QUALITY CONTROL PLAN REMEDIAL INVESTIGATION AT THE NIAGARA FALLS STORAGE SITE NIAGARA COUNTY, NEW YORK

Contract DACW-49-97-D-0001 Delivery Order 0012

Prepared For:

U.S. Army Corps of Engineers Buffalo District 1776 Niagara Street Buffalo, New York 14207-3199

September 1999

9905006-210 Task 11

MAXIM TECHNOLOGIES, INC.

1908 Innerbelt Business Center Drive St. Louis, Missouri 63114-5700 (314) 426-0880 September 24, 1999 9905006

U.S. Army Engineer District, Buffalo Attn: CELRB-PE-EE (Dr. Judith Leithner) 1776 Niagara Street Buffalo, New York 14207-3199

Re: Contract DACW49-97-D-0001

Delivery Order No. 0012 Quality Control Plan

For the Remedial Investigation, Niagara Falls Storage Site

Niagara County, New York

Dear. Dr. Leithner:

Maxim Technologies, Inc. has enclosed two (2) copies of the above-referenced document for your review and comment. This document is being submitted in accordance with the Statement of Work, dated February 1999.

Very truly yours,

Thomas Lachajczyk Project Manager

Enclosure

cc: Dr. Dave Brancato (1 copy)

Mr. Hans Honerlah & Alan Warminski (1 copy)

Mr. Mike Filips (1 copy)
Mr. Tom Hempfling (1 copy)

PEER REVIEW CERTIFICATION SHEET FOR

Draft Final

Quality Control Plan

Remedial Investigation at the Niagara Falls Storage Site Niagara County, New York

Prepared by: Maxim Technologies, Inc. St. Louis, Missouri

We, the undersigned and Peer Reviewers, have reviewed and submitted our comments on the Draft Quality Control Plan. All internal comments have been resolved and the Draft Final Document is ready for release to the government.

Plan Preparation and Team Peer Review	<u>Date</u>
Maxim Gricevich, Maxim Project Principal	9-23-99
Thomas Lochaggy	9-23-99
Thomas Lachajczyk, Project Manager	9-23-99
Daniel Logan, QCP Coordinator	

INDEPENDENT TECHNICAL REVIEW CERTIFICATION SHEET FOR

Draft Final Quality Control Plan for the Remedial Investigation at the Niagara Falls Storage Site Niagara County, New York

> Prepared by: Maxim Technologies, Inc. St. Louis, Missouri

I, the undersigned Independent Reviewer, have reviewed and submitted my comments on the Draft Quality Control Plan. All comments have been resolved and the Draft Final Document is ready for release to the government.

Independent Review

Date

Dennis Herzing, P.E.

9/22/99

INDEPENDENT TECHNICAL REVIEW CERTIFICATION SHEET FOR

Draft Final Quality Control Plan for the Remedial Investigation at the Niagara Falls Storage Site Niagara County, New York

Prepared by: Maxim Technologies, Inc. St. Louis, Missouri

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Independent Review

Clyde Yancey, P.G.

Date

9-22-99

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- 2 Quality Assurance Internal Assessment Checklist
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LIST OF ACRONYMS/ABBREVIATIONS

ADL Approximate Detection Limit

A-E Architect-Engineer
AMSL Above Mean Sea Level
AOC Area of Concern

ARARs Applicable or Relevant and Appropriate Requirements

ASTM American Standards for Testing of Materials

ATSDR Agency for Toxic Substances and Disease Registry

AWP Approved Work Plan

bgl Below Ground Level

BNA Base-Neutral/Acid Extractables (Semi-volatile Organics)

BNI Bechtel National Incorporated BRA Baseline Risk Assessment

C Centigrade

CAD Computer-Aided Design
CAS Chemical Abstract System

CCVS Continuing Calibration Verification Standard

CE Civil Engineering

CELRB Corps of Engineers, Lakes and Rivers Division, Buffalo District

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CFR Code of Federal Regulations
CLP Contract Laboratory Program

CoC Chain-of-Custody
COC Constituents of Concern

COPC Constituents of Potential Concern
COR Contracting Officer's Representative
CRDL Contract Required Detection Limits

CRP Community Relations Plan

CT Central Tendency

CTR Custody Transfer Record

CX USACE Center of Expertise for HTRW

DL Detection Limit
DI Deionized Water
DO Dissolved Oxygen
DOD Department of Defense

DOE Department of Energy

DOT Department of Transportation
DQO Data Quality Objective

DUP Duplicate

EE/CA Engineering Evaluation /Cost Analysis
EEQ Environmental Effects Quotient

EMSL Environmental Monitoring and Support Laboratory

EPA Environmental Protection Agency

FCR Field Change Request

FEMA Federal Emergency Management Agency

FS Feasibility Study

FUDS Formerly Utilized Defense Sites

FUSRAP Formerly Utilized Sites Remedial Action Program

FY Fiscal Year

g grams

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectroscopy

GIS Geographic Information System
GSA General Services Administration

GW Groundwater

HEAST Health Effects and Assessment Summary Tables

HNO₃ Nitric Acid

HPLC High Performance Liquid Chromatography

HSP Health and Safety Plan

HTRW Hazardous, Toxic and Radioactive Waste

ID Identification
I.D. Inner Diameter

IDW Investigation Derived Waste

IRIS Integrated Risk Information System ITR Independent Technical Review

LC Liquid Chromatography

LIMS Laboratory Information Management System

LOOW Lake Ontario Ordnance Works

MB Method Blank

MCL Maximum Contaminant Level
MCLG Maximum Contaminant Level Goal

mg/L milligrams per Liter

MSDS Material Safety Data Sheet

MS/MSD Matrix Spike/Matrix Spike Duplicate

LIST OF ACRONYMS/ABBREVIATIONS

(Continued)

MSL Mean Sea Level

NA Not Applicable

NAS National Academy of Sciences NBS National Bureau of Standards

NCEA National Center for Environmental Assessment

NCN Nonconformance Notice

ND Not Detected

NFSS Niagara Falls Storage Site

ng nanograms

NGVD National Geodetic Vertical Datum

NIST National Institute of Standards and Technology

NPL National Priorities List NTP Notice to Proceed

NYSDEC New York State Department of Environmental Conservation

NYDOH New York Department of Health

O.D. Outer Diameter

OSHA Occupational Safety and Health Administration

PAH/PNA Polynuclear Aromatic Hydrocarbons

PCBs Polychlorinated Biphenyls
P.E. Professional Engineer
PID Photoionization Detector
PMP Project Management Plan

POC Point of Contact

POL Petroleum, Oil, and Lubricants
POTW Publicly Owned Treatment Works

PP Proposed Plan
ppb parts per billion
PVC Polyvinyl Chloride

PPE Personal Protective Equipment

ppm parts per million

PQL Practical Quantitation Limit

QA Quality Assurance

QAM Quality Assurance Manager QAO Quality Assurance Officer

QAMP Quality Assurance Management Plan QAPP Quality Assurance Project Plan

QCP Quality Control Plan

RAGS Risk Assessment Guidance for Superfund

LIST OF ACRONYMS/ABBREVIATIONS

(Continued)

RCRA Resource Conservation and Recovery Act

RI Remedial Investigation

RI/FS Remedial Investigation/Feasibility Study

ROD Record of Decision

ROTC Reserve Officer Training Corps
RPP Radiation Protection Plan
RPD Relative Percent Difference
RSD Relative Standard Deviation

SAIC Science Applications International Corporation

SAP Sampling and Analysis Plan

SARA Superfund Amendments and Reauthorization Act

SB Soil Boring

SOP Standard Operating Procedure

SOW Statement of Work

SPCSState Plane Coordinate SystemSRMsStandard Reference MaterialsSSHOSite Safety and Health OfficerSSHPSite Safety and Health Plan

SVOCs Semi-volatile Organic Compounds

SW Surface Water

SW846 Test Methods for Evaluating Solid Waste 1986

SWMU Solid Waste Management Unit

TAL Target Analyte List

TB Trip Blank

TBC To Be Determined TCL Target Compound List

TCE Trichloroethene

TDS Total Dissolved Solids
TM Technical Memorandum

TNT Trinitrotoluene

TOC Total Organic Carbon TOV Total Organic Vapor

T.O.C. Top of Casing

TON Total Organic Nitrogen

TPH Total Petroleum Hydrocarbons

TRPH Total Recoverable Petroleum Hydrocarbons

TSCA Toxic Substance Control Act

UCL Upper Confidence Limit ug/kg micrograms per kilogram ug/L micrograms per Liter

LIST OF ACRONYMS/ABBREVIATIONS

(Continued)

USACE	United States Army	Corps of Engineers
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USEPA United States Environmental Protection Agency

USGS United States Geologic Survey
UST Underground Storage Tank
VOA Volatile Organic Analysis
VOC Volatile Organic Compound

INTRODUCTION AND SUMMARY

INTRODUCTION AND SUMMARY

This Quality Control Plan (QCP) is submitted by Maxim Technologies, Inc. (Maxim) in response to Task 11 of the Statement of Work (SOW), see Attachment 1, for the USACE, Buffalo District, Delivery Order 0012 of Contract DACW49-97-D-0001.

The work associated with the performance of this SOW is divided into the following 13 task activities:

- 1. Records Review and Evaluation
- 2. Visual Site Inspection
- 3. Landfill Survey
- 4. Identify ARARS
- 5. Data Summary and Data Needs Determination
- 6. Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP)
- 7. Specification and Acquisition of Field Data
- 8. Interim Action Determination
- 9. Identify Remediation Areas and Volumes
- 10. Health, Safety, and Radiation Protection Plan
- 11. Quality Control Plan (QCP) & Independent Technical Review
- 12. Community Relations and General Support

13. Preparation of RI Report

The RI Report to be prepared by Maxim Technologies will summarize the results from two phases of field investigation. The field work will be conducted during the fall of 1999 and the spring of 2000.

The project work products will be externally reviewed by the US Army Corps of Engineers - Buffalo District, the "Corps' Virtual Team" and the New York State Department of Environmental Conservation.

Strategy and Objectives

"The strategy of the Niagara Falls Storage Site is to remediate the radiological and chemical contaminants at the site such that the requirement of CERCLA are met. The selected remediation option(s) for radiological material may involve removal and disposal of at least the high activity residues to an off-site location or it may involve extraction of marketable material form these residues with subsequent disposal of the recycling byproducts." The strategy for the removal/remediation of the chemical contamination, if it exists, will be developed following the performance of chemical characterization taking place during this remedial investigation (RI) project.

The main objectives of this project effort are focused on the performance and documentation of the RI process which will culminate in the preparation of a RI Report. The RI Report will include:

- 1. Preparation of a site conceptual model summarizing both historical data and site characterization data obtained during the additional field investigations this SOW. The proposed additional field characterization tasks are based on uncertainties (data gaps) identified during the review and evaluation of the historical data, and;
- 2. Performance of a Baseline Risk Assessment.

The performance of a Fate and Transport Analysis are not part of the current work. However, it may be performed at a later date based on the results of the Baseline Risk Assessment and outcome of the RI.

Technical objectives were defined during the Technical Planning Process (TPP) meeting held in Buffalo on June 8-9, 1999. During this meeting, the objectives contained in Figure 1-1 were defined. Some of these project objectives are not included in the current Statement of Work. Project work plans will be prepared and site investigations performed to achieve project objectives.

SECTION 1

1.0 MANAGEMENT PHILOSOPHY

The Maxim Technologies, Inc. quality process is a comprehensive system designed to address all aspects of Maxim's multi-functional, multi-location operations. The system implements a strategy which combines a focus on the needs of external and internal customers with conformance to recognized quality standards and a commitment to continuous improvement.

Maxim Technologies' Corporate Quality Policy Statement is:

"The Associates of Maxim Technologies, Inc. have a tradition of excellence and are committed to continued leadership in quality services and customer satisfaction which we enhance by constantly focusing on improving everything we do."

The MAXIM QUALITY MANUAL establishes Quality Policies and Objectives which support this Statement. A copy of the Table of Contents from the Manual is included as Exhibit 1-1. The Manual is not designed to conform to a specific Quality Standard or Management System. It is designed, rather, to establish a total quality environment for all operations.

