SITE SAFETY AND HEALTH PLAN ADDENDUM
PHASE II
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

August 2000
9905006

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PEER REVIEW
CERTIFICATION SHEET

REVISED DRAFT

SITE SAFETY AND HEALTH PLAN
ADDENDUM
PHASE II REMEDIAL INVESTIGATION (RI)
OF THE
NIAGARA FALLS STORAGE SITE
LEWISTON, NEW YORK

We, the undersigned plan preparer and Peer Reviewer, have reviewed and submitted our comments on the Draft Site Safety and Health Plan. All internal comments have been resolved and the Final Document is ready for release to the government.

Plan Preparation and Peer Reviewer

Greg Dawdy
Maxim Plan Preparation

8/18/00
Date

Mark Sievers
Maxim Peer Reviewer

9/21/00
Date

INDEPENDENT REVIEW
CERTIFICATION SHEET

REVISED DRAFT

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NIAGARA FALLS STORAGE SITE
LEWISTON, NEW YORK

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Independent Reviewer

Nancy Dickens

Nancy Dickens, PRG
Maxim Technologies, Inc.

8-21-00

Date

CERTIFIED INDUSTRIAL HYGIENIST'S STATEMENT OF REVIEW

The undersigned Certified Industrial Hygienist has reviewed and approved the Site Safety and Health Plan Addendum for the following project:

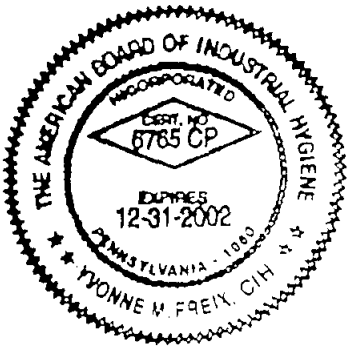
REMEDIAL INVESTIGATION OF THE NIAGARA FALLS STORAGE SITE
LEWISTON, NIAGARA COUNTY, NEW, YORK

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

August 2000

MAXIM TECHNOLOGIES, INC. PROJECT NO. 9905006-170

Yvonne Friex
Certified Industrial Hygienist
ABIH Certification Number 6765



LIST OF ACRONYMS/ABBREVIATIONS

AA	Atomic Absorption
ALARA	As Low As Reasonably Achievable
CHMM	Certified Industrial Hygienist
COR	Contracting Officer Representative
CRZ	Contaminant Reduction Zone
DAC	Derived Air Concentration
DI	Deionized
DOD	Department of Defense
EZ	Exclusion Zone
FSP	Field Sampling Plan
FUSRAP	Formerly Used Sites Remedial Action Program
GEL	General Engineering Laboratory
HNO_3	Nitric Acid
HP	Health Physicist
HTW	Hazardous and Toxic Waste
ID	Identification
IDW	Investigation Derived Waste
mg/kg	milligrams per kilogram (ppm)
mg/L	milligrams per liter (ppm)
nCi/g	nano curries per gram
NFSS	Niagara Falls Storage Site
P.E.	Professional Engineer
PAH	Polynuclear Aromatic Hydrocarbon
PCBs	Polychlorinated Biphenyls
pCi/g	Picosuries Per Gram
pCi/L	Picocuries Per Liter
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Ra	Radium
RAM	Radioactive Material
RCRA	Resource Conservation and Recovery Act
RDL	Reporting Limit
REC	Recovery (% rec)
RF	Response Factor
RI	Remedial Investigation
RPP	Radiation Protection Plan
RSO	Radiation Safety Officer

SM	Site Manager
SOP	Standard Operating Procedure
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SSHP	Site-Specific Safety and Health Plan
SZ	Support Zone
TCE	Trichloroethene
TEDE	Total Effective Dose Equivalent
Th	Thorium
TWA	Time Weight Average
U	Uranium
ug/L	micrograms per liter (ppb)
ug/kg	micrograms per kilogram (ppb)
UN	United Nations
USACE	U.S. Army Corps of Engineers
VOC	Volatile Organic Compound

DRAFT SITE SAFETY AND HEALTH PLAN ADDENDUM
NIAGARA FALLS STORAGE SITE
LEWISTON, NEW YORK

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SECTION 1

1.0 INTRODUCTION

This Site Safety and Health Plan Addendum (SSHPA) has been prepared by Maxim Technologies for the use in Phase II of the Remedial Investigation at the Niagara Falls Storage Site (NFSS) a Formerly Utilized Sites Remedial Action Program (FUSRAP) site located in the Township of Lewiston, Niagara Country in northwestern New York. The location of the NFSS is shown in Figure 1-1of the original SSHP.

The purposes of this addendum is to update changes to the project organization and responsibilities related to safety; establish standard operating procedures (SOPs) for preventing accidents, injuries and illnesses; identify hazards; specify personal protective equipment to be used at the site; identify personnel health and safety training requirements; summarize continuous monitoring techniques to be used; establish emergency procedures; describe medical surveillance programs in effect; ensure that appropriate first aid equipment is available; and provide for accident record keeping and safety inspections.

In addition to the general changes to practices and procedures identified in this addendum, project personnel are informed that their activities must comply with all applicable federal, state and local laws and health and safety requirements. The addendum and the original SSHP are in compliance with the U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM 385-1-1, revised 1996), the U.S. Army Corps of Engineers Safety and Occupational Health Requirements for Hazardous Waste Site Remedial Actions (ER-385-1-92), the Occupational Safety and Health Administration (OSHA) requirements (29 CFR 1910 and 1926, specifically 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response), the U.S. Environmental Protection Agency's (USEPA) hazardous waste requirements (40 CFR 260-270); New York State Code Rule 56. Asbestos Abatement; 10 CFR 20, Standards for Protection Against Radiation; and 49 CFR 172, Hazardous Materials.

This SSHPA has been prepared to address additional procedures that will be performed under Contract DACW49-97-D-0001, Delivery Order 0012.

1.1 Site Background Information/Setting

There are no changes to this section of the original SSHP.

SECTION 2

2.0 SCOPE AND OBJECTIVES

Maxim Technologies was contracted by the Buffalo District of the U.S. Army Corps of Engineers to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Niagara Falls Storage Site under the Formerly Utilized Site Remedial Action Program (FUSRAP). The following sections describe the scope of work to be performed and the objectives of the project.

2.1 Scope of Work Activities

The following additional activities which were not addressed in the original SSHP, which will be performed during Phase II of the RI and are addressed in this SSHPA are:

1) Gamma Walkover Surveys
2) Pavement Core Sample Collection
3) Clearing and Grubbing
4) Trenching

2.3 AREAS OF STUDY

Areas of study and types and location of sample collection are described in the Field Sampling Plan Addendum.

SECTION 3.0

3.0 HAZARD IDENTIFICATION AND RISK ANALYSIS

3.1 Preliminary Evaluation

Prior to preparation of this document, the Site Manager, Project Health and Safety Officer and the Radiation Protection Officer performed a preliminary evaluation of each study area. This evaluation includes the overall site characteristics, hazards associated with investigative tasks and identifies hazardous conditions. This evaluation will aid in the selection of appropriate employee protection methodologies and PPE. Evaluation of work site characteristics and hazards is an on-going process and will continue throughout the duration of the project.

Chemical and radiological contamination may be encountered in the areas of study during sampling activities. The primary physical hazards during this project are hazards associated with operation of the drill rigs, excavating equipment, clearing and grubbing equipment and other sampling equipment. Other physical hazards include: slip/trip/fall hazards in the form of uneven grades, ditches, culverts, animal burrows, brushy or overgrown areas of the site; wet, muddy, slick surfaces; and electrical hazards associated with above and below ground utilities and the use of a portable generators during some on-site activities.

Hazards associated with the investigative tasks described in the FSP Addendum are identified and addressed in the following sections of this Site Safety and Health Plan Addendum.

3.2 Hazard Identification

Hazards are identified so that site workers can be adequately protected. Emphasis is placed on identifying conditions that may cause death or serious harm and the protective measure implemented to avoid such hazards. All site workers must be diligent in identifying hazards in the work place and should bring them to the attention of supervisory personnel.

Physical hazards potentially present while conducting field operations at this site are: heavy equipment operation (drill rigs, excavating and clearing equipment) trenches, unsure footing, trip, slip, and fall; hot weather; equipment operations; and biological hazards.

Chemical hazards will include those associated with, or resulting from contacting impacted media in the form of soils, surface water and sediments during sampling activities, chemical preservatives used during the preservation of analytical samples, and decontamination fluids. Material Safety Data Sheets (MSDS) for chemical preservatives are found in Appendix A of the original SSHP.

Radiological hazards that pose a potential threat to on-site workers may also be present at the facility. These hazards have been identified and specifically addressed in the Radiation Protection Plan presented in Appendix A of this plan. Radiological safety information and procedures such as radiological contaminants of concern, radioactive material monitoring requirements, radworker

training, and radiation monitoring of personnel, equipment, sampled media and investigation derived waste are also discussed within this SSHPA.

A list of possible chemical and radiological hazards that may be encountered during this investigation is presented in Table 3- 1 of this SSHPA. Information included in this table includes: chemical name, Threshold Limit Value (TLV) and Permissible Exposure Limits (PEL) (if available), symptoms of exposure, route of exposure, media, action levels and work practice controls.

Hazards that are inherent to specific tasks will be discussed in Section 3.4 through 3.11. If additional hazards are identified during the performance of any task, additional protective measures will be implemented. A Site Activity Hazard Analysis has been performed, and is presented in Table 3-2 of this document.

It is anticipated that the field operations associated with this project will be conducted in the summer/fall of 2000.

3.3 Risk Analysis - Gamma Walkover Survey

Hazards identified have the potential to cause death or serious injury. Sampling operations are potentially dangerous and require strict adherence to safe practices and safety procedures. As additional hazards are identified, protective measures will be implemented.

3.3.1 Physical Hazards

3.3.1.1 Electrical Hazards

3.3.1.1.1 Above-Ground Utilities - Utilities of this type will not present a hazard during this task.

3.3.1.1.2 Underground Utilities - Utilities of this type will not present a hazard during this task.

3.3.1.1.3 Electrical Equipment - This hazard will not be present during this task. No electrical equipment will be used during the Gamma Walkover Survey task.

3.3.1.2 Fire – Areas in which gamma walkover surveys will be performed vary from well-maintained mown areas, to areas, which are over-grown with herbaceous plants, shrubs and trees. A fire hazard may be present when driving low profile vehicles equipped with catalytic converters in these areas.

3.3.1.3 Trip/Slip/Fall - On site workers may be exposed to these hazards while walking through brushy, overgrown, wet, muddy areas of the site.

3.3.1.4 Noise Hazards - No noise producing equipment will be used during this task.

3.3.1.5 Thermal Stress

3.3.1.5.1 Heat Stress/Stroke - The potential for heat stress at the site will be moderate to high depending upon the temperature at the time the field investigation is being performed. Daytime high temperatures exceeding 70° F increases the potential for heat related illnesses to occur. During the time of year the field sampling will be performed, the high temperature at the site may exceed 80 degrees Fahrenheit. These temperatures can subject site workers to conditions, which can contribute to an increased potential for heat stress/stroke during performance of on-site activities.

3.3.1.5.2 Cold Stress/Hypothermia - The potential for cold stress/hypothermia will be low based upon the average daily temperature range during the time of year this task will being performed.

3.3.1.6 Flying Debris - This hazard will not be present during this task.

3.3.1.7 Pinch/Puncture/Shear - These hazards may exist on support vehicles used during performance of this task.

3.3.2 Chemical Hazards

Due to the non-intrusive nature of this task, chemical hazards should not be encountered during this activity.

3.3.3 Biological Hazards

The personnel involved in activities at the site may be exposed to threats from biological hazards such as mosquitoes, ticks, spiders, rodents, and snakes. Mosquitoes are prevalent on the site and at least one bird infected with the West Nile Virus has been documented in Niagara County. Confirmed human cases have also been documented in Albany and Staten Island, New York. Irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar may be present in areas where this activity will occur.

Table 3-3,which is presented in the SSHP lists poisonous spiders and other animals and plants common to the work area.

3.3.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

Unexploded ordnance (UXO)/ordnance explosive waste (OEW) hazards are not expected to be encountered during this task.

3.3.5 Radiological Hazards

Soils in areas of the site which are outside of the Waste Containment Structure have previously been released by the Department of Energy using 5/15 pCi/g criteria (40CFR192) with a U-238 concentration limit of 75 pCi/g. Radiological hazards for any individual are not anticipated to

exceed a total effective dose equivalent of 100 mrem TEDE (USACE ALARA) during this investigation. The Radiation Protection Plan presented in Appendix A, details the methodologies that will be employed to monitor site workers, equipment, sampled media and investigation derived wastes.

3.4 Action Levels and Hazard Mitigation/Gamma Walkover Surveys

This section identifies action levels and mitigation methods that will be employed during gamma walkover survey activities. The action levels identify situations where specific protective equipment or engineering controls will be employed to reduce worker exposure and risk to specific hazards during this task. These action levels and mitigation methods are presented in Table 3-1 of this document.

3.4.1 Physical Hazards

3.4.1.1 Electrical Hazards

3.4.1.1.1 Above-Ground Utilities - These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.4.1.1.2 Underground Utilities - These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.4.1.1.3 Electrical Equipment -These hazards are not expected, therefore no action levels or hazard mitigation is required.

3.4.1.2 Fire - Caution will be used when driving low profile vehicles with catalytic converters in areas of tall, dry grasses. A fire extinguisher will be kept in all vehicles used on-site. Smoking will be allowed only in designated areas of the support zone near the job site trailer.

3.4.1.3 Trip/Slip/Fall - Each worker should be constantly aware of local conditions that would contribute to the increased risk of this hazard and immediately correct any such situation. On-site workers should exercise care when walking in areas of overgrown vegetation, debris, wet grass or mud during performance of work associated with this task. Good house keeping practices shall be used to prevent the on-site workers from tripping or falling on or over equipment used during this task.

3.4.1.4 Noise Hazards - These hazards are not expected to be present during these activities therefore, no action levels or hazard mitigation is required.

3.4.1.5 Thermal Stress

3.4.1.5.1 Heat Stress/Stroke - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from heat stress are presented in SOP 27 presented in Appendix C of

the SSHP. Workers should ensure adequate hydration measures are employed and reduce intake of caffeinated drinks such as colas, coffee and tea.

3.4.1.5.2 Cold Stress/Hypothermia - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from cold stress/hypothermia in SOP 27 presented in Appendix C of the SSHP.

3.4.1.6 Flying Debris -These hazards will not be present during this task therefore, no mitigation controls, monitoring or action levels are required.

3.4.1.7 Pinch/Puncture/Shear - Care should be exercised when entering and existing vehicles used during this task. Steel-toed, leather, work boots are required footwear for all on-site personnel to reduce the likelihood of foot injury. Care should be exercised when walking in areas of debris to avoid puncturing of foot wear.

3.4.2 Chemical Hazards

All work during this task will be performed in modified Level D that includes work clothes, steel-toed boots, chemically resistant overboots and safety glasses w/side shields. On-site workers involved in this task should be watchful for the presence of any odors or visible signs of chemical contamination while conducting gamma walkover survey activities.

3.4.3 Biological Hazards

Protective clothing such as tyveks, high boots and heavy gloves can help to minimize exposure to many of these biological hazards. Insect repellents containing the active ingredient, "DEET" or "Permethrin" will be used. These products will be used in a manner consistent with the manufacturer's label instructions. Insect – proof head nets will be supplied and worn by field personnel in situations where high numbers of biting insects are present.

Onsite workers will be required to wash their hands with an antibacterial soap or antibacterial gel prior to eating or drinking. Refer to SOP 27 in Appendix C of the SSHP for specific mitigation and preventative action to reduce the risk of worker injury from biological hazards.

3.4.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

These hazards are not expected to be encountered during this task; therefore, no action levels or hazard mitigation is required.

3.4.5 Radiological Hazards - All gamma walkover survey activities will be monitored by a HP Technician to ensure that radiological hazards, should they be encountered, do not pose a threat to on-site workers. Radiation exposures to workers and the public will be kept below regulatory limits and As Low as Reasonably Achievable (ALARA). Worker training requirements are specified in Section 5.0 of this document. Dosimetry that will be employed for monitoring the radiological

exposure of on-site workers is specified in Section 8.0 of this Addendum. Specific monitoring requirements for personnel, equipment, sampled media and IDW are presented in the RPP Addendum. The Radiation Protection Plan Addendum is presented in Appendix A of this document

3.5 Risk Analysis - Pavement Coring

Hazards identified have the potential to cause death or serious injury. Sampling operations are potentially dangerous and require strict adherence to safe practices and safety procedures. As additional hazards are identified, protective measures will be implemented.

3.5.1 Physical Hazards

3.5.1.1 Electrical Hazards

3.5.1.1.1 Above-Ground Utilities - Utilities of this type may present a hazard during this task.

3.5.1.1.2 Underground Utilities - Utilities of this type may present a hazard during this task.

3.5.1.1.3 Electrical Equipment - This hazard will not be present during this task. No electrical equipment will be used during the Pavement Coring task.

3.5.1.2 Fire – A fire hazard associated with the use of equipment powered by internal combustion engines will be present during this task.

3.5.1.3 Trip/Slip/Fall - On site workers may be exposed to these hazards during the performance of this task if the sampling areas are wet and/or muddy during the time of sample collection

3.5.1.4 Noise Hazards - The use of a drill rig to power coring equipment may expose on-site workers involved in this task to noise in excess of the 85 dB action level.

3.5.1.5 Thermal Stress

3.5.1.5.1 Heat Stress/Stroke - The potential for heat stress at the site will be moderate to high depending upon the temperature at the time the field investigation is being performed. Daytime high temperatures exceeding 70° F increases the potential for heat related illnesses to occur. During the time of year the field sampling will be performed, the high temperature at the site may exceed 80 degrees Fahrenheit. These temperatures can subject site workers to conditions that can contribute to an increased potential for heat stress/stroke during performance of on-site activities. Sampling personnel will be wearing Tyvek coveralls, overboots and gloves which will limit the body's ability to dissipate heat, thereby increasing the risk of heat related illnesses.

3.5.1.5.2 Cold Stress/Hypothermia - The potential for cold stress/hypothermia will be low based upon the average daily temperature range during the time of year this task will being performed.

3.5.1.6 Flying Debris - The use of coring equipment may cause small pieces of pavement to be mobilized and expose on-site workers to this hazard.

3.5.1.7 Pinch/Puncture/Shear - These hazards may exist on support vehicles, drill rigs and equipment used during performance of this task.

3.5.1.8 Drill Rig Hazards – Numerous physical hazards are present on drilling equipment that will be used during this task. These include entrainment of personnel by rotating pieces of the drilling equipment, stored hydraulic energy hazards, pinch shear hazards and hazards of backing over personnel during the movement of the equipment to and from sampling locations.

3.5.2 Chemical Hazards

The potential chemical hazards that could be encountered during on-site activities are presented in Table 3-1 of this addendum. During RI activities on the site, volatile organic compounds, nitroaromatics, heavy metals, petroleum and petroleum derivatives and radiological contaminants such as thorium, radium and radon gas could be encountered.

3.5.3 Biological Hazards

The personnel involved in activities at the site may be exposed to threats from biological hazards such as mosquitoes, ticks, spiders, rodents, and snakes. Mosquitoes are prevalent on the site and at least one bird infected with the West Nile Virus has been documented in Niagara County. Confirmed human cases have also been documented in Albany and Staten Island, New York. Irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar are not likely to be present in areas where this activity will occur.

Table 3-3 of the SSHP lists poisonous spiders and other animals and plants common to the work area.

3.5.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

Unexploded ordnance (UXO) is not expected to be encountered at this site. There has been no history of storage, use or disposal noted on those portions of the NFSS that will be investigated during the RI/FS. The former use of portions of the facility which are included in this investigation as a TNT manufacturing plant, specifically the Acid Production Area, increase the potential for encountering TNT and other nitroaromatic compounds in this area. Based upon analytical data from previous investigations, the presence of nitroaromatic compounds in explosive concentrations is not anticipated.

3.5.5 Radiological Hazards

Soils in areas of the site which are outside of the Waste Containment Structure have previously been released by the Department of Energy using 5/15 pCi/g criteria (40CFR192) with a U-238 concentration limit of 75 pCi/g. Radiological hazards for any individual are not anticipated to exceed a total effective dose equivalent of 100 mrem TEDE (USACE ALARA) during this investigation. The Radiation Protection Plan presented in Appendix A, details the methodologies that will be employed to monitor site workers, equipment, sampled media and investigation derived wastes.

3.6 Action Levels and Hazard Mitigation/Pavement Coring

This section identifies action levels and mitigation methods that will be employed during surface scan activities. The action levels identify situations where specific protective equipment or engineering controls will be employed to reduce worker exposure and risk to specific hazards during this task. These action levels and mitigation methods are presented in Table 3-1 of the original SSHP.

3.6.1 Physical Hazards

3.6.1.1 Electrical Hazards

3.6.1.1.1 Above-Ground Utilities - These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.6.1.1.2 Underground Utilities - Maxim's Site Manager will contact the New York one-call utility locator service (1-800-892-7962) and non-subscriber local utilities a minimum of seven days in advance of the anticipated sampling date so that the utility lines will be clearly marked prior to the initiation of intrusive site activities. Since the one-call service will only guarantee the utility delineations for a limited number of days, it will may be necessary to arrange for multiple utility clearances in order to identify utility locations at all sampling locations.

3.6.1.1.3 Electrical Equipment – These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.6.1.2 Fire – The drill rig and each support vehicle will be equipped with a fire extinguisher in the event of a fire.

3.6.1.3 Trip/Slip/Fall - Each worker should be constantly aware of local conditions that would contribute to the increased risk of this hazard and immediately correct any such situation. On-site workers should exercise care when walking in areas of overgrown vegetation, debris, wet grass or mud during performance of work associated with this task.

3.6.1.4 Noise Hazards - Hearing protection with a noise reduction rating of at least 20 dBA will

only be required when noise producing equipment with the potential to produce noise levels which approach the 85 dBA action level is used.

3.6.1.5 Thermal Stress

3.6.1.5.1 Heat Stress/Stroke Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from heat stress are presented in SOP 27 presented in Appendix C of the SSHP. Workers should ensure adequate hydration measures are employed and reduce intake of caffeinated drinks such as colas, coffee and tea.

