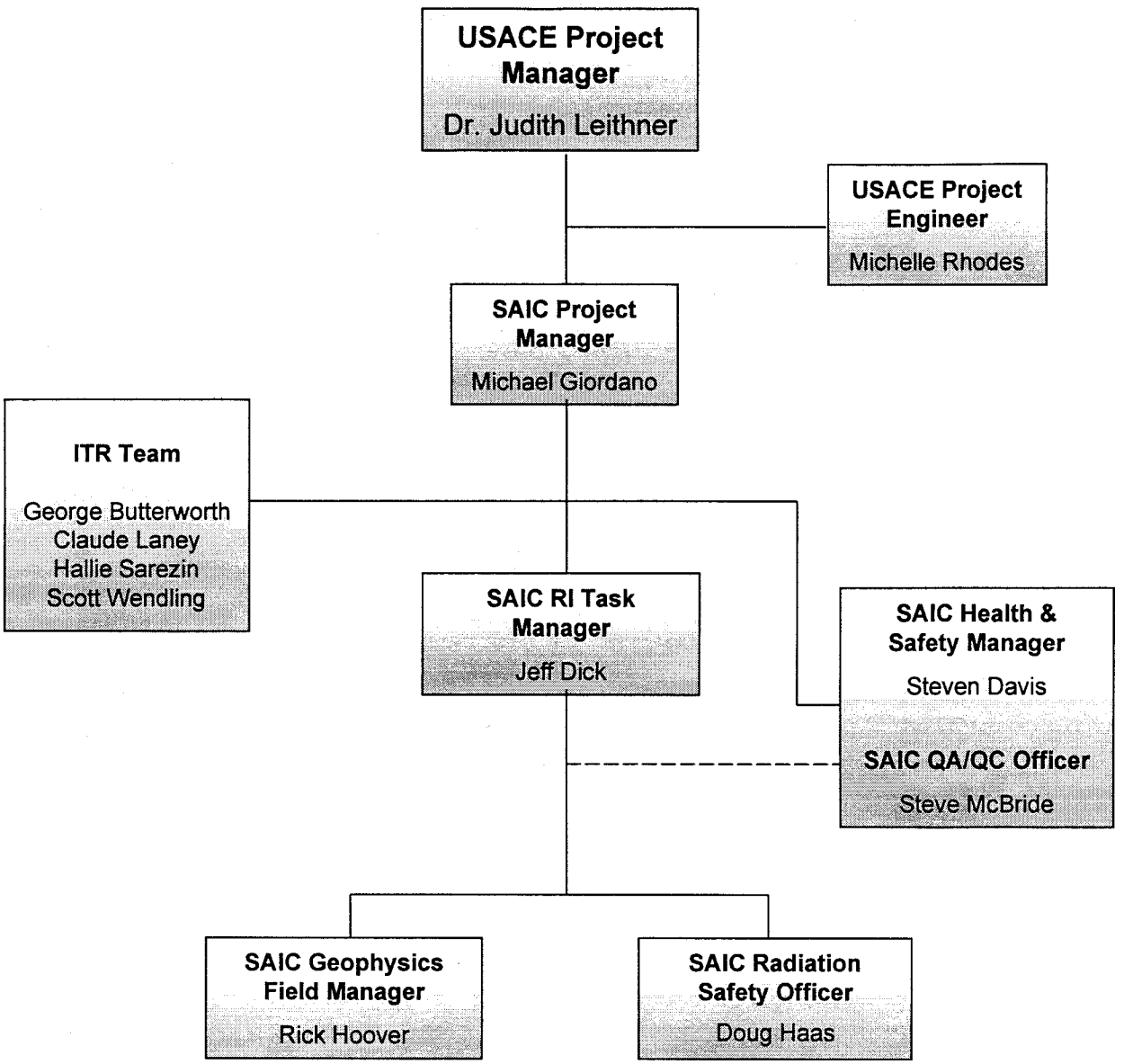
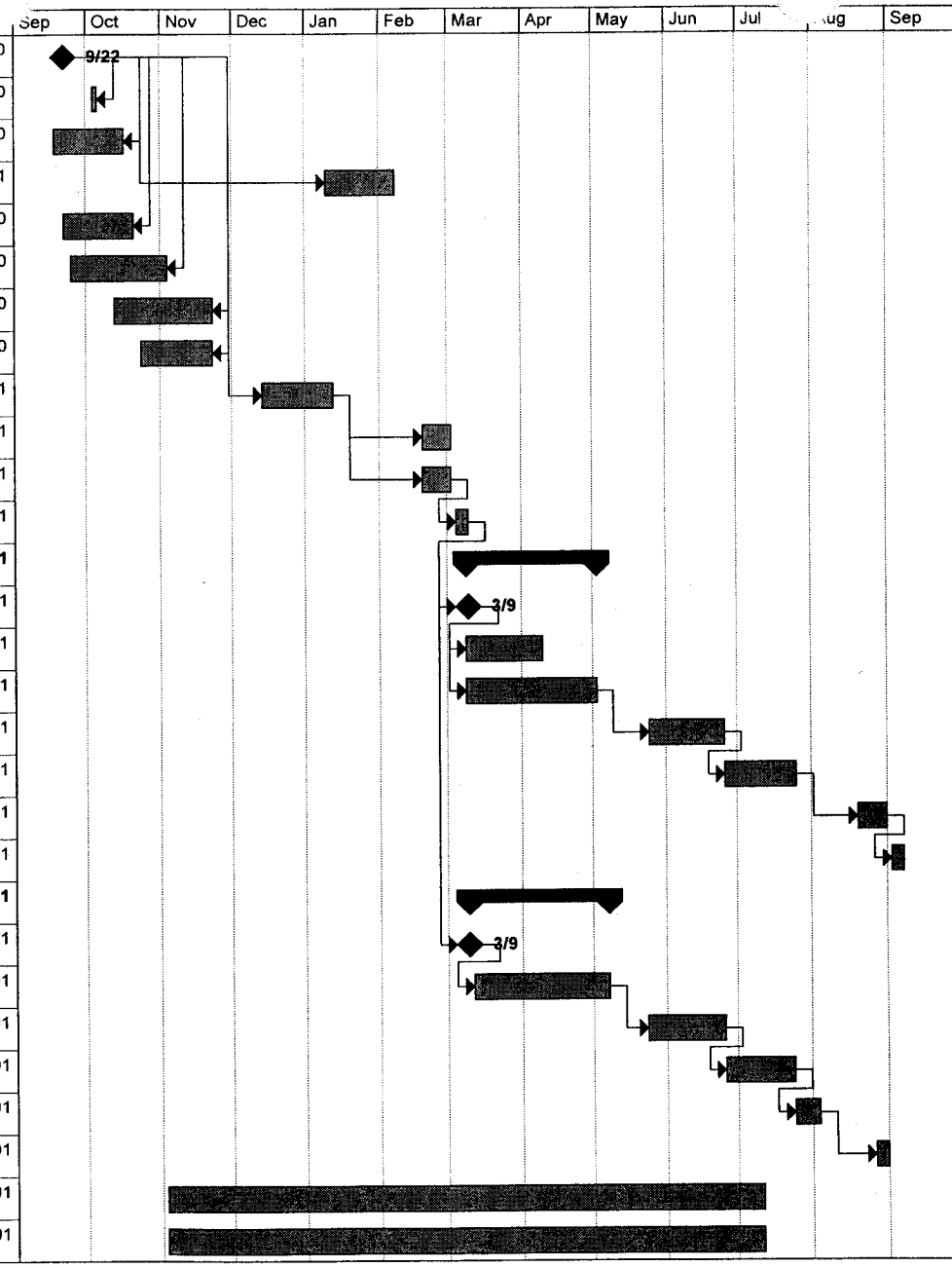