The Quality Manual is supported by Quality Assurance Plans (QAPs) and Standard Operating Procedures (SOPs) which define the implementation of quality policies and objectives within specific operations. The structure of this quality system is illustrated on Exhibit 1-2. The quality system emphasizes problem prevention and root cause determination and elimination.

Quality Review. Each Maxim operating group or functional area is subjected to a formal Internal Assessment at a minimum of once every two years. Assessment frequency is adjusted as necessary to comply with customer requirements, proficiency/accreditation programs, results of previous assessments and associated corrective action plans, observed or reported nonconformances, or results of management self-evaluations. The Table of Contents of Maxim Procedure No. QP-AUD-1, which establishes the Maxim procedure for Internal Assessments, is included in this QCP as Attachment 2. The checklist encompasses all aspects of an operation's quality system. All Maxim organizations must take specified corrective action for any aspect of their quality system rated "Improvement Needed" or "Unacceptable".

SECTION 2

2.0 MANAGEMENT APPROACH

As is illustrated by Exhibit 1-1, described in the previous section, the <u>Maxim Quality Manual</u> presents generic guidance for all aspects of task management from the quality standpoint. This guidance is Maxim's <u>minimum internal</u> requirement. Where necessitated by task requirements, <u>project-specific</u> plans are produced reflecting integration of the task's specific needs and Maxim's systems and procedures as outlined in the Manual. Other Maxim Corporate guidance manuals providing input to QCPs include:

Maxim Health and Safety Manual;

Maxim Project Management Handbook;

Maxim Standard Operating Procedures for Management, and;

Maxim Standard Operating Procedures for Technical Performance.

Maxim's management mission is to execute the work with emphasis on achieving project Data Quality Objectives (DQO), while adhering to established project schedule and budgets. The system to be used to accomplish this mission is the Management-by-Objective (MBO) System, which focuses on this mission with both flexibility and control. The following sections describe Maxim's approach to management for this project. The generic overall flow of the project is illustrated in Figure 2-1.

2.1 Delivery Order Initiation and Execution

Upon receiving the project Statement of Work (SOW), Maxim's St. Louis office selects the Project Manager. Once assigned, the Project Manager is considered a key resource and is committed to the project for the duration unless changes are requested by the Corps.

The Project Manager's responsibility includes identification of the skills required to achieve the SOW. The Project Manager selects Resource Managers to cover the technical areas/disciplines to complete required work elements. The need for Maxim's subcontractors is assessed and project staff is selected accordingly.

The Project Manager communicates with the Corps' Project Manager/Engineer to review available data, discuss data quality objectives and the Corps' need for rigor and documentation, and perform a site visit. As deemed appropriate, additional technical specialists will participate in order to achieve project goals.

With the Statement of Work in hand, and with orientation to the site, Maxim's approach includes:

· Break the SOW down into tasks;

- · Select staff and subcontractors and establish lines of communication:
- Review historical site data to estimate the necessary level of effort (LOE), materials and equipment required;
- Secure cost quotes from identified subcontractors;
- Establish the sequence of tasks based on technical, DQO, and procedural constraints;
- · Schedule the work, and:
- Provide a list of work products (if not in the Statement of Work).

Maxim's St. Louis office reviewed the draft budget and schedule to assure that it meets the missions of the Corp's HTRW program, and is consistent with the terms and conditions of the contract.

Maxim and the Corps then negotiated the level of effort and the need for recommended equipment, materials and subcontractors, as necessary. The two parties will resolve differences in scope, schedule, and budget.

Maxim will conduct ongoing communications and execute the project. Monthly reports and invoices will be delivered by the 24th of each month. Work products will be issued in draft form to the Corps for review and comment. Upon receipt of comments, changes will be made as requested and the final work products will be delivered. As a result of this process, Maxim believes that the final documents will truly be the result of a team effort to achieve the Corps' missions.

2.2 Communications

Effective communications are critical to success of the Corps' mission. Maxim has organized our team to match the Corps' organization. Formal communications occur at both the Contract Administration level between Maxim's Project Principal, Project Manager and the Corps' Authorized Agents; and at the project level, directly between the Corps' and Maxim's Resource Managers. This concept of communication is reflected in our organization discussed in Section 3. Other formal communications will be in writing in monthly reports and invoices as prescribed by the Corps, and regularly-scheduled project meetings conducted every two weeks by telephone.

In the event that project problem solving is necessary, the Corps has the following primary contacts for problem resolution. These are the Project Manager, the Program Manager and the Project Principal. Key components to pro-active problem solving include:

- Early and effective communication to clearly define the problem;
- Assembly of those with authority to solve the identified problem;

- Mutual development of the remedy including cost and schedule impacts if any;
- Expeditious implementation of remedy in order to minimize project impact;
- Evaluation to confirm remedy was effective at correcting the problem, and;
- · Continued communication through the complete cycle of the problem.

Supplemental discussions related to project communications are presented in Section 8 of this submittal.

2.3 Management of Subcontractors

Each subcontractor will have a contract with Maxim that reflects the same obligations and requirements contained in the contract between Maxim and the Corps. Known as "trickle down requirements", they will assure compliance with the Corps' requirements and communicate Maxim's commitment to consistently high quality, continuous improvement and customer service.

The Project and Resource Managers will have day-to-day responsibility for communicating with the subs and reporting their status along with Maxim's in the monthly reports and progress invoices.

2.4 Quality Control Procedures

Quality control begins with establishing the quality requirements of the assignments. These are established in the scoping document issued by the Corps, or they are developed specifically for the assignment by Maxim after discussion with the Corps. If QC plans issued by the Corps differ from or conflict with (SOPs) established by Maxim, the Corps' approach will be written into the project-specific plans. Corps-specific review/reporting requirements will be incorporated as directed by the Corps.

The following paragraphs describe Maxim's general approach to QC on this delivery order assignment with the Buffalo District.

Detailed components of Maxim's guidance documents are incorporated by reference. They include:

- Corporate QA Procedures Manual;
- Laboratory Quality Assurance Program and Project Plan;
- Document Format and Style Guide;
- · Hazardous Waste Manual:
- Contingency Plan, and;
- · Chemical Hygiene (Right-to-Know) Plan.

QA/QC personnel are assigned at both the program and task levels. The program level staff assure consistency and completeness for all assignments. Project level staff implement policy for each delivery order.

The following sections describe QC procedures for:

- 1. Reports;
- 2. Design calculations, and;
- 3. Design drawings.

2.4.1 Reports

The Project Manager is responsible for implementing quality control on the project. Key components of this control are:

- · 100% peer review, and;
- · Grammar and spell checking.

The Project Manager or Resource Manager will identify specific staff to execute work and identify a peer for checking fundamental components of each Work Plan, RI Report and other submittals. These fundamental components include:

- 1. Clear statement of purpose(s) of report;
- 2. Accurate description of actions taken and studies conducted;
- 3. Accurate reporting of chemical, biological or physical testing results in clear, verified tables;
- 4. Appropriate methods and execution of all significant calculations;
- 5. Verification that conclusions can be derived from the data and analyses presented;
- 6. Concurrence on the recommendations contained in the draft RI Report;
- 7. All figures and drawings are complete and accurate, and;
- 8. Confirmation that the work product conforms to the requirements of the delivery order and the contract.

When the peer's recommendations conflict with the author's opinion, the issue will be raised sequentially to the Project Manager and the Project Principal until such time that the issue is

resolved, as an alternative means for resolving quality issues, employees are empowered to contact the Quality Manager for issue resolution.

Peer review will be conducted on all draft submittals. Finally, as text is finalized, it will be reviewed for grammar and for spelling.

2.4.2 Design Quality Control

The Principal Engineer is responsible for the preparation of design calculations, the preparation of drawings or other technical documents as required to define the design of the project. Should any Interim Actions (i.e. including the demolition of Building 401) be required during the performance of this project, it is anticipated that preliminary submittals (i.e. 50%, 90% and/or some other percentage) of the design packages will be provided for US Army Corps of Engineers review.

Final action on all textual documents include grammar and spelling checks.

The quality control procedures for calculations and drawings will:

- · Assure that applicable codes and standards are used in the development of the design;
- Assure that the documents address any special fabrication, production, or construction requirements, and;
- · Assure that documents identify testing requirements.

2.4.2.1 Calculations - It is the policy of Maxim to have design calculations prepared, reviewed and checked prior to signature. Design calculations includes any design computations produced through the use of computers. All calculations will be assigned a Project File Number for tracking purposes and appended to the appropriate project work product. The purposes of this policy are to:

- · Assure accuracy and conformance to design quality objectives;
- Provide a clear documentation which indicates conformity of design with the relevant codes and design criteria of the project;
- Provide design input for the subsequent contract documents consistent with accepted engineering, architectural practices and the function for which the facility is being designed, and;
- Assure that the design approach is generally consistent with field conditions and that the project can be constructed in an economical and timely manner.

Design calculations will contain the following:

- Listing of assumptions or limitations which are to be consistent with furnished data or known field conditions;
- Discussion of the approach for designing a particular item including the usage of appropriate formulae, theory and computer programs, consistent with good engineering or architectural principles;
- Tabulation of reference sources used, and;
- Sketches of the finished design for the particular area of interest in order to be able to follow through to the design drawings.

The design review will be conducted by making either an approximate independent design or a line-by-line check of the design calculations. The design reviewer shall confirm that:

- Appropriate engineering principles and codes have been complied with;
- Appropriate documentation has been included in order to provide a complete design document:
- · All calculations and drawings are consistent within themselves and also consistent with the SOW for the project, and;
- Design calculations are legible, clear, correct, and professionally done with all appropriate issues addressed.

The Principal Engineer reviews the assumptions and criteria upon which the design is based and is responsible for the content of the design calculations. He or she makes periodic reviews of the design calculations to ensure that all review and checking is being undertaken consistent with these instructions.

2.4.2.2 Drawings - It is Maxim's policy to have the drawings prepared, reviewed, and checked prior to signature or approval. The purposes of this review process are to:

- · Provide standard procedures for the preparation and review of the drawings;
- Establish a clear means of identifying all persons who have worked on each drawing;
- · Provide procedures for the preparation and review of "standard" drawings or typical details;
- Maintain a record of drawing revisions and control the distribution of all revisions to assure that the most recent approved revision is being used for the project, and;
- Revisions of drawings require the same review and approval as the original.

The Project Manager will be responsible for assuring that the design drawings conform to the objectives of the statement of work. He or she will also assure that all of the interdisciplinary review and checking has been completed and all outstanding issues have been satisfactorily resolved, with sign-off sheets being completed and filed.

The Project Manager will designate a Resource Manager who will be responsible for reviewing the design drawings for coordination between the various disciplines or specialties, so that any interfunctional conflicts and omissions are resolved.

The QC process will consist of reviewing the drawings and seeing that the following, as a minimum, have been checked:

- Drawings are consistent and are based on the intended design as shown in the calculations;
- · All "key" dimensions are verified;
- · All sections are properly labeled;
- · Drawing notes do not conflict, and;
- All notes referencing a detail in another discipline's drawings refer accurately to specific details.

In the case of the NFSS project, an Independent Technical Review (ITR) committee has been identified which will report directly to the Project Manager. Findings of the IRT will be subsequently reviewed by the Project Principal and Principal Engineer to ensure that corrections and errors/omissions are addressed.

SECTION 3

3.0 MANAGEMENT STRUCTURE

Maxim is performing this work under contract to the Buffalo District, U.S. Army Corps of Engineers (USACE) and has overall responsibility for conducting the radiological and chemical site characterization for NFSS and the subsequent preparation of the accompanying RI Report which will summarize the results of the field work. Maxim will prepare project work plans, review project reference documents, evaluate criteria and standards, direct field investigations, communicate with the US Army Corps of Engineers, conduct review meetings, provide work product submittals and address resulting comments. Project management and quality assurance functions will also be provided by Maxim. The NFSS project organization including quality assurance and management responsibilities along with the relationship of the key personnel are illustrated in Figure 3-1.

