U.S. Army Corps of Engineers

FUSRAP

Niagara Falls Storage Site FUSRAP Site
Lewiston, New York

Quality Control Plan Addendum for the Remedial Investigation Transition Task: Baseline Risk Assessment

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

Prepared by:
Science Applications International Corporation
Dublin, Ohio

Contract: DACW49-00-C-0020

May 22, 2002

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Science Applications International Corporation
An Employee-Owned Company

May 22, 2002

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Attention: Dr. Karen Keil

SUBJECT: Contract No. DACW49-00-C-0020
Final Quality Control Plan Addendum for the Remedial Investigation Transition Task: Baseline Risk Assessment

Dear Dr. Keil:

Enclosed are three (3) copies of the subject document sent to you in PDF format on May 22, 2002 via e-mail. The final QCP Addendum incorporates USACE comments on the draft document and includes a current schedule for the baseline risk assessment. Also, I have included a copy of internal technical review (ITR) comments and responses as requested by Michelle Rhodes.

Should you have any questions, please feel free to contact me at 614-791-3394.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Paul E. Carter
Task Manager

Attachments

cc: D. Engelgau, SAIC

4900 Blazer Pkwy., Dublin, OH 43017 (614) 793-7600 • Fax: (614) 793-7620

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

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

Item	Technical Concerns	Possible Impact	Resolution
1	There is a task associated with identification of data gaps (Task 2). However, there are no provisions included in the QCP tasks and schedule for addressing what to do if there are data gaps identified. There should be tasks and associated schedules, including links to impacted tasks, included for addressing any identified data gaps such as how to resolve the impacts of the data gaps and how to progress forward with the BRA with the data gaps or with getting the data gaps filled and how will they be filled.	Depending on the data gap(s), there could be a significant delay in the BRA schedule while the data gaps are evaluated and a path forward established.	1) In Section 2.3, I will add the following: "The proposed schedule assumes that the limited document review/identification of data gaps task will not identify any data gaps that would delay the receipt of a complete validated data as shown on the schedule. This data set must be available prior to the start of preliminary remediation goal (PRG) development. If significant data gaps are identified, this could cause delays on all remaining tasks, or portions of all tasks, beginning with PRG development. When SAIC reports on data gaps, SAIC will recommend potential remedies for data gaps and will indicate any potential schedule impacts. Implementation of these or other remedies is not included in the current scope of the BRA and will be addressed through

continued on next page

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

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

Item	Technical Concerns	Possible Impact	Resolution
			through scope modifications if necessary. 2) On Fig. 2.5, ID #12 "Report Data Gaps" will be linked to #17 "Complete validated data set available." The following footnote will be added to #12: "Identification of any significant data gaps could delay receipt of a complete validated data set from USACE. Delays in receipt of the data set could cause delays on all remaining tasks, or portions of all tasks, beginning with preliminary remediation goals (see Section 2.3). 3) In our cost assumption list, I will include the following: "When SAIC reports on data gaps, SAIC will recommend potential remedies for any identified data gaps and will indicate any potential schedule impacts. continued on next page

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

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

Item	Technical Concerns	Possible Impact	Resolution
			Implementation of these or other remedies is not included in the current scope of the BRA and will be addessed through scope and cost modifications, if USACE requires SAIC's assistance."

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION	
DOCUMENT REVIEW RECORD	**Sheet 1 of 1**

DOCUMENT PREPARER:	Paul Carter/Deb Engelgau				
DOCUMENT TITLE:	**Quality Control Plan Addendum for the Remedial Investigation Transition Task Baseline Risk Assessment at the Niagara Fall Storage Site**				
DOCUMENT DATE:	March 25, 2002				
DOCUMENT NUMBER:	Internal Review Draft		REVISION:	D0	
DATE RECEIVED:	March 25, 2002		DATE COMMENTS DUE:	March 26, 2002	
TYPE OF REVIEW:	Technical: X	Editorial: X			

REVIEW BY:		RESPONSES BY:		Concurrence:	
Print Name:	George E. Butterworth, III	Print Name:	Paul E. Carter	Print Name:	See Signed Statement of ITR
Signature:	George E. Butterworth, III	Signature:	Paul E. Carter	Signature:	
Date:	March 26, 2002	Date:	March 26, 2002	Date:	