Figure 2.1 Organizational Chart for the Continued RI Activities at the Niagara Falls Storage Site in Lewiston, New York

Figure 2.2

Project Schedule

ID	Task Name	Days	Start	Finish
1	**Notice to Proceed**	0 days	Fri 9/22/00	Fri 9/22/00
2	**Visual Site Inspection**	2 days	Wed 10/4/00	Thu 10/5/00
3	**QCP-Draft**	30 days	Mon 9/18/00	Mon 10/16/00
4	**QCP-Final**	30 days	Wed 1/10/01	Wed 2/7/01
5	Records Review and Analysis	30 days	Fri 9/22/00	Fri 10/20/00
6	Geophysics Data Summary and Data Needs Determination	40 days	Mon 9/25/00	Fri 11/3/00
7	Draft Work Plan	40 days	Fri 10/13/00	Wed 11/22/00
8	Draft Health, Safety, and Radiation Protection Plan	30 days	Tue 10/24/00	Wed 11/22/00
9	Draft Plan Review	30 days	Thu 12/14/00	Fri 1/12/01
10	Final Work Plan	10 days	Mon 2/19/01	Fri 3/2/01
11	Final Health, Safety, and Radiation Protection Plan	10 days	Mon 2/19/01	Fri 3/2/01
12	Approval Work Plan	5 days	Mon 3/5/01	Fri 3/9/01
13	**Field Work-Geophysical Survey**	**55 days**	**Fri 3/9/01**	**Wed 5/2/01**
14	Begin Site Clearing	0 days	Fri 3/9/01	Fri 3/9/01
15	End Site Clearing Task	30 days	Fri 3/9/01	Mon 4/9/01
16	End Field Work (Geophysics)	55 days	Fri 3/9/01	Wed 5/2/01
17	Draft Characterization Report	30 days	Fri 5/25/01	Mon 6/25/01
18	Review Characterization Report	30 days	Tue 6/26/01	Wed 7/25/01
19	Final Characterization Report	10 days	Mon 8/20/01	Fri 8/31/01
20	Approval of Characterization Report	5 days	Mon 9/3/01	Fri 9/7/01
21	**Field Work-Gamma Walkover**	**60 days**	**Fri 3/9/01**	**Mon 5/7/01**
22	Begin Field Work	0 days	Fri 3/9/01	Fri 3/9/01
23	End Field Work	60 days	Mon 3/12/01	Mon 5/7/01
24	Draft Gamma Walkover Survey Report	30 days	Thu 5/24/01	Mon 6/25/01
25	Review Draft Gamma Walkover Report	30 days	Tue 6/26/01	Tue 7/24/01
26	Final Gamma Walkover Survey Report	10 days	Wed 7/25/01	Fri 8/3/01
27	Approve Gamma Walkover Report	5 days	Mon 8/27/01	Fri 8/31/01
28	**Technical Support Services**	179 days	Fri 11/3/00	Wed 7/11/01
29	**Community Relations and General Support**	179 days	Fri 11/3/00	Wed 7/11/01