3.1 Corps of Engineers Project Manager/Site Superintendent

Dr. Judith Leithner, Ph.D. is the USACE Project Manager for this project. She has responsibility for technical project direction, review and approval of contractor work plans and reports, allocation of overall project resources, tracking and management of the overall project schedule and budget, and management of contractor oversight by other USACE staff.

Dr. Leithner can be contacted by telephone at (716) 879-4234. Her E-Mail address is as follows: Judith.S.Leithner@USACE.army.mil

Requests from any third parties for any information concerning this project should be addressed to Dr. Judith Leithner at the following address:

Dr. Judith Leithner, CELRB-PE-EE U.S. Army Corps of Engineers, Buffalo District 1776 Niagara Street Buffalo, NY 14207-3199

Mr. Dennis Rimer will be the USACE Site Superintendent. The USACE Site Superintendent will oversee field activities for the USACE, and will have the authority to approve all field decisions, exclusive of those that require a scope change or commitment of additional resources. In those instances, the decision must be approved by Dr. Leithner and the District's Contracting Officer, Ms. Mary Price.

3.2 Adjacent Property Owner(s) - Points of Contact

The Point of Contact (POC) for the Modern Landfill, located to the east of the project site, is Mr. James P. Goehrig, P.E. He can be contacted at (716) 754-8226, FAX (716) 754-8964. The POC

for the Waste Management site, located north of the project site, is Ms. Rebecca Park Zayatz. She can be contacted at (716) 754-8231, FAX (716) 754-0211. If right-of-entry, a site walk over inspection, or other information concerning these properties is required, Maxim will coordinate these requests through Dr. Leithner, the Project Manager for the Buffalo District, Corps of Engineers.

3.3 Project Oversight Committee (Regulatory/Virtual Team)

The Project Oversight Committee will be composed of designated New York State and Corps of Engineers personnel with specialized expertise. Each of these committee members will provide review and comment concerning project submittals.

At the beginning of the project, the Buffalo District, US Army Corps of Engineers will furnish Committee members with a copy of the Statement of Work.

Virtual team members attended a Technical Project Planning meeting on June 8-9, 1999. Attendees at the meeting are presented in Table 3-1.

All submittals will be furnished by Maxim to the US Army Corps of Engineers. USACE Project Manager/Engineer will transmit Maxim's pertinent submittals to the Oversight Committee members, together with a due date.

Comments received by the Corps of Engineers from the Project Oversight Committee members will be reviewed to ensure they are pertinent. Conflicting issues will be resolved by the Corps of Engineers, Project Manager/Engineer. Those issues which require Maxim's involvement will be forwarded to Maxim. Maxim will develop responses and if necessary a telephone conference will be scheduled by the Corps of Engineers Project Manager/Engineer in order to resolve any technical issues.

Periodic telephone conferences may be attended by representatives of the Project Oversight Committee as well as other project team members.

3.4 Project Principal

Mr. Max Gricevich is Maxim's Project Principal. He is Manager of Maxim's St. Louis office. Mr. Gricevich possesses over 26 years of environmental experience with scientific and engineering projects ranging from initial site planning and contamination surveys through remedial investigations (RIs), feasibility studies, and hazardous waste clean-up supervision. Past investigative, engineering and management experience has been obtained at numerous active and inactive DOD and DOE sites.

The responsibilities of the Project Principal will include:

- Signatory authority and power to commit company resources to the overall execution of the contract;
- Allocate manpower and other resources to the project;
- Review subcontract agreements;
- · Interface with subcontractors on the administrative level;
- Communicate directly with the USACE Manager for both routine support and for problem solving if problems cannot be resolved through normal channels;
- Develop solutions to problems of particular difficulty;
- · Provide senior-level technical, administrative and logistical support to Maxim's Project Manager as needed;
- · Provide quality assurance audit of all aspects of the project, and;
- Review and approve project plans and reports prior to submittal.

3.5 Principal Engineer

Mr. David Germeroth, P.E., is the Principal Engineer. He will provide engineering expertise and review, approve and apply his Professional Engineer's seal to pertinent design documents, as necessary. Mr. Germeroth possesses over ten years experience performing geotechnical testing, construction oversight, health and safety evaluation, remedial investigations, remedial design and site investigations. Mr. Germeroth has extensive experience at FUSRAP and former DOE sites.

Project-related duties of the Principal Engineer will include:

- Signatory authority and power to commit company resources to the overall execution of the contract;
- Directing communication with the Buffalo District's Project Manager/Engineer (Dr. Judith Leithner) if problems cannot be resolved through normal channels;
- Providing solutions to problems of particular difficulty;
- Review and approval of project plans and reports prior to submittal, and;
- Providing project supervision in order to ensure that engineering aspects of the project are performed according to the project plans.

3.6 Contractor Program Manager/Project Manager

Mr. Thomas Lachajczyk is Maxim's USACE Buffalo District Program Manager. Mr. Lachajczyk has over 25 years experience in environmental science, project management and program management. He has extensive experience with Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) processes and regulatory agencies. His experience includes Program/Project Management involving more than 100 DOD sites, development of sampling plans for DOE sites, and radiation waste characterization, pollutant migration modeling, and cost/risk assessment in support of USEPA's Office of Radiation Standards for disposal of radioactive waste.

Mr. Lachajczyk has overall responsibility for ensuring that the project meets USACE's project objectives and Maxim's quality standards. In addition, as Project Manager for this Delivery Order, he is responsible for technical quality control and project oversight, and will provide the Site Manager with access to corporate management.

Mr. Lachajczyk is responsible for implementing the project and has the authority to commit the resources necessary to meet project objectives and requirements. The Project Manager's primary function is to ensure that technical, financial, and scheduling objectives are achieved successfully. The Project Manager will report directly to the USACE Project Manager and will provide the major point of contact and control for matters concerning the project. The Project Manager will:

- Define project objectives and develop a detailed work plan schedule;
- Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task;
- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule constraints;
- · Orient all field leaders and support staff concerning the project's special considerations;
- Monitor and direct the field leaders;
- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product;
- · Review the work performed on each task to ensure quality, responsiveness, and timeliness;
- Review and analyze overall task performance with respect to planned requirements and authorizations;
- Approve all external reports (deliverables) before their submission;

- · Ultimately responsible for the preparation and quality of interim and final reports;
- · Represent the project team at progress meetings;
- · Develop solutions to problems of particular difficulty;
- · Communicate with the USACE's Project Manager;
- · Coordinate with federal and state agencies, following approval from the USACE Project Manager, concerning scheduled activities and regulatory criteria;
- Maintain daily contact with Site Manager during field operations;
- Notify USACE concerning the status of the project schedule;
- Resolve problems, interpret the Scope of Work, submit monthly schedule changes, progress reports, and pertinent written and telephonic communications;
- · Develop subcontract agreements;
- · Communicate with USACE concerning modifications to the delivery order, and;
- Supervise preparation of the engineering report of results and the presentation of results to the USACE.

3.7 Field Leaders/Task Resource Managers

Numerous individuals will participate in the various RI tasks scheduled for the NFSS. A number of the individuals responsible for task assignments have more than ten years' experience in projects related to environmental science and/or engineering. Field Leaders/Task Resource Managers will:

- Review and identify pertinent regulations which govern the tasks identified;
- Review project reference documents which provide the basis for development of the investigation activities;
- Develop assumptions which provide the framework for the site characterization;
- · Identify project tools to be used for task activities identified above;
- Review calculations, logs, figures/drawings, and technical memoranda developed by project technical personnel, and;

Participate in review meetings and interface with other project team leaders to ensure interdisciplinary coordination of project issues.

3.8 Independent Technical Review (ITR) Committee

An independent technical review (ITR) committee of personnel affiliated with Maxim and SAIC will be established to review project work products prior to their submittal to the USACE. The ITR committee will consist of technical reviewers not directly involved with the preparation of the documents. However, each ITR committee member will be selected because of their technical expertise and/or familiarity with the NFSS.

The ITR committee will focus primarily on the work products conformance tot he assumptions and technical aspects of the project, not document quality control. Each reviewer will complete his review in accordance with the checklist provided in Exhibit 3-1. The independent reviews for each of the project work products will be performed by several individuals from the following ITR committee:

- Mr. Dennis Herzing, M.S., Professional Engineer (P.E.) Mr. Herzing is a civil/environmental engineer and has more than 25 years of experience in all aspects of RI/FS, proposed plan and records of decision, landfill design, industrial and municipal wastewater treatment systems and closure of RCRA hazardous waste storage facilities. He will review all plans, designs, reports, surveys, and assessments.
- Mr. Clyde Yancey, M.S., Professional Geologist (P.G.) Mr. Clyde Yancey has more than 20 years of environmental experience in all aspects of the CERCLA process at Uranium Mill Tailings Remedial Action (UMTRA) and DOE sites. He will review all plans, designs, reports, surveys, and assessments.
- Dr. Robert Tucker (SAIC), Ph.D., P.G., Senior Geologist Dr. Tucker has over 25 years of experience in hydrogeologic investigations and all aspects of the CERCLA/RCRA process at DOD, DOE and FUSRAP sites. His experience varies from development of project work plans and reports for hydrogeologic investigations to performing cost evaluations for proposed remedial actions. He is responsible for reviewing all health and safety and field-related documents.
- Mr. Steve L. McBride, B.S. (SAIC), Chemistry Mr. McBride possesses over 13 years of experience in the analytical QA/QC. He is experienced in laboratory operations, data validation, method development and development of Quality Assurance Project Plans at DOE at FUSRAP sites. He is responsible for reviewing all documents related to analytical and radiological quality control such as the QAPP, data reports, RI report, and all chemical and radiological surveys.
- Mr. Steve Passig (SAIC), Certified Health Physicist (CHP) Mr. Passig possesses 13 years of experience in all aspects of radiation health and safety for a number of radiological industries. He is experienced is radiation surveys and worker protection, development of Radiation Safety Plans

and evaluation of radio-chemical data for the protection of human health and the environment. Mr. Passig will review all documents associated with on-site radiation health and safety and assessments of human and ecological exposure to radiological contamination at the NFSS.

In general each member of the ITR committee will

- Review documents pertinent to their expertise as described above;
- Provide written comments and required actions to Maxim concerning omissions, inconsistencies, typographical and grammatical errors and other corrections requiring revisions:
- Review responses to comments and all action taken in response to comments;
- · Resolve any outstanding differences, and;
- Document independent review and resolution of comments.

Upon completion of the ITR, the reviewer will complete certification documentation similar to that illustrated in Exhibit 3-2.

SECTION 4

4.0 DESIGN TOOLS

The USACE's engineering regulation, ER 1110-1-12, Quality Management, provides the general policy and principles for improving the quality of the project's design product. This document was downloaded from the USACE's web site and used as the primary guidance in preparing this QCP. It appears that many of the design tools identified in this USACE document are more applicable to the preparation of the design plans and specifications. Therefore, Maxim elected to prepare a summary of each task and to identify the various project tools and/or resources which Maxim intends to use during the performance of the RI tasks specified in the SOW. However, should design tasks be added during the performance of the project, Maxim anticipates that the applicable "Quality Design Tools" identified in Appendix D of ER 1110-1-12, dated 1 Jun 93, will be utilized.

4.1 Task 1: Records Review and Evaluation

The various project personnel will review pertinent supporting documents to identify the relevant information which can be used to establish an overview of the site's history, geology, concentrations of radiological wastes and contaminants, and the stakeholder opinions and preferences. Data review will include, but not be limited to the Final Environmental Impact Statement (1986), the National Research Council Report (1995), the Failure Analysis Report (1994), the Evaluation Report on Remediation of the NFSS Residues (DOE, 1997), and all site Technical Memorandums (surveillance reports). Any reports and data which are being developed by the USACE will be reviewed as soon as they become available.

To date, Maxim has reviewed, summarized and catalogued approximately 500 technical documents related to NFSS. Pertinent sections of key documents have been scanned for digital access. The data base is summarized on CD.

Maxim personnel will review the list of documents identified in SOW along with the USEPA and/or Engineer Manual/Regulations cited by the Buffalo District. We will utilize one of our Internet connections to download potentially pertinent technology resources and applicable documents from the USACE's and/or other applicable Web sites as required.