Sec/Page.	Comment	Response to Comment	
Sec. 2.1.1.4	Barney's qualifications also include the Town of Tonawanda Landfill FUSRAP site in Buffalo. Suggest adding it.	Tonawanda work added.	
Sec. 2.1.3	In the 5th line, reference is made to "three" team members listed in Table 2.3 whereas there are four listed.	Text revised to say "four".	
Table 2.3	Qualifications for George Butterworth should be changed to indicate a M.S., not a B.S., the years experience should be 17+, not 8+, and the years with Buffalo District should be 4+, not 2+.	Corrections made as indicated.	
Figure 2.5	Spell out CSM.	CSM replaced with "Conceptual Site Model".	
Figure 2.5	See ITR comment about the need to include efforts associated with addressing the findings of the data gap analysis. If there are gaps, then there will need to be activities associated with how to address them and how to proceed with the BRA. All of these will impact the overall schedule of the BRA and should be identified.	See Resolution Section on ITR form	
	THE END		

Quality Control Plan Addendum
for the
Remedial Investigation Transition Task:
Baseline Risk Assessment
at the
Niagara Falls Storage Site

Niagara Falls FUSRAP Site
Lewiston, New York

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

Prepared by:
Science Applications International Corporation
4900 Blazer Parkway
Dublin, Ohio 43017

Contract: DACW49-00-C-0020

May 22, 2002

STATEMENT OF INDEPENDENT TECHNICAL REVIEW

SAIC has completed the **Quality Control Plan Addendum for the Remedial Investigation Transition Task Baseline Risk Assessment at the Niagara Fall Storage Site.**

Notice is hereby given that an ITR has been conducted on the **Quality Control Plan Addendum for the Remedial Investigation Transition Task Baseline Risk Assessment at the Niagara Fall Storage Site,** as defined in the preceding paragraph, and 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.

Paul E. Carter
(Signature)
Study/Design Team Leader or Task Manager

May 21, 2002
(Date)

George E. Butterworth III
(Signature)
Independent Technical Review

March 26, 2002

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LIST OF FIGURES

(Figures located at the end of Section 6.0)

ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirement
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHP	Certified Health Physicist
COPC	Constituents of Potential Concern
CX	Center for Expertise
DOE	Department of Energy
FS	Feasibility Study
FUSRAP	Formerly Utilized Sites Remedial Action Plan
GIS	Geographic Information System
HTRW	Hazardous, Toxic, Radiological Waste
ITR	Independent Technical Review
NCRs	Nonconformance Reports
NFSS	Niagara Falls Storage Site
PRG	Preliminary Remediation Goal
QAAP	Quality Assurance Administrative Procedures
QA/QC	Quality Assurance/Quality Control
QCP	Quality Control Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SAIC	Science Applications International Corporation
SOW	Scope of Work
USACE	U.S. Army Corps of Engineers
WCS	Waste Containment Structure

1.0 INTRODUCTION

This Quality Control Plan (QCP) Addendum is Science Applications International Corporation's (SAIC) management plan for execution of all aspects of the Remedial Investigation (RI) Transition Task: Baseline Risk Assessment (BRA) for the Niagara Falls Storage Site (NFSS). This is an Addendum to SAIC's QCP For RI Transition Tasks & Feasibility Study (SAIC 2002) which establishes the procedures for deliverables to control product quality. The Addendum identifies members of the BRA project team as well as personnel making up the Independent Technical Review (ITR) team specific to the BRA task.

1.1 PROJECT BACKGROUND

See QCP (SAIC 2002).

1.2 SCOPE OF WORK

The project tasks identified in Table 1.1 represent the definable features for the RI Transition Task: BRA as defined in the Scope of Work (SOW) dated March 2002. The SOW requires that a baseline human health risk, and screening level ecological risk assessment be performed for the NFSS. Risks will be evaluated separately for chemical and radiological constituents. A conceptual site model and an exposure assessment will be submitted as interim deliverables for the BRA. The BRA will encompass the entire site, excluding the buildings, but including the waste containment structure (WCS) and all radiological and chemical contamination in soil, surface water, groundwater, and sediment.

Table 1.1. Delivery Order Detailed Task Descriptions

Task Number	Task Description RI Transition Task: Baseline Risk Assessment
1.	Prepare addendum to the QCP containing BRA schedule, product delivery team, and independent technical review team.
2.	Perform limited document review and identify any potential data gaps.
3.	Prepare baseline risk assessment including interim deliverables of the conceptual site model and exposure assessment.
4.	Develop site-specific preliminary remediation goals to be used in the feasibility study.
5.	Perform independent technical review of the baseline risk assessment report.

2.0 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.