3.6.1.5.2 Cold Stress/Hypothermia - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from cold stress/hypothermia in SOP 27 presented in Appendix C of the original SSHP.

3.6.1.6 Flying Debris –All on-site personnel are required to wear ANZI-approved safety glasses equipped with side shield at all times while on the NFSS site. The only areas of the NFSS where the wearing of safety glasses w/side shields is not required is the job/office trailer located on the facility or while personnel are completely inside a vehicle. Water will be used to control dust generated during coring activities. DI water will be applied using a garden sprayer to control the release of dust during coring operations.

3.6.1.7 Pinch/Puncture/Shear - Care should be exercised when entering and existing vehicles used during this task. Steel-toed leather work boots will be worn to reduce the likelihood of foot injury Care should be exercised when walking in areas of debris to avoid puncturing foot wear Personnel operating coring equipment should wear leather gloves in addition to chemically resistant gloves to afford additional protection to the hands. Hard hats will be required to be worn by all personnel within the exclusion zone that will be established at each coring location.

3.6.1.8 Drill Rig Hazards - The hazards mitigation for these hazards are detailed in SOP 2 presented in Appendix C of the original SSHP. Only trained employees will be allowed to operate the drilling equipment. Appropriate lockout/tagout procedures as presented in SOP 11 shall be employed during any equipment maintenance activities.

3.6.2 Chemical Hazards

The work ensemble will consist of Modified Level D PPE consisting of poly-coated Tyvek™ coveralls, steel-toed boots, rubber overboots and nitrile gloves (inner and outer), hard hat and safety glasses with side shields will be required for all sampling personnel. Full-faced air purifying respirators equipped with organic vapor/P100 filters will be on-hand in the event an up-grade to Level C is required.

During intrusive investigations, ambient air monitoring will be accomplished in accordance with SOP 4 "Exposure Monitoring during Sample Collection". The atmosphere in the work zone will be monitored during intrusive activities (i.e., drilling, pavement coring, and trenching) using a PID. If

monitoring indicates the presence of volatile organic compounds, colorimetric indicator tubes will be used in an attempt to identify these compounds If a PID indication of 100 ppm or greater is realized, explosive gas monitoring using a TMX 412 toxic gas meter or equivalent will be initiated If the Gastech GX-82 toxic gas meter exceeds the preset standards (10 % LEL, < 19.5 % or > 23.5 % O_2, hydrogen sulfide - 10 ppm, Carbon monoxide 10ppm) all work will stop and all personnel will move in an upwind direction away from the work area. After evaluating the data, the Site Safety and Health Officer (SSHO), in consultation with the Maxim CIH and USACE Site Manager, will decide on the proper action to protect all personnel. Work will continue only after proper respiratory protection has been donned. If safe work standards cannot be met, the safety officer will contact the project manager and USACE contracting officer for instructions. These monitoring requirements are also presented in Section 9 of this document. A list of environmental monitoring equipment is listed in SOP 4 and Table 9-1 of the SSHP.

3.6.3 Biological Hazards

Mitigation methods do not differ from those described in Section 3.4.3.

3.6.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

These hazards are not expected to be encountered during this task; therefore, no action levels or hazard mitigation is required.

3.6.5 Radiological Hazards - All sampling activities will be monitored by a HP Technician to ensure that radiological hazards, should they be encountered, do not pose a threat to on-site workers Radiation exposures to workers and the public will be kept below regulatory limits and As Low as Reasonably Achievable (ALARA). Worker training requirements are specified in Section 5.0 of this document. Dosimetry that will be employed for monitoring the radiological exposure of on-site workers is specified in Section 8.0 of this Addendum. Specific monitoring requirements for personnel, equipment, sampled media and IDW are presented in Section 9 of the RPP Addendum. The Radiation Protection Plan Addendum is presented in Appendix A of this document

3.7 Risk Analysis – Clearing and Grubbing

Areas of the site will be cleared of trees, shrub and herbaceous growth to facilitate the collection of soil samples, installation of groundwater monitoring wells and performance of gamma walkover survey activities. Hazards identified in the following sections have the potential to cause death or serious injury. Clearing and grubbing operations are potentially dangerous and require strict adherence to safe practices and safety procedures. As additional hazards are identified, protective measures will be implemented.

3.7.1 Physical Hazards

3.7.1.1 Electrical Hazards

3.7.1.1.1 Above-Ground Utilities - Utilities of this type are not present in the areas of the site in which clearing and grubbing activities will be conducted.

3.7.1.1.2 Underground Utilities - Utilities of this type may present a hazard during this task.

3.7.1.1.3 Electrical Equipment - This hazard will not be present during this task. No electrical equipment will be used during the clearing and grubbing task.

3.7.1.2 Fire – The areas of the site at which clearing and grubbing will be performed may be overgrown with tall grasses, scrub/scrub, and trees. A fire hazard associated with the use of equipment powered by internal combustion engines will be present during this task.

3.7.1.3 Trip/Slip/Fall - On site workers may be exposed to these hazards during the performance of this task if the sampling areas are wet and/or muddy during the time clearing or grubbing activities.

3.7.1.4 Noise Hazards - The use of a excavating equipment may expose on-site workers involved in this task to noise in excess of the 85 dB action level.

3.7.1.5 Thermal Stress

3.7.1.5.1 Heat Stress/Stroke - The potential for heat stress at the site will be moderate to high depending upon the temperature at the time the field investigation is being performed. Daytime high temperatures exceeding 70° F increases the potential for heat related illnesses to occur. During the time of year the field sampling will be performed, the high temperature at the site may exceed 80 degrees Fahrenheit. These temperatures can subject site workers to conditions that can contribute to an increased potential for heat stress/stroke during performance of on-site activities. Personnel will be wearing Tyvek coveralls, overboots and gloves which will limit the body's ability to dissipate heat, thereby increasing the risk of heat related illnesses.

3.7.1.5.2 Cold Stress/Hypothermia - The potential for cold stress/hypothermia will be low based upon the average daily temperature range during the time of year this task will being performed.

3.7.1.6 Flying Debris – During the clearing and grubbing activities, equipment may cause pieces soil, debris and trees to become mobilized and expose on-site workers to this hazard.

3.7.1.7 Pinch/Puncture/Shear - These hazards exist on support vehicles and excavating equipment used during performance of this task.

3.7.2 Chemical Hazards

The potential chemical hazards that could be encountered during on-site activities are presented in Table 3-1. During RI activities on the site, volatile organic compounds, nitroaromatics, heavy metals, petroleum and petroleum derivatives and radiological contaminants such as thorium, radium and radon gas could be encountered.

3.7.3 Biological Hazards

The personnel involved in activities at the site may be exposed to threats from biological hazards such as mosquitoes, ticks, spiders, rodents, and snakes. Mosquitoes are prevalent on the site and at least one bird infected with the West Nile Virus has been documented in Niagara County. Confirmed human cases have also been documented in Albany and Staten Island, New York. Irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar may be present in areas where this activity will occur.

Table 3-3 of the original SSHP lists poisonous spiders and other animals and plants common to the work area.

3.7.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

Unexploded ordnance (UXO) is not expected to be encountered at this site. There has been no history of storage, use or disposal noted on those portions of the NFSS that will be investigated during the RI/FS. The former use of portions of the facility which are included in this investigation as a TNT manufacturing plant, specifically the Acid Production Area, increase the potential for encountering TNT and other nitroaromatic compounds in this area. Based upon analytical data from previous investigations, the presence of nitroaromatic compounds in explosive concentrations is not anticipated.

3.7.5 Radiological Hazards

The historic use of the facility and the storage of radiological waste materials at the facility are described in Section 2 of the original SSHP. Soils in areas of the site which are outside of the Waste Containment Structure have previously been released by the Department of Energy using 5/15 pCi/g criteria (40CFR192) with a U-238 concentration limit of 75 pCi/g. Radiological hazards for any individual are not anticipated to exceed a total effective dose equivalent of 100 mrem TEDE (USACE ALARA) during this investigation. The Radiation Protection Plan Addendum presented in Appendix A details the methodologies that will be employed to monitor site workers, equipment, sampled media and investigation derived wastes.

3.8 Action Levels and Hazard Mitigation/Clearing and Grubbing

This section identifies action levels and mitigation methods that will be employed during clearing and grubbing activities. The action levels identify situations where specific protective equipment

or engineering controls will be employed to reduce worker exposure and risk to specific hazards during this task. These action levels and mitigation methods are presented in Table 3-1

3.8.1 Physical Hazards

3.8.1.1 Electrical Hazards

3.812.1.1.1 Above-Ground Utilities - These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.8.1.1.2 Underground Utilities - Maxim's Site Manager will contact the New York one call utility locator service (1-800-892-7962) and non-subscriber local utilities a minimum of seven days in advance of the anticipated sampling date so that the utility lines will be clearly marked prior to the initiation of intrusive site activities. Since the one-call service will only guarantee the utility delineations for a limited number of days, it will may be necessary to arrange for multiple utility clearances in order to identify utility locations at all sampling locations.

3.8.1.1.3 Electrical Equipment – No electrical equipment will be used during this task therefore no action levels or hazard mitigation are required.

3.8.1.2 Fire - Caution will be used when driving low profile vehicles with catalytic converters in tall, dry grasses and when operating gasoline or diesel powered equipment in areas of the site which large amounts of dry grass or woody vegetation. A fire extinguisher will be kept in all vehicles used on-site.

3.8.1.3 Trip/Slip/Fall - Each worker should be constantly aware of local conditions that would contribute to the increased risk of this hazard and immediately correct any such situation. On-site workers should exercise care when walking in areas of overgrown vegetation, debris, wet grass, downed trees or mud during performance of work associated with this task.

3.8.1.4 Noise Hazards – Hearing protection with a noise reduction rating of at least 29 dBA will only be required when noise producing equipment with the potential to produce noise levels which approach the 85 dBA action level is used.

3.8.1.5 Thermal Stress

3.8.1.5.1 Heat Stress/Stroke - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from heat stress are presented in SOP 27 presented in Appendix C of the SSHP. Workers should ensure adequate hydration measures are employed and reduce intake of caffeinated drinks such as colas, coffee and tea.

3.8.1.5.2 Cold Stress/Hypothermia - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from cold stress/hypothermia in SOP 27 presented in Appendix C of the original SSHP.

3.8.1.6 Flying Debris –All on-site personnel are required to wear ANZI-approved safety glasses equipped with side shield at all times while on the NFSS site. The only areas of the NFSS where the wearing of safety glasses w/side shields is not required is the job/office trailer located on the facility or while personnel are completely inside a vehicle.

3.8.1.7 Pinch/Puncture/Shear - Care should be exercised when entering and existing vehicles used during this task. Steel-toed leather work boots will be worn to reduce the likelihood of foot injury. Care should be exercised when walking in areas of debris to avoid puncturing foot wear. Personnel operating coring equipment should wear leather gloves to afford additional protection to the hands. Hard hats will be required to be worn by all personnel within the exclusion zone that will be established at each clearing and grubbing location.

3.8.2 Chemical Hazards

The work ensemble will consist of Modified Level D PPE consisting of poly-coated Tyvek™ coveralls, steel-toed boots, rubber overboots and nitrile gloves (inner and outer), hard hat and safety glasses with side shields will be required for all sampling personnel. Full-faced air purifying respirators equipped with organic vapor/P100 filters will be on-hand in the event an up-grade to Level C is required.

During intrusive investigations, ambient air monitoring will be accomplished in accordance with SOP 4 "Exposure Monitoring ". The atmosphere in the work zone will be monitored during intrusive activities (i.e., drilling, pavement coring, and trenching) using a PID. If monitoring indicates the presence of volatile organic compounds, colorimetric indicator tubes will be used in an attempt to identify these compounds If a PID indication of 100 ppm or greater is realized, explosive gas monitoring using a TMX 412 toxic gas meter or equivalent will be initiated. If the Gasteeh GX-82 toxic gas meter exceeds the preset standards (10 % LEL, < 19.5 % or > 23.5 % O_2, hydrogen sulfide - 10 ppm, Carbon monoxide 10ppm) all work will stop and all personnel will move in an upwind direction away from the work area. After evaluating the data, the Site Safety and Health Officer (SSHO), in consultation with the Maxim CIH and USACE Site Manager, will decide on the proper action to protect all personnel. Work will continue only after proper respiratory protection has been donned. If safe work standards cannot be met, the safety officer will contact the project manager and USACE contracting officer for instructions. These monitoring requirements are also presented in Section 9 of this document. A list of environmental monitoring equipment is listed in SOP 4 and Table 9-1 of the SSHP.

3.8.3 Biological Hazards

Mitigation methods do not differ from those described in Section 3.4.3.

3.8.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

These hazards are not expected to be encountered during this task; therefore, no action levels or

hazard mitigation is required.

3.8.5 Radiological Hazards - All sampling activities will be monitored by a HP Technician to ensure that radiological hazards, should they be encountered, do not pose a threat to on-site workers. Radiation exposures to workers and the public will be kept below regulatory limits and As Low as Reasonably Achievable (ALARA). Worker training requirements are specified in Section 5.0 of this document. Dosimetry that will be employed for monitoring the radiological exposure of on-site workers is specified in Section 8.0 of this Addendum. Specific monitoring requirements for personnel, equipment, sampled media and IDW are presented in the RPP Addendum. The Radiation Protection Plan Addendum is presented in Appendix A of this document.

3.9 Risk Analysis – Trenching

Hazards identified have the potential to cause death or serious injury. Treching operations are potentially dangerous and require strict adherence to safe practices and safety procedures. As additional hazards are identified, protective measures will be implemented.

3.9.1 Physical Hazards

3.9.1.1 Electrical Hazards

3.9.1.1.1 Above-Ground Utilities - Utilities of this type are not present in the areas of the site in which clearing and grubbing activities will be conducted.

3.9.1.1.2 Underground Utilities - Utilities of this type may present a hazard during this task.

3.9.1.1.3 Electrical Equipment - This hazard will not be present during this task. No electrical equipment will be used during the clearing and grubbing task.

3.9.1.2 Fire – The areas of the site at which trenching will be performed may be overgrown with tall grasses, scrub/scrub, and trees.

3.9.1.3 Trip/Slip/Fall - On site workers may be exposed to these hazards during the performance of this task due to the presence of open trenches and if the sampling areas are wet and or muddy during the trenching activities.

3.9.1.4 Noise Hazards - The use of a drill rig to power coring equipment may expose on-site workers involved in this task to noise in excess of the 85 dB action level.

3.9.1.5 Thermal Stress

3.9.1.5.1 Heat Stress/Stroke - The potential for heat stress at the site will be moderate to high depending upon the temperature at the time the field investigation is being performed. Daytime high temperatures exceeding 70° F increases the potential for heat related illnesses to occur. During the

time of year the field sampling will be performed, the high temperature at the site may exceed 80 degrees Fahrenheit. These temperatures can subject site workers to conditions that can contribute to an increased potential for heat stress/stroke during performance of on-site activities. Personnel will be wearing Tyvek coveralls, overboots and gloves which will limit the body's ability to dissipate heat, thereby increasing the risk of heat related illnesses.

3.9.1.5.2 Cold Stress/Hypothermia - The potential for cold stress/hypothermia will be low based upon the average daily temperature range during the time of year this task will being performed.

3.9.1.6 Flying Debris - The excavating equipment may cause pieces of debris, soil or other objects to be mobilized and expose on-site workers to this hazard.

3.9.1.7 Pinch/Puncture/Shear - These hazards may exist on support vehicles and equipment used during performance of this task.

3.9.1.8 Trench Hazards –The presence of open trenches may expose site workers working near trenches to additional hazards such as cave-ins that cause workers to be thrown or fall into the trench. Entry into the trenches is prohibited.

3.9.2 Chemical Hazards

The potential chemical hazards that could be encountered during on-site activities are presented in Table 3-1. During RI activities on the site, volatile organic compounds, nitroaromatics, heavy metals, petroleum and petroleum derivatives and radiological contaminants such as thorium, radium and radon gas could be encountered.

3.9.3 Biological Hazards

The personnel involved in activities at the site may be exposed to threats from biological hazards such as ticks, spiders, rodents, and snakes. Irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar are not likely to occur in the paved areas that will be sampled during this task.

Table 3-3 of the original SSHP lists poisonous spiders and other animals and plants common to the work area.

3.9.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

Unexploded ordnance (UXO) is not expected to be encountered at this site. There has been no history of storage, use or disposal noted on those portions of the NFSS that will be investigated during the RI/FS. The former use of portions of the facility which are included in this investigation as a TNT manufacturing plant, specifically the Acid Production Area, increase the potential for encountering TNT and other nitroaromatic compounds in this area. Based upon analytical data from previous investigations, the presence of nitroaromatic compounds in explosive concentrations is not anticipated.

3.9.5 Radiological Hazards

The historic use of the facility and the storage of radiological waste materials at the facility are described in Section 2 of the SSHP. Soils in areas of the site which are outside of the Waste Containment Structure have previously been released by the Department of Energy using 5/15 pCi/g criteria (40CFR192) with a U-238 concentration limit of 75 pCi/g. Radiological hazards for any individual are not anticipated to exceed a total effective dose equivalent of 100 mrem TEDE (USACE ALARA) during this investigation. The Radiation Protection Plan presented in Appendix A of the original SSHP, details the methodologies that will be employed to monitor site workers, equipment, sampled media and investigation derived wastes.

3.10 Action Levels and Hazard Mitigation/Trenching

This section identifies action levels and mitigation methods that will be employed trenching activities. The action levels identify situations where specific protective equipment or engineering controls will be employed to reduce worker exposure and risk to specific hazards during this task. The Activity Hazard Analysis is presented in Table 3-1.

3.10.1 Physical Hazards

3.10.1.1 Electrical Hazards

3.10.1.1.1 Above-Ground Utilities - These hazards are not expected to be present, therefore no action levels or hazard mitigation is required.

3.10.1.1.2 Underground Utilities - Maxim's Site Manager will contact the New York one-call utility locator service (1-800-892-7962) and non-subscriber local utilities a minimum of seven days in advance of the anticipated sampling date so that the utility lines will be clearly marked prior to the initiation of intrusive site activities. Since the one-call service will only guarantee the utility delineations for a limited number of days, it will may be necessary to arrange for multiple utility clearances in order to identify utility locations at all sampling locations.

3.10.1.1.3 Electrical Equipment – No electrical equipment will be used during this task therefore no action levels or hazard mitigation are required.

3.10.1.2 Fire - Caution will be used when driving low profile vehicles with catalytic converters in tall, dry grasses and when operating gasoline or diesel powered equipment in areas of the site which large amounts of dry grass or woody vegetation. A fire extinguisher will be kept in all vehicles used on-site.

3.10.1.3 Trip/Slip/Fall - Each worker should be constantly aware of local conditions that would contribute to the increased risk of this hazard and immediately correct any such situation. An exclusion zone will be established at each trenching location and this EZ will be delineated by the

use of yellow caution tape. No trenches will be allowed to remain open and unattended unless the trench is enclosed by high-visibility fencing installed in such a manner as to prevent entry into the trench area. On-site workers should exercise care when walking in areas of overgrown vegetation, debris, wet grass, downed trees or mud during performance of work associated with this task.

3.10.1.4 Noise Hazards - Hearing protection with a noise reduction rating of at least 29 dBA will only be required when noise producing equipment with the potential to produce noise levels which approach the 85 dBA action level is used.

3.10.1.5 Thermal Stress

3.10.1.5.1Heat Stress/Stroke - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from heat stress are presented in SOP 27 presented in Appendix C of the SSHP. Workers should ensure adequate hydration measures are employed and reduce intake of caffeinated drinks such as colas, coffee and tea.

3.10.1.5.2 Cold Stress/Hypothermia - Mitigation controls, monitoring protocols and action levels to prevent injury to site workers from cold stress/hypothermia in SOP 27 presented in Appendix C of the original SSHP.

3.10.1.6 Flying Debris –All on-site personnel are required to wear ANZI-approved safety glasses equipped with side shield at all times while on the NFSS site. The only areas of the NFSS where the wearing of safety glasses w/side shields is not required is the job/office trailer located on the facility or while personnel are completely inside a vehicle.

3.10.1.7 Pinch/Puncture/Shear - Care should be exercised when entering and existing vehicles used during this task. Steel-toed leather work boots will be worn to reduce the likelihood of foot injury. Care should be exercised when walking in areas of debris to avoid puncturing foot wear. Personnel operating equipment should wear leather gloves to afford additional protection to the hands. Hard hats will be required to be worn by all personnel within the exclusion zone that will be established at each coring location.

3.10.1.8 Trench Hazards - Material excavated will be placed a minimum of two feet back from the edge of the trench opening or a sufficient distance greater that two feet to prevent excessive loading on the face of the excavation. Objects such as boulders, tree stumps and large pieces of concrete or other rubble will be removed from the trench and piled in such a manner to prevent their movement.

3.10.2 Chemical Hazards

The work ensemble will consist of Modified Level D PPE consisting of poly-coated Tyvek™ coveralls, steel-toed boots, rubber overboots and nitrile gloves (inner and outer), hard hat and safety glasses with side shields will be required for all personnel working within the exclusion zone Full-faced air purifying respirators equipped with organic vapor/P100 filters will be on-hand in the event an up-grade to Level C is required.

During intrusive investigations, ambient air monitoring will be accomplished in accordance with SOP 2.0 "Exposure Monitoring during Sample Collection". The atmosphere in the work zone will be monitored during intrusive activities (i.e., drilling, pavement coring, and trenching) using a PID. If monitoring indicates the presence of volatile organic compounds, colorimetric indicator tubes will be used in an attempt to identify these compounds. If a PID indication of 100 ppm or greater is realized, explosive gas monitoring using a TMX 412 toxic gas meter or equivalent will be initiated. If the Gastech GX-82 toxic gas meter exceeds the preset standards (10 % LEL, < 19.5 % or > 23.5 % O_2, hydrogen sulfide - 10 ppm, Carbon monoxide 10ppm) all work will stop and all personnel will move in an upwind direction away from the work area. After evaluating the data, the Site Safety and Health Officer (SSHO), in consultation with the Maxim CIH and USACE Site Manager, will decide on the proper action to protect all personnel. Work will continue only after proper respiratory protection has been donned. If safe work standards cannot be met, the safety officer will contact the project manager and USACE contracting officer for instructions. These monitoring requirements are also presented in Section 9 of this document. A list of environmental monitoring equipment is listed in SOP 4 and Table 9-1 of the SSHP.