In addition, Maxim maintains a large library which contains approximately 3,000 volumes of technical encyclopedias, handbooks and other reference materials, and subscribes to more than 90 professional journals. In addition, inter-library loans make available the resources of libraries nationwide. Maxim also accesses databases through computer networks and CD-ROM. Through subscriptions to professional journals, the *Federal Register, Environment Reporter*, and many state regulatory publications, Maxim's professionals keep up to date on the latest environmental regulations and regulatory requirements, and are able to obtain copies of specific regulations applicable to a particular project. The nationwide scope of our experience gives us familiarity with 40 CFR 260-270 (RCRA) regulations, 40 CFR 300 (CERCLA) regulations, 40 CFR 761 (TSCA), as well as the opportunity to work with many state regulatory agencies.

4.2 Task 2: Visual Site Inspection

Maxim will perform a visual walkover/inspection of the NFSS to locate wells, debris and/or evidence of contamination prior to the preparation of the project work plans. The aerial photography and topographic mapping previously performed by the Baltimore District Corps of Engineers will be furnished to Maxim in a computer format and will be used as the basis of the preparation of Maxim's updated Site Map. Survey data obtained during the visual inspection and subsequent site characterization will be incorporated into a project's "Site Map".

Maxim will utilize its Intergraph system with MicroStation and GIS systems software/hardware to update the previous site mapping. This system was checked by project personnel and confirmed to be fully compatible with the USACE Buffalo District's MicroStation 95, running on an Intel Windows NT 4.0 Platform, without any translation by the Corps. Global origin will be defined. The file format (file name) will be ".DGN". In addition, Maxim uses several fully-configured stations using the AutoCAD Ver. 14 and 2000 software with numerous enhancements.

4.3 Task 3: Landfill Survey

This task will be initiated by reviewing/compiling available USACE documents applicable to landfill disposal of the site's wastes. Maxim will then perform a nationwide survey to identify available landfills and obtain acceptance criteria for all landfills surveyed. Maxim's DaVinci e-Mail system may be utilized to transmit messages, communication and/or relevant documents during the execution of this task with prospective landfill participants. It is also anticipated that numerous telephone calls between Maxim and the landfill personnel will be carried out to discuss acceptance criteria.

This information will be used to prepare a narrative to summarize this landfill survey task. This activity will also be described in the RI Report.

4.4 Task 4: Identify ARARs

Maxim will initiate this task by contacting the NYSDEC and NYDOH to obtain a list of potential ARARs that may be applicable to NFSS. Other ARARs will be identified through further communication with the virtual team. Potential ARARs will be refined throughout the RI process. An initial list of ARARs will be presented in an appendix of the companion Quality Assurance Project Plan.

USEPA Region IX PRGs, accessed through the internet, will be tabulated to identify analytical requirements. This input will in turn be used to propose remedial action objectives and develop the preliminary identification of remedial alternatives.

4.5 Task 5: Data Summary and Data Needs Determination

Maxim will utilize the output of Task 1, Records Review and Evaluation, to prepare a summary of the existing data in a preliminary site conceptual model. This will be done to assess existing data sufficiency and identify additional dat requirements within the context of the SOW.

4.6 Task 6: Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP)

The FSP and QAPP will be prepared in accordance with the outline provided in the SOW. The FSP will follow the guidance contained in USACE publication entitled "Requirement for the Preparation of Sampling and Analysis Plans", EM-200-1-3, September 1994. The guidance for the preparation of the QAPP will also follow EM-200-1-3. The FSP and QAPP, which together constitute the Sampling and Analysis Plan, will be prepared using word processing software on our PC system network. This allows our Document Production Department to assemble the various sections of the plans prepared by the technical personnel into a complete hard-copy documents. The high quality outputs will be produced using our HP-compatible laser printers. Documents can also be provided in a variety of word processing formats, including Microsoft Word, on 3-1/2 inch disk or other electronic media, if desired by the Buffalo District.

4.7 Task 7: Specification and Acquisition of Field Data

The guidance contained in ER-1110-1-263, Chemical Data Quality Management for HTRW Activities will be utilized by Maxim during the performance of this task. Once the project work plans are approved, Maxim will use the procedures and techniques presented in the FSP to acquire the required field data.

4.8 Task 8: Interim Action Determination

Maxim examined Building 401 during the visual site inspection of Task 2. Based on the results of the visit and subsequent discussions with the Buffalo District Corps of Engineers, it was decided that Building 401 is structurally sound, therefore, alleviating the need for an Interim Action of the building at this time. However, Maxim will utilize the findings of the RI site investigations to assess whether or not interim remedial actions of other areas of the NFSS are warranted.

4.9 Task 9: Identify Remediation Areas and Volumes

Maxim will utilize the results of the visual inspection of Building 401 to assess the volumes of material requiring disposal. Volume estimates will be made for contamination within Building 401 along with the soils external to the building.

4.10 Task 10: Health, Safety and Radiation Protection Plan

Maxim's safety and health program will meet the requirements of 29 CFR 1919.120 (b). The Site Specific Health and Safety Plan (SSHP) to be prepared and submitted for this project will follow the guidance contained in Appendix B of USACE publication ER 385-1-92 and other appropriate requirements contained in ER 385-1-1 and ER 385-1-80. The SSHP will be prepared using word

processing software on our PC system network. This allows our Document Production Department to assemble the various sections of the plans prepared by the technical personnel into a complete hard-copy documents. The high quality outputs will be produced using our HP-compatible laser printers. Documents can also be provided in a variety of word processing formats, including Microsoft Word, on 3-1/2 inch disk or other electronic media, if desired by the Buffalo District.

4.11 Task 11: Quality Control Plan

The QCP was prepared in accordance with the outline provided in the SOW which follows guidance contained in ER 1110-1-12, Quality Management. The text of the QCP was prepared using word processing software on our PC system network. This allowed our Document Production Department to assemble the various sections of the plan prepared by the technical personnel into a complete hard-copy document. The high quality outputs were produced using our HP-compatible laser printers. Documents can also be provided in a variety of word processing formats, including Microsoft Word, on 3-1/2 inch disk or other electronic media, if desired by the Buffalo District.

4.12 Task 12: Community Relation and General Support

Maxim will assist the Buffalo District USACE as requested by providing information regarding site history, participating in public meetings, and preparing written material and displays, and other support. Maxim will also use its resources to assist the District by interfacing with regulatory agencies, government officials, other contractors and commercial vendors.

4.13 Task 13: Preparation of the RI Report

Maxim will utilize the outline contained in the SOW (see Attachment 1 - Appendix 4) along with the publication entitled "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" as the major guidance in preparing the RI Report of the NFSS. It is anticipated that the draft RI Report will consist of several volumes which will be provided to the USACE in 3-ring binders. The report text will be contained in Volume 1. Subsequent volumes are anticipated to include appendices for field notes/logs, site photographs and the analytical data packages. Eight (8) copies of the draft submittal will be sent to the Buffalo District Project Manager.

The draft RI Report will be prepared using word processing software on our PC system network. This allows our Document Production Department to assemble, format and spell-check the various sections of the text prepared by the various technical personnel in order to prepare a consistent/coordinated document. High quality outputs will be produced using our HP-compatible laser printers. The report can also be provided in a variety of word processing formats, including MicroSoft Word, on 3-1/2 inch disk or other electronic media, if desired by the Buffalo District.

Following resolution of the draft submittal comments, Maxim will prepare the final RI Report. As part of the final submittal, Maxim will furnish a paper reproducible full size "Site Map" (i.e. approximately $30" \times 42"$ format). Eight (8) copies of the final submittal will be sent to the Buffalo District Project Manager, Dr. Judith Leithner.

SECTION 5

5.0 SCHEDULING

Maxim's initial RI work on the Niagara Falls Storage Site (NFSS) project will be performed according to the schedule included in the Statement of Work, with the exception indicated. The project schedule includes several milestones including submittal of key deliverables along with several project meetings. Intervening factors outside Maxim's control such as extended review periods or unanticipated changes in the project scope may impact the project schedule.

Notice to Proceed (NTP) was issued by the USACE Buffalo District on **20 April 99.** The work associated with the first deliverable, the Fernald Paper, was started immediately and was submitted within approximately 40 days after NTP. The remaining 13 tasks will be performed during 1999 and into the year 2000. The final submission of the completed RI Report is scheduled for **November 2000.**

Interim project reviews by the USACE will take place after submittal of the draft work plans, and submittal of the draft and the final RI Reports. Several other agencies will also review the draft and final documents. The screening of review comments generated by these agencies will be coordinated by the USACE Buffalo District prior to transmittal to Maxim. In addition, periodic telephone conference calls will be conducted during the performance of this project between the USACE project representatives and Maxim personnel.

Maxim anticipates WAD 1 and 2 will be 90% complete by September 30, 1999, and 100% complete by October 31, 1999.

The Independent Technical Review (ITR), described in Section 3.8, is a key component of the QC process and will be undertaken following the submittal of the draft Work Plans and RI Report to the USACE and the completion of the internal checks.

The anticipated sequence of the major project activities is presented in Table 5-1. The current project schedule, a time-scale bar chart showing the relationship between the various task events, is provided in Table 5-2. The project schedule, updated monthly by the Maxim Project Manager, will provide the status of each task in terms of percent complete, scheduled date of completion, and the actual date of completion. The monthly progress/status reports will be submitted to the USACE Contracting Officer Representative along with the monthly billings.

SECTION 6

6.0 COST CONTROL

6.1 Documentation of Costs

Maxim's work on the RI for the NFSS is being performed on a cost-plus basis. Project cost including labor hours, overhead, profit, analytical costs, subcontractor fees and other expenses are recorded daily within Maxim's accounting system, COMPAS, and total project costs are updated monthly. The information is presented in a monthly report and invoiced to the Buffalo District, Corps of Engineers. Costs are monitored on a task-by-tasks basis compared to the task budget and are reported as a percent complete (See Exhibit 6-1). The invoice is submitted to the Buffalo District for approval. Total project costs will not exceed the budget estimate unless the Statement of Work is modified.

Monthly expenditures, cumulative billings and projections for future months will be tabulated and compared with scheduled costs in a table similar to the one presented in Table 6-1.

SECTION 7

7.0 CONSTRUCTION COST ESTIMATE CONTROL

Maxim's primary focus for this project is the performance of the various RI task activities. However, should the Corps request the preparation of a construction cost estimate during the performance of the SOW, it is anticipated that Maxim will utilize the Microcomputer-Aided Cost Engineering System (MCACES). This is an automated cost estimating program, used to develop the cost estimate and to present its output to the USACE. In addition, ER 415-345-42, Costs, Cost Estimating, and Reserves for Contingencies, will be used as guidance during the performance of any cost estimating tasks.

Quantity take-offs for each item (i.e. equipment, buildings, electrical, earthwork or decontamination/demolition) will be tabulated from design drawings along with the unit costs for the various cost factor components. The tabulated cost factors will be totaled to create the estimated capital and/or construction costs. This information will be established and verified through vendor contacts and use of standard indices to ensure the accuracy and integrity of the construction cost estimate.

SECTION 8

8.0 COMMUNICATIONS

This section describes the methods by which clear and accurate communications will be achieved within Maxim's organization, between Maxim and the US Army Corps of Engineers, Buffalo District. The section also describes the methods by which Maxim will submit requests for modifications to the Work, and how these modifications will be coordinated and documented.

8.1 Documentation

In accordance with the Statement of Work, several types of project documentation are required. A project file will be established and hard copies of each of the types of documentation will be maintained.

8.1.1 Telephone Correspondence

All of Maxim's functional team members are required to document all substantive telephone conversations and provide records of all written correspondence related to the project. Records of telephone discussions will be documented through email memoranda sent by Maxim to the individual involved in the telephone discussion. Copies of the e-mail will be sent to the Maxim Project Manager. These correspondence records will be maintained in the project file and supplied monthly by Maxim's Project Manager to the Corps of Engineers Project Manager, Dr. Judith Leithner, as part of the monthly progress report.

8.1.2 Written Correspondence

All of Maxim's functional team members are required to maintain records of all written correspondence related to the project. Maxim's Project Manager will be provided with a copy of all project correspondence. These correspondence records will be maintained in the project file and supplied monthly by Maxim's Project Manager to the Corps of Engineers Project Manager as part of the monthly progress report.