Table 2.1 Key SAIC Personnel Assignments and Qualifications for the Baseline Risk Assessment at the Niagara Falls Storage Site in Lewiston, New York

Project Assignment	Minimum Degree Requirements	Minimum Qualifications
Project Manager Michael Giordano	B.S. Engineering	16+ years experience in HTRW projects including site investigations and related environmental evaluations / studies.
Risk Assessment Manager Paul Carter	B.S. Science, Engineering, or related field	6+ years of experience in HTRW projects including risk assessment for site investigations, remedial investigations, and related environmental evaluations/studies.
Health Physicist David King	B.S. Science, Engineering, or related field	6+ years of experience in HTRW projects including risk assessment for site investigations, remedial investigations, and related environmental evaluations/studies. Certified Health Physicist.
Lead Ecological Risk Assessor Barney Cornaby	B.S. Science, Engineering, or related field	6+ years of experience in HTRW projects including risk assessment for site investigations, remedial investigations, and related environmental evaluations/studies.
Data Manager Dave Kulikowski	B.S. Computer Science, Engineering, or related field	6+ years of experience in data management
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.
Other Technical Support Hallie Serazin Maria Johnson Bob Tucker Chuck Hadden Kevin Vought Tad Fox	B.S. Science, Engineering or related field	4+ years of experience in HTRW projects including risk assessment.

2.1.1 Key Personnel Responsibilities

2.1.1.1 SAIC Project Manager

The SAIC Project Manager manages the overall project performance and quality of the project deliverables. This individual also will provide the overall financial management of the project, and serve as the single point of contact with the USACE-Buffalo District Project Manager (Dr. Judith Leithner).

The SAIC Project Manager is responsible for the timely submittal of all draft and final deliverables in the quantities requested. 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.

Mike Giordano's Qualifications: B.S., Chemical Engineering, Certified Hazardous Materials Manager (CHMM) certification and Professional Engineer (P.E.) certification in Environmental Engineering. He has 22 years experience in the environmental and waste management business area. Twelve years in consulting with project management experience and the balance in waste management and remediation activities.

2.1.1.2 SAIC Risk Assessment Manager

The SAIC Risk Assessment Manager is responsible for managing the technical performance of the baseline risk assessment. This individual will serve as the lead human health risk assessor, will coordinate the performance of the screening level ecological risk assessment and serve as the point of contact with the USACE-Buffalo District Project Engineer (Michelle Rhodes).

Paul Carter's Qualifications: M.S., Zoology. Mr. Carter has 10 years of experience as an environmental scientist with nearly 9 years of experience performing risk assessments. He has worked in all phases of hazardous waste site risk assessments from the development of Preliminary Remediation Goals for use in preliminary site assessments to full Baseline Risk Assessments. Mr. Carter has experience assessing risks from contaminants at hazardous waste sites, identifying human and ecological (nonhuman) receptors, identifying Contaminants of Concern, establishing Cleanup Levels, and evaluating risks from remediation activities.

2.1.1.3 Health Physicist

The SAIC Health Physicist performs dose/risk assessments for radiological constituents in support of the human health risk assessment. This individual also will provide technical assistance for the evaluation of radiological exposures for the screening level ecological risk

assessment. The SAIC Health Physicist will provide support to the Risk Assessment Task Manager.

David King's Qualifications: M.S. Radiation Protection Engineering. Mr. King has nine years experience as an environmental health physicist. He performs dose/risk assessments in support of numerous USACE St. Louis, New York and Buffalo District documents, including use of RESRAD and interaction with HTRW-CX. He prepared the human health radiological risk assessments for the Luckey and Painesville sites.

2.1.1.4 Lead Ecological Risk Assessor

The SAIC Lead Ecological Risk Assessor is responsible for managing the technical performance of the screening level risk assessment. The SAIC Lead Ecological Risk Assessor will provide support to the Risk Assessment Task Manager.

Barney Cornaby Qualifications: Ph.D., Ecology. Dr. Cornaby has 28 years experience in ecological risk assessment, environmental toxicology, and environmental assessments of HTRW sites. He prepared ecological risk assessments for the Luckey, Painesville, and Town of Tonawanda FUSRAP sites for the USACE Buffalo District.

2.1.1.5 SAIC Data Manager

The SAIC Data Manager will be responsible for managing the field and analytical data needed to perform the BRA. He will be responsible for the accumulation, control, reduction, validation, documentation, and storage of project data. The SAIC Data Manager will provide support to the Risk Assessment Task Manager.

David Kulikowski Qualifications: M.S. Geology. Mr. Kulikowski has 12 years of experience in HTRW site assessments. His primary expertise has focused on the development and design of information and data management systems. He has developed database programs that provide rapid data analysis and reporting capabilities. He has provided data management support for the Luckey, Painesville, and St. Louis FUSRAP sites.