3.10.3 Biological Hazards

Mitigation methods do not differ from those described in Section 3.4.3.

3.10.4 Unexploded Ordnance(UXO)/Ordnance Explosive Waste (OEW)

These hazards are not expected to be encountered during this task; therefore, no action levels or hazard mitigation is required.

3.10.5 Radiological Hazards - All trenching activities will be monitored by an HP Technician to ensure that radiological hazards, should they be encountered, do not pose a threat to on-site workers. Radiation exposures to workers and the public will be kept below regulatory limits and As Low as Reasonably Achievable (ALARA). Worker training requirements are specified in Section 5.0 of this document. Dosimetry that will be employed for monitoring the radiological exposure of on-site workers is specified in Section 8.0 of this Addendum. Specific monitoring requirements for personnel, equipment, sampled media and IDW are presented in the RPP Addendum. The Radiation Protection Plan Addendum is presented in Appendix A of this document.

SECTION 4

4.0 PROJECT ORGANIZATION AND RESPONSIBILITY

Maxim Technologies, Inc. (Maxim) is performing the Remedial Investigation (RI) at the Niagara Falls Storage Site (NFSS) on behalf of the Buffalo District, U.S. Army Corps of Engineers (USACE) and has overall responsibility for all phases of the remedial investigation. Maxim will prepare project work plans, direct field investigations and provide project management and quality assurance functions. The various quality control and management responsibilities of key personnel are defined in the subsequent paragraphs of this section. A QA/QC Organizational Chart is included in Figure 2-1 of the QAPP.

Key project personnel are identified below.

4.1 Corps of Engineers Project Manager

Dr. Judith Leithner is the Project Manager for the USACE Buffalo District for this project. She has responsibility for review and approval of work plans and reports, tracking of status of the project schedule and budget, and coordination of oversight by other Buffalo District Technical Staff. In case of any problems, Dr. Leithner can be contacted at 716-879-4234 (e-mail address Judith.S.Leithner@USACE.army.mil). Requests from any third parties for any information concerning this project should be addressed to Dr. Leithner at the following address:

U.S. Army Corps of Engineers
Buffalo District
Attn: Dr. Judith Leithner
1776 Niagara Street
Buffalo, New York 14207-3199

Mr. Dennis Rimer will be the USACE Buffalo District Site Manager. The USACE Site Manager will oversee field activities for the USACE, and will have the authority to approve decisions made in the field.

4.2 Project Principals

Mr. Max Gricevich will serve as Project Principal. He is Manager of Maxim's St. Louis Science and Engineering Department.

The responsibilities of the Project Principal will include:

- Signatory authority and power to commit company resources to the overall execution of the contract;

- Review of subcontract agreements;
- Direct communication with the Buffalo District Project Manager if problems cannot be resolved through normal channels;
- Development of solutions to problems of particular difficulty;
- Responsibility for quality assurance audit of all aspects of the project; and
- Review and approval of project plans and reports prior to submittal.

4.3 Contractor Program Manager/Project Manager

Mr. Thomas Lachajczyk, Maxim's USACE Buffalo District Program Manager, has overall responsibility for ensuring that the project meets USACE Buffalo District'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 Buffalo District Corps of Engineers 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 - Buffalo District Project Manager, concerning scheduled activities and regulatory criteria;
- Maintain daily contact with Site Manager during field operations;
- Notify USACE, Buffalo District, 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.

4.4 Principal Engineer

Mr. Dave Germeroth, P.E., is the Principal Engineer. He will be available to review, approve and apply his Professional Engineer's seal to pertinent design documents when necessary.

4.5 SAIC Technical Services Coordinator

Mr. Mike Giordano is Technical Coordinator for SAIC participation in this project. His responsibilities include:

- Ensures that all required resources to be provided by SAIC are available on an as needed basis;
- Provides technical guidance and review for plans and reports;

- Provides assistance in identifying information sources, pertinent documents and first-hand knowledge of the site;

- Coordinates and supervises development of the Radiation Protection Plan by SAIC personnel;

- Coordinates scheduling of SAIC Health Physicists for field work; and

- Communicates problems anticipated and/or encountered during activities performed by SAIC to the Maxim Project Manager.

4.6 Certified Industrial Hygienist

Ms. Yvonne Freix, Certified Industrial Hygienist, will review and approve the Site Safety and Health Plan and supervise its implementation. She will advise concerning any upgrades or downgrades in the level of protection required for non-radiological contaminants.

4.7 Radiation Safety Officer

SAIC personnel monitor all locations and field activities for the presence of radioactive contamination. Mr. Douglas Haas will be the Radiation Safety Officer(s) (RSO) for this project. The Radiological Protection Plan is presented under separate cover. The following tasks are the responsibility of the RSOs:

- Conduct on-site training in radiation safety and radiation protection;

- Perform radiation level surveys of work areas;

- Monitor field activities and equipment related to field activities for the presence of radioactive contamination;

- Evaluate potential radioactive hazards and establish restricted areas if necessary;

- Coordinate with the Site Manager and Health and Safety Officer for implementation of the Site Safety and Health Plan (SSHP); and

- Direct the preparation and shipment of radioactive materials for shipment.

4.8 Site Safety and Health Officer

Depending on availability, scheduling and task requirements, the following individuals may be designated Site Safety and Health Officer (SSHO) or safety officer a field team involved in a specific task: Greg Dawdy ; Tim Biggs; Nancy Dickens; Dave Germeroth; Sonja Goen; Jim Richards; or Mark Sievers. The responsibilities of the SSHO include:

- Preparation and implementation of the SSHP;
- Assurance that all required safety equipment is available on-site;
- Coordination with the Radiation Safety Officer for implementation of the SSHP and the Radiation Safety Plan;
- Enforcement of use of proper safety equipment and implementation of other plan requirements on-site by employees and subcontractors and assurance that personal protective equipment is available for authorized government or other authorized official visitors;
- Revision of equipment requirements and procedures based on new information gathered during site inspection;
- Modification (upgrading or downgrading) of levels of personnel protection based on site observations;
- Determination and posting of locations of medical facilities, telephone numbers of emergency resources (police, fire, ambulance), and arranging emergency transportation to medical facilities (as required);
- Observation of work-party members for symptoms of exposure or stress;
- Arrangement for availability of on-site emergency medical care and first aid (as necessary);
- Preparation of accident or incident reports and submittal to the USACE;
- Coordination of specialized training, pre-investigation health and safety briefing, daily morning safety meetings, and post-investigation health and safety briefing;
- Implementation of on-site continuous monitoring for exposure to airborne contaminants. This also includes continuous monitoring of sampling activities for hazardous conditions;
- Collection of personal monitoring air samples, if necessary;
- Reference of all questions from the news media to the Corps' Project Manager, Dr Judith Leithner at telephone number (716) 879-4234, U.S. Corps of Engineers, Buffalo New York;
- Assistance to the Site Manager for preparation and shipment of samples in accordance with shipping regulations;
- Supervision of safety aspects of subsurface exploration;
- Designation of Site Manager as SSHO to administer duties identified above in case of

unavoidable absence from site;

- Preparation and shipment of equipment including preservatives in accordance with Department of Transportation regulations; and

- Implementation of a utility check and metal detector search prior to the initiation of sampling activities to clear subsurface exploration sites prior to initiation of drilling.

The SSHO has ultimate responsibility to cease any operations not in compliance with the approved policy or which could otherwise threaten the health or safety of on-site personnel or the general public, or which may cause significant adverse impact on the environment.

4.9 Site Manager

The Project Manager will be supported by the field team (Site Manager and SSHO). The Site Manager is responsible for leading and coordinating the day-to-day activities of the various resource specialists under his supervision. The Site Manager is an experienced environmental professional and will report directly to the Project Manager. Depending on the task requirements, one of the following individuals will be designated Site Manager for a given task: Tim Biggs, Nancy Dickens, Dave Germeroth, Sonja Goen, Dan Logan, Jim Richards or Mark Sievers. An experienced geologist or engineer will be designated Site Manager for all tasks pertaining to well installation, borehole excavation, and collection of geologic and hydrogeologic information.

Specific Site Manager responsibilities include:

- Provision of day-to-day coordination with the Project Manager on technical issues in specific areas of expertise;

- Development and implementation of field-related work plans, assurance of schedule compliance, and adherence to management-developed study requirements;

- Coordination and management of field staff;

- Implementation of QC for technical data provided by the field staff including field measurement data;

- Adherence to work schedules provided by the Project Manager;

- Authorship, review, and approval of text and graphics required for field team efforts;

- Coordination and oversight of technical efforts of subcontractors assisting the field team;

- Identification of problems at the field team level, discussion of resolutions with the USACE Site Manager, and provision of communication between team and upper management;

- Participation in the preparation of the final report;
- Communication with USACE representatives concerning scheduled activities
- Identification of sampling locations as specified in Field Sampling and Analysis Plan (FSAP);
- Coordination with the USACE , locator services, and utility companies to ensure subsurface exploration sites are cleared for possible presence of underground utilities;
- Submission of requests to the laboratory to supply sample containers for soil, sediment, and water samples;
- Supervision of the collection, labeling, preservation, packing, chain of custody, documentation, and proper shipment and transportation of sediment samples equipment blanks, and duplicates from the site to the project analytical laboratories;
- Supervision of all aspects of drilling, sampling and field testing activities;
- Maintenance of a daily written log and photo documentation of all field activities;
- Coordination with USACE to facilitate collection of split samples, if required
- Assistance to the SSHO and the Radiation Safety Officer in implementation of the SSHP and the Radiation Safety Plan; and
- Notification of Maxim's Project Manager and the USACE (Dr. Judith Leithner, 716/879-4234) concerning problems encountered during field activities.

4.10 Team Technical and Safety Leaders (Field Geologists / Environmental Scientists)

During Phase II, multiple field tasks will be conducted concurrently on-site with field geologists and environmental scientists providing technical and safety supervision for additional drilling and sampling activities. Field geologists/geotechnical engineers will be responsible for technical supervision of drilling and sampling activities and will be under the direction of the Site Manager Environmental scientists or geologists will provide safety monitoring for the team under the direction of the SSHO. Team leaders will be selected from the list of potential Site Managers (Section 4.9). Responsibilities for each member of the team include:

Team Technical Leaders:

- Coordination on a daily basis with the Site Manager;

- Compliance with all aspects of the FSAP and SSHP;
- Coordination and oversight of technical efforts of subcontractors assisting the team;
- Identification of problems and discussion of resolutions with the Site Manager;
- Identification of sampling and drilling locations as specified in the FSAP;
- Coordination with necessary parties to ensure subsurface exploration sites are cleared for possible presence of underground utilities;
- Supervision of the collection, labeling, preservation, packing, chain of custody, documentation, and proper transportation of sediment, soil, and surface water and groundwater samples from the site to the project analytical laboratory;
- Supervision of all aspects of drilling, sampling and field testing activities;
- Maintenance of a daily written log and photo documentation of all sampling and drilling activities;
- Assistance to the Team Safety Leader in implementation of the SSHP; and
- Notification of the Site Manager of any problems encountered during field activities

Team Safety Leader:

- Coordination on a daily basis with the SSHO and the Radiation Safety Officer;
- Compliance with all aspects of the SSHP and the Radiation Safety Plan;
- Enforcement of use of proper safety equipment and implementation of other plan requirements on-site by team members and subcontractors;
- Revision of equipment requirements and/or procedures based on new information gathered during site inspection;
- Modification (upgrading or downgrading) of levels of personnel protection based on site observations;
- Posting of locations of medical facilities, telephone numbers of emergency resources (police, fire ambulance), and arranging emergency transportation to medical facilities (as required).
- Observation of work-party members for symptoms of exposure or stress;

- Preparation of accident or incident reports and submittal to the USACE;
- Implementation of on-site continuous monitoring for exposure to airborne contaminants. This also includes continuous monitoring of sampling activities for hazardous conditions.
- Assistance to the Team Technical Leader in preparation and shipment of samples in accordance with shipping regulations;
- Supervision of safety aspects of drilling operations;
- Implementation of a utility check and metal detector search to clear subsurface exploration sites prior to initiation of drilling; and
- Designation of the Team Technical Leader as the Team Safety Leader to administer duties identified above in case of unavoidable absence from site.

SECTION 5

5.0 TRAINING

All training related to the performance of on-site activities will be completed in accordance with Maxim's SOP 3.0 "Accident Prevention, Training, and Medical Surveillance" presented in Appendix C of the original SSHP.

5.1 Comprehensive Health and Safety Indoctrination

At the onset of each phase of the project, the project personnel (including subcontractors) will be required to have read the Site Safety and Health Plan and sign the Statement of Understanding (Exhibit 5-1) attesting that they have read and understand the SSHP.

Prior to the initiation of each phase of the field operations, the Site Manager will review the Safety plan with all site personnel. They will be verbally informed of the known and possible hazards of working on this site and instructed on the proper safety procedures that they will be required to practice. All personnel will be instructed and trained in the proper use of all safety equipment and their limitations. All field personnel will be informed of relevant safety procedures and will be furnished with emergency telephone numbers.

All on-site personnel and visitors will be briefed on the potential physical and chemical hazards before they are allowed on site. These briefings will be documented in the site log, listing name, date, and subject.

5.2 Specialized Training - Maxim Personnel

All Maxim field personnel and supervisors have attended an OSHA required (29 CFR 1910.120) 40-hour training course for safety at hazardous materials sites, and are American Red Cross certified to administer First Aid and CPR. Maxim supervisory personnel have received OSHA required 8 hour training for "Hazardous Waste Site Supervision." In addition, all personnel have been trained in the use and limitations of respirators, and the use of personal protective equipment. Qualitative respirator fit testing is performed for all personnel prior to commencement of field activities. A summary of the health and safety training acquired by Maxim personnel is provided in Table 5-1. Copies of training certificates are presented in Appendix C.

5.3 Specialized Training - Subcontractors

All subcontract field personnel and supervisors who will be involved with on-site activities at the NFSS, have attended an have attended an OSHA required (29 CFR 1910.120) 40 hour training course for safety at hazardous materials sites. In addition, on-site personnel have been trained in the use and limitations of respirators, and the use of personal protective equipment. Qualitative respirator fit testing is performed for all personnel prior to commencement of field activities.

5.4 Site-Specific Training

At the beginning of on-site activities, all personnel will receive a site-specific briefing on th hazards, procedures and precautions for on-site operations, and emergency response protocol. Thi training will be documented in the bound site logbook.

5.4.1 Visitor Training

Any official visitor present during sampling activities shall present documentation that he/she ha received health and safety training and medical surveillance examination/certification equivalent t that required for on-site work. This includes 40-hour HAZWOPER training and 8 hour annua refresher training. In addition, the Site Safety and Health Officer shall give a short orientatio covering relevant information outlined above. The visitor shall also provide evidence of respirato fit testing and that an appropriate respirator is available in the event one is required.

5.4.2 Morning Safety Meetings

Daily "tailgate safety meetings" will be conducted on-site prior to any work activity. During thes meetings, personnel will be briefed and /or trained in various safety procedures and precautions t be used on-site to mitigate and reduce potential worker exposure to hazards. When there is modification in work activity or location or on-site personnel the daily safety meetings will b adjusted accordingly. These meetings will be documented on the form presented as Exhibit 5-2.

5.5 Radworker Training

Personnel who have the potential to receive 100 mrem TEDE in a year must be radworker trained as required by EM 385-1-1 Section 06.E.03 and 10 CFR 19. Although workers are not expected t receive 100 mrem/yr, initially, each individual will be radworker trained until the work area source term has been verified by field measurement. After the field measurements indicate that less than 10 mrem TEDE will be received by any individual, the Site Safety and Health Officer may discontinue requiring radworker training for additional site personnel

Radworker training will include at a minimum 4 hours of instruction in the following elements of radiation safety: health effects of ionizing radiation; exposure limits (including those for pregnant workers); use of dosimetry and instruments; effects of radiation on the embryo/fetus; employee rights and responsibilities; site contaminants and probability of exposure; required monitoring; and exposure control methods.

SECTION 6

6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The normal work uniform for this site will be Level D that will include: work clothes and/or coveralls, leather steel-toed work boots, and safety glasses with side shields.

During sampling operations which by the nature of the media being sampled do not have splash hazards, Modified Level D PPE consisting of Tyvek™ coveralls, steel-toed boots, rubber overboots and nitrile gloves (inner and outer), and safety glasses with side shields will be required for all sampling personnel. Full-faced air purifying respirators equipped with organic vapor/P100 filters will be on-hand in the event an up-grade to Level C is required. If a monitoring indicates that a hazardous situation or the possibility of exposure is encountered or anticipated at sampling locations, the SSHO in consultation with the Site Manager, RSO, the Maxim PM and the on-site USACE COR will evaluate the situation and upgrade the level of PPE as needed. If conditions are encountered that require a higher level of PPE than Level C, operations will cease and the COE and the Maxim program manager will be advised.

During sampling operations which by the nature of the media being sampled or inherent to the operation, do have splash hazards, Modified Level D PPE consisting of poly-coated Tyvek™ coveralls, chemically resistant steel-toed boots, or rubber overboots over leather steel toed work boots, nitrile gloves (inner and outer), safety glasses with side shields and face shields will be required for all sampling personnel. Full-faced air purifying respirators equipped with organic vapor/P100 filters will be on-hand in the event an up-grade to Level C is required. If monitoring indicates that a hazardous situation or the possibility of exposure is encountered or anticipated at sampling locations, the SSHO in consultation with the Site Manager, RSO and the PM and the on-site USACE COR will evaluate the situation and upgrade the level of PPE as needed. If conditions are encountered that require a higher level of PPE than Level C, operations will cease and the COE and the Maxim program manager will be advised.

All PPE will be kept in weather-proof containers. Prior to use, each piece of PPE will be inspected A list of personal protective equipment is presented in Table 6-1.

All Maxim personnel have been fit-tested for their assigned respirator. Upon donning the respirator, the individual will perform a positive and negative pressure fit check. At the end of each day, respirators will be cleaned, dried, and placed in weather-proof container. Respirator cartridges will be replaced as needed. Visitors will be required to have fit-test documentation available for review and have a respirator of the brand and size with which they were fit-tested with available for use on-site.

6.1 Levels of Protection

Levels of protection to be worn on-site will vary. Level D protection is necessary to enter the site. A minimum uniform of Modified Level D protection will be worn during all sampling activities.

Levels of protection required for each task conducted during this investigation will be as follows.

Activity	Level of Protection
Site Entry	Level D: Safety glasses with side shields, work clothes and/or coveralls, and steel-toed leather work boots.
Gamma Walkover Surveys	Modified Level D - Modified by the inclusion of safety glasses with side shields, nitrile gloves (inner and outer), Steel-toed chemically resistant boots, chemically-resistant Tyvek™ coveralls, hearing protection, and face shield if splash hazards are present.
Pavement Coring	Modified Level D - Modified by the inclusion of safety glasses with side shields, chemically-resistant Tyvek™ coveralls, nitrile gloves (inner and outer), leather work gloves, hearing protection, steel-toed boots, chemically resistant overboots and hard hat.
Clearing and Grubbing	Modified D Modified by the inclusion of safety glasses with side shields, chemically-resistant Tyvek™ coveralls, nitrile gloves (inner and outer), leather work gloves, hearing protection, steel-toed boots, chemically resistant overboots and hard hat.
Trenching	Modified Level D - Modified by the inclusion of safety glasses with side shields, chemically-resistant Tyvek™ coveralls, nitrile gloves (inner and outer), leather work gloves, hearing protection, steel-toed boots, chemically resistant overboots and hard hat. A face shield will be worn if splash hazards are present

SECTION 7.0

7.0 MEDICAL SURVEILLANCE

Bioassay sample analysis will not be performed unless work area air sampling indicates the presence of airborne concentrations of radionuclides.

The Maxim Medical Surveillance Program is detailed in SOP 3.0 "Accident Prevention, Training, and Medical Surveillance".

Table 5-1 presents the dates of the employees' most recent annual medical exam. Copies of the most recent Fit-for Duty Statements are included in Appendix C. Exposure of personnel above the OSHA Permissible Exposure Limit (PEL) to any of the hazardous substances listed in Table 3-1 will require a physician examination.

8.0 DOSIMETRY

Maxim Technologies, Inc. will utilize Personnel Monitoring Devices (PMD) to maintain a permanent dose record of each type of mixed radiation. Specifically, on-site Maxim and subcontractor employees will be required to wear a Thermoluminescent Dosimeter (TLD) film badge for monitoring the exposure to non-alpha radiation while on-site at the NFSS. TLD badges have a nominal detection range of 0.01 to 10,000 rem. The dosimetry program will be administrated in accordance with the Radiation Protection Plan Addendum presented in Appendix A. Each site worker and visitor subject to this site safety and health plan will wear a TLD while onsite, except in health physics designated office and assembly areas. All dosimetry, including the control badge, will be collected and evaluated at the end of Phase Two.

The RSO will be responsible for management of the on-site TLD badge program. Each on-site employee will be required to wear his or her TLD badge when he or she is present on the NFSS site. The TLD badge will only be used to monitor potential exposures to personnel while they are on the NFSS. The TLD badge will remain at the work site when personnel are off-site.

Records of dosimetry will be maintained by the Radiation Safety Officer (RSO) while personnel are on the NFSS project site. Maxim will maintain the employee records at the Maxim Technologies, Inc.-St. Louis office.

SECTION 9.0

9.0 EXPOSURE MONITORING DURING SAMPLE COLLECTION

9.1 Environmental Exposure Monitoring

During intrusive investigations, ambient air monitoring will be accomplished in accordance with SOP 2.0 "Exposure Monitoring during Sample Collection". The PID will be calibrated at the beginning and end of each work period and the results recorded on the Air Monitoring Calibration form presented as Exhibit 9-1. The results of all environmental monitoring activities will be recorded on the Environmental Air Monitoring Forms presented as Exhibit 9-2 of the original SSHP.