8.1.3 Progress Reports and Meetings

Maxim will conduct periodic telephone conference calls and review meetings in accordance with Section 10 of the Statement of Work.

8.1.3.1 Minutes of Meeting - The Maxim Project Manager or his designated representative is responsible for preparation of Minutes to all telephone or in person meetings which Maxim will participates. The minutes will be supplied within ten (10) working days after each meeting. Submittals will be supplied by e-mail, using MS-Word software.

8.1.4 Submittals

All project deliverables or other submittals will be sent by Maxim's Project Manager in the quantities defined in the Statement of Work to the Buffalo District Corps of Engineers Project Manager. All submittals will be accompanied by a letter of transmittal, such as the form shown in Exhibit 8-1.

8.1.5 Transmittal of Maxim's Submittals

The Corps of Engineers Project Manager will transmit the submittal to each reviewer, including appropriate Corps of Engineers personnel and Project Review Committee representatives, together with the Project Statement of Work. The USACE Project Manager will stipulate a due date on which all comments need to be submitted.

8.1.6 Comments

All comments concerning Maxim's work products will be forwarded by Corps of Engineers and Project Review Committee representatives to Maxim's Project Manager. The Corps of Engineers Project Manager will review the comments and will determine if they are warranted. If unwarranted, the comment will be resolved through communication between the Corps of Engineers Project Manager and the reviewer. If comments are warranted, they will be submitted by e-mail to Maxim's Project Manager at:

TLachajc.StLouis@Maximmail.com

in order to expedite their review and resolution. Hard copies of comments will be forwarded by fax and/or mail.

If necessary, the US Army Corps of Engineers will schedule a telephone conference involving Maxim and individual reviewer(s) in order to resolve issues which involve disagreement between Maxim and the reviewer.

8.1.7 Response to Comments

Maxim will submit a copy of response to all comments within 10 business days of their receipt by e-mail to the US Army Corps of Engineers Project Manager. Maxim will follow up with hard copies by mail or fax. Maxim will proceed with implementation of the response to comments after receipt of concurrence from the Buffalo District US Army Corp of Engineers Project Manager by e-Mail.

If necessary additional iterations of the Comment/Response to Comments procedures will take place until all comments are resolved.

8.1.8 Communication with the Adjacent Property Owner(s)

All communication with the owner(s) of the adjacent properties will be coordinated through the US Army Corps of Engineers Buffalo District Project Manager. With the Corps of Engineers permission, follow-up discussions may occur without direct Corps of Engineers involvement.

8.1.9 Requests for Information

All requests and transmittal of information from other COE District personnel, Virtual Team members, the USEPA, and/or the State of New York regulatory personnel will be coordinated through the US Army Corps of Engineers Project Manager. All original copies of documentation will be supplied to Buffalo District. In the case of routine exchange of information, the initial request will be coordinated through the US Army Corps of Engineers but follow-up exchange or discussion of information may proceed without the US Army Corps of Engineers Project Manager. Maxim will furnish the Corps of Engineer with a copy of all information obtained and documentation of all correspondence between Maxim and information sources.

8.1.10 Progress Reports and Invoices

Maxim will submit progress reports and invoices to the Contracting Officer Representative on a monthly basis. The Corps of Engineers Project Manager will review and approve the invoice as appropriate. The invoice will be submitted on a Form 93 and will include an estimate of the percent completeness of the progress.

The invoice will be submitted together with a progress report which includes the following:

- Task-by-task breakdown of the project, value of each task, estimate of percent complete of each task, and total value of work completed by task and in total to-date;
- Status of schedule and milestones achieved during the reporting period, and;
- · Summary of progress.

8.2 Project Modifications

Requests for Project Modifications will be submitted in writing by Maxim's Project Manager to the Corps of Engineers Project Manager. The request will indicate the nature of the required modification, provide the basis for Maxim's judgment that the proposed modification is not included in the existing scope of services, and provide justification concerning why the proposed modification is required.

Upon receipt of the request for modification, the Corps of Engineers Project Manager will determine if the modification is warranted. The Corps of Engineers will respond to Maxim's request. If necessary, a written proposal from Maxim concerning the cost of the modification will

- 3

be requested. The costs of the modification will be based on the labor, overhead, profit, established in the delivery order contract-negotiated expenses.

Maxim's proposals will be signed by an authorized representative.

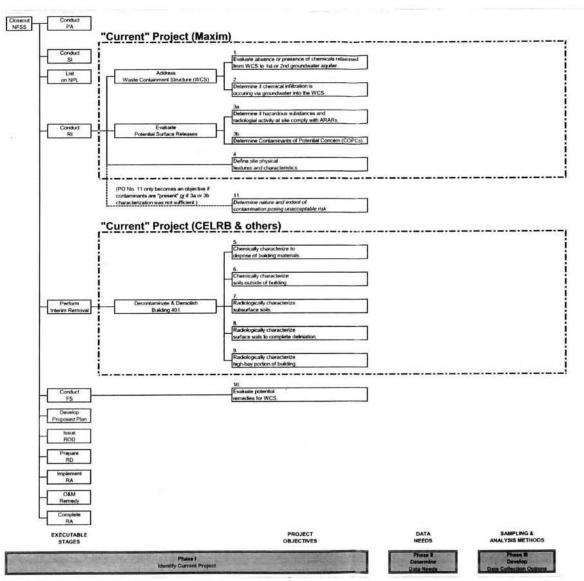
No work related to project modifications will proceed until written authorization from the Corps of Engineers is received.

8.3 Packaging and Marking

Project materials shall be suitable packaged in accordance with the Statement of Work.

Shipping labels shall be marked as follows:

US Army Corps of Engineer District, Buffalo Attention CELRB-PE-EE (Dr. Judith Leithner) Contract No. DACW 49-97-D-0001 Delivery Order No. 0012 1776 Niagara Street Buffalo NY 14207-3199



Primary Objectives for Collection Of Analytical Data at NFSS MAXIM TECHNOLOGIES INC.
PROJECT # 9905006 Figure # 1-1

Scale: N/A

Drawn by: DCJ

Date: 09-20-99 Checked by: TL

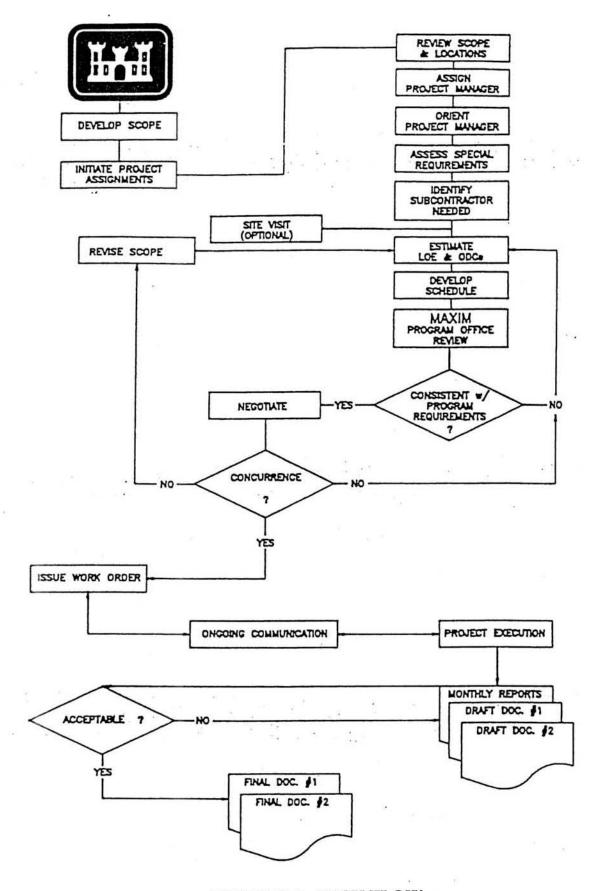


FIGURE 2-1 TASK FLOW

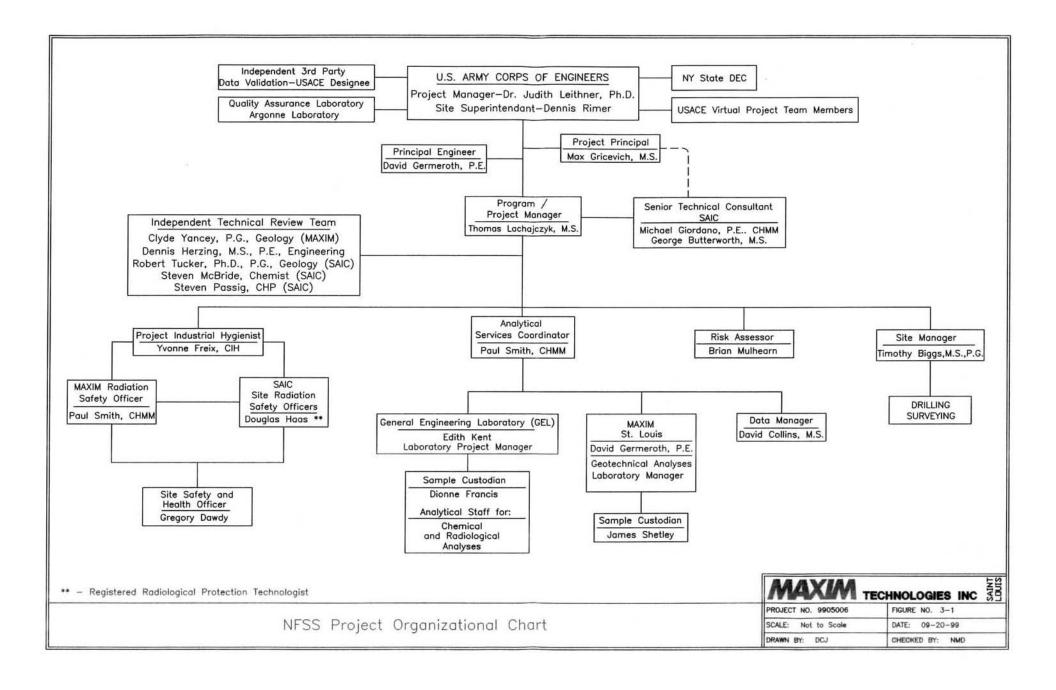


TABLE 3-1

LIST OF PARTICIPANTS: NFSS TECHNICAL PROJECT PLANNING WORKSHOP (Typed Reproduction of Sign-in sheet)

NAME	ORG	PHONE	PROJECT FUNCTION	FAX	E-MAIL ADDRESS
Debbie Howell	CELRB	(716) 879-4213	Environmental Engineer	(716) 879-4355	Debra.howell@usace.army.mil
Alan Warminski	CENAB	(410) 962-2179	Chemist, FUSRAP Virtual Team	(410) 962-4972	Alan.s.warminski@usace.army.mil
Alfred Kozminski	CELRB	(716) 879-4270	Chemist	(716) 879-4355	Alfred.c.kozminski@usace.army.mil
Ray Pilon	CELRB	(716) 879-4146	Project Manager	(716) 879-4355	Raymond.l.pilon@usace.army.mil
Joe Melnyk	CELRN	(615) 736-2637	Geologist/ Hydrogeologist	(615) 736-7676	Joseph.j.melnyk@lrn02.usace.army.mil
John Mitchell	NYSDEC	(518) 457-2225	FUSRAP Project Manager	(518) 457-8390	Jimitche@gw.dec.state.ny.us
Kent Johnson	NYSDEC	(518) 457-9253	Geology/Chemical support	(518) 457-9253	Kdjohnso@gw.dec.state.ny.us
Heidi Novotny	USACE HTRW-CX	(402) 697-2626	Technical Liaison Mgr. TPP POC Facilitator	(402) 697-2613	Heidi,l.novotny@usace.army.mil
Paul Smith	Maxim	(314) 426-0880	Chemist	(314) 426-4212	Psmith.stlouis@maximmail.com
Thomas Lachaczyk	Maxim	(314) 426-0880	Project Manager	(314) 426-4212	Tlachaic.stlouis@maximmail.com
Tim Biggs	Maxim	(314) 426-0880 ext. 3278	Geologist	(314) 426-4212	Tbiggs.stlouis.maximmail.com
Max Grincevich	Maxim	(314) 426-0880	Project Principal	(314) 426-4212	Mgrincevi stlouis@maximmail.com
David Brancato	CELRL	(502) 582-6765	Risk Assessor	(502) 582-5168	David.j.brancato@lrl02.usace.army.mil
Dan Logan	Maxim	(314) 426-0880	Project Engineer	(314) 426-4212	Dlogan.stlouis@maximmail.com
Anita Meyer	USACE HTRW-CX	(402) 697-2585	Risk Assessor & Facilitator	(402) 697-2595	Anita.k.meyer@usace.army.mil
Chris Hallam	CELRB	(716) 879-4171	Health Physicist	(716) 879-4355	Christopher.m.hallam@usace.anny.mil
Tony Cappella	CELRB	(716) 879-4173	Industrial Hygienist	(716) 870-4355	Anthony.f.cappella@usace.army.mil
Craig Willis	Black and Veatch	(913) 458-6656	TPP Facilitator	(913) 458-6633	Willisca@bv.com
Fred Boglione	CELRB	(716) 879-4190	Section Chief Environmental Eng. Section	(716) 879-4355	Fredrick.l.boglione@usace.army.mil
ludy Leithner	CELRB	(716) 879-4234	Project Engineer for Site	(716) 879-4355	Judith.s.leithner@usace.army.mil
Mike Giordano	SAIC (Maxim Subcontr.)	(513) 659-1900	Env. Engineer & PM for SAIC	(513) 923-2599	Giordanom@saic.com