2.1.1.6 SAIC Quality Assurance/Quality Control Officer

The SAIC quality assurance/quality control (QA/QC) Officer is responsible for the project QA/QC in accordance with the requirements of the appropriate SAIC management guidance and the QCP (SAIC 2002). This individual will be responsible for oversight and review of risk assessment documents and will ensure that the quality control responsibilities of the risk assessment project team members are carried out. He will work with the SAIC Data Manager to ensure that all data have been appropriately validated for use in the risk assessment. The SAIC QA/QC Officer reports directly to the SAIC Project Manager, but will coordinate activities with the SAIC Risk Assessment Manager.

Steve McBride Qualifications: B.S., English, Minor Chemistry. Mr. McBride has 17 years of QA/QC experience in chemical sampling and analysis including supervision of laboratory operations as well as coordination of work product submittals. Mr. McBride was the principal author for the Luckey FUSRAP Site Data Quality Assessment.

2.1.1.7 Other Technical Support Staff

The technical support staff will assist with the preparation of the baseline risk assessment.

Hallie Serazin's Qualifications: M.S., Environmental Toxicology. Ms. Serazin has 20 years experience working on a broad range of regulatory and environmental projects with an emphasis on risk assessments for HTRW sites. She prepared baseline risk assessments for the Luckey and Painesville FUSRAP sites for the USACE Buffalo District. She has extensive experience with the use of U.S. EPA's *Risk Assessment Guidance for Superfund* (RAGS) and is trained in the use of RESidual RADiation (RESRAD) computer code, RESRAD-Build and RESRAD Recycle codes.

Maria Johnson's Qualifications: M.E.R., Energy Resources. Ms. Johnson has over 19 years of work experience as an environmental scientist. Ms. Johnson has provided regulatory compliance support for Federal and commercial clients. Her experience includes Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation Liability Act (CERCLA), National Pollution Discharge Elimination System and other regulatory compliance areas. Responsibilities have included conducting QA/QC, data validation, RCRA and CERCLA human health risk assessments, environmental audits, preparation of Quality Assurance Plans, work plans, sampling plan, closure plans, and Remedial Facility Investigations (RFIs) reports.

Bob Tucker's Qualifications: Ph.D., Geology. Dr. Tucker has 20 years of experience working on regulatory and environmental projects. Dr. Tucker serves as a senior project geoscientist for projects with the U.S Army Corps of Engineers and other clients. In addition, Dr. Tucker provides statistical support for data evaluation and is trained in application of Data Quality Objectives and MARSSIM.

Charles Hadden's Qualifications: Ph.D., Microbiology. Dr. Hadden is a senior scientist with 15 years of experience studying effects of radiation and mutagenic chemicals and over 15 years of experience assessing impacts of environmental contaminants. His work has focused on study of the effects on biological populations of contaminants taken up by plants and animals as a result of releases to the environment, from sites such as the U.S. Department of Energy (DOE) Oak Ridge National Laboratory (ORNL) and Y-12 plant, and other DOE and non-DOE federal facilities.

Kevin Vought's Qualifications: M.S., Nuclear Engineering and Civil Engineering. Mr. Vought is an engineer/hydrogeologist with 3.5 years of experience developing groundwater flow and

contaminant transport models for HTRW sites. Mr. Vought operates programs such as SESOIL, EarthVision, and MODFLOW to develop 3D visual models and groundwater flow models to predict contaminant locations and movement in the subsurface

Tad Fox's Qualifications: M.S., Geology. Mr. Fox is hydrogeologist with over 12 years of experience developing groundwater flow and contaminant transport models. His experience ranges from the collection and interpretation of raw field data to the development of numerical groundwater flow and solute transport models. He has employed numerical models to support risk assessment calculations, to evaluate the potential for natural attenuation, to perform 3D capture zone analyses, to develop performance monitoring plans and protocols for the emplacement of reactive barriers, and for the evaluation and optimization of traditional pump-and-treat systems. He has utilized 3D volume modeling to estimate the volume of contaminants in the subsurface, to integrate field data into 3D images of contaminant distribution and site hydrogeology, and to present modeling results to clients, regulatory agencies, and concerned citizens.