The atmosphere in the work zone will be monitored during intrusive activities (i.e., drilling, pavement coring, and trenching) using a PID and Gastech GX-82 toxic gas meter or equivalent. If monitoring indicates the presence of volatile organic compounds, colorimetric indicator tubes will be used in an attempt to identify these compounds. If the Gastech GX-82 toxic gas meter exceeds the preset standards (10 % LEL, < 19.5 % or > 23.5 % O_2, hydrogen sulfide - 10 ppm) all work will stop and all personnel will move in an upwind direction away from the work area. After evaluating the data, the Site Safety and Health Officer (SSHO) will decide on the proper action to protect all personnel. Work will continue only after proper respiratory protection has been donned. If safe work standards cannot be met, the safety officer will contact the project manager and USACE contracting officer for instructions. A list of environmental monitoring equipment is listed in SOP 2.0 and Table 9-1 of the SSHP.

Personnel working at sampling locations should be familiar with the characteristics and diagnostic signs and symptoms of the potential contaminants.

Perimeter monitoring is not practical or considered necessary for this project.

9.2 Radiation Monitoring

The following sections detail radiation monitoring which will be conducted at the NFSS. Recordkeeping requirements are specified in the Radiation Protection Plan Addendum presented in Appendix A.

9.2.1 Internal Radioactive Material Monitoring

From a radiological perspective, consideration of the hazard associated with MED/AEC isotopes largely focuses on the potential for uptake into the body. Internal dose monitoring will be accomplished using breathing zone (lapel) particulate air sampling. Air monitoring will be conducted on individuals with the highest potential of inhaling radioactive material, when there is a potential for airborne radioactive material. (as determined by the field Health Physics Technician) Surface and soil contamination will be evaluated to determine the potential to generate airborne radioactive

material.

Air samples will be analyzed for gross alpha and gross beta/gamma using a Ludlum 2229/43-10-1, or equivalent. Gross air sample activity will be compared against a weighted (10 CFR 20 Appendix B, Table 2) Derived Air Concentration (DAC) value. Although not expected, respiratory protection and bioassay sampling will be implemented if, based on air sample data, any individual is likely to receive in excess of 12 DAC/hrs (10 CFR 20.1701) in any one week.

9.2.2 Radiation Exposure Monitoring

External monitoring will be accomplished by performing a radiation survey of each work area. A gamma sensitive Geiger Mueller exposure rate instrument (Bicron MicroR meter or equivalent) will be used to perform the dose rate surveys. The exposure rate instrument will have a current annual calibration, and response to a Cs-137 source will be verified each day prior to work. Documentation of the instrument response checks will be maintained onsite during the work.

Exposure rates will be performed by an ANSI 3.1 qualified, procedure trained Health Physics Technician. Area surveys will be performed at both knee and waist levels and recorded in units of μR/hr. The survey results will be documented on procedure HP-405 Attachment 1, "Radiological Survey" form presented in the original RPP. Dose rate and stay time calculations will be used to verify that no individual is exposed to more than the USACE ALARA Limit of 100 mrem TEDE during this project.

9.2.3 Contamination Monitoring Equipment

Personnel and equipment direct contamination surveys will be performed with a dual alpha-beta/gamma scintillation detector coupled with a ratemeter. (Ludlum 2221/43-89 or equivalent) Each frisker will have a current annual calibration and will be response checked each day prior to use with a Thorium-230 and a Cs-137 source. Frisker response checks will be performed in accordance with HP-004 "Quality Control of Radiation Monitoring Equipment", and will be documented on HP-004 Attachment 7, "Count Rate Meter Source Test Log" presented in the original RPP.

Smears and air samples will be counted with a dual alpha-beta/gamma scintillation detector coupled with a scaler (Ludlum 2229/43-10 or equivalent). The bench counter will have a current annual calibration and will be source checked each day prior to use with a Thorium-230 and a Cs-137 source. Source checks will be performed in accordance with HP-004 "Quality Control of Radiation Monitoring Equipment", and will be documented on HP-004 Attachment 10, "Lab Instrumentation QC Data Sheet", presented in the original RPP, or equivalent.

9.2.4 Personnel Contamination Monitoring

Employees who handle radioactive material will be monitored for total contamination periodically, and at least before leaving the work area. Monitoring will be performed with a frisker under the direct supervision of an HP technician. Personnel will be considered contaminated if total activity at 3" from the skin or clothing is equal to, or in excess of 300 dpm/100 cm^2 alpha (at a frisk rate not to exceed 2" per second).

If personnel contamination is detected, the affected area will be decontaminated with soap and lukewarm water under the direct supervision of the HP technician. The nature and extent of the contamination event will be documented on Appendix E, "Skin / Clothing Contamination Report", presented in the original RPP.

9.2.5 Equipment Contamination Monitoring

All sampling equipment will be direct frisked as it is extracted from the sampled media. This will be the primary mechanism to ensure that contamination is not spread during intrusive characterization activities. Any tools and equipment that come in contact with (potential) radioactive material will be monitored for total and removable contamination prior to removal from the work area. Any tools or equipment with alpha contamination exceeding the limits presented in Appendix A of the RPP Addendum will be managed as contaminated material. Contaminated material and equipment will be either decontaminated or containerized for disposal, under the direct supervision of the health physics technician.

9.3 Weather

Prior to each day's operation, the current weather and meteorological data will be evaluated to determine the impact on site operations.

9.4 Noise

Noise monitoring will not be conducted. High noise tasks have been previously identified, i.e., drill rig, steam cleaner and portable electrical generator operations.

Appropriate hearing protection with a minimum noise reduction rating of 25 dB shall be worn by all personnel engaged in this operation while they are within the exclusion zone and the drill rig is in operation.

9.5 Heat/Cold Stress Monitoring

On-site personnel will spend some time wearing personal protective clothing such as Tyvek suits, overboots and respirators. This equipment limits the dissipation of body heat. Based on the time of year this work will be performed, heat stress and heat exhaustion are potential threats to the health

and safety of the workers. It is the responsibility of each on-site worker to be alert to the onset of symptoms of heat stress/stroke in themselves and co-workers. To avoid these heat stress or heat stroke, the precautions detailed in SOP 14.0 "Heat/Cold Precautions" presented in the SSHP, will be taken.

SECTION 10.0

10.0 STANDARD OPERATING PROCEDURES (SOPs), ENGINEERING CONTROLS AND WORK PRACTICES

SOPs for field work are provided to Maxim and subcontractor personnel for review of proper safety procedures. Adherence to these SOPs is provided to help reduce the possibility of or prevent accidents. Safety related SOPs are presented in Appendix D of the original SSHP.

10.1 General Field Safety

Hazards due to normal site activities can be reduced by using common sense and following safe practices. Practices and procedures as outlined in SOP 4.0 "Field Safety" will be followed and complied with.

During drilling operations, the location of overhead power lines and underground utilities must be established. Prior to arrival on site, the New York underground utility locator will be contacted a minimum of seven days prior to the initiation at 1-800-892-7962.

A minimum of a Level D work outfit will be worn during all field operations. Level D work outfit consists of coveralls (if required), steel-toed shoes, boot covers or steel-toed rubber boots (as required or needed), safety glasses, and appropriate gloves.

Appropriate gloves (chemical resistant or improved grip) and eye protection will be worn while performing sampling or related duties.

Each Maxim field team member will be issued a personal eye wash bottle which will be available in the zone of exclusion at all times.

Material safety data sheets are presented in Appendix A of the original SSHP and will be available on site for all potential contaminants of concern which may be encountered during coring and sampling activities.

Contamination avoidance will be practiced. Field crews will be reminded to:

- Be aware of potentially dangerous situations such as irritating or nauseating odors.
- Be alert to changes in crew members' physical and mental condition.
- Personnel should keep track of weather conditions; avoid working in conditions that would escalate potential site hazards, such as rain, mud, lightning, etc.

Appropriate hearing protection will be worn in all high noise areas, such as around the drill rig while it is in operation.

Team members will be familiar with emergency hand signals:

Hand gripping throat ..... Respirator or breathing problems, can't breath
Thumbs up ..... OK, I'm all right, I understand
Thumbs down ..... No, negative
Hand(s) on top of head ..... Need assistance
Grip partner's wrist ..... Leave site immediately

10.2 Mechanical Equipment Operation

Operation of mechanical equipment presents another potential source for physical hazards, precautions and procedures for these hazards are detailed in SOP 4.0 "Field Safety".

EM 385-1-1 USACE Safety and Health Requirements Manual will be on-site and as applicable guidelines in Section 18 will be followed.

10.3 Hand Tools

Guidance for the use of hand tools is found in Section 16 of the USACE Safety and Health Requirements Manual (EM 385-1-1). Only tools that are in good condition shall be used.

Improper and defective tools contribute to accidents. Safety practices as detailed in SOP 4.0 "Field Safety" shall be observed when using hand tools.

10.4 Illumination

Performance of on-site activities will normally be allowed to occur from sunrise to sunset. The Maxim Site Manager in consultation with the Maxim SSHO, RSO, PM and the USACE COR may approve completion of sampling activities beyond this time period. Packaging of samples for shipment to analytical laboratories will be allowed to occur outside of the prescribed sampling period of sunrise to sunset.

10.5 Material/Drum Handling

Potentially contaminated sampling equipment and PPE will be generated and containerized in UN-1A1 55gallon drums during investigative activities at this site. Drum handling procedures are detailed in Field Safety SOP 4.0

Normally all investigation-derived waste (IDW) will be placed in UN-1A1 55-gallon drums and properly labeled. All full drums will be removed from the work site on a daily basis and placed in

the IDW Storage Area. Partially full drums will be sealed before the work crew leaves the site.

Care must be taken when handling or moving drums. Hazards include: excessive weight, rolling and tipping over, chemical exposure, and explosion. Personnel will not attempt to move full or partially full drums by themselves.

10.6 Electrical Safety

Care will be taken to avoid overhead power lines. Their location will be noted and sampling locations adjusted to avoid any over head power lines.

All electrical equipment used on site will be serviceable and properly grounded. The use of ground fault circuit interrupters (GFCIs) will be required on all electrical equipment.

Use of electrical equipment such as power tools, generators, and lighting will not be allowed if it is raining.

10.7 Confined Space and Hot Work

These activities will not take place during this project.

10.8 Noise/Hearing Protection

Refer to SOP 11.0 "Hearing Conservation SOP".

Hearing protection will be worn at all times the drill rig or portable electrical generator is in operation or other high noise producing equipment is being used.

10.9 Fall Protection

Fall protection measures and equipment is not deemed necessary

10.10 Hazard Communications

See SOP 3.0 "Accident Prevention, Training, and Medical Surveillance"

10.11 Sanitation and Site Cleanliness

Housekeeping procedures contained herein pertain to uncontaminated trash, debris, and rubbish. The following housekeeping rules will apply at the job site:

- The work zones must be kept clean and free from trash and debris. Trash containers will be located in the in the exclusion zone. Trash will be removed daily;

- Excess tools, equipment and rubbish must be kept out of the work areas;
- All surplus materials must be returned to a designated area of the site at the completion of the job;
- Tools and materials must be put in tool boxes, returned to the van, drill rig or support truck after use to avoid creation of a hazard to others, and;
- PPE will be placed in designated receptacles at the end of the work period (if applicable).

10.12 Lockout/Tagout

Lockout/tagout procedures are detailed in SOPs 12.0 "Field Equipment Repair Lockout Tagout SOP" and 13.0 "Electrical Lockout/Tagout SOP".

10.13 Signs and Labels

The warning signals designated for this site are:

1) Restricted Area - Do Not Enter
2) Noise Hazard/ Hearing Protection Required
3) Hard Hat Area
4) Eye Protection Required
5) No Smoking

The work zones for this project will be the sampling and support vessels. Barricade tape is not practical for use to identify work zones.

All labels used on shipping containers will comply with Department of Transportation regulations. Radiologically contaminated IDW and sample media will be labeled as detailed in the Radiation Protection Plan presented in Appendix B.

10.14 Biological Hazards

The investigation of the site may pose a threat from biological hazards such as: ticks, spiders, rodents, snakes, and irritant plants. Potential biological hazards and precautions are detailed in SOP 15.0 "Biological Hazards".

SECTION 11.0

11.0 SITE ACCESS AND WORK ZONES

11.1 General

In order to reduce the spread of contaminated materials by workers to clean areas of the site, to control the flow of personnel and material to and from the work site and to reduce safety hazards at the site, work zones will be delineated. The establishment work zones will help to ensure that personnel are properly protected from the hazards associated with the area in which they are working and the equipment which is being used during a each task which is conducted during this investigation. A typical work zone configuration is presented in Figure 11-1 of the original SSHP

11.2 Exclusion Zone (EZ)

The Exclusion Zone is the area where contamination or equipment hazards is most likely to occur. An Exclusion Zone will be established for all locations where surface soil, subsurface soil, sediment, surface water and groundwater samples will be collected. An Exclusion Zone will also be established at each well location at which well development and in-situ permeability testing activities are conducted. For those tasks that include building entries, the entire building will be considered the exclusion zone. The Contaminant Reduction Zone (CRZ) and the Support Zone (SZ) will be established immediately outside of the door that is used to gain access to the building. Access into the Exclusion Zone will be controlled by the SSHO or his designee to ensure that all employees entering the area are wearing the prescribed PPE ensemble presented in Section 6.1 for the particular task with which they are involved. The use of open flames, smoking, eating, drinking, gum chewing, tobacco chewing and the use of contact lenses will not be permitted in the Exclusion Zone. The SSHO or the HP Technician may expand the boundaries of the EZ if monitoring or site conditions indicate that levels of chemical or radiological contamination at the perimeter could potentially be approaching or above the action levels of any contaminant of concern as detailed in Table 3-1 which could impact unprotected personnel in the Support Zone. During drilling activities, the EZ boundaries will be placed, at a minimum, a distance equal to or greater than the extended mast height of the drill rig from the borehole.

11.3 Contamination Reduction Zone (CRZ)

The Contamination Reduction Zone will be located between the Exclusion Zone and the support zone. The CRZ will be located upwind or crosswind to the Exclusion Zone. All decontamination of personnel and equipment will occur in this area. Prior to leaving the CRZ, all personnel will be monitored for total radioactive contamination by a whole body frisk performed under the direct supervision of an HP Technician. Sampling equipment will also be direct frisked before and after decontamination and prior to leaving the CZR. Personnel and equipment monitoring aspects of this SSHPA are detailed in Section 9.1 and the Radiation Protection Plan Addendum presented in Appendix A.

11.4 Support Zone (SZ)

The Support Zone is the outer most work zone and includes designated break areas, operational areas and support facilities. Equipment is staged in this area prior to movement into the Exclusion Zone through the CRZ. PPE is donned in this area by those personnel who will be entering the Exclusion Zone to perform sampling activities. The use of open flames and smoking eating and drinking may be allowed in designated areas of the SZ. No personnel or equipment will be allowed to enter the Support Zone from the CRZ without first being direct frisked and decontaminated as is necessary as determined by the result of the direct frisking. Equipment that can not be decontaminated to acceptable levels will be managed as detailed in Section 13.0 of this Plan.

The Support Zone will also be the location all support vehicles involved in the specific task being performed will be parked. The drill rig will be the only vehicle allowed in the Exclusion Zone during drilling activities. Other vehicles may be allowed in the Exclusion Zone during monitoring well/piezometer development, in-situ permeability testing and well sampling activities.

The area of the Support Zone which is used as a staging and support area will generally, to the extent possible, be located upwind or crosswind to the CRZ and Exclusion Zone.

11.5 Other Access Control

Because the public is generally unaware of the hazards associated with on-site activities, access to work areas will be restricted and posted.

11.6 Communications

Maxim personnel will have a portable cellular telephone available for use during all field operations. Each field team will be equipped with a hand-held transceiver for use during on-site activities. Cellular phones and transceivers will not be used in atmospheres which monitoring indicates are explosive.

11.7 Site Security

The layout of the site is adequate for security and access.

11.8 Project Site Office

A mobile office trailer will be placed on-site prior to initiation of investigative activities. The office trailer will be equipped with electrical power and telephone and fax equipment and will be the storage location of monitoring equipment, dosimetry and PPE when not in use. A copy of this SSHP will be available in the project site office at all times. Emergency contact information as presented in Section 15.0 of this plan will be prominently posted in the project site office and in all on-site

vehicles.

SECTION 12.0

12.0 PERSONAL HYGIENE AND DECONTAMINATION

12.1 Personal Hygiene

Portable toilet facilities will be located at the project site office and at a central location near the work areas.

Soap and water or antiseptic water-less gel will be provided for hand and face washing in the project site office, portable toilets and support zones during all investigative activities.

12.2 Decontamination

To prevent contaminants from being transferred into clean areas of the site or from exposing un-protected workers to site contaminants, all field personnel will decontamination. The extent and degree of decontamination will be dependent upon the results of direct frisking and chemical and radiological monitoring activities conducted on personnel, equipment and sampled media.

The decontamination station will be established in the Contaminant Reduction Zone adjacent to the Exclusion Zone and will be used to clean all personnel and equipment and which could have potentially contacted contaminated media.

If results of the whole body frisking by the HP Technician indicates the presence of radiological contamination on protective clothing, the personnel will be decontaminated. The decontamination regime which includes a boot wash, scrubbing of poly-coated Tyvek coveralls with a soft bristle brush with a wash of Alconox and tap water followed by a tap water rinse and then a spray rinse of DI water. Un-coated Tyvek coverall are not water proof and will not be decontaminated, but rather, will be frisked by the HP Technician to determine level of radiological contamination and managed according to the results of the frisking. PPE that can not be decontaminated will be containerized labeled as radioactive material and stored in the IDW storage area pending disposal. All augers and other down-hole drilling equipment will be steam cleaned to remove residual soil. A schematic of the maximum level C decontamination line layout is presented in Figure 12-1 of the original SSHP. The exact layout of the decontamination line will be determined in the field based upon site conditions and task specific decontamination requirements.

Personnel decontamination procedures are detailed in SOP 36 "Personnel/Equipment Decontamination Procedures" presented in Appendix D of the original SSHP. This SOP also addresses decontamination during medical emergencies.

All non-radiologically contaminated disposable PPE will be containerized and stored in UN-1A2 55 gallon drums until results of waste characterization analysis are available. The drums will be stored in the designated IDW storage area.

13.0 EQUIPMENT DECONTAMINATION

Equipment used in this project which comes into contact with contaminated soils or materials or is deemed radiologically contaminated as a result of direct frisking by the on-site HP Technician, shall be decontaminated in the CRZ prior to the equipment being released for re-use. Details of the direct frisking are presented in Section 9.2.5 of the original SSHP and the original Radiation Protection Plan presented in Appendix B of the original SSHP. This equipment includes: sampling equipment such as stainless steel bowls and spoons, bucket auger, Eckman dredge, split spoon samplers, continuous samplers; and PPE such as respirators, chemically resistant work boots, safety glasses, face shields, and hard hats.

All sampling equipment will be subjected to a decontamination regime that includes scrubbing with a soft bristle brush in a wash of Alconox and tap water followed by a tap water rinse and then a spray rinse of DI water. All augers and other down-hole drilling equipment will be steam cleaned to remove residual soil.

The water generated during decontamination activities will be contained in the decon pad to prevent runoff to the surrounding soil. Decontamination fluids pumped from the decon pad to the IDW storage area and containerized in 1000 and/or 1500 gallon portable polyethylene tanks.

Personnel decontamination procedures are detailed in SOP 36 "Personnel/Equipment Decontamination Procedures" which is presented in the original SSHP.

14.0 EMERGENCY AND SITE EQUIPMENT

Maxim will provide all emergency equipment, which includes the following items:

Fire Extinguisher -Maxim will provide a 2A:10:BC extinguisher for every vehicle. In addition, a 4A:20:BC extinguisher will be available in each vessel on each site.

First Aid Kit - Maxim will provide a physician-approved first aid kit that will be on-site at all times. A list of items included in the first aid kit and a copy of Maxim's Industrial Medicine Physician's letter of review is included in Appendix F of the original SSHP In addition, each vehicle will be equipped with First Aid Kits.

Eye Wash Station - Maxim will provide each Maxim field team member with a portable eye wash bottle that will be located as close as possible to work hazards. All personnel will be trained in its operation.

SECTION 15.0

15.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURE

15.1 Emergency Procedures

In the event that an emergency develops on-site, the procedure outlined below are to be immediately followed. Emergency conditions are considered to exist if:

1) Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on the site.

2) A condition is discovered that suggest the existence of a situation more hazardous than anticipated.

3) An explosion or fire occurs.

In case of any of the above events, the following procedures shall be followed.

1) Notify the paramedics and/or fire department immediately.

2) Signal and implement the evacuation procedure.

3) Isolate the area.

4) Stay upwind of any explosion site or fire.

5) Keep the area surrounding the problem clear after the incident.

6) Complete the accident report form and distribute to the appropriate personnel.

Emergency numbers will be kept in each vehicle and kept readily available to the field crew. All personnel will be aware of the location of the closest telephone and/or radio communications. The following is a list of the emergency phone numbers:

Fire: (Lewiston).....911

Police: (Lewiston).....911

Hospital: (Mount St. Mary's Hospital).....(716)-297-4800

Poison Control:.....1-800-764-7661

National Response Center (NRC)
Toxic Chemical and Oil Spills: 1-800-424-8802

New York One Call Utility Locator Service 1-800-892-7962

Buffalo USACE ..... (716) 879-4271

Buffalo USACE Industrial Hygienist ..... (716) 879-4173

Maxim Technologies Office Number ..... (314) 426-0880

Maxim CIH ..... (713) 845-4100

Directions to the hospital are described as follows: Exit the site right (west) onto Pletcher Road, turn left (south) Route 18 South (Creek Road), stay on Route 18 South it becomes Route 104, turn left at traffic light onto Route 265 (Military Road). Mount St. Mary's Hospital is approximately ½ mile on the right.

The route is shown in Figure 15-1 of the original SSHP.

Contact will be made with the appropriate local authorities and facilities prior to project start. The purpose of these contacts is to delineate responsibilities in the event of an emergency situation, to familiarize site management with the local services available, and to provide local authorities and facilities with information as to the type of work to be performed and the potential hazards involved. Contact will be established and responsibilities verified prior to the initiation of on-site activities.

In the event of an emergency, the Site Manager (Site Safety and Health Officer in his absence) will assume responsibility for implementing the Emergency Response and Contingency Plan.

Producers for this section are detailed in SOP 14 "Emergency Preparedness and Fire Protection."

SECTION 16.0

16.0 ACCIDENT PREVENTION

Accident Prevention is discussed in detail in SOP 14 "Emergency Preparedness and Fire Protection" presented in Appendix B of the original SSHP. This SOP describes the procedures and requirements for initial, daily and weekly safety briefings and Post Investigation Health and Safety Briefings.