Project: NiagaraGeophysicsWorkPlan(
Date: Fri 2/9/01

Task Milestone Summary

Figure 2.3

Statement of Independent Technical Review

Figure 2.3

STATEMENT OF TECHNICAL REVIEW CONTRACTOR DESIGN

COMPLETION OF INDEPENDENT TECHNICAL REVIEW

SAIC has completed the (task).

Notice is hereby given that an ITR has been conducted on the SAP, as defined in the preceding paragraph, that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the ITR, 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)

Program Manager

_____ _____

(Signature) (Date)

Project Manager

_____ _____

(Signature) (Date)

Task Manager (if applicable)

_____ _____

(Signature) (Date)

Independent Technical Review

Figure 2.4

Certification of Independent Technical Review

Figure 2.4

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows;

Item	6.0 TECHNICAL CONCERNS	7.0 POSSIBLE IMPACT	8.0 RESOLUTION

As noted above, all concerns resulting from independent technical review of the project have been considered.

_____ _____

(Signature) (Date)

(Principal w/SAIC)

Figure 2.5

SAIC Document Review Record

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

DOCUMENT REVIEW RECORD

DOCUMENT PREPARER:

DOCUMENT TITLE:

DOCUMENT NUMBER:

REVISION:

DATE TRANSMITTED:

REVIEW TYPE: ☐ TECHNICAL ☐ EDITORIAL

COMMENTS THAT ARE ANNOTATED WITH AN (*) ARE MANDATORY AND REQUIRE RESPONSE AND RESOLUTION

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT

REVIEWED BY:	RESPONSE BY:
_____	_____
PRINT NAME	PRINT NAME
_____ _____	_____ _____
SIGNATURE DATE	SIGNATURE DATE

Instructions for Completion of the Document Review Record (DRR)

COMPLETE THIS FORM USING BLACK INK ONLY

Document Preparer:	Enter the name of the document preparer.
Document Title:	Enter document title, if applicable.
Sheet __ of __:	Enter the number of document review record sheets.
Document Number:	Enter the document number, if applicable.
Revision:	Enter the revision number, if applicable.
Date Transmitted:	Enter the date (MM/DD/YY) the record was sent out for review.
Date Comments Required:	Enter the date (MM/DD/YY) comments are due back.
Review Type:	Technical or Editorial
Page or Section/Paragraph:	Identify the page pr section/paragraph
Reviewer Comments: DRR.	The reviewer writes legibly or types each comment on the When a reviewer identifies a significant conflict with or deviation from policy, technical requirements, or scientific fact, this is considered a mandatory comment and must be identified by an asterisk. If no comments exist, the reviewer enters "No Comments".
Reviewed By:	Reviewer prints his/her name, and signs and dates the form.
Preparer Response:	The proposed resolution of nonmandatory comments may be Documented by the preparer. Resolution of mandatory comments must be documented by the preparer.
Response By:	Preparer prints his/her name, and signs and dates the form.
Reviewer Accept/Reject:	Reviewer indicates agreement/rejection with the resolution of Mandatory comments by writing accept/reject and initialing.

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

DOCUMENT REVIEW RECORD

COMMENTS THAT ARE ANNOTATED WITH AN (*) ARE MANDATORY AND REQUIRE RESPONSE AND RESOLUTION

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT

REVIEWED BY:	RESPONSE BY:
PRINT NAME	PRINT NAME
SIGNATURE DATE	SIGNATURE DATE