2.1.2 Project Team

The project team will be comprised of SAIC personnel under the direction of the USACE, Buffalo District Project. 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
Paul Carter	Risk Assessment Manager	(614) 791-3394	(614) 793-7620	SAIC
David King	Health Physicist	(865) 481-4782	(865) 481-8714	SAIC
Barney Cornaby	Lead Ecological Risk Assessor	(865) 481-8721	(865) 481-8797	SAIC
Dave Kulikowski	Data Manager	(614) 791-3375	(614) 793-7620	SAIC
Steve McBride	QA/QC Officer	(614) 791-3383	(614) 793-7620	SAIC
Hallie Serazin	Technical Support	(614) 791-3342	(614) 793-7620	SAIC
Maria Johnson	Technical Support	(614) 791-3330	(614) 793-7620	SAIC
Bob Tucker	Technical Support	(614) 791-3344	(614) 793-7620	SAIC
Chuck Hadden	Technical Support	(865) 481-8733	(865) 481-8590	SAIC
Kevin Vought	Technical Support	(614) 791-3355	(614) 793-7620	SAIC
Tad Fox	Technical Support	(330) 405-5820	(330) 405-9811	SAIC
Deborah Harb	Project Controls	(865) 481-4619	(865) 481-8564	SAIC
Lydia Ellis	Project Controls	(865) 481-2954	(865) 481-8559	SAIC

Table 2.2 Project Team Identification

Name	Position/Role	Phone	Fax	Organization
Bill Farino	Contract Officer	(717) 901-8100	(717) 901-8107	SAIC
Melissa Cunkle	Purchasing Officer	(717) 901-8864	(717) 901-8101	SAIC
Diana Leffler	Document Production	(614) 791-3364	(614) 793-7620	SAIC

2.1.3 Independent Technical Review (ITR) Team

In order to ensure that BRA fulfills the SOW, is technically accurate, is appropriate for this project's requirements, the draft BRA and interim deliverables for this delivery order will have an independent technical review (ITR) before being submitted to the customer. An ITR team consisting of experienced individuals has been assembled to perform the ITRs on draft documents prior to submittal to USACE-Buffalo. All four team members listed in Table 2.3 will perform the BRA review. The ITR team chair will review the entire draft BRA. The health physicist will review the radiological portions of the BRA. The ecological risk assessor will review the screening level ecological risk assessment. The program specialist will review the QCP addendum and discussion of applicable or relevant and appropriate requirements (ARARs) in the BRA.

The Certification of Independent Technical Review (Figure 2.2) shall be used to document reviewer comments and the resolution of those comments. Upon comment resolution, a Statement of Independent Technical Review (Figure 2.3) will be signed by the ITR reviewer(s) and Project Manager, or appropriate task manager, 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 retained in project files. The Statement of Independent Technical Review shall be submitted to USACE with all draft deliverables. In the event that certain members of the ITR Team are not available to perform a submittal review, a qualified alternate ITR reviewer will be selected by the Project Manager to perform the ITR.

The technical reviews also will be conducted in accordance with SAIC Quality Assurance Administrative Procedure QAAP 3.1, "Document Review", as shown in Figure 2.4. The peer reviewer will indicate acceptance of the final product by signing the signature page of submitted reports.

Table 2.3 Independent Technical Review Team

Name	Qualifications	Phone	Fax	Organization
Sharon Robers (Chair)	M.S., Marine-Estuarine-Environmental Science 12+ years experience in environmental management with a focus on risk assessment for HTRW sites. Risk assessment experience includes both human health and ecological as well as both chemical and radiological constituents.	(865) 405-9810	(865) 405-9811	SAIC
Kenny Fleming, (CHP, CSP)	M.S. Nuclear Env. Systems Engineering 17+ years experience performing HP services for HTRW sites. Trained in the use of RESRAD.	(865) 481-2309	(865) 481-8593	SAIC
Mike Barta (Ecological risk assessor)	M.S. Zoology 9+ years experience in performing ecological risk assessments for HTRW sites.	(703) 318-4541	(703) 709-1042	SAIC
George Butterworth (Program Specialist)	B.S. Engineering 17+ years of experience in HTRW projects, including engineering and management of related environmental evaluations. 4+ years experience with Buffalo USACE.	(865) 769-5314	(865) 769-5313	SAIC

2.2 ASSESSMENT TOOLS

The following computer software programs will be used in the performance of this project.

RESRAD
RESRAD is an integrated code that provides both carcinogenic risk and radiological dose estimates taking into account source removal by radiological decay, leaching, erosion, and radiological in-growth. RESRAD will be used to perform the human health radiological risk assessment. RESRAD version 6.1 will be used for this effort.

SESOIL
SESOIL is a one-dimensional vertical transport model. It helps predict contaminant transport in the unsaturated zone by using equations of mass balance and equilibrium partitioning of the chemical between four different phases (dissolved, sorbed, vapor, and pure). It is capable of accounting for volatilization of the contaminant to the atmosphere, biodegradation and hydrolysis, adsorption and cation exchange, and metal complexation.

Many parameters are input into SESOIL to account for chemical properties of the soil, climatalogical conditions, and the chemical properties of the contaminant itself. SESOIL can be used to help determine the period of time required for a contaminant to reach the groundwater surface, and the concentration of the contaminant at any point in the soil column.