All reportable accidents as defined by OSHA regulations will be immediately reported to the USACE Project Manager and Safety Officer and Maxim Project Managers. A follow-up written report and appropriate forms (as directed by Project Managers) will be completed and submitted with in 48 hours of the accident. In the event of an accident ENG Form 3394, will be completed by Maxim. A copy of this form and procedures for the completion of this form are presented in Appendix F of the original SSHP.

17.0 LOGS, REPORTS, AND RECORDKEEPING

The following logs, reports, and records shall be kept (as applicable) for activities conducted during this investigation:

1) Training logs (site-specific and visitor)
2) Daily safety inspection log
3) Equipment maintenance/calibration log
4) Environmental air monitoring log
5) Visitor register
6) Potential exposure reports
7) Dosimetry Records
8) Radiological Survey Logs
9) Count Rate Meter Source Test Log
10) Lab Instrumentation QC Data Sheet
11) Skin / Clothing Contamination Report
12) Checklist for Shipping Limited Quantities of Radioactive Material
13) Checklist for Instruments or Articles
14) Limited Quantity Certificate
15) Accident reports

All records will be kept as part of the permanent records file and shall be submitted to the USACE Project Manager as requested.

TABLES

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Gamma Walkover Surveys	Heat-related Problems	1. Pace your work. 2. Take frequent breaks (cool and dry rest area). 3. Force fluid intake.
	Cold-related problems	1. Pace your work. 2. Take frequent breaks (warm and dry rest area). 3. Wear layered clothing with a wind breaking material on the outside. 4. Wear layered garments on hands and feet. 5. Proper hydration.
	Tripping, slipping or falling	1. Maintain employee alertness in and around work areas. Be aware of fallen logs, vines, wet or muddy conditions which could increase the potential for slip/trip and falls
	Weather	1. Avoid working in conditions which would escalate potential site hazards such as rain, mud, lightning, etc.
	Biological (mosquitoes, ticks, spiders, snakes, etc.)	1. Maintain employee awareness and avoidance. Use products containing DEET or Permanone to reduce potential for ticks and chigger bites. Wear head nets and Tyvek coveralls, use duct tape to tape pants legs at boot tops.
	Contamination of clothing	1. Maintain employee alertness of contaminated area. 2. Whenever possible, avoid walking through puddles, mud, or discolored surfaces; kneeling on the ground; leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground.
	Direct contact with unidentified wastes	1. Maintain employee awareness of known or suspected areas of unidentified waste 2. Proper personal protective equipment.

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Clearing and Grubbing	Head or foot injuries from falling equipment	1. Wear hard hats. 2. Wear steel-toed shoes.
	Backing over workmen	1. Check backup alarms on equipment. 2. Before moving equipment, make sure all people are clear. 3. Slow down when backing up or when on ramps and curves. 4. Do not drive through dust clouds. 5. Allow for safe stopping distances. 6. Instruct employees never to walk in front or back of moving equipment. 7. Do not remove any blocking or jacks under equipment while the equipment is in operation. 8. Try to make eye contact with operators you are near.
	Equipment Malfunctions	1. Inspect earthmoving equipment for proper operation prior to initiation of field activities and daily during field activities and document on equipment inspection form. 2. If problems exist, remove from service.
	Explosions/Fire	1. Never use gasoline or any other combustible solvent as a cleaning agent. 2. Do not fuel or perform maintenance while generator is running. 3. When jumping batteries be sure of your connections. 4. Know where fire extinguishers are and how to use them. 5. Use non-sparking tools.
	Back injuries	1. Instruct personnel in proper lifting techniques. 2. Instruct personnel to get help and/or to use lifting equipment.
	Getting caught in moving machinery	1. Do not wear loose clothing or jewelry around moving machinery. 2. Tie up long hair or place it under a net or cap. 3. Tuck overalls into boot tops or bind them at the ankle.

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Clearing and Grubbing (Continued)	Hearing loss	1. Hearing protection shall be worn in areas 85 dBA or greater. 2. Rotating shifts over a period of time. 3. Ear protection must be worn by employees working in close proximity to equipment that generates noise. Ear muffs or ear plugs should be worn.
	Slip/Trip/Fall	1. Maintain employee alertness around clearing operations. 2. Practice good housekeeping.
	Contamination of clothing	1. Maintain employee alertness of contaminated area. 2. Whenever possible, avoid walking through puddles, mud, or discolored surfaces; kneeling on the ground; leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground.
	Pinch/Shear/Puncture	1. Be aware of pinch or shear points on equipment and vehicles. 2. Be aware of sharp branches, debris and stumps which could cause injury.
	Direct contact with unidentified wastes	1. Maintain employee awareness of known or suspected areas of unidentified waste. 2. Proper personal protective equipment.
	Weather	1. Avoid working in lightning and weather conditions which would escalate potential site hazards.

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Pavement Coring	Head or foot injuries from falling equipment	1. Wear steel-toed shoes. 2. Wear hardhats when working within the exclusion zone.
	Backing over workmen	1. Check backup alarms on equipment. 2. Before moving equipment, make sure all people are clear. 3. Slow down when backing up or when on ramps and curves. 4. Do not drive through dust clouds. 5. Allow for safe stopping distances. 6. Instruct employees never to walk in front or back of moving equipment. 7. Try to make eye contact with operators you are near.
	Explosions/Fire	1. Never use gasoline or any other combustible solvent as a cleaning agent. 2. Do not fuel or perform maintenance while generator is running. 3. When jumping batteries be sure of your connections. 4. Know where fire extinguishers are and how to use them. 5. Use non-sparking tools.
	Back injuries	1. Instruct personnel in proper lifting techniques. 2. Instruct personnel to get help and/or to use lifting equipment.
	Hearing loss	1. Barriers shall be placed based on sound level measurements taken on site or from previous operations where sound levels are 90 or greater. Hearing protection shall be worn in areas 85 dBA or greater. 2. Rotating shifts over a period of time. 3. Ear protection must be worn by employees working in close proximity to equipment that generates noise. Ear muffs or ear plugs should be worn.
	Tripping, slipping or falling	1. Maintain employee alertness in and around work areas. Be aware of fallen logs, vines, wet or muddy conditions which could increase the potential for slip/trip and falls

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Pavement Coring (Continued)	Falling, tripping, or puncturing	1. Maintain employee alertness around drilling operations. 2. Practice good housekeeping. 3. Always be on guard for pinch or shear points.
	Dust Control	1. Use water to control dust generated during pavement coring activities.
	Contamination of clothing	1. Maintain employee alertness of contaminated area. 2. Whenever possible, avoid walking through puddles, mud, or discolored surfaces; kneeling on the ground; leaning, sitting, or placing equipment on drums, containers, or the ground.
	Direct contact with unidentified wastes	1. Maintain employee awareness of known or suspected areas of unidentified waste. 2. Proper personal protective equipment.
	Weather	1. Avoid working in lightning and flash flood conditions which would escalate potential site hazards.
	Back injuries	1. Instruct personnel in proper lifting techniques. 2. Instruct personnel to get help and/or to use lifting equipment.
Trenching	Head or foot injuries from falling equipment	1. Wear hard hats. 2. Wear steel-toed shoes.

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Trenching (Continued)	Backing over workmen	1. Check backup alarms on equipment. 2. Before moving equipment, make sure all people are clear. 3. Slow down when backing up or when on ramps and curves. 4. Do not drive through dust clouds. 5. Allow for safe stopping distances. 6. Instruct employees never to walk in front or back of moving equipment. 7. Do not remove any blocking or jacks under the rig while the machine is drilling. 8. Try to make eye contact with operators you are near.
	Equipment Malfunctions	1. Inspect excavating equipment for proper operation prior to initiation of field activities and daily during field activities. 2. If problems exist, remove from service.
	Explosions/Fire	1. Never use gasoline or any other combustible solvent as a cleaning agent. 2. Do not fuel or perform maintenance while generator is running. 3. When jumping batteries be sure of your connections. 4. Know where fire extinguishers are and how to use them. 5. Use non-sparking tools.
	Back injuries	1. Instruct personnel how to lift materials. 2. Instruct personnel to get help and/or to use lifting equipment.
	Getting caught in moving machinery	1. Do not wear loose clothing or jewelry around moving machinery. 2. Tie up long hair or place it under a net or cap. 3. Tuck overalls into boot tops or bind them at the ankle.
	Falling, tripping, or puncturing	1. Practice good housekeeping. 3. Always be on guard for pinch or shear points. 4. Lighting on site should be properly installed and sufficient in quantity to provide adequate illumination for night work.

TABLE 3-2
ACTIVITY HAZARD ANALYSIS
NFSS PHASE II ACTIVITIES

Contract No.: DACW49-97-D-0001, Delivery Order 12	**Project:** RI/FS - Niagara Falls Storage Site	**Facility:** Niagara Falls Storage Site
Date: 27 July 1999	**Location:** Lewiston, NY.	**Estimated Start Date:** July 2000
Phase of Work	**Safety Hazard**	**Precautionary Actions**
Trenching (Continued)	Contamination of clothing	1. Whenever possible, avoid walking through puddles, mud, or discolored surfaces; kneeling on the ground; leaning, sitting, or placing equipment on drums, containers, or the ground.
	Acid burns to skin	1. Check compatibility of the different compounds to be used. 2. Do not store acid and base materials together. 3. Keep bulbs, pipettes, and gloves in separate containers. 4. Wear safety glasses or splash goggles and acid resistant gloves.
	Direct contact with unidentified wastes	1. Maintain employee awareness of known or suspected areas of unidentified waste. 2. Proper personal protective equipment; Level C.
	Weather	1. Avoid working in lightning and flash flood conditions which would escalate potential site hazards.
	Confined Space Hazards	1. Personnel will not enter trenches deeper than four feet for any reason. 2. If a trench less than four is entered, the atmosphere must be checked using a four gas meter and PID prior to entry.

TABLE 5-1						
TRAINING/MEDICAL SUMMARY						
Personnel	**40-Hour HAZWOPER**	**8-Hour Supervisor**	**8-Hour Refresher**	**Physical Exam**	**Respirator Fit Test**	**First Aid/CPR (expires)**
Biggs, Tim	May 1992	October 1994	March 2000	March 2000	June 2000	Jan. 2002/Jan. 2001
Dawdy, Greg	November 1984	December 1990	March 2000	April 2000	July 1999	Jan. 2003/Jan. 2001
Dickens, Nancy	October 1989	March 1990	March 2000	June 2000	June 2000	Jan. 2003/Jan. 2001
Germeroth, Dave	February 1991	February 1996	March 2000	April 2000	June 2000	Jan. 2002/Jan. 2001
Goen, Sonja	June 1996	March 2000	March 2000	June 2000	June 2000	July 2002/July 2000
Jones, Dave	May 1991	None	March 2000	December 1999	June 2000	Jan. 2003/Jan. 2001
Lindenbusch, Brad	August 1994	None	March 2000	January 2000	June 2000	Jan. 2003/Jan. 2001
McLean, Mike	November 1994	None	March 2000	November 1999	June 2000	March 2002/Jan. 2001
Richards, Jim	May 1993	May 1993	March 2000	May 2000	July 1999	July 2002/July 2000
Shetley, Jim	August 1998	None	February 2000	October 1999	June 2000	Jan. 2002/Feb. 2001
Sievers, Mark	August 1993	May 1994	March 2000	April 2000	June 2000	Jan. 2003/Jan. 2001
Smith, Jennifer	July 2000	None	None	June 2000	June 2000	

APPENDICES

APPENDIX A

RADIATION PROTECTION PLAN ADDENDUM

RADIATION PROTECTION PLAN FOR PHASE TWO OF THE NFSS REMEDIAL INVESTIGATION CONDUCTED BY MAXIM TECHNOLOGIES

Date of Preparation: August 4, 2000 Revision 1

Purpose

This document is a supplement to the Radiation Protection Plan implemented during Phase One of the Maxim remedial investigation. Only revisions and additions to the original plan are noted.

Phase One Plan Revisions

During Phase 2, lapel air samples will only be measured for alpha activity. Phase 1 measurements of beta/gamma activity with a 95% confidence level was impractical due to the restrictive DAC value and low volume collected on samples.

During Phase 1 activities, neither airborne contamination nor internal dose was detected with air sampling or bioassay. Therefore, bioassay sampling will not be performed during Phase 2 unless work area air sampling indicates any airborne concentration exceeding 0.25 DAC-hrs/hr.

Because the field office is located within a locked area, dosimetry will not be stored in a locked receptacle.

Instead of monitoring individuals for contamination at each sampling location, workers will be monitored periodically and prior to leaving the fenced Restricted Area.

Because every sample analyzed during Phase 1 contained less than the 49 CFR definition of radioactive material (2000 pCi/g), sample coolers will not be labeled as Limited Quantity packages unless activity in excess of the limit is suspected. However, each cooler will continue to be surveyed for radiation and contamination prior to release from the site.

A deficient instrument report will not be generated for detector mylar window light leak as indicated in HP-004, "Quality Control of Radiation Monitoring Equipment".

Plan Additions

Disposal of any IDW, liquid or solid, may only be released if approved by the USACE, regardless of radiological survey or sample results.

If directly approved by the USACE, solid IDW meeting radiological surface contamination limits may be disposed of in a municipal waste receptacle. If any solid IDW cannot be confirmed as meeting radiological surface contamination limits, or the IDW has a "radioactive material" marking, the IDW will be containerized and labeled as radioactive material.

Liquid IDW will be containerized, labeled as radioactive material, and be presumed to be radiologically contaminated unless proven otherwise. Liquid sample analytical may will be evaluated against NRC water effluent release concentrations (10 CFR 20 Table 2 Column 2) using the "unity" rule (10 CFR 20 App. B footnote 4). If all liquid composite samples are less than water effluent

release concentrations, and with direct approval from the USACE, the liquid IDW may be unconditionally radiologically released. If any composite sample exceeds water release concentrations, the affected IDW container(s) will be representatively sampled, and the compared against water release criteria as described above. Any liquid IDW exceeding release criteria will be transported to a permitted facility for disposal.

Using analytical data from Phase 1, the contaminants of concern at NFSS include U238, Ra-226, and Th-230. Based on Regulatory Guide 1.86 guidance, the most restrictive applicable release isotope at NFSS is Ra-226. Therefore, a surficial release value of 100 dpm/100cm^2 for total contamination, and 20 dpm/100cm^2 for removable contamination, will be used to evaluate equipment/material surveys at the site. Anticipated release surveys include vehicles, drill rigs, and sampling equipment. Any further releases require direct authorization by the USACE.

The DAC value used to evaluate air samples at the NFSS is based on the most restrictive applicable occupational air isotope in 10 CFR 20 (Appendix B Table 1 Column 3), Th-230. All occupational air sample concentrations will be compared to 6.E-12 µCi/ml (Th-230) to determine potential occupational dose.

All field personnel at NFSS will submit a personal dose history estimate to the RSO prior to TLD issuance, as well as other information such as home address. When personnel doses are evaluated after the field effort, each monitored individual will receive a dose report documenting their exposure while at NFSS. MAXIM Technologies in St. Louis will retain all personnel dose information.

Phase Two Additional Tasks

An activity hazard analysis has been prepared to address both the intrusive and non-intrusive additional tasks.

SUPPLEMENT- Monitoring Requirements and Action Limits

Hazard or Measured Parameter	Area	Interval	Limit	Action	Tasks
Radiological total contamination with survey instrument. Alpha & Beta sensitive plastic scintillation count rate system, or equivalent.	Performed at the field office and at various work locations on personnel, vehicles, equipment, and discarded materials.	Prior to exit from the fenced restricted area and periodically as determined by Health Physics.	Less than 100 dpm/100cm^2 alpha.	Notify Project Manager, H&S Manager. Additional controls may include changes to PPE, decontamination procedures, or engineering controls	All onsite tasks
Sampling for airborne radioactive particulates	Breathing zone of selected employees	Full shift sampling on selected personnel with the highest potential of inhaling radioactive material as determined by Health Physics.	0.25 DAC-hrs/hr	Notify Project Manager, H&S Manager, Project CHP	During intrusive activities as determined by Health Physics.
Removable surface contamination determined by smearing surface of 100cm^2.	Performed at the field office and at various work locations on vehicles, the field office, and equipment.	Prior to exit from the fenced restricted area and at least once per week in break areas, office areas, etc.	Less than 30 dpm/100cm^2 alpha.	Remove by decontamination and resurvey. If contamination can not be removed, control as radioactive material.	All onsite tasks

SUPPLEMENT- HAZARD ANALYSIS

Safety and Health Hazards	Probability/ Severity	Controls	Monitoring
NON-INTRUSIVE ACTIVITIES: GAMMA WALKOVER SURVEYS, SAMPLING WELLS, GEOPHYSICS WORK			
Radiological surficial contamination	Low /low	PPE (Level D) Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth. Nitrile or PVC gloves for handling potentially contaminated material	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
INTRUSIVE ACTIVITIES: SOIL BORING AND SAMPLING, SEDIMENT AND SURFACE WATER SAMPLING, TRENCHING, CLEARING AND GRUBBING, AND INSTALLATION OF PERMANENT MONITORING WELLS			
Radiological surficial contamination	Low /low	PPE (Level D modified with Tyvek suits, boots, and Nitrile or PVC gloves) Exclusion zone around potentially contaminated areas. Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth.	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
Radiological airborne exposure	Very Low /Very Low	Removable contamination surveys will be performed on potentially contaminated equipment / soil. Engineering controls and/respiratory protection will be implemented if occupational air sampling indicates airborne concentrations exceeding 0.25 DAC-hrs/hr.	Occupational air sampling (lapel) on individual most likely to be exposed as determined by Health Physics.

PPE = personal protective equipment

APPENDIX B

TRAINING CERTIFICATES/
FIT-FOR-DUTY STATEMENTS

Certificate No.: 1085

Certificate of Training

This is to certify that

Tim Biggs

has completed the Forty Hour Training Program for:

Hazardous Waste Site Activity

In Compliance with OSHA 29 CFR 1910.120

Course Dates: May 4, 5, 6, 7, & 8, 1992

Date of Expiration: May 8, 1993

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

REACT environmental engineers

2208 Welsch Industrial Court · St. Louis, MO 63146 · 314/

McLaren Hart

ENVIRONMENTAL ENGINEERING CORPORATION

Certificate of Training

This is to certify that

Timothy Biggs

has successfully completed an 18 hour course on
Site Safety Officer Training
prepared and conducted by
McLaren/Hart Environmental Engineering Corporation.

Location of Training: Pittsburgh, PA
Date of Training: October 20, 1994
Instructors: Kuhn, Durst, Less
Date Issued: November 2, 1994

Russell B. Pulchak
Corporate Health and Safety Director

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

TIMOTHY C. BIGGS

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 00826
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: 7-SL031300/02
Expires: 03/13/01

[illegible]

Jeanine S. Arrighi, CET
DIRECTOR

MAXIM TECHNOLOGIES, INC.

Louis Branch Office
8 Innerbelt Business Center Drive
St. Louis, MO 63114

4/24 12:42

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Timothy C. Biggs	03/16/00		3

Employer	Exam Type
Maxim Technologies, Inc.	☒ Annual ☐ Pre-Employment

I. PULMONARY FUNCTION

A. FEV1___% 75% or Better Required	B. FVC___% 80% or Better Required	C. Qualified to Wear Respirator ☐ Yes ☐ No

II. FIT FOR DUTY

☑ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations:_____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration_____ ☐ Does not meet criteria for employment at this time

Physician C Douglas Meadows MD Date 3/17/00

Address

HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis MO 63141
(314) 567-6584

Signature

FORMS103/n

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULT
DATE OF TESTING: 6/30/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Name of Person Tested:	Employee Number: 00826
Signature: Tim Biggs	
Company: **MAXIM TECHNOLOGIES, INC.**	Address: 1908 Innerbelt Business Ctr Dr. St. Louis, MO 63114
Telephone Number: (314) 426-0880	
Department or Assignment: 4509	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Brand of Respirator: MSA	[X] Full Face Piece [ ] Half Mask
Type of Respirator: [X] Air Purifying [ ] Atmosphere Supplying [ ] Air Line [ ] SCBA [ ] Oxygen Manufacturing	Size of Respirator: [ ] Small [X] Medium [ ] Large [ ] Extra Large [ ] Other (explain)
Respirator Model Identification: Ultra-Twin (Silicone) MSA	Date of Initial Respirator Training: 5/93 Date of Respirator Update Training: 3/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/Bending	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Dukes

American Red Cross

This certifies that

TIMOTHY BIGGS

has completed the requirements for

STANDARD FIRST AID

sponsored by

MAXIM TECHNOLOGIES

Date completed

1-8-99

Chairman, American Red Cross

Instructor's Signature

Ray Fillo

Holder's Signature

The American Red Cross recognizes this training as valid for three years from completion date.

Cert. 653207 (Jan. 1993)

American Red Cross

This recognizes that

Timothy Biggs

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

ST. LOUIS BI-STATE CHAPTER

HIV/AIDS Education

FA/CPR

Holder's Signature

32100

Cert. 653999 (June 1997)

Environmental
Science &
Engineering, Inc.

November 1, 1990

Mr. Max Gricevich
Twin City Testing
1908 Innerbelt Business Center Drive
St. Louis, Missouri 63114

Dear Mr. Gricevich:

While employed at Environmental Science & Engineering, Inc. (ESE) Mr. Greg Dawdy worked at a number of Superfund (NPL) sites. Among the sites that I am personally familiar with are Rock Mountain Arsenal in Denver, Colorado and Koppers, Company in Galesburg, Illinois. Mr. Dawdy worked at these sites in or about 1984.

Since 1981 ESE has had a policy that all employees working at Superfund sites must have a 40-hour OSHA equivalent Health and Safety training course. While we do not keep records indefinitely on employees after they leave the company, I can assure you that Mr. Dawdy completed a 40-hour OSHA equivalent course.

Sincerely,

Rick Folkemer

Rick Folkemer, P.E.
Manager-Water Resource Engineer

cn:c-gmsr89-s1/drf

"Imagineering a Better World"

№ 2054

Riedel Environmental Technologies Inc.

Certificate of Completion

presented to

GREG DAWDY

in recognition of satisfactory completion
of the course of instruction entitled

29CFR 1910.120 Eight Hour Hazardous Materials Waste Site Management

December 18, 1990

Date[s] of Instruction

Michael A Gross

Instructor

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

GREGORY C. DAWDY

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 11784
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: 7-SL031300/03
Expires: 03/13/01

Jeanne S. Arright, CET
DIRECTOR

XIM TECHNOLOGIES, INC.