SEQ	TABLE 5-1 UENCE OF ACTIVITIES	
Deliverable	Due Date (time in calendar days)	Completed/Due
Fernald Paper	30 days from notice to proceed (NTP)	May, 1999
Task 1: Records Review	30 days from NTP	90% Complete July 13, 1999
Task 2: Visual Site Inspection and Preparation of Drawings	VSI 15 days from NTP / dwgs 75 days from NTP	Site Inspection Complete July 16, 1999
Draft Work Plans Including outline for QCP, SSHP, RPP, and format for fate and transport analysis model	75 days from NTP	July 26, 1999
Final Work Plans Including outline for QCP, SSHP, RPP, and format for fate and transport analysis model	15 days from receipt of comments	
Task 3: Landfill Survey	45 days from AWP	
Task 4: ARARs	30 days from AWP	
Task 5: Data Needs Determination	40 days from AWP	
Task 6: FSP/QAPP	50 days from AWP	
Task 7a: Begin Field Work	60 days from approval of work plans (AWP); Hours dependent upon fieldwork needs	
Task 7a: End Field Work	8 months from start of field work	
Task 8: Interim Action Determination	60 days from AWP	
Task 9: Identify Remedial Areas and Volumes	45 days from end of field work	
Task 10: SSHP/Radiation Protection Plan	Part of Work Plan	
Task 11: QCP/ITR	75 days from NTP	
Task 12: Community Relations/General Support	Ongoing	
Task 13: Preparation of RI/FS Draft Report (Includes fate and transport analysis/model and human risk assessment)	6 months from receipt of field data	
Task 13a: Receive Comments on Draft Report	30 days from issue of report	
Task 13b: Preparation of RI/FS Final Report	15 days from end of comment period	
Task 14: Prepare Proposed Plan (PP)	15 days from approval of final RI/FS Report	
Task 15: Provide PP Public Meeting Support, Responsiveness summary and Draft ROD	60 days from issuance of proposed plan	

TABLE 5-2

NIAGARA FALLS Tasks/Man-hours by Month

			1	999 (Mar	n-Hours)							2000 (Ma	n-Hours)			
Task	M_	J	J	A	S	0	N	D	J	F	M	Α_	M	J	J	A
1. Records Review	1	2052														
Site Inspection/Drawings			224			_1										
3. Landfill Survey			L		213											
4. ARARs			L		364		_1									
5. Data Needs Determination			L		1630											
5. FSP/QAAP		141-2		712												
7. Field Work*						_		10,783*	<u> </u>							
Interim Action Plans			L	552												
 I.D. Remedial Areas* and Volumes 													268*	1		
0. SSHP/Rad Protection Plans	1		280		_1	-										
1. QCP/ITR	1			348		_1										
2. Community Re.							552									
3. RI/FS*													1	4,170	•	
Not yet authorized.																

Maxim Technologies, Inc.

Karen/C:\Maxim/Projects/990500@QCP

TABLE 6-1

NFSS FUSRAP RI MONTHLY MAXIM COST ESTIMATE FOR MONTH ENDING JUNE 99

MONTH	ACTUALS/PROJECTIONS END MONTH	CURRENT PROJECTIONS CUMULATIVE
Apr-99	\$11,883.12	\$11,883.12
May-99	\$67,984.57	\$79,867.69
Jun-99	\$82,136.85	\$162,004.54
Jul-99	\$145,000.00	\$307,004.54
Aug-99	\$145,000.00	\$452,004.54
Sep-99	\$145,000.00	\$597,004.54
Oct-99	\$73,200.00	\$670,204.54
Nov-99		
Dec-99		
TOTAL:	\$670,204.54	

EXHIBITS



Maxim Quality Manual

Doc No.: MQM-TC

Revision: 1

Date: August 1, 1998

Page: 1 of 1

Title

Table of Contents

TABLE OF CONTENTS

D	Introduction/Scope
ii)	Quality Policy
1)	Management and Organization
2)	Quality System
3)	Document Control
4)	Training and Qualification
5)	Methodology
6)	Contract Review
7)	Procurement
8)	Design Control
9)	Quality Control
10)	Test Item Traceability
11)	Control of Measuring and Test Equipment
12)	Nonconformance Control
13)	Data and Reports
14)	Quality System Assessment
15)	Corrective/Preventive Action
16)	Customer Satisfaction
17)	Continuous Improvement
18)	Quality Records
19)	Ethics

Appendix A Quality System Organization



MAIN OBJECTIVE: Establish and implement a uniform corporate quality system supporting operations which will reduce cost and risk, while improving the quality of services and customer relations.

APPLICATION: The quality system structure maintains continuity of commitment to the quality process (quality policies and objectives) throughout the organization, while allowing management the flexibility to implement the program at the department/project level to suit their operating and customers' needs.

Level	Documentation	Scope	Basis	Responsibility
1 .	Quality Policy	Corporate Business Philosophy	Executive Management Commitment	President, CEO
ż	Maxim Quality Manual	Corporate Quality Policies & Objectives	Continuous Improvement Customer Focus Problem Prevention	Executive Management Quality Director
2+	Standard Quality Policies	Chemical Laboratories Quality System Standards	 Maxim Quality Manual Chemistry Quality Requirements 	Chemistry/IH Laboratory Management Quality Director
		Quality Procedures (QPs) for quality s	ystem administration and operations	
31	Quality Assurance Plans (QAPs)	Discipline/Location specific Quality Policy Implementation	Maxim Quality Manual Quality Standard	Quality Director/Team (formulate) Department/Project Mgr (implement)
4	Std. Operating Procedures Work Instructions (SOPs)	Department Project function specific	Code/Standard/Regulation /Method	Operator (formulate) Manager (approve) QA Representative (monitor & verify)

Project specific Quality (Assurance) Management Plans addressed on an individual basis.

EXHIBIT 3-1

PROJECT DOCUMENTATION

1.0 General

- 1.1 There is an accurate description of the actions taken and the studies conducted.
- 1.2 There are clear statements of the SOW, project deliverables required, and assumptions.
- 1.1 All documentation is complete, with all appendices present.
- 1.2 All documentation is organized logically and is consistent with the Table of Contents.
- 1.3 All comments have been addressed as indicated in the responses.
- 1.4 The purpose of each Document and each Section of the documentation is clearly stated and the stated purpose has been met.
- 1.5 All special or unusual project features are discussed in the project report.
- 1.6 References are clearly indicated and properly referenced in the report.
- 1.7 Geotechnical, hydrologic, and other pertinent features and/or analyses have been prepared and included.
- 1.8 Text has been prepared using word processing spell check system.
- 1.9 Titles of Tables, Figures, Appendices, Exhibits, Drawings, etc in Table of Contents match the titles as they appear elsewhere in the document.
- 1.10 Text has been proof-read and its content is grammatically correct, and organized in consistent paragraph labeling system. All pages are present.
- 1.11 Contract Number, Delivery Order Number, Client, Project Number are properly identified.
- 1.12 Binding and hole punched areas do not interfere with content of text or figures.
- 1.13 There is verification that conclusions can be derived from the data and results presented.
- 1.14 There is concurrence on the recommendations contained in the draft RI Report.
- 1.15 The work product conforms to the requirements defined in the Statement of Work.

When the Independent Technical Reviewer's recommendation conflict with the author's opinion, the issue will be raised sequentially to the Resource Manager, the Project Manager, and the

EXHIBIT 3-1 PROJECT DOCUMENTATION

(Continued)

Principal Engineer until such time that the issue is resolved.

2.0 Calculations

It is the policy of Maxim to have calculations prepared reviewed and checked prior to signature. Calculations include any computations produced through the use of computers.

- 2.1 The purposes of the policy are to:
- 2.1.1 Assure accuracy and conformance to quality objectives;
- 2.1.2 Provide a clear documentation which indicates conformity of design with the relevant codes and criteria of the project;
- 2.1.3 Provide design input for contract documents consistent with accepted engineering/ architectural practices and the function for which the facility is being designed, and;
- 2.1.4 Assure that the design approach is generally consistent with field conditions and that the project can be constructed in an economical and timely manner.
- 2.2 Content. The design calculations will contain the following:
- 2.2.1 Listing of assumptions of limitations which are to be consistent with furnished data or known field conditions:
- 2.2.2 There is ample discussion of the approach used for designing each item including the usage of appropriate formulae, theory and computer programs, consistent with good engineering or architectural principles, and;
- 2.2.3 Where appropriate, sketches of the finished design for the particular area of interest are available for future reference.

The design review will be conducted by making either an approximate independent design or a line-by-line check of the design calculations.

EXHIBIT 3-1 PROJECT DOCUMENTATION

(Continued)

- 2.3 The Independent Technical Reviewer will confirm that:
- 2.3.1 Appropriate engineering principles and codes have been complied with;
- 2.3.2 Appropriate documentation has been included in order to provide a complete design document:
- 2.3.3 All calculations, drawings, and specifications are consistent within themselves and also consistent with the Statement of Work for the project, and;
- 2.3.4 Design calculations are legible, clear, correct, and professionally done with all appropriate issues addressed.

The Independent Technical Review (ITR) personnel will review the assumptions and criteria upon which the design is based and be responsible for review of the content of the design calculations.

3.0 Design Drawings

It is Maxim's policy to have drawings prepared, reviewed, and checked prior to signature or approval.

- 3.1 Purpose. The purposes of this review process are:
- 3.1.1 Provide standard procedures for the preparation and review of drawings;
- 3.1.2 Establish a clear means of identifying all persons who have worked on each drawing;
- 3.1.3 Provide procedures for the preparation and review of standard drawings and specifications or typical details
- 3.1.4 Maintain a record of drawing revisions and control the distribution of all revisions to assure that the most recent approved revision is being used for the project
- 3.1.5 Revisions of drawings require the same review and approval as the original.
- 3.2 The ITR personnel will review the drawings and see that the following, as a minimum, have been checked.
- 3.2.1 All Figures and drawings have scale and north arrow, as appropriate. Size of site features is consistent with scale shown.

EXHIBIT 3-1 PROJECT DOCUMENTATION

(Continued)

- 3.2.2 Figures, drawings, and calculation sheets have been initialized as appropriate to identify person originating, checking, and approving each sheet.
- 3.2.3 Drawings are consistent and are based on the intended design and as shown in the calculations.
- 3.2.4 All key dimensions are verified.
- 3.2.5 All sections are properly labeled.
- 3.2.6 Drawing notes do not conflict.
- 3.2.7 All notes referencing a detail in another discipline's drawings refer accurately to specific details.
- 3.2.8 Items discussed have a backup calculation or complete discussion to justify conclusions.
- 3.2.9 Terminology is consistent.