Groundwater Modeling Software
The fate and transport model developed by HydroGeoLogic will be used to evaluate the exposure point concentrations in groundwater for future land use scenarios.

Arc View and/or MicroStation - GIS and Drafting Software
Site maps, figures, and engineering drawings will be prepared using either of these software packages to ensure compatibility with the Buffalo District versions of the software. Arc View files will be converted to Arc View version 3.2 prior to submittal to USACE.

Microsoft Office
Microsoft Office software shall be used for word-processing and spreadsheet preparation. Geospatial data shall be submitted in Microsoft Access format. Prior to submittal, documents will be converted to Microsoft Office version 97, or as directed by USACE.

2.3 PROJECT SCHEDULE

The proposed project schedule for this delivery order is presented in Figure 2.5. The proposed schedule assumes that the limited document review/identification of data gaps task will not identify any data gaps that would delay the receipt of a complete validated data as shown on the schedule. Preliminary remediation goal (PRG) development may start, at the direction of USACE, prior to receipt of the complete data set. These PRGs will be developed for a preliminary list of Constituents of Potential Concern (COPCs). If significant data gaps are identified, this could cause delays on all remaining tasks, or portions of all tasks. When SAIC reports on data gaps, SAIC will recommend potential remedies for data gaps and will indicate any potential schedule impacts. Implementation of these or other remedies is not included in the current scope of the BRA and will be addressed through scope modifications, if necessary.

2.4 COST CONTROL

See QCP (SAIC 2002).

2.5 COMMUNICATION

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

- Weekly submittal to USACE project manager containing summary of phone conversations and other correspondences.
- Monthly Cost Reports will be submitted to the USACE Project Manager.
- Monthly Schedule Reports will be submitted to the USACE Project Manager and Project Engineer.

- Project decisions shall be documented by correspondence from the SAIC Project or Task Manager, as appropriate, 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.
- Conference calls will be held on an as-needed basis to discuss ongoing work, address outstanding issues, and discuss any other pertinent information about project progress. Participants may include USACE, SAIC, and ITR team members.

The individuals involved in this communication include:

• USACE Project Manager	Dr. Judith Leithner
• USACE Project Engineer	Michelle Rhodes
• USACE Project Risk Assessor	Karen Keil
• SAIC Project Manager	Michael Giordano
• SAIC BRA Task Manager	Paul Carter
• SAIC ITR Chair	Sharon Robers

3.0 CUSTOMER INVOLVEMENT

See QCP (SAIC 2002).

4.0 IDENTIFICATION OF QUALITY INDICATORS

See QCP (SAIC 2002).

5.0 PROVISIONS FOR FEEDBACK AND LESSONS LEARNED

See QCP (SAIC 2002).

6.0 REFERENCES

Science Applications International Corporation (SAIC). 2002. Quality Control Plan for the Remedial Investigation Transition Tasks and Feasibility Study, Niagara Falls Storage Site FUSRAP Site, Lewiston, New York. Prepared for U.S. Army Corps of Engineers Buffalo District. February 7, 2002.