Louis Branch Office
6 Innerbelt Business Center Drive
Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Gregory C. Dowdy	4/18/2000		42

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-[illegible]

I. PULMONARY FUNCTION

A. FEV1 [illegible]% 75% or Better Required	B. FVC [illegible]% 80% or Better Required	C. Qualified to Wear Respirator: ☒ Yes ☐ No

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration_____ ☐ Does not meet criteria for employment at this time

Physician_____ Date 4/25/00

Address HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis, MO 63141
(314) 567-6581

Signature_____

FORMS.DOC

American Red Cross

This recognizes that

Gregory Dawdy

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

HIV/AIDS Education

ST. LOUIS BI-STATE CHAPTER

FA/CPR

Holder's Signature

Gregory Dawdy

32100

Cert. 653999 (June 1997)

American Red Cross
We'll be there.

This recognizes that

Gregory Dowdy

has completed the requirements for

Workplace Training: First Aid

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 3 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

ST. LOUIS BI-STATE CHAPTER

HIV/AIDS Education

FA/CPR

Holder's Signature

Gregory Dowdy

Cert. 653999 (Rev. Feb. 1999)

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 7/5/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Name of Person Tested: Greg Dawdy Signature: Gregory Dawdy	Employee Number: 11784
Company: **MAXIM TECHNOLOGIES, INC.**	Address: 1908 Innerbelt Bus Ctr Dr St. Louis Mo 63114
Telephone Number: **(314) 426-0880**	
Department or Assignment: 4509	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Brand of Respirator: MSA	☒ Full Face Piece ☐ Half Mask
Type of Respirator: ☐ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☐ Medium ☒ Large ☐ Extra Large ☐ Other (explain)
Respirator Model Identification: MSA ultra twin	Date of Initial Respirator Training: 1981 Date of Respirator Update Training 3/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	1X time
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace / Bending	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Dickens

"Imagineering a Cleaner World"

Riedel Environmental Technologies, Inc.

Certificate of Completion

presented to

NANCY DICKENS

in recognition of satisfactory completion
of the course of instruction entitled

Forty-Hour Hazardous Materials Handling & Response

October 16 - 19, 1989
Date(s) of Instruction

Margaret Wickard
Instructor

"Imagineering a Cleaner World"

Riedel Environmental Technologies, Inc.

Certificate of Completion

presented to

NANCY M. DICKENS

in recognition of satisfactory completion
of the course of instruction entitled

Eight Hour Hazardous Waste Site Management

March 13, 1990
Date(s) of Instruction

Margaret L Wichard
Instructor

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

NANCY M. DICKENS

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 28290
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: 7-SI-031300-01
Expires: 03/13/01

Jeanine S. Arrigo, CET
DIRECTOR

MAXIM TECHNOLOGIES, INC.
TRANSMITTAL LETTER

NAME OF EMPLOYEE: Nancy Dickens BIRTHDATE: 4/28/50 Date 6/24/99
HOME ADDRESS: [redacted] SS#:

SECTION 1 FACILITY ADMINISTRATOR AUTHORIZING PHYSICAL (INITIALS)

CHARGE TO DEPT # 4509 DEPT FAS/C
PURPOSE OF PHYSICAL: PEP ___ ANNUAL ✓ TERMINATION ___
TYPE OF PHYSICAL: CLASS 1 ✓ CLASS 3 ___
ASBESTOS ___ DOT ___ OTHER

DRUG SCREEN: ___ 10-PANEL ___ DOT ___ NONE

Is job description attached? ___ Yes ✓ No

SECTION 2 (PHYSICIAN TO COMPLETE THE NEXT TWO SECTIONS)

Services Performed:	Yes	No
Basic History/Std. Physical Exam	—	—
DOT Physical Exam	—	—
Pulmonary Func. Study	—	—
Chest X-Ray	—	—
Back X-Ray	—	—
Routine Urinalysis	—	—
CBC	—	—
SMAC-25	—	—
Hearing Test	—	—
Drug Screen (10-Panel)	—	—
Drug Screen (DOT-NIDA)	—	—
Range of Motion Test - B200, Cybec or ISTU	—	—

SECTION 3 OCCUPATIONAL REVIEW

1. Physically capable of wearing respiratory device:
✓ Approved ___ Disapproved ___ Not Applicable
If disapproved, please comment:

2. Physically fit to perform job functions: ✓ Yes ___ No
If no, please comment:

3. Any detected medical condition which would place ___ Yes ✓ No
the employee at risk of impairment on the job.
If yes, please comment:

Any physical recommended limitations upon ~~employee's~~ assigned work:

Examining Physician's Signature: Date: 6/28/99

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6/30/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Name of Person Tested: Signature: Nancy M. Dukers	Employee Number: 28290
Company: MAXIM TECHNOLOGIES, INC.	Address: 1908 Innerbelt Bus. St. Louis MO 63114
Telephone Number: (314) 426-0880	
Department or Assignment: 4509	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Brand of Respirator: MSA	☒ Full Face Piece ☐ Half Mask
Type of Respirator: ☒ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☒ Medium ☐ Large ☐ Extra Large ☐ Other (explain)
Respirator Model Identification: MSA ULTRA TWIN SILICONE	Date of Initial Respirator Training: 11/89 Date of Respirator Update Training: 3/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/Bendover	✓		✓	

SIGNATURE OF FIT TESTER: Mark [signature]

American Red Cross
We'll be there.

This recognizes that

Nancy Dickens

has completed the requirements for

Workplace Training: First Aid

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 3 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

H.I.V./AIDS Education

ST. LOUIS BI-STATE CHAPTER

FA/CPR

Holder's Signature

Nancy M. Dickens

Cert. 653999 (Rev. Feb. 1999)

American Red Cross

This recognizes that

Nancy Dickens

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date.

Aquatics

Thomas R. Eggleston
Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

HIV/AIDS Education

FA/CPR

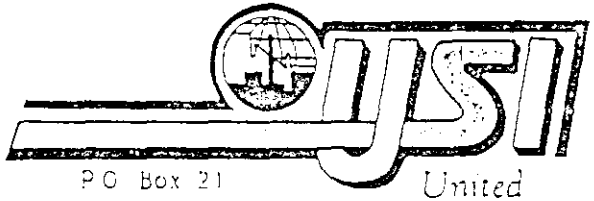
ST. LOUIS BI-STATE CHAPTER

Holder's Signature

Nancy N. Dickens

32100

Cert. 653999 (June 1997)



P O Box 21
621 Ninth Street
Carlyle, Illinois 62231
(618) 594-4023

United
Science
Industries

David E. Germeroth

Has attended and satisfactorily passed
an examination covering the contents
of a course entitled

40-HOUR HAZARDOUS MATERIALS WORKER

(Designed to meet the requirements of 29 CFR 1910.120)

HM-0342
Certificate Number

February 28, 1991
Date

February 27, 1992
Expiration Date

Course Director

Exam Administrator

CERTIFICATE OF TRAINING

MAXIM TECHNOLOGIES, INC.

Hereby Certifies

DAVID GERMEROTH

_____

Social Security No.

has completed

MANAGER/SUPERVISOR TRAINING
according to 29 CFR 1910.120(e)(4)

02/21/96 — *Date*

ST LOUIS, MO — *Location*

_____

Instructor

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

DAVID E. GERMEROTH

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 36759
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: [illegible]
Expires: 03/13/01

Jeanine S. Arrighi, CHT
DIRECTOR

MAXIM TECHNOLOGIES, INC.

St. Louis Branch Office
1908 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No	Age
DAVID GREENEATH	4/5/00		40

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-Employment

I. PULMONARY FUNCTION

A. FEV1 83% 75% or Better Required	B. FVC 96% 80% or Better Required	C. Qualified to Wear Respirator? ☒ Yes ☐ No

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommended following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration_____ ☐ Does not meet criteria for employment at this time

Physician_____ Date 4/5/00

Address: HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis MO 63141
(314) 567-6581

Signature

FORM5103.n

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULT
DATE OF TESTING: 6/30/08

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Name of Person Tested:	Employee Number: 36759
Signature:	
Company: MAXIM TECHNOLOGIES, INC.	Address: 1908 Innerbelt Dr
Telephone Number: (314) 426-0880	
Department or Assignment: Safety 1505	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Brand of Respirator: MSA	☑ Full Face Piece ☐ Half Mask
Type of Respirator: ☑ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☑ Medium ☐ Large ☐ Extra Large ☐ Other (explain)
Respirator Model Identification: MSA Ultra Twin	Date of Initial Respirator Training: 1980 Date of Respirator Update Training: 3/08

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/Bending	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Dutcher

American Red Cross

This recognizes that

David Germeroth

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

ST. LOUIS BI-STATE CHAPTER

HIV/AIDS Education

FA/CPR

Holder's Signature

32100

Cert 6539 [illegible]

American Red Cross

This certifies that

DAVE GERMEROTH

has completed the requirements for

STANDARD FIRST AID

sponsored by

MAXIM TECHNOLOGIES

Date completed

1-8-99

Chairman, American Red Cross

Instructor's Signature

Holder's Signature

The American Red Cross recognizes this training as valid for three years from completion date

Cert. 6[illegible]20 [illegible] 1993

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

This Certifies that

Sonja Goen

492-70-0594

has satisfactorily completed
40 hours HAZWOPER training
as required by CFR 1910.120
Ft. Riley Army Post, Junction City, Kansas

June 17-21, 1996

William Keffer, Instructor

Region 7

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

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

Does hereby certify that

Sonja J. Goen

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

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date:	March 3, 2000
Exam Date:	March 3, 2000
Number:	SSS030300-023HWR
Expires:	March 3, 2001
Student SSN:	492-70-0594

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

BCSP

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

ENVIRONMENTAL Training Center

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

Certifies that

SONJA J. GOEN

has successfully completed

8 Hour Supervisor Training Per 29 CFR 1910.120(e) For

HAZARDOUS WASTE SITE OPERATIONS

Soc.Sec.No: 492-70-0594
Course Date: 03/02/00
Requirement: 29 CFR 1910.120(e)
Certificate #: 7-SL030200/01
Expires: 03/02/01

Jeanine S. Arright, CCH
DIRECTOR

MAXIM TECHNOLOGIES, INC.

St. Louis Branch Office
1908 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Sonja Boen	6/19/00		28

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-employment

I. PULMONARY FUNCTION

A. FEV1 [illegible] 75% or Better Required	B. FVC 115 80% or Better Required	C. Qualified to Wear Respirator ☒ Yes ☐ N

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites. Recommend following limitations:

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration_____ ☐ Does not meet criteria for employment at this time

Physician C Douglas Meadows MD Date 6/21/00

Address Healthsouth Medical Clinic
777 S. New Ballas Road
St. Louis, MO 63141
(314) 567-6581

Signature

FORMS103.n

Maxim Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6/30/00

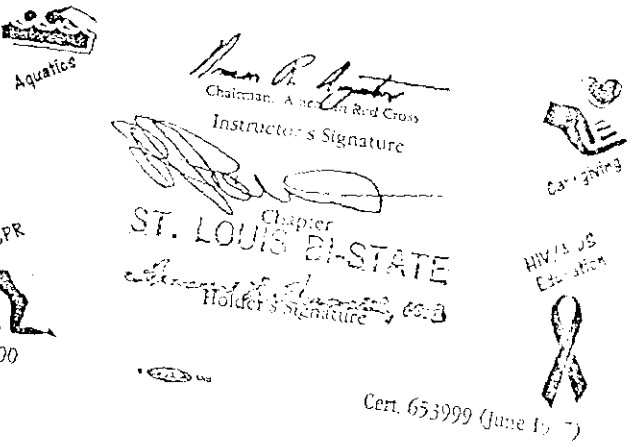
IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Name of Person Tested: SONJA GOEN Signature: Sonja Goen	Employee Number: 838
Company: **MAXIM TECHNOLOGIES, INC.**	Address: 1908 Innerbelt Bus. Ctr. St. Louis MO 63114
Telephone Number: **(314) 426-0880**	
Department or Assignment: ENVIRONMENTAL	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Brand of Respirator: NORTH	☒ Full Face Piece ☐ Half Mask
Type of Respirator: NORTH SILICON 76008AS ☒ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☒ Small ☐ Medium ☐ Large ☐ Extra Large ☐ Other (explain) ________
Respirator Model Identification: NORTH SILICON 76008AS	Date of Initial Respirator Training: 6/21/96 Date of Respirator Update Training: 3/3/2000

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/Bending	✓		✓	

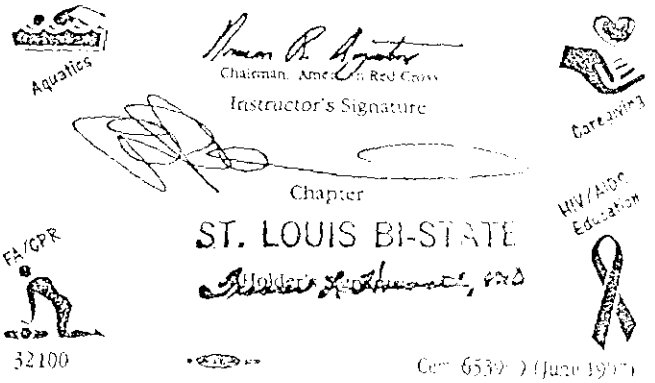
SIGNATURE OF FIT TESTER: Nancy M. Dubois



American Red Cross

This recognizes that
Sonja Goen
has completed the requirements for
Standard First Aid

conducted by
St. Louis Bi-State
Date completed **07/27/1999**
The American Red Cross recognizes this certificate as valid for **3** year(s) from completion date.



American Red Cross

This recognizes that
Sonja Goen
has completed the requirements for
Adult CPR

conducted by
St. Louis Bi-State
Date completed **07/27/1999**
The American Red Cross recognizes this certificate as valid for **1** year(s) from completion date.

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

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

Does hereby certify that

Brad J. Lindenbusch

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

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date:	March 10, 2000
Exam Date:	March 10, 2000
Number:	SSS031000-025HWR
Expires:	March 10, 2001
Student SSN:	499-70-7367

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

BCSP
DOUGLAS L. MUELLER
13006
CERTIFIED SAFETY PROFESSIONAL

Hazardous Material Waste Operations and Site Training Course

40 HOUR OSHA TRAINING

This is to certify that

Brad Lindenbusch

has completed Security Training Center's
40 Hour Hazardous Materials Training Course
in compliance with OSHA 29CFR1910.120

Daniel P. Heitert

INSTRUCTOR
Daniel P. Heitert, M.A.
Security Training Center
Certified by Missouri Coordinating Board for Higher Education

August 1, 1994

DATE COMPLETED

426-43

1. .IM TECHNOLOGIES, INC.

. Louis Branch Office
·8 Innerbelt Business Center Drive
. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Iedical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Brad Lindenbusch	1-11-00		34

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-Employment

I. PULMONARY FUNCTION

A. FEV1	B. FVC	C. Qualified to Wear Respirator
10 % 75% or Better Required	108 % 80% or Better Required	☒ Yes ☐ No

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration _____ ☐ Does not meet criteria for employment at this time

Physician _____ Date 1/17/2000

HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis, MO 63141
(314) 567-6681

Address _____

Signature _____

FIT TEST FOR PROTECTIVE BREATHING EQUIPMENT

(29 CFR 1910.134, 29 CFR 1910.1001, ANSI Z88, 2-1980)

Brad Linderbusch was fit tested for breathing apparatus medium MSA Ultra Twin, full-face
(Employee's Name)

Comfo II respirator using the Isoamyl Acetate Procedure and Irritant Smoke Test.

The test(s) were performed and passed on 7/1/99 by Nancy Dickens.

PERSON TESTED: Brad Linderbusch

DATE: 7-7-99

SAFETY OFFICER: Nancy Dickens

DATE: 7/7/99

Certificate of Completion

2 Hour Asbestos Awareness Training

The following individual has completed a two hour asbestos awareness training course which satisfies the requirements of 29 CFR 1926.1101(k)(6)(vi) for Class IV asbestos workers.

Topics covered in this class included:

Definition of Hazards

Asbestos Hazards

Nature of Asbestos Hazards

Health Risks

Types of Asbestos Containing Materials

Minimizing Asbestos Hazards and Exposure To Asbestos

Attendee: Brad Lindenbusch Brad Lindenbusch

Instructor: David E. Germeroth, P.E., Asbestos Management Planner #: SSS122199-96MP

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6/30/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Name of Person Tested: Signature: Brad Lindenbusch	Employee Number: 1514
Company: MAXIM TECHNOLOGIES, INC.	Address: 1875 Argyle Ave St. Louis MO 63114
Telephone Number: (314) 426-0880	
Department or Assignment: 4509	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Brand of Respirator:	☒ Full Face Piece ☐ Half Mask
Type of Respirator: ☒ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☒ Medium ☐ Large ☐ Extra Large ☐ Other (explain) Breathing guard
Respirator Model Identification: MSA Ultra twin Silicone	Date of Initial Respirator Training: 4 Oct 95
	Date of Respirator Update Training: 3 00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil PASS	Banana Oil FAIL	Irritant Smoke PASS	Irritant Smoke FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/bending	✓		✓	

SIGNATURE OF FIT TESTER: Nancy A. Dulles

American Red Cross

This recognizes that

Brad Lindenbusch

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-96-CC

The American Red Cross recognizes this certificate as valid for **1** year(s) from completion date.

Aquatics

Norman R. Augustine
Chairman, American Red Cross

Caregiving

Instructor's Signature

Chapter

ST. LOUIS BI-STATE CHAPTER

HIV/AIDS Education

FA/CPR

Holder's Signature

Brad Lindenbusch

32100

Cert. 653999 (June 1997)

Certificate of Completion

2 Hour Asbestos Awareness Training

The following individual has completed a two hour asbestos awareness training course which satisfies the requirements of 29 CFR 1926.1101(k)(6)(vi) for Class IV asbestos workers.

Topics covered in this class included:

Definition of Hazards

Asbestos Hazards

Nature of Asbestos Hazards

Health Risks

Types of Asbestos Containing Materials

Minimizing Asbestos Hazards and Exposure to Asbestos

Date of Course: 23 February 2000

Attendee: Brad Linenbusch Brad Linenbusch

Instructor: David E. Germeroth, P.E., Asbestos Management Planner #: ASS122199-220AMPR

American Red Cross
We'll be there.

This recognizes that
Brad Lindenbusch
has completed the requirements for

Workplace Training: First Aid

conducted by

St. Louis Bi-State
Date completed 1-19-00
The American Red Cross recognizes this certificate as valid for 3 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Chapter

ST. LOUIS BI-STATE CHAPTER

Holder's Signature

Brad Lindenbusch

Caregiving

HIV/AIDS Education

FA/CPR

Cert. 653999 (Rev. Feb. 1999)

Hazardous Material Waste Operations and Site Training Course

40 HOUR OSHA TRAINING

This is to certify that

Michael McLean

has completed Security Training Center's
40 Hour Hazardous Materials Training Course
in compliance with OSHA 29CFR1910.120

Daniel P. Heifert

November 11, 1994

INSTRUCTOR
Daniel P. Heifert, M.A.
Security Training Center
Certified by Missouri Coordinating Board for Higher Education

DATE COMPLETED

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

MICHAEL McLEAN

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 12181
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: 7-SL031300-10
Expires: 03/13/01

Jeanine S. Arrighi, CIH
DIRECTOR

Certificate of Completion

2 Hour Asbestos Awareness Training

The following individual has completed a two hour asbestos awareness training course which satisfies the requirements of 29 CFR 1926.1101(k)(6)(vi) for Class IV asbestos workers.

Topics covered in this class Included:

Definition of Hazards

Asbestos Hazards

Nature of Asbestos Hazards

Health Risks

Types of Asbestos Containing Materials

Minimizing Asbestos Hazards and Exposure to Asbestos

Date of Course: 23 February 2000

Attendee: Mike McLean

Instructor: David E. Germeroth, P.E., Asbestos Management Planner # SSS122199-220AMPR

MAXIM TECHNOLOGIES, INC.