EXHIBIT 3-2

INDEPENDENT TECHNICAL REVIEW CERTIFICATION SHEET FOR

Draft Final

Quality Control Plan

Remedial Investigation at the Niagara Falls Storage Site Niagara County, New York

Prepared by: Maxim Technologies, Inc. St. Louis, Missouri

I, the undersigned Independent Reviewer, have reviewed and submitted my comments on the Draft Quality Control Plan. All internal comments have been resolved and the Draft Final Document is ready for release to the government.

Independent Review	<u>Date</u>
(Signature)	
Reviewer's Name	

EXHIBIT 6-1

DOCUMENTATION OF COSTS

NIAGARA FALLS PROJECT BUFFALO, N.Y. DETAILED LISTING OF CHARGES - PROPOSES VS. ACTUAL - TASK ≠ 1

		PROPOSE		05/30/99 thru 06/26/99	ACTUAL CUMULATIVE	PERCENT
	RATE		34.00		- manual Strategies	
	400	HOURS	5		5	%
			0.00	0.00	0.00	0.00%
Program Manager	0.00	0	0.0000000000000000000000000000000000000	0.00	0.00	0.00%
Project Manager	0.00	0	0.00			9144.0
Senior Engineer	0.00	0	0.00	0.00	0.00	0.00%
Midlevel Engineer	0.00	0	0.00	0.00	0.00	0.00%
unior Engineer	0.00	0	0.00	0.00	0.00	0.00%
Engineering Technician	0.00	0	0.00	0.00	0.00	0.00%
Senior Scientist	0.00	0	0.00	0.00	0.00	0.00%
Vlid-level Scientist	0.00	0	0.00	0.00	0.00	0.00%
funior Scientist	0.00	0	0.00	0.00	0.00	0.00%
Cost Estimator	0.00	0	0.00	0.00	0.00	0.00%
Construction Manager	0.00	0	0.00	0.00	0.00	0.00%
Condituction Inspector	0.00	0	0.00	0.00	0.00	0.00%
Environmental Technician	0.00	0	0.00	0.00	0.00	0.00%
Industrial Hygienist	0.00	0	0.00	0.00	0.00	0.00%
I & S Officer	0.00	0	0.00	0.00	0.00	0.00%
Sr. CADD/Graphic Specialist	0.00	0	0.00	0.00	0.00	0.00%
Ir. CADD/Graphic Specialist	0.00	0	0.00	0.00	0.00	0.00%
Senior Geologist	0.00	0	0.00	0.00	0.00	0.00%
Mid-level Geologist	0.00	0	0.00	0.00	0.00	0.00%
lunior Geologist	0.00	0	0.00	0.00	0.00	0.00%
	0.00	0	0.00	0.00	0.00	0.00%
Clerical/Word Processing Project Administration	0.00	0	0.00	0.00	0.00	0.00%
Project Administration	0,00	u	0.00	0.00	0.00	0.00
TOTAL HOURS/DIRECT LABOR						
			200000	200		20000
TOTAL DIRECT LABOR COST			0.00	0.00	0.00	0.00%
OVERHEAD @	182%		0.00	0.00	0.00	0.00%
TOTAL LABOR COST			0.00	0.00	0.00	0.00%
TOTAL LABOR COST			0.00		0.00	0.00%
SUBCONTRACTOR			0.00	0.00	0.00	0.00%
ANALYTICAL			0.00	0.00	0.00	0.00%
PRINT/REPRO/COMPUTER/PHONE			0.00	0.00	0.00	0.00%
SUBSISTENCE			0.00	0.00	0.00	0.00%
MATERIALS AND SUPPLIES			0.00	0.00	0.00	0.00%
TRAVEL			0.00	0.00	0.00	0.00%
SHIPPING			0.00	0.00	0.00	0.00%
					0.00	0.00%
TOTAL DIRECT COSTS			0.00	0.00	0.00	0.00%
TOTAL LABOR & DIRECT COSTS			0.00	0.00	0.00	0.00%
FEE LABOR AND DIRECT COSTS	8%		0.00	0.00	0.00	0.00%
FEE SUBCONTRACTOR	5%		0.00	0.00	0.00	0.00%
Total Cost For Tosk Is			0.00	0.00	0.00	0.00%

EXHIBIT 6-1

DOCUMENTATION OF COSTS

NIAGONA PALLE PROJECT - BUPFALO, N.Y. BUMMARY OF EXPENSES That #1

	PROP	PROPOSES	1	-			-	Oeme	Ž	643629	Cernse Paried 853979 Sars 962639		Completion
Salcontrater	F			UNIT	CONT	COST (B)	E			TIME	T900	COST (B)	COST (B)
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Analyses													
Samples		1	0	8/8	5	30.00	•	6363		30.00	toes.	20.00	30.00
SUBTOTAL						\$8.00						\$1.00	\$0.00
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Reproduction-Cost per page		1	9 0	8.8	9060	80.00	•	5		20.00		80'08	10.00
Telephone Calls		4	0	20.00	6	\$0.00	•	est.		\$0.00	fi i	90'05	\$0.00
SUBTOTAL						\$0.00						\$8.00	90.06
Bubakennes													
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Plet Client Alberry		day.	0	20.00		20.00	_	i		\$110.00		39.00	20.00
Per Clem Circinnat		day	0	30,00		20.00		je d	0	1113.00		86.00	30.00
SUBTOTAL						***						8 8	\$0.00
Materials and Supplies													
		1	0	8 8	3	30.00		î		8	N	8 8	30.00
SUBTOTAL						8.8						8 8	20.00
Theresi													
Auto Bardai Declades Fuel/Cost car day		1	0	80.08	day	80.00		1	0	8 8	all a	20.00	90.00
Ay Fare St. Louis - Cindinasi RT		5	0	8	5	30.00		each		20.00	sact.	20.00	00'05
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Arr Pare 3t. Louis - Aberry, NY	0 0	5	9 (30,00	11	8 8		5		200	1000	0000	8 8
Tautharing	9 0	11	0 0	8	5	8 8	• •	1		20.00	11	8 8	30.00
SUBTOTAL						\$0.00						8 3	\$0.00
Shipping													
Overright Letters Postage	0.0	11	00	8 8	11	\$6.00	**	5 5	00	\$0.00 \$0.00	8 800 8 800 800	30.00	10.00 10.00
SUBTOTAL						\$0.00						80.08	80.00
TOTAL COST FOR TASK 1						\$0.00						8 18	80.00
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MAXIM TECHNOLOGIES INC. LETTER OF TRANSMITTAL

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QUALITY ASSURANCE INTERNAL ASSESSMENT CHECK LIST

MAXIM TECHNOLOGIES, INC. QUALITY ASSURANCE INTERNAL ASSESSMENT CHECKLIST

DEPARTMENT/OPERATION:	DATE:
LOCATION:	
REPRESENTATIVE(S)/TITLE:	
EVALUATOR(S):	
QA REQUIREMENT	RATING
QUALITY POLICY - Posted where easily observed by Associates and Customers	
1 MANAGEMENT AND ORGANIZATION	
1.1 Organization Chart Date:	
1.1.1 Technical Director	
1.1.2 Quality Assurance Coordinator/Representative:	
1.1.3 Alternate Technical Director & QA Coordinator Designated	
2 QUALITY SYSTEM	
2.1 Maxim Quality Manual (MQM) and Quality Procedures available & current	
2.2 Approved Maxim Quality Assurance Plan (QAP)	
2.2.1 Current - Date & Revision #:	
2.2.2 QAP Available to staff	
2.3 SOPs available and current	
2.4 Quality Standard(s) established for the organization's operations	
3 DOCUMENT CONTROL	
3.1 MQM & QPs - Correct holder and controlled copy receipt returned	
3.2 Distribution control of documents issued by the operation - QAPs/SOPs/Other	

3.2.1 Controlled copies issued as needed/appropriate

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QA REQUIREMENT	RATING
3.2.2 Uncontrolled copy recipients recorded	
3.2.3 Revision transmittal/distribution and replacement documented	
3.3 Superseded originals of controlled documents archived	
3.4 Controlled document security	
4 TRAINING & QUALIFICATION (See Qualification Files Worksheet)	
4.1 Resumes - Available, Current & suitable Format	
4.2 Job Descriptions Available	
4.3 Training Documented	
4.3.1 Orientation to Policies, Health & Safety	
4.3.2 Trained on MQM, Ethics, and Organization's QAP & Procedures	
4.3.3 Technical (Methods) Training	
4.3.4 Job Requirements - HazWopper, Right to Know, Trans. of HazMaterials	
4.3.5 Continuing Education	
4.4 Individual Certifications	
4.5 Signed Ethics Affirmation	
4.6 Position Medical/Physical Requirements	
4.7 Annual Manager review of associate proficiency	
5 METHODOLOGY	
5.1 Current Reference Methods Available	
5.2 SOPs available for modified procedures, sample handling & tracking and unique administrative functions	
5.3 SOPs and reference methods readily available to associate users	
5.3.1 SOP format and approval IAW established criteria	
5.3.2 SOPs current - Issued, revised or reviewed within the past 2 years	
5.4 Electronically generated/calculated data validated	

DATE	
	DATE

QA REQUIREMENT	RATING
5.5 Security measures used for access to/modification of electronic data files or computer hardware/software	
5.6 Appropriate methodology used for tests	
6 PROJECT SCOPE AND CONTRACT EVALUATION (See Project Worksheet) -	
6.1 Valid contract in place	
6.1.1 Documentation of rejected projects	
6.2 Customer given written notice of subcontracted work	
6.3 Contract/project revisions documented and customer approved	
6.4 Customer confidentiality maintained	
7 PROCUREMENT	
7.1 Quality Critical Items and Services identified	
7.2 Qualified suppliers identified for Quality Critical Items and Services	
7.3 Purchase Orders for Quality Critical Items and Services	
7.3.1 Items/services explicitly specified	
7.3.2 Restrictions/requirements stated & provided to supplier	
7.3.3 Approved supplier(s) used	
7.3.4 Quality Coordinator/Representative review and approval	
7.4 Subcontracted calibration and laboratory services approved IAW corporate QP	
7.5 Conformance of received items to PO specifications verified and documented	
8 ENGINEERING AND DESIGN CONTROL	
8.1 Written procedures established for the review and approval of engineering/ design work.	
8.2 Review and approval of engineering and/or design work is documented	
8.3 Changes to engineering/design work are reviewed, approved & documented	
9 QUALITY CONTROL	
9.1 Appropriate Quality Control techniques used	

E = Excellent A = Acceptable I = Improvement Needed U = Unacceptable N/A = Does Not Apply N/O Not Observed
Page 3 of 7

DEPARTMENT______ DATE_____

QA REQUIREMENT	RATING
9.1.1 Interlaboratory comparisons	
9.1.2 Replicate tests	
9.1.3 Retained sample retest	
9.1.4 Secondary reference standards	
9.1.5 Correlation of results with established characteristics	
9.1.6 Interim calibration verifications	
9.1.7 Other	
9.2 Proficiency Samples used	
9.2.1 Prompt corrective action initiated when results are out of acceptable range	
9.3 Data transfers and calculations verified	
9.4 Peer review of project results	
9.5 Quality control results statistically evaluated if feasible	
9.6 Quality control activities documented	
10 SAMPLE & TEST ITEM TRACEABILITY	
10.1 When applicable, sampling/subsampling conducted IAW written procedures	
10.2 Sample custody is documented from collection/receipt of a sample to disposition	
10.3 Samples are clearly labeled and assigned a unique identifier.	
10.4 Based on a receipt examination the customer is notified if sample/item does not correspond to shipment documents or appears to have been damaged.	
10.5 While testing is in process both sample and associated worksheets are clearly identified	
10.6 Samples/items are appropriately stored until disposition	
10.7 Sample/item disposition is documented	
11 CALIBRATION & MAINTENANCE OF EQUIPMENT/INSTRUMENTATION (See Calibration Worksheet(s))	
11.1 Master measurement and test equipment (MTE) list available & complete	

E = Excellent A = Acceptable I = Improvement Needed U = Unacceptable N/A = Does Not Apply N/O Not Observed
Page 4 of 7