Figure 2.1
ORGANIZATIONAL CHART

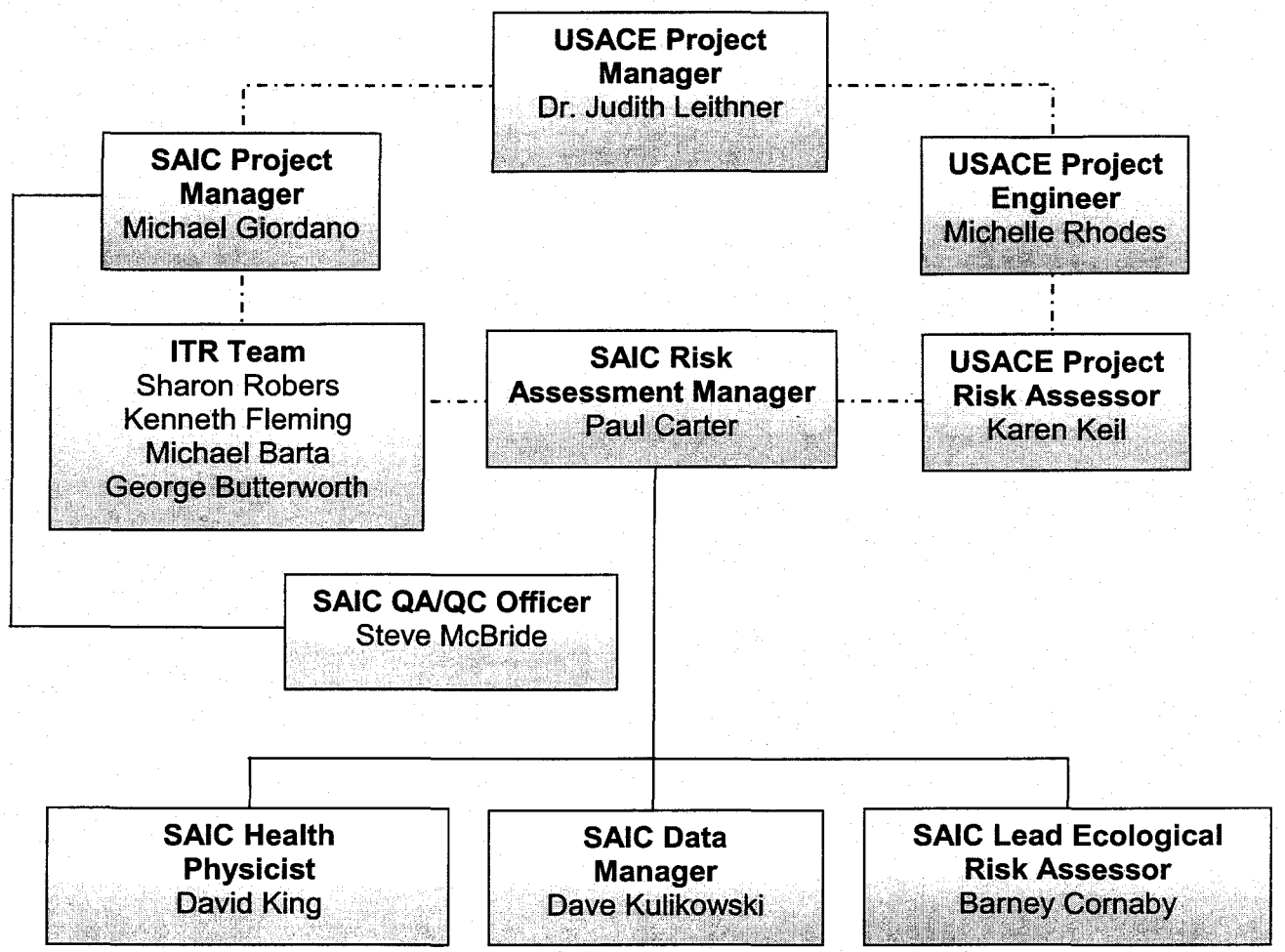


Figure 2.2
CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW

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

Item	Technical Concerns	Possible Impact	Resolution

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

_____ _____

(Signature) (Date)

(Study/Design Task Manager)

Figure 2.3
STATEMENT OF INDEPENDENT TECHNICAL REVIEW

SAIC has completed the (task).

Notice is hereby given that an ITR has been conducted on the [task], as defined in the preceding paragraph, and 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)
Study/Design Team Leader or Task Manager

_____ _____

(Signature) (Date)
Independent Technical Review

Figure 2.4
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: _____ PRINT NAME _____ _____ SIGNATURE DATE		RESPONSE BY: _____ PRINT NAME _____ _____ SIGNATURE DATE	