St. Louis Branch Office
1908 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Michael Mahan	11-17-99		37

Employer	Exam Type:
Maxim Technologies, Inc.	☑ Annual ☐ Pre Employment

I. PULMONARY FUNCTION

A. FEV1 91% 75% or Better Required	B. FVC 96% 80% or Better Required	C. Qualified to Wear Respirator ☑ Yes ☐ No

II. FIT FOR DUTY

☑ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend follow up

Limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration _____ ☐ Does not meet criteria for employment at this time

Physician C D Mahan, M.D. Date 11-24-99

Address HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis MO 63141
(314) 567-6581

Signature _____

FORM5103en

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6-30-0[illegible]

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Name of Person Tested: Michael McLean	Employee Number: 12181
Signature:	
Company: **MAXIM TECHNOLOGIES, INC.**	Address: 439 Aldrup St. Edwardsville, IL [illegible]
Telephone Number: (314) 426-0880	
Department or Assignment: 4509	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Brand of Respirator: MSA	☑ Full Face Piece ☐ Half Mask
Type of Respirator: ☑ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☐ Medium ☑ Large ☐ Extra Large ☐ Other (explain)
Respirator Model Identification: Silicone MSA Ultra Twin	Date of Initial Respirator Training: 11/99 Date of Respirator Update Training: 3/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Glasses/Beading	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Dukes

American Red Cross

This recognizes that

Michael McLean

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

HIV/AIDS Education

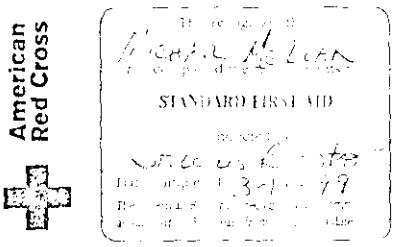
ST. LOUIS BI-STATE CHAPTER

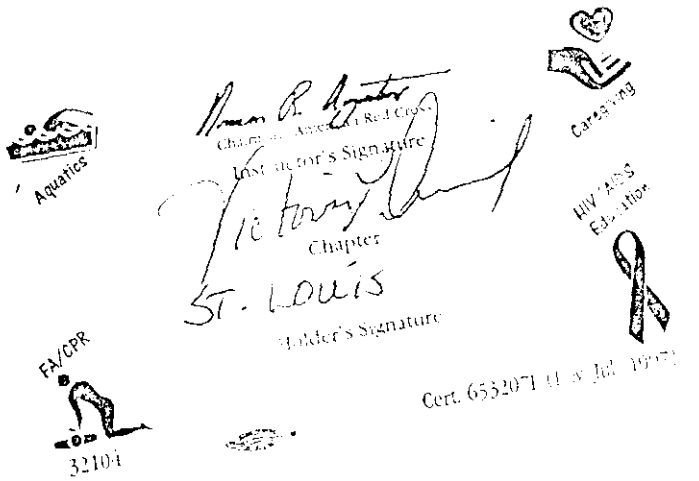
FA/CPR

Holder's Signature

32100

Cert. 653999 (June 1997)


American
Red Cross
STANDARD FIRST AID


Aquatics
Caregiving
HIV/AIDS
Education
Chapter
ST. LOUIS
Holder's Signature
FA/CPR
32104

Environmental Training Consultants, Inc.
Certificate of Training

This certifies that

James L. Richards

has received FORTY hours of training for attending the
OSHA HAZARDOUS WASTE SITE WORKER
OSHA 29 CFR 1910.120

May 3-6, 1993

Itasca, Illinois

Certificate Number 93-2409 SSN:

Larry A. Baylor, President
Environmental Training Consultants, Inc.
1050 Granville, Itasca, Illinois 60143 (708) 773-2833

"Solving Environmental Concerns Through Training" CEU: 5.0

1st Environmental Information Systems

DOT HAZARDOUS MATERIALS TRAINING COURSE

THIS IS TO CERTIFY THAT

James Richards

has completed a Hazardous Materials Training Course in Compliance with 49 CFR 172.700

Barbara J. Miller
Instructor

Certificate Number: 30099303

30 September 1993
Date Completed

Environmental Training Consultants, Inc.
Certificate of Training

This certifies that

James L. Richards

has received EIGHT hours of training for attending the
OSHA HAZARDOUS WASTE SITE SUPERVISOR
OSHA 29 CFR 1910.120

May 7, 1993

Itasca, Illinois

Certificate Number 93-2431 SSN: [redacted]

Larry A. Baylor

Larry A. Baylor, President
Environmental Training Consultants, Inc.
1050 Granville, Itasca, Illinois 60143 (708) 773-2833

"Solving Environmental Concerns Through Training"

CEU: 1.0

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

JAMES L. RICHARDS

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 02040
Course Date: 03/13/00
Requirement: 29 CFR 1910.120 (e) and (q)
Certificate #: 7-SL-031300-12
Expires: 03/13/01

Jeanine S. Arright, CIH
DIRECTOR

MAXIM TECHNOLOGIES, INC.
. Louis Branch Office
1908 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
James L. Richards	5/11/00		32

Employer	Exam Type
Maxim Technologies, Inc.	☒ Annual ☐ Pre-Employment

I. PULMONARY FUNCTION

A. FEV1 115 % 75% or Better Required	B. FVC 115 % 80% or Better Required	C. Qualified to Wear Respirator ☒ Yes

II. FIT FOR DUTY

☑ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration _____ ☐ Does not meet criteria for employment at this time

Physician _____ Date 5/15/00

Address _____

HEALTHSOUTH MEDICAL CLINIC
777 S New Ballas Road
St. Louis, MO 63141
(314) 567-8581

Signature _____

FORMS1033a

FIT TEST FOR PROTECTIVE BREATHING EQUIPMENT

(29 CFR 1910.134, 29 CFR 1910.1001, ANSI Z88,2-1980)

Jim Richards was fit tested for breathing apparatus medium MSA Ultra
(Employee's Name)

Twin, full-face Silicone Comfo II respirator using the Isoamyl Acetate Procedure and Irritant Smoke Test.

The test(s) were performed and passed on 6/29/99 by Nancy Dickens

PERSON TESTED: [signature]

DATE: 7/7/99

SAFETY OFFICER: Nancy Dickens

DATE: 7/7/99

American Red Cross

This recognizes that
Jim Richards
has completed the requirements for
Standard First Aid
conducted by
St. Louis Bi-State
Date completed **07/27/1999**
The American Red Cross recognizes this certificate as valid for **3** year(s) from completion date.

Aquatics
Chairman, American Red Cross
Instructor's Signature
Caregiving
Chapter
ST. LOUIS BI-STATE
HIV/AIDS Education
Holder's Signature
FA/CPR
32100
Cert. 653999 (June 1997)

American Red Cross

This recognizes that
Jim Richards
has completed the requirements for
Adult CPR
conducted by
St. Louis Bi-State
Date completed **07/27/1999**
The American Red Cross recognizes this certificate as valid for **1** year(s) from completion date.

Aquatics
Chairman, American Red Cross
Instructor's Signature
Chapter
ST. LOUIS BI-STATE
Holder's Signature
FA/CPR
32100

ENVIRONMENTAL
Training Center

CERTIFIES THAT

MARK L. SIEVERS

has successfully completed

40 HOUR INITIAL HEALTH & SAFETY TRAINING PER 29 CFR 1910.120 FOR

HAZARDOUS WASTE SITE OPERATIONS

SSN ____________________

Course date AUGUST 9 to 13, 1993

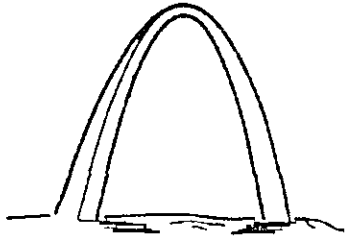
Requirement 29 CFR 1910.120

Certificate No. 7-SL080993-04

Training Site: 1988 INNERBELT BUSINESS CTR. DR.
ST. LOUIS, MISSOURI 63114-5760
TELEPHONE 314/428-7020

C. J. Metcalf
Instructor

Ronald Neuland
Director, Training



PSH inc - Training Center

St. Louis, Missouri

This Certifies That

Mark L. Siewers

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

29 CFR 1910.120

Hazardous Waste Operation and Emergency Response

Class Date: *May 18, 1994*
Exam Date: *May 18, 1994*
Number: *PSH051894-002HWMS*
SSN:

Carol E. Hoag, President

Course Provider: **PSH inc**

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

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

ENVIRONMENTAL Training Center

Training Location:
Maxim Technologies
1908 Innerbelt Business Ctr. Dr.
St. Louis, MO 63114
Tel. (314) 426-0080

Certifies that

MARK L. SIEVERS

has successfully completed

8 Hours of Annual Health & Safety Training Per 29 CFR 1910.120(e) and (q) For

HAZARDOUS WASTE SITE OPERATIONS

AND EMERGENCY RESPONSE

Employee No: 11998
Course Date: 03/13/00
Requirement: 29 CFR 1910.120(e) and (q)
Certificate #: 7-SL031300-14
Expires: 03/13/01

Jennifer S. Arright, CHEP
DIRECTOR

MAXIM TECHNOLOGIES, INC.

St. Louis Branch Office
1908 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
Mark L. Sievers	4/5/00		35

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-employment

I. PULMONARY FUNCTION

A. FEV1 [illegible] % 75% or Better Required	B. FVC [illegible] % 80% or Better Required	C. Qualified to Wear Respirator ☒ Yes ☐ No

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration _____ ☐ Does not meet criteria for employment at this time

Physician _____ Date 4/10/00

Address _____

HEALTHSOUTH MEDICAL CLINIC
777 S. New Ballas Road
St. Louis, MO 63141
(314) 567-6581

Signature _____

FORM:S103/n

Maxim
Technologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6/30/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Name of Person Tested: Signature: Mark Zelin	Employee Number: 11998
Company: MAXIM TECHNOLOGIES, INC.	Address: 1908 Innerbelt St Louis MO 63114
Telephone Number: (314) 426-0880	
Department or Assignment: Eng	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)

Brand of Respirator: MSA	☒ Full Face Piece ☐ Half Mask
Type of Respirator: ☒ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☐ Medium ☒ Large ☐ Extra Large ☐ Other (explain)
Respirator Model Identification: Advantage 1000	Date of Initial Respirator Training: 2/92 Date of Respirator Update Training: 2/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/Bend	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Arbeen

American Red Cross
We'll be there.

This recognizes that

MARK SIEVERS

has completed the requirements for

Workplace Training: First Aid

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 3 year(s) from completion date.

Aquatics

Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

HIV/AIDS Education

FA/CPR

ST. LOUIS BI-STATE CHAPTER

Holder's Signature

Cert. 653999 (Rev. Feb. 1999)

American Red Cross

This recognizes that

Mark Sievers

has completed the requirements for

Workplace - Adult CPR

conducted by

St. Louis Bi-State

Date completed 1-19-00

The American Red Cross recognizes this certificate as valid for 1 year(s) from completion date.

Aquatics

Norman R. Augustine
Chairman, American Red Cross

Instructor's Signature

Caregiving

Chapter

HIV/AIDS Education

ST. LOUIS BI-STATE CHAPTER

FA/CPR

Holder's Signature

32100

Cert. 653999 (June 1997)

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

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

Does hereby certify that

Jim D. Shetley

has successfully completed the 40 hour initial course of instruction for accreditation under

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date: August 17-21, 1998
Exam Date: August 21, 1998
Number: SSS082198-271HW40
Expires: August 21, 1999
Student SSN:

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

BCSP
DOUGLAS L. MUELLER
13006

MAXIM TECHNOLOGIES, INC.

Hereby Certifies

JIM SHETLEY

_____

Employee No.

has satisfactorily completed

EIGHT-HOUR HAZARDOUS WASTE SITE OPERATIONS REFRESHER TRAINING as required in 29 CFR 1910.120 (e) and (q)

02/25/97 — *Date*

ST. LOUIS — *Location*

This training included the OSHA training requirements for the following: Hearing Conservation, 29 CFR 1910.95; Personal Protective Equipment, 29 CFR 1910.132; Eye and Face Protection, 29 CFR 1910.133; Respiratory Protection, 29 CFR 1910.134 (APR); Head Protection, 29 CFR 1910.135; Foot Protection, 29 CFR 1910.136; Hand Protection, 29 CFR 1910.138; Confined Space Entry, 29 CFR 1910.146; Portable Fire Extinguisher Training, 29 CFR 1910.157; Excavation Safety, 29 CFR 1926.650-652; Bloodborne Pathogens, 29 CFR 1910.1030; Right-to-know, 29 CFR 1910.1200; and Contractor Training under PSM, 29 CFR 1910.119 (f)(4) and (h).

Susan D. Harms, Ph.D., CIH
Health and Safety Director, Houston, TX

Certificate # 97022519

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

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

Does hereby certify that

Jim D. Shetley

has successfully completed the 40 hour initial course of instruction for accreditation under

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date: August 17-21, 1998
Exam Date: August 21, 1998
Number: SSS082198-271HW40
Expires: August 21, 1999
Student SSN:

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

BCSP
DOUGLAS L. MUELLER
13006
CERTIFIED SAFETY PROFESSIONAL

Safety Support Services, Incorporated

Environmental and Occupational Safety & Health Consultants

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

Does hereby certify that

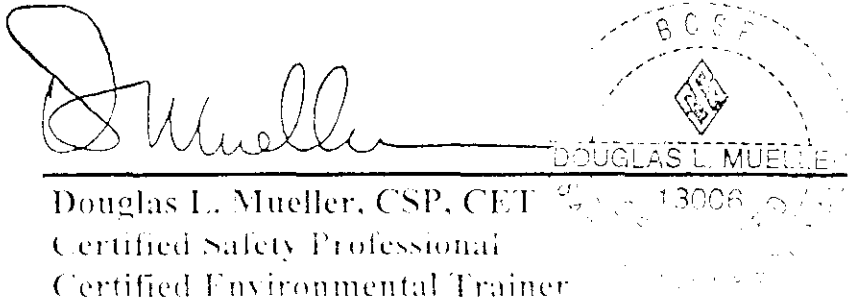
Jim D. Shetley

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

29 CFR 1910.120

Hazardous Waste Operations and Emergency Response

Class Date:	February 17, 2000
Exam Date:	February 17, 2000
Number:	SSS021700-015HWR
Expires:	February 17, 2001
Student SSN:	327-54-8810



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

MAXIM TECHNOLOGIES, INC.

Louis Branch Office
1008 Innerbelt Business Center Drive
St. Louis, MO 63114

PHYSICIAN'S FITNESS STATEMENT

Medical Monitoring Program

Name	Date of Exam	Social Security No.	Age
JAMES D SHETLEY	10/22/99	[redacted]	43

Employer	Exam Type:
Maxim Technologies, Inc.	☒ Annual ☐ Pre-Employment

I. PULMONARY FUNCTION

A. FEV1 91 % 75% or Better Required	B. FVC 84 % 80% or Better Required	C. Qualified to Wear Respirator ☒ Yes ☐ No

II. FIT FOR DUTY

☒ Fit for duty, including qualified for respirator

☐ Meets minimum criteria of examination protocol and should be able to continue work at hazardous waste sites; recommend following limitations: _____

☐ Limited Duty: ☐ Permanent ☐ Temporary Duration_____ ☐ Does not meet criteria for employment at this time

Physician_____ Date 10/27/99

Address_____

Signature_____

FORMS103.a

Maxim
chnologies Inc.

RESPIRATOR FIT TEST RESULTS
DATE OF TESTING: 6/30/00

IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Name of Person Tested: Signature: [signature]	Employee Number: 1902
Company: MAXIM TECHNOLOGIES, INC.	Address: St. Louis office
Telephone Number: (314) 426-0880	
Department or Assignment:	

RESPIRATOR IDENTIFYING INFORMATION (TO BE COMPLETED BY PERSON BEING TESTED)	
Brand of Respirator: MSA	☒ Full Face Piece ☐ Half Mask
Type of Respirator: ☒ Air Purifying ☐ Atmosphere Supplying ☐ Air Line ☐ SCBA ☐ Oxygen Manufacturing	Size of Respirator: ☐ Small ☒ Medium ☐ Large ☐ Extra Large ☐ Other (explain) ____
Respirator Model Identification: MSA ultratwin silicone	Date of Initial Respirator Training: 1998 Date of Respirator Update Training: [illegible]/00

FIT TESTING DOCUMENTATION (TO BE COMPLETED BY FIT TESTER)

Activity	Banana Oil		Irritant Smoke	
	PASS	FAIL	PASS	FAIL
Normal Breathing	✓		✓	
Deep Breathing	✓		✓	
Turn Head Side to Side	✓		✓	
Move Head Up and Down	✓		✓	
Talking (Reading of Rainbow Passage)	✓		✓	
Other (Explain): Grimace/breathing	✓		✓	

SIGNATURE OF FIT TESTER: Nancy M. Dukes

Chairman, American Red Cross

Instructor's Signature

Ray Fiddes

Holder's Signature

The American Red Cross recognizes this training as valid
for three years from completion date

Cert 653307 (Jan 1993)

Red Cross

This certifies that

JIM SHETLEY

has completed the requirements for

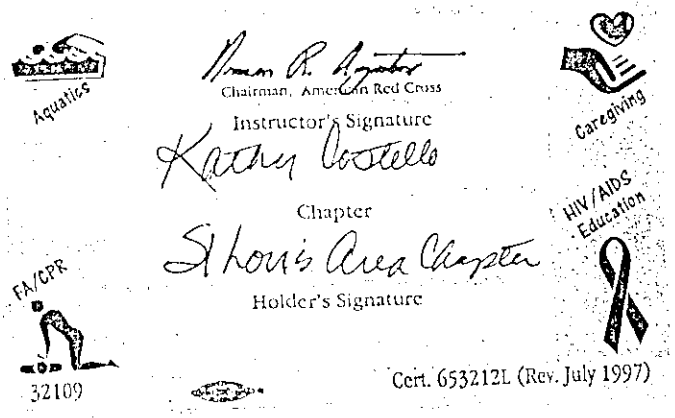
STANDARD FIRST AID

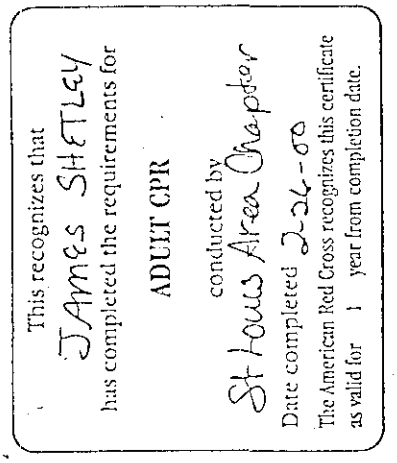
sponsored by

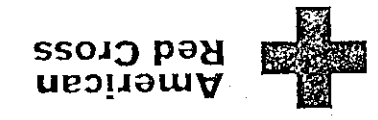
MAXIM TECHNOLOGIES

Date completed

1-8-99


Aquatics
Chairman, American Red Cross
Instructor's Signature
Kathy Costello
Chapter
St Louis Area Chapter
Holder's Signature
Caregiving
HIV/AIDS Education
FA/CPR
32109
Cert. 653212L (Rev. July 1997)


This recognizes that
JAMES SHETLEY
has completed the requirements for
ADULT CPR
conducted by
St Louis Area Chapter
Date completed 2-26-00
The American Red Cross recognizes this certificate as valid for 1 year from completion date.


American Red Cross

APPENDIX C

MAXIM REVISED SUBSTANCE ABUSE POLICY

EMPLOYEE SUMMARY

AND

MAXIM POLICY

FOR

CONTROLLED SUBSTANCE and ALCOHOL USE AND TESTING

under
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION AND
RESEARCH AND SPECIAL PROGRAMS
ADMINISTRATION REGULATIONS

Revised October 30, 1997
Revised December 1, 1997
Revised January 1, 1999
Revised June 15, 2000
Effective Date: June 15, 2000

CONFIRMATION OF RECEIPT
MAXIM DOT/RSPA DRUG AND ALCOHOL PROGRAM EMPLOYEE SUMMARY

I,_____, acknowledge receipt of a copy of the Maxim Technologies, Inc.® ("MAXIM") DOT/RSPA Drug and Alcohol Program Employee Summary. I understand the following elements of the plan:

Who is covered?

What is prohibited conduct.

What tests are required and when employees may be tested.

What the consequences are for engaging in prohibited conduct.

How the testing is done.

Where an employee can go for help.

What effects alcohol abuse and drug use have on personal health, the family and job.

I have received a statement of the Maxim Policy on Drug Abuse and Alcohol Use and understand the consequences of a positive test. I agree to abide by the provisions of this plan.

_____
Employee Signature

_____
Printed Name

_____
Date

MAXIM TECHNOLOGIES, INC.® POLICY STATEMENT

The policy of MAXIM TECHNOLOGIES, INC.® ("MAXIM") pertaining to alcohol and drug use by employees is as follows:

1. Any covered employee who registers an alcohol concentration above the legal limit for operation of a motor vehicle as a result of an agency (RSPA, FHA, DOT), Maxim or client mandated test will be terminated unless the employee requests first offense amnesty. Any employee who registers an alcohol concentration above the legal limit for operation of a motor vehicle as a result of a law enforcement mandated test while operating a company vehicle or a hired, non-owned vehicle on company business will be terminated unless the employee requests first offense amnesty.

2. Any employee who tests positive for controlled substances (after MRO review) will be terminated unless the employee requests first offense amnesty. The employee will be referred for evaluation by a Substance Abuse Professional under the Employee Assistance Program. The employee will be allowed to return to duty within the recommendations of the SAP which include passing a drug test and a reasonable program of follow-up drug testing, without prior notice, for up to five years after returning to duty.

3. Any employee who refuses to be tested when required by or for MAXIM will be terminated. Delay, avoidance, obfuscation or submission of an invalid sample may be construed as refusal to test.

4. An employee self-referring for alcohol or controlled substances will be referred to a Substance Abuse Professional under the Employee Assistance Program. Costs are assigned to the employee or may be covered under the Major Medical Benefit Plan.

5. Any employee who registers an alcohol concentration between 0.04 and the legal limit for operation of a motor vehicle on any test administered by or for MAXIM will be removed from performing any duties. The employee will be referred for evaluation by an SAP under the Employee Assistance Program. The employee will be allowed to return to duty within the recommendations of the SAP, which may include follow up testing for a period up to five years.

6. Any employee who registers an alcohol concentration of greater than 0.02 but less than 0.04 will be removed from performing safety sensitive and/ or fiduciary duties, as defined in the Maxim Drug and Alcohol Testing Program (SOP - 20) and the DOT/RSPA Anti Drug and Alcohol Misuse Prevention Plan.

7. Any employee terminated will be advised to obtain an evaluation from a Substance Abuse Professional. The evaluation will be at the employee's expense. Any employee terminated for alcohol or drug use may be considered for re-hire after 3 years. An employee terminated for drug use or alcohol abuse for the second time or an employee who refuses to test will not be considered for rehire.

8. Any employee convicted of Driving Under the Influence or under criminal drug statutes must notify Human Resources no later than 5 calendar days after such conviction. An employee must notify Human Resources immediately upon receiving a citation for DUI or indictment under criminal drug statutes for a violation occurring in the work place.

9. **Employees are advised that work related injury resulting from alcohol or controlled substance use may not be compensable under Workers' Compensation statutes and may not be covered under the Major Medical Benefit plan.**

SUMMARY

The Department of Transportation, Federal Highway Administration and Research and Special Programs Administration (RSPA), as part of the controlled substance and alcohol misuse prevention regulations (49 CFR 199 and 49 CFR 382) prohibits certain conduct by, and requires controlled substance and alcohol testing of, persons who perform specified covered and safety sensitive functions. Controlled substance testing is performed on a urine specimen. Alcohol tests are conducted by qualified technicians using evidential breath testing devices.

Persons who violate this regulation will be subject to consequences, including removal from covered functions. In addition, ***Maxim*** has established a policy with respect to employees who use controlled substances or misuse alcohol and the consequences that may occur. This document summarizes the regulatory requirements and the Maxim policy.

Maxim will apply these requirements to all employees covered under 49 CFR 199 and 382 based on the independent authority allowed under these regulations (199.209 and 382.111). The Maxim Policy appears bold and underlined.

IMPLEMENTATION DATE: May 15, 1995
REVISION DATES: October 30, 1997, December 1, 1997, January 1, 1999, June 15, 2000

A copy of this summary plan will be distributed to each covered employee prior to the start of alcohol testing under the DOT (FHA and RSPA) mandated Alcohol Misuse Prevention Program (AMPP) and to each person subsequently hired for or transferred to a covered position.