DEPARTMENT____

DATE

QA REQUIREMENT	RATING
11.2 MTE calibration schedule established & consistent with defined intervals	
11.3 MTE calibrations performed per schedule	
11.4 MTE calibrations performed by approved calibration service	
11.5 MTE calibrations traceability to nationally recognized standards	
11.6 MTE red tagged when out of calibration or if repair is required	
11.7 MTE calibration status documented with an unbroken record	
11.8 MTE maintenance performed per schedule with records available	
11.9 MTE before calibration reading review for out of tolerance conditions	
11.9.1 Immediate corrective action initiated if before calibration readings are found to be out of tolerance	
12 NONCONFORMANCE CONTROL	
12.1 Identification of nonconformances at the lowest possible level encouraged	
12.2 Appropriate corrective action procedures promptly initiated when nonconformances have been identified.	
12.3 Immediate action is taken to prevent use of nonconforming materials or instruments or the release of nonconforming work.	
12.4 Nonconformances and associated corrective actions are documented.	
13 DATA AND REPORTS (See Project File Worksheet)	
13.1 Report contains all required information in accordance with the QAP or specific standard/criteria document(s)	
13.2 Report, as feasible, meets the customer's needs	
13.3 Amended or revised reports are clearly marked as such and file should establish the technical basis for the change made.	
13.4 Transmission of the report performed so as to preserve customer confidentiality especially if transmitted by facsimile.	
4 QUALITY SYSTEM ASSESSMENT	
14.1 Annual Management Review of Quality System conducted and documented	
14.1.1 Appropriate action taken to correct any reported annual review deficiencies	

E = Excellent A = Acceptable I = Improvement Needed U = Unacceptable N/A = Does Not Apply N/O Not Observed
Page 5 of 7

MAXIM TECHNOLOGIES, INC. INTERNAL ASSESSMENT

Attachment

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QA REQUIREMENT	RATING
14.2 Self audits conducted	
15 CORRECTIVE/PREVENTATIVE ACTION	
15.1 Potential/actual quality problems identified	
15.2 Problem root cause analyzed	
15.3 Action taken to remedy/eliminate root cause to prevent future problem occurrences	
15.4 Preventative/Corrective action(s) promptly implemented	
15.5 Verification that corrective action solved problem and eliminated the cause	13
15.6 Corrective actions for external assessments documented and implemented	
15.7 Corrective actions for internal assessments documented and implemented	
15.8 Customer complaints responsively handled	
15.8.1 Receipt of customer complaints logged & appropriately reported	
15.8.2 Customer complaints thoroughly investigated	
15.8.3 Customer notified of complaint resolution	
15.8.4 Customer complaint, investigation, and resolution documented	
16 CUSTOMER SATISFACTION	
16.1 Customer needs determined	
16.2 Customer accessibility to associates is emphasized	
16.3 Customer satisfaction plan has been developed	
16.4 Customer satisfaction measured	
16.4.1 Satisfaction measures based on characteristics important to the customer	
16.5 Customer feedback used to improve process and develop new services	
7 CONTINUOUS IMPROVEMENT	
17.1 A continuous improvement strategy has been developed	
17.2 Improvements are tracked using objective measures	
17.3 Measures indicate improvements are being achieved	

E = Excellent A = Acceptable I = Improvement Needed U = Unacceptable N/A = Does Not Apply N/O Not Observed
Page 6 of 7

MAXIM TECHNOLOGIES, INC. INTERNAL ASSESSMENT

Attachment

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DATE_

QA REQUIREMENT	RATING
18 QUALITY RECORDS (See Project File Worksheet)	
18.1 Project files complete with all data required to reconstruct reported values/conclusions	
18.1.1 Laboratory data permanent, complete, defendable and project traceable	
18.1.2 Complete record of customer correspondence available including work requested and all reports issued.	
18.2 Recent files are accessible, secure, and protected from damage or loss	
18.3 An accurate index of quality files is available	
18.4 Archived files (after a minimum of 1 year) are secure, protected and easily retrievable	
18.5 Quality records as necessary are available to support project files	
18.6 Computer files are periodically backed up	
18.7 Project files and supporting quality files are securely stored and retained for a minimum of ten years	
19 FACILITIES AND EQUIPMENT	
19.1 Facilities are adequate for tests conducted	
19.2 Appropriate equipment is available for tests conducted	
19.3 Adequate safety equipment is available and operational	
20 SCOPE OF SERVICES	
20.1 A comprehensive scope of services offered by the operation is available	
21 PROGRAM SPECIFIC CRITERIA	

RESPONSE TO ITR COMMENTS DRAFT QUALITY CONTROL PLAN

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP)

REMEDIAL INVESTIGATION AT THE NIAGARA FALLS STORAGE SITE NIAGARA COUNTY, NEW YORK

REVIEWER # 1: Mr. Dennis R. Herzing, P.E. Maxim Technologies, Inc.

1. COMMENT: Cover: Site location is given as Lewiston, New York. All

other project documents identify location as Niagara County, New York. Suggest revising QCP for

consistency.

RESPONSE: QCP cover revised to be consistent with other plans.

2. COMMENT: Page 4-2: Correct typos - see attached mark-up.

RESPONSE: Corrected typos as requested.

3. COMMENT: Page 5-1: Last paragraph references Table 5-1. No Table 5-1 is

included in the document.

RESPONSE: Table 5-1 included in revised document.

4. COMMENT: Misc.: No tabs are provided to locate Tables, Exhibits, or

Figures. Some of these items are either missing or out of order. There is a tab for an Attachment 3 but no attachment is included and I did not find any

reference to Attachment 3 in the text.

RESPONSE: Tabs will be provided for each component of the document and

Attachment 3 is the Response to Comments.

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP) (CONT.)

REVIEWER # 2: Mr. Clyde L. Yancey, P.G., Maxim Technologies, Inc.

- 1. COMMENT: Page ii: Introduction and Summary, second paragraph, items 1 & 2 suggested rewording:
 - 1. Preparation of a site conceptual model summarizing both historical data and site characterization data obtained during the additional field investigations of this SOW. The proposed additional field characterization tasks are based on uncertainties (data sufficiency) identified during the review and analysis of the historical data;
 - 2. Performance of a Fate and Transport Analysis, within the confines of the working site conceptual model, using the results of the outcome of the RI, and;

RESPONSE: Text revised as follows:

"The main objectives of this project effort are focused on the performance and documentation of the RI process which will culminate in the preparation of a RI Report. The RI Report will include:

- 1. Preparation of a site conceptual model summarizing both historical data and site characterization data obtained during the additional field investigations this SOW. The proposed additional field characterization tasks are based on uncertainties (data gaps) identified during the review and evaluation of the historical data, and;
- 2. Performance of a Baseline Risk Assessment.

The performance of a Fate and Transport Analysis is not part of the current work. However, it may be performed at a later date based on the results of the Baseline Risk Assessment and outcome of the RL."

2. COMMENT: Page 2-1: Section 2.1, second paragraph, second sentence: strike the first use of "required".

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP) (CONT.)

RESPONSE: Removed from text as requested.

3. COMMENT: Page 2-2: Section 2.1, bulleted list: might want to add a bullet

or reference stating that historical data was also evaluated to determine the necessary LOE. It's then clear that Maxim is including all previous activities at

the NFSS.

RESPONSE: Bulleted list revised as follows:

"Review of historical site data to estimate the necessary level of effort (LOE), materials and equipment required;"

4. COMMENT: Page 2-2: Section 2.1, fifth bullet: strike the word "both"

RESPONSE: Removed from text as requested.

5. COMMENT: Page 2-5: Section 2.4.2 – I realize that this document is for the

RI phase only, but if you identify any Interim Actions (including the demolition of Bldg. 401) to streamline the remediation approach, significant design work may by required. If so, 50% or 90% (or some other percentage) design reviews may be needed during development of *significant* design projects within the

scope of a RI Interim Measure.

RESPONSE: The first paragraph of this section was revised as follows:

"The Principal Engineer is responsible for the preparation of design calculations, the preparation of drawings or other technical documents as required to define the design of the project. Should any Interim Actions (i.e. including the demolition of Building 401) be required during the performance of this project, it is anticipated that preliminary submittals (i.e. 50%, 90% and/or some other percentage) of the design packages will be provided for US Army Corps of Engineers review."

6. COMMENT: Page 2-5: Section 2.4.2.1 – You might want to add a bullet stating that all calculations will be assigned a

3

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP) (CONT.)

project/file/etc number and filed and/or appended to the appropriate document.

RESPONSE: Sentence added to this Section as follows:

"It is the policy of Maxim to have design calculations prepared, reviewed and checked prior to signature. Design calculations include any design computations produced through the use of computers. All calculations will be assigned a Project File Number for tracking purposes and appended to the appropriate project work product. The purposes of this policy are to:"

7. COMMENT: Page 4-2: Section 4.2 – First paragraph, second sentence:

....previously performed by the Baltimore will

be 1/4 clarify "Baltimore"

RESPONSE: Sentence was edited by adding descriptors to the sentence as follows:

... "Baltimore District Corps of Engineers".

8. COMMENT: Page 4-2: Section 4.2, Second paragraph, fourth sentence, first

word: "Th" = "The"

RESPONSE: Word changed as requested.

9. COMMENT: Page 4-2: Section 4.5, suggested rewording: *Maxim will utilize*

the output of Task 1, Records Review and Evaluation, to prepare a summary of the existing data in a preliminary site conceptual model to assess existing data sufficiency and identify additional data

requirements within the content of the SOW.

RESPONSE: Section 4.5 reworded as suggested.

10. COMMENT: Page 4-3: Section 4.8 – Should you confine any Interim

Actions to Bldg. 41 alone? Some other opportunity

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP) (CONT.)

may present itself during the RI where an innovative solution could be employed to initiate additional remediation (streamlining). CERCLA is definitely more prescriptive than RCRA, but I would think that any negotiated innovative approach would be viewed by stakeholders as a plus.

RESPONSE: Section revised as follows:

"Maxim examined Building 401 during the visual site inspection of Task 2. Based on the results of the visit and subsequent discussions with the Buffalo District Corps of Engineers, it was decided that Building 401 is structurally sound, therefore, alleviating the need for an Interim Action of the building at this time. However, Maxim will utilize the findings of the RI site investigations to assess whether or not interim remedial actions of other areas of the NFSS are warranted."

- 11. COMMENT: General comments based on Appendix 3 guidelines.
 - A. <u>Design Tools</u> (item 4) The QCP addresses this item under "Project Tools," where you present the Tasks from the SOW. Somehow, you need to address the specifics called out in Appendix 3, Item 4 in this section, or provide a new section. They are in the text of the QCP at various other locations, but always best to "return the mail verbatim" to the senders. Scheduling software should be named somewhere.
 - 2. <u>Scheduling</u> (item 5) The Corps states *Clearly show the design review and correction periods scheduled prior to submittals.* Addressed somewhat in QCP text (Section 5), but not shown on Table 5-2. Based on experience, government agencies prefer very detailed schedule plots (more detail than what is shown in Table 5-2).
 - 3. <u>Construction Cost Estimate Control</u> (item 7) This is not addressed in the QCP. May be more important to FS activities, but should be addressed somewhere.

RESPONSE TO INDEPENDENT TECHNICAL REVIEW COMMENTS QUALITY CONTROL PLAN (QCP) (CONT.)

RESPONSE: Appendix 3 is specific guidance for a design project but is addressed

as follows:

A. <u>Design Tools</u> - Section 4. Project Tools will be changed to "*Design* Tools". In addition, the first paragraph will be edited to address the applicable Design Tools identified in Appendix 3 should any design activities be incorporated into the project at a later date.

- B. <u>Scheduling</u> Section 5. The Project Schedule, Table 5-2, is currently pending review and will incorporate the regulatory review comment/correction period following acceptance/approval of the Draft Final Work Plans.
- C. <u>Construction Cost Estimate Control</u> This item will be briefly addressed as Section 7 of the revised QCP.

12. COMMENT: Figure 3-1: The organization chart should show a Maxim

QA/QC manager high-up in the food chain.

RESPONSE: Figure changed as requested.

END

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