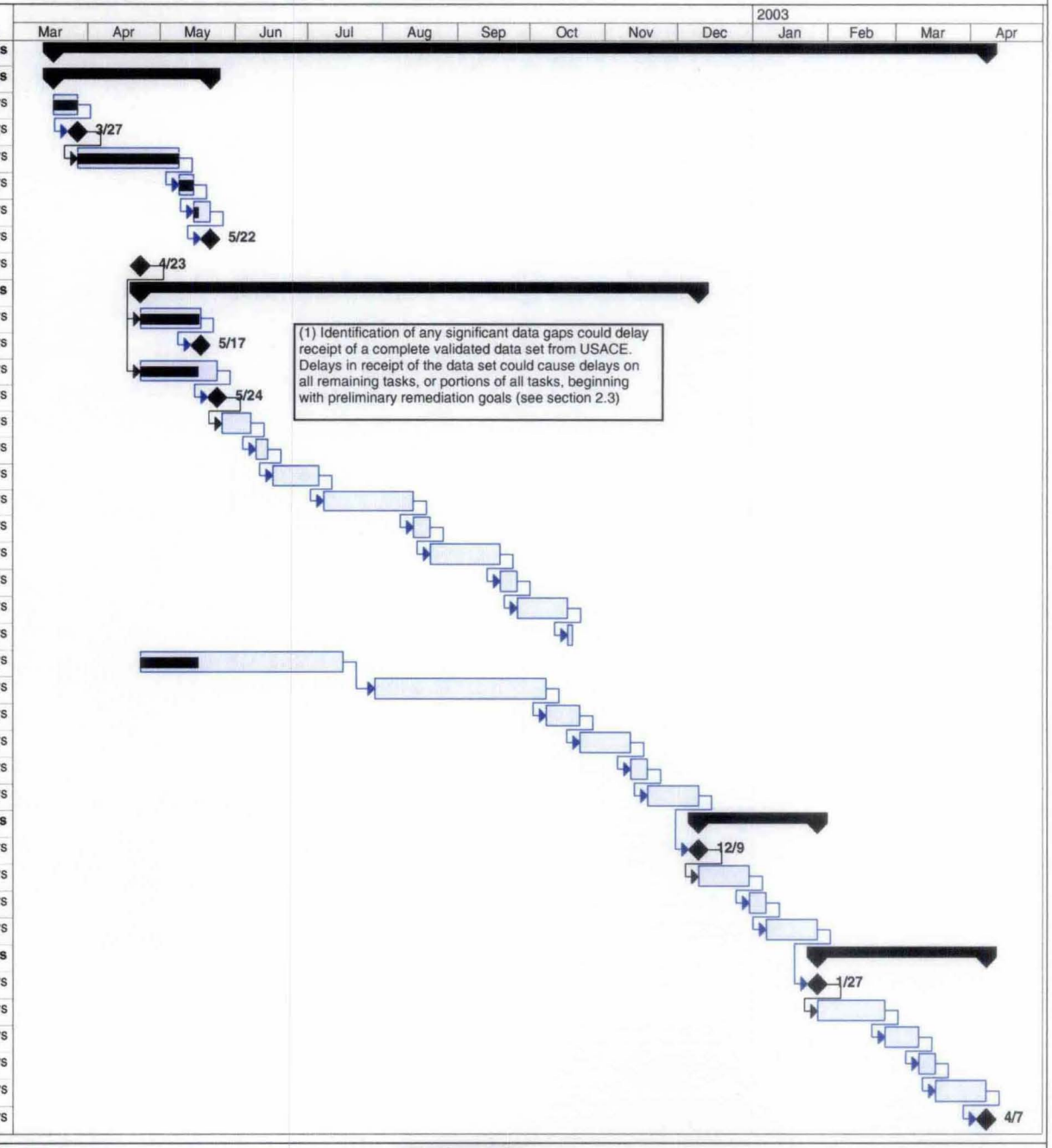
Instructions for Completion of the Document Review Record (DRR)

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.

Figure 2.5
Proposed Schedule for NFSS Baseline Risk Assessment

ID	Task Name	Duration
1	**Baseline Risk Assessment**	**276 days**
2	**Quality Control Plan Addendum**	**47 days**
3	Prepare Draft QCP Addendum	8 days
4	Submit Draft QCP Addendum	0 days
5	USACE-LRB Review	30 days
6	Generate Comment Responses	4 days
7	Prepare Final QCP Addendum	5 days
8	Submit Final QCP Addendum	0 days
9	Notice to Proceed	0 days
10	**Draft BRA Report**	**165 days**
11	Limited Document Review/Identify Data Gaps	19 days
12	Report Data Gaps(1)	0 days
13	Conceptual Site Model & Exposure Assessment (CSM/EA)	24 days
14	Submit Conceptual Site Model & Exposure Assessment	0 days
15	USACE (Buffalo) Review of CSM/EA	10 days
16	Revise CSM/EA	5 days
17	State Review of CSM/EA	15 days
18	Draft Preliminary Remediation Goals	27 days
19	Perform ITR & Review PRG Document	5 days
20	USACE Review of Draft PRGs	21 days
21	Revise Draft PRGs	5 days
22	Submit Draft PRGs to State	15 days
23	TPP Meeting	2 days
24	Begin Draft BRA Report	60 days
25	Continue with Draft BRA Report	51 days
26	Perform ITR	10 days
27	USACE-LRB Review	15 days
28	Generate Comment Responses	5 days
29	Revise Draft BRA Report	15 days
30	**Revised Draft BRA Report**	**35 days**
31	Submit Revised Draft BRA Report	0 days
32	USACE - CX Review	15 days
33	Generate Comment Responses	5 days
34	Revise Draft BRA Report	15 days
35	**Draft Final BRA Report**	**50 days**
36	Submit Draft Final BRA Report	0 days
37	Stakeholder Review	20 days
38	Comment Resolution (USACE/SAIC/EPA)	10 days
39	Generate Comment Responses	5 days
40	Revise Draft Final BRA Report	15 days
41	Submit Final BRA Report	0 days



Project: BRA02
Date: Wed 5/22/02

Task | Progress | Milestone | Summary

Duration in working days (5 days/week)