A copy of this summary will be distributed to each covered employee after any revision of the plan.

Written notice of the availability of this information will be provided to representatives of employee organizations.

1. CONTACT PERSON KNOWLEDGEABLE OF THE DRUG AND ALCOHOL PROGRAM

The following person(s) are available and able to answer questions concerning the Drug and Alcohol Testing Programs.

James J. Houghtalin
Vice President of Administrative Services
14673 Midway Road, Suite 210
Addison, TX 75001
Phone: 972/701-0713, ext. 271
Mobile: 214-679-3413

2. EMPLOYEES SUBJECT TO TESTING

2.1 Covered Employees

Employees performing any of the following covered functions for MAXIM are subject to the DOT/RSPA alcohol testing:

* operations, maintenance or emergency response functions for pipelines or gas facility operators regulated by the Federal Department of Transportation Research and Special Programs Administration, or

* functions involving unrestricted access to protected areas of nuclear power plants regulated by the Federal Nuclear Regulatory Commission, or

* interstate operation of commercial motor vehicles regulated under the U.S. Department of Transportation, Federal Highway Administration.

In addition, employees

* required by the client to be part of the RSPA Drug and Alcohol Program, or

* holding a Commercial Driver's License (CDL) and operating a Commercial Motor Vehicle for MAXIM

will be covered by the DOT/RSPA Drug and Alcohol Program.

2.2 Covered Supervisors

Considering the above definition of covered employees, employees with the following job titles may be subject to this testing based on job/project assignment:

NDT Tech I
NDT Tech IIA, B, and C
Environmental Scientist
CME Technician

NDT Tech III	Geotech/Soils Tech
Air Technician	Logger
Driller	Driller's Helper

2.3 Considering the definition of a covered employee in section 2.1, supervisors with the following job titles may be subject to this testing based on job/project assignment:

NDT Supervisor	Environmental Project Manager
CME Supervisor	GeoTech Supervisor
Drilling Supervisor	Air Group Supervisor

3. PROHIBITED CONDUCT

MAXIM prohibits the use or possession of alcoholic beverages or controlled substances while on company property, in any company vehicle, or on company time, including breaks or lunch, paid or unpaid, on any shift.

3.1. Alcohol Prohibitions

Covered employees may not report for duty or remain on duty in a position requiring the performance of covered functions

a. while having an alcohol concentration of 0.04 or greater, or

b. while in possession of alcohol unless it is being transported as cargo by a commercial motor vehicle, or

c. if using alcohol, or

d. within four hours of having used alcohol; that is, an employee who has consumed alcohol off duty must decline a call to work if acceptance would result in performing covered duties within the 4 hours. Once notified to respond to an emergency, the employee must not consume any alcohol.

Covered employees who have been involved in an accident may not use alcohol until post-accident testing is done or for a period of eight hours, whichever comes first.

Covered employees cannot refuse to submit to alcohol testing.

MAXIM, upon obtaining knowledge about any of the above acts, will not permit the covered employee to perform a safety sensitive function.

3.2 Controlled Substance Prohibitions

Covered employees may not report for duty or stay on duty in a safety sensitive function while using any controlled substance.

Covered employees may not report for duty or stay on duty in a safety sensitive function if they have tested positive for a controlled substance.

MAXIM, upon obtaining knowledge about any of the above acts, will not permit the covered employee to perform a safety sensitive function.

4. TESTING REQUIRED

Employees covered under the DOT, Federal Highway Administration rules are subject to testing under the following circumstances:

Pre-Employment*, Post Accident, Random, Reasonable Suspicion, Return-to-Duty/Follow up.

***MAXIM will apply these requirements to all covered employees covered under 49 CFR 199 and 382, based on the independent authority allowed under these regulations.**

4.1. Pre-Employment or Pre-Assignment

Prior to the first time an employee performs safety sensitive functions for an employer, the employee must undergo testing for alcohol and controlled substances.

a. If the results show an alcohol concentration of greater than 0.02 but less than 0.04, the provisions of section 7.1.1 of this program apply.

b. If the controlled substance test is positive or if the results show an alcohol concentration of 0.04 or greater, the employee (applicant) will not be assigned to perform a safety sensitive function

The requirements of this plan with respect to referral, evaluation and rehabilitation do not apply to applicants who refuse to submit to a pre-employment alcohol or controlled substance test or who have a pre-employment alcohol test with a result indicating an alcohol concentration of 0.04 or greater or controlled substance test with a verified positive test result.

4.2. Post-Accident

a. Post accident alcohol testing must be done within 2 hours following the accident. If a test cannot be administered within 8 hours, attempts to test will cease.

b. Post accident drug testing will be done with 32 hours following the accident. If the specimen cannot be obtained within the 32 hours, efforts to obtain the specimen will cease

c. In either case, the supervisor must document why the test was not performed

4.3. Random Testing

MAXIM shall apply random drug and alcohol testing to all DOT/RSPA covered employees based on the independent authority allowed by 49 CFR 199.209.

MAXIM shall select randomly a sufficient number of employees for testing during each calendar year to equal an annual rate not less than 25% of covered employees for alcohol testing and not less than 50% of covered employees for controlled substance testing. The random tests shall be unannounced and the dates for such testing will be spread reasonably throughout the calendar year.

When an employee is notified of selection for random alcohol testing, he shall proceed to the collection site immediately. An employee shall only be tested for alcohol while the employee is performing a covered safety sensitive function, just before the employee is to perform a safety sensitive function or just after the employee has ceased performing such a function.

The random selection process used will be determined by the MRO. The MRO will monthly select employees for random testing.

4.4 Reasonable Suspicion

A covered employee must submit to testing when a trained *MAXIM* supervisor has determined that reasonable suspicion exists that the employee behavior or appearance may indicate alcohol or drug use.

This determination must be based on a trained supervisor's specific, contemporaneous, articulable observations concerning the appearance, behavior, speech or body odors of the employee. These observations must be documented.

If testing cannot be administered, no employee who appears to be under the influence of or impaired by alcohol or controlled substances, as shown by behavioral, speech, or performance indicators of alcohol misuse, should report for duty or remain on duty requiring the performance covered functions. The employee will not be allowed to perform a covered function until an alcohol test can be administered and the result is below 0.02 or until the commencement of the employee's next duty period if at least 24 hours has elapsed. In the case of controlled substance suspicion, the employee will not perform a covered function pending the test results.

The supervisor making the observation and determination that reasonable suspicion test should be done may not conduct the alcohol test.

Alcohol testing should take place within 2 hours and controlled substance testing within 8 hours of the observation. If the alcohol test does not take place within 8 hours, efforts to test should cease. If the controlled substance test does not take place within 32 hours, efforts to test should cease. In either case, the supervisor must make a written report stating the reasons the alcohol test was not administered within 2 hours or the controlled substance test within 8 hours. If the test is not administered within 8 hours o

32 hours respectively, the written report must state the reasons why. This report must be submitted (by the Vice President of Administrative Services) to the Federal Highway Administration or Research and Special Programs Administration, whichever is appropriate.

4.5 Return to Duty/ Follow Up Testing

4.5.1 Alcohol: Before a covered employee may be allowed to return to duty in a covered function he must undergo a return-to-duty test with an alcohol test result of 0.02 or less.

There are two circumstances under which return to duty and follow up testing apply:

(1) the employee has tested above 0.04 in a random or reasonable suspicion or post accident alcohol test, or

(2) the employee has voluntarily identified himself/herself in need of assistance for alcohol or drug related problems and is utilizing first offense amnesty.

Under either of these circumstances the employee would be referred to the Substance Abuse Professional.

Follow up testing is then required when the employee returns to work in a safety sensitive function. Follow up testing will occur randomly at least six times during the first year following referral and may continue as long as five years.

4.5.2 Controlled Substances: **MAXIM policy requires termination of employment in the event of a verified positive drug test if the employee has utilized first offense amnesty.** If the employee chooses first offense amnesty, he or she will be referred to the Substance Abuse Professional under the Employee Assistance Program. Before a covered employee may be allowed to return to duty in a covered function he or she must undergo a return-to-duty test and provide certification of rehabilitation. Follow up testing will occur randomly at least six times during the first year following referral and may continue as long as five years.

4.5.3 Retests

At the discretion of the company, ***MAXIM*** may permit an employee to perform a covered function within 24 hours following administration of a DOT (FHA or RSPA) mandated alcohol test indicating an alcohol concentration of 0.02 or greater but less than 0.04, if a retest result indicates an alcohol concentration of less than 0.02.

5. PERIOD OF THE WORK DAY WHEN TESTING MAY OCCUR

An employee performing a covered function is subject to alcohol and controlled substance testing whenever he is performing, ready to perform, or immediately after he has ceased performing such covered functions.

An employee will only be tested for alcohol or controlled substances while he is at the work site.

6. PROCEDURES FOR DRUG AND ALCOHOL TESTING

Note: *MAXIM* will use designated collection sites to collect urine specimens and to conduct breath alcohol testing in proximity to the branch offices. Information regarding collection sites is included in the Alcohol Misuse Prevention Plan, Anti-Drug Plan or may be obtained from the Vice President of Administrative Services.

6.1. Alcohol

All alcohol testing is done by a certified Breath Alcohol Technician, or BAT, in a private setting where no one but the employee and the BAT can see or hear the test results. An evidential breath-testing device (EBT) approved by the National Highway Safety Administration must be used.

The BAT will ask for identification. The employee may ask for the BAT 's identification as well.

To complete the test, the employee must blow forcefully into the mouthpiece of the testing device. The BAT must show the employee the test result on the testing device.

A screening test is done first. If the reading is less than 0.02, the employee will sign the certification and fill in the date on the form and the test is over.

If the reading is 0.02 or greater, a confirmation test must be done (after waiting 15 minutes but within 20 minutes of the first test). The employee will be asked not to eat, drink, belch, or put anything in his mouth. These steps prevent the build-up of mouth alcohol, which could lead to an artificially high result.

If the screening and the confirmation test results are not the same, the confirmation test result is used.

If an employee refuses to be tested or sign the testing form, the BAT will immediately notify the Vice President of Administrative Services.

6.2. Controlled Substances

Drug testing is done by analyzing a urine sample, which is collected in a private location. The sample is tested for the following drugs: cocaine, marijuana, amphetamines, phencyclidine, and opiates.

Urine specimens may consist of one sample or a divided specimen. MAXIM will use the one sample method. If the urine specimen is divided it will be divided by pouring into two containers by the collection site person in the employee's presence. These two samples, called split samples, are sent to a testing laboratory certified by the Department of Health and Human Services. MAXIM uses MEDTOX for all urine drug test analysis.

At the laboratory a screening test is performed on the sample. If this test is positive for drugs, a confirmation test is required.

The confirmation test must use a gas chromatograph/mass spectrometry method to ensure that over-the-counter drugs are not reported as positive for controlled substances.

If the first test is positive, the Medical Review Officer (MRO), and agent of MAXIM, will notify the employee to find out if there is a medical reason for the drug use. If the employee can document why the substance is being taken (with prescriptions, prescription containers, physician contact with the MRO, etc.) and if the MRO finds it is a legitimate medical use, the test may be reported as negative to the employer.

After being notified that the first test was positive, the employee has 72 hours to request a retest of the same sample or the split sample (if taken). If the employee makes this request, the specimen is sent to another DHHS certified laboratory for the test. The employee will be asked to pay in advance for this retest.

If the employee does not contact the MRO within 72 hours but can prove to the MRO that he had a legitimate reason for not doing so, the MRO can order the retest.

> **NOTE: Removal from a safety-sensitive function by MAXIM is not delayed to await the result of the retest. This is a DOT requirement.**

If the retest does not confirm the presence of a drug, the MRO cancels the test and reports the test as negative to the DOT, MAXIM and the employee. MAXIM will then reimburse the employee for the cost of the retest.

7. CONSEQUENCES FOR VIOLATING THE ALCOHOL AND DRUG PROHIBITIONS

7.1 Alcohol

7.1.1 Use of an Employee with Test Results >0.02 but < 0.04

If a covered employee is found to have an alcohol concentration of 0.02 or greater but less than 0.04, that employee will be immediately removed from performing covered functions, until the employee is retested with a result below 0.02, or until the start of the employee's next regularly scheduled duty period, if it occurs at least 24 hours following administration of the test.

7.1.2 Use of an Employee with Test Result > 0.04

If a covered employee is found to have an alcohol concentration in excess of 0.04 (but less than the legal limit for operation of a motor vehicle), that employee will be immediately removed from performing covered functions. The employee is then prohibited from returning to a covered function unless and until he has:

(1) Been evaluated by a SAP to determine whether the employee is in need of assistance in resolving problems related to alcohol use;

(2) Completed any treatment recommended by the SAP;

(3) Been evaluated by a SAP to ensure that the employee has properly followed the treatment program; and

(4) Undergone required return-to-duty testing.

7.1.3 A covered employee is prohibited from performing covered functions if he refuses to test under the provisions of this plan including, post-accident, reasonable suspicion, random or follow up criteria.

MAXIM will terminate any employee who refuses a DOT agency mandated alcohol test.

Avoidance, obfuscation, or delay may be construed as refusal to test.

7.2 Controlled Substances

7.2.1 **Compliance with the drug testing plan is a condition of employment. Refusal to take a required drug test or failure of a drug test after first offense amnesty shall result in termination of employment.**

7.2.2 MAXIM shall not use, in a function covered by 49 CFR 199 or 382, anyone who:
(i) Fails a drug test as verified by the MRO, or
(ii) Refuses to take a drug test as required by this plan. Avoidance, obfuscation, or delay may be construed as refusal to test.

7.1.2 Use of an Employee with First Positive Drug Test

If a covered employee is found to have tested positive for a controlled substance, that employee will be immediately removed from performing covered functions. The employee is then prohibited from returning to a covered function unless and until he or she has:

(1) Been evaluated by a SAP to determine whether the employee is in need of assistance in resolving problems related to controlled substance use;

(2) Completed any treatment recommended by the SAP;

(3) Been evaluated by a SAP to ensure that the employee has properly followed the treatment program; and

(4) Undergone required return-to-duty testing.

7.1.3 A covered employee is prohibited from performing covered functions if he or she refuses to test under the provisions of this plan including, post-accident, reasonable suspicion, random or follow up criteria.

8. EMPLOYEE ASSISTANCE OR REFERRAL PROGRAM

8.1. Employee Assistance Program, Information

The Employee Assistance Program (EAP) will provide education and training on drug and alcohol use to all employees. The education shall include:

a. Informational material displayed on the employee bulletin board and in the employee break rooms, and distributed to employees;

b. A community service hot-line telephone number (or other available resource) displayed on bulletin boards and distributed to employees; and

c. Distribution of the MAXIM policy regarding the use of prohibited drugs to all new employees.

8.2. Outpatient Services

Outpatient programs exist in a variety of settings:

a. Community mental health centers.
b. Family service agencies.
c. Private physicians' and therapists' offices.
d. Occupational settings.
e. Specialized alcoholism treatment facilities.

8.3. Inpatient Services

Inpatient services, designed for those with more serious alcohol problems, can be found in hospitals, residential care facilities, community halfway houses, and some alcoholism clinics.

8.4. Other Referral Organizations

The local phone directory will list helpful referral organizations such as:

a. Local council on alcoholism.
b. Alcoholics Anonymous.
c. Community alcoholism or mental health clinic.
d. Social services or human resources department.
e. County medical society.

8.5. Obtaining Employee Assistance

Employee Assistance will be coordinated through Interface EAP, who will assure that benefits are obtained consistent with the requirements of the program and within the parameters of the employee Major Medical Health Insurance coverage. Self referral for substance abuse or alcohol abuse problems may be obtained by contacting Interface EAP directly at 1-800-324-4327.

The SAP for ***MAXIM*** is dependent on branch location. If referral occurs as a consequence of violations of the provisions of the DOT/RSPA Drug and Alcohol, the Substance Abuse Professional will be selected by Interface EAP.

9. DEFINITIONS

BAT - Breath Alcohol Technician

CDL - Commercial Driver's License

CMV - Commercial Motor Vehicle

DHHS - Department of Health and Human Services

EAP or ERP - Employee Assistance (or Referral) Program

EBT - Evidential Breath Testing

MRO - Medical Review Officer

Alcohol - The intoxicating agent in beverage alcohol, ethyl alcohol, or other low molecular weight alcohols, including methyl or isopropyl alcohol.

Alcohol use - The consumption of any beverage, mixture, or alcohol use, including any medication, containing alcohol.

Alcohol concentration - The alcohol in a volume of breath expressed in terms of grams of alcohol per 210 liters of breath as measured by an evidential breath test device.

Breath Alcohol Technician - An individual who instructs and assists individuals in the alcohol testing process and operates an evidential breath-testing (EBT) device.

Confirmation Test - In alcohol testing: a second test, following a screening test with a result of 0.02 or greater, that provides quantitative data of alcohol concentration.

In controlled substances testing: a second test to identify the presence of a specific drug or metabolite. In order to ensure reliability and accuracy, this test is separate from and uses a different instrument for analysis than that of the screening test.

Controlled Substances - In this regulation, the terms 'drugs' and 'controlled substances' are interchangeable and have the same meaning. These terms refer to:

marijuana
cocaine
opiates
phencyclidine (PCP) and
amphetamines, including methamphetamine

Covered Employees - Any person who is a driver as defined below or performs on a pipeline or LNG facility in an operating, maintenance or emergency response function regulated by 49 CFR 192, 193, and 195, or is required to be covered by the client for whom MAXIM acts as contractor, consultant, or subcontractor.

Driver - Any person who operates a commercial motor vehicle in interstate or intrastate commerce and is subject to the commercial drivers' license regulations, 49 CFR 383.

First Offense Amnesty – After the first confirmed positive drug or alcohol test, the employee requests to seek assistance for alcohol or drug-related problems through a Substance Abuse Professional.

Evidential Breath Testing Device (EBT) - A device used for alcohol breath testing that has been approved by the National Highway Safety Administration.

Incident - Defined in Part 191.3 as (1) an event that involves a release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility and (a) a death, or personal injury necessitating in-patient hospitalization; or (b) estimated property damage, including cost of gas lost, of the operator or others, or both, of $50,000 or more; (2) an event that results in an emergency shutdown of a LNG facility; or (3) an event that is significant, in the judgment of the operator, even though it did not meet the criteria listed above.

Medical Review Officer (MRO) - A licensed physician responsible for receiving laboratory results generated by an employer's drug testing program. The MRO must have knowledge of substance abuse disorders and appropriate medical training to interpret and evaluate an individual's confirmed positive test, medical history and other relevant biomedical information.

On Duty Time - All time from the time a driver or covered employee begins to work or is required to be in readiness to work until the time he is relieved from work and all responsibility for performing work. On duty time includes:

1. all time at a carrier plant waiting to be dispatched.
2. All time inspecting equipment.
3. All driving time as defined in 49 CFR 395.
4. All time loading or unloading a vehicle, supervising or assisting in the loading or unloading.
5. All time repairing, obtaining assistance, or remaining in attendance of a disabled vehicle.
6. All time spent providing breath or urine samples at a collection site.
7. Performing any other work in the employ of a motor carrier.

Performing a Safety Sensitive Function - An employee is considered to be performing a safety sensitive function when he is actually performing, ready to perform, or immediately available to perform a job/task of a covered employee (defined above).

Substance Abuse Professional - A licensed physician or licensed or certified psychologist, social worker employee assistance professional, or certified addiction counselor with knowledge of and clinical experience in the diagnosis and treatment of alcohol and controlled substances related disorders.

APPENDIX D

RESPONSE TO COMMENTS

RESPONSE TO COMMENT ON THE SITE SAFETY AND HEALTH PLAN ADDENDUM
FROM JOE MELNYK
USACE NASHVILLE DISTRICT

COMMENT: On page 15-2 the route to the hospital is indicated to be in Figure 15-1. There is no such figure.

RESPONSE: Text will be modified to indicate that 15-1 can be found in the original SSHP

RESPONSE TO COMMENTS FROM
Chris Hallam
USACE BUFFALO DISTRICT
Health Physicist/RSO

Comment: Disposal of any IDW (liquid or solid) can only be performed with the direct concurrence of USACE regardless of the radiological survey or sample results. Disposal will then be coordinated thru NYSDEC, USEPA, or other (i.e. Local) parties. This is based on USACE policy as well as perception issues regarding the site.

Response: (Text has been revised to state that any liquid or solid IDW release requires direct authorization from the USACE.

Comment: Appendix A and B: Due to the lack of consistent correlation for radionuclide fractions, using the mean value of preliminary sample results is not acceptable as it does not provide a conservative basis for release criteria and occupational DAC calculations. Fractions for the source term may vary widely due to the different operations and ore residues which are at the site. Re-evaluating the isotopic distribution AFTER the Phase II data is back would be a little late for equipment already released, and possibly for the air monitoring process as well. Recommend the contractor select a more conservative value (closer to worst case) until we firm up source term data.

Response: Text has been revised to present the most conservative Surficial Release Limit. Appendix B has been deleted.

A copy of the revised RPP is attached below.

RADIATION PROTECTION PLAN FOR PHASE TWO OF THE NFSS REMEDIAL INVESTIGATION CONDUCTED BY MAXIM TECHNOLOGIES

Date of Preparation: August 4, 2000
Revision: 1

Purpose

This document is a supplement to the Radiation Protection Plan implemented during Phase One of the Maxim remedial investigation. Only revisions and additions to the original plan are noted.

Phase One Plan Revisions

During Phase 2, lapel air samples will only be measured for alpha activity. Phase 1 measurements of beta/gamma activity with a 95% confidence level was impractical due to the restrictive DAC value and low volume collected on samples.

During Phase 1 activities, neither airborne contamination nor internal dose was detected with air sampling or bioassay. Therefore, bioassay sampling will not be performed during Phase 2 unless work area air sampling indicates any airborne concentration exceeding 0.25 DAC-hrs/hr.

Because the field office is located within a locked area, dosimetry will not be stored in a locked receptacle.

Instead of monitoring individuals for contamination at each sampling location, workers will be monitored periodically and prior to leaving the fenced Restricted Area.

Because every sample analyzed during Phase 1 contained less than the 49 CFR definition of radioactive material (2000 pCi/g), sample coolers will not be labeled as Limited Quantity packages unless activity in excess of the limit is suspected. However, each cooler will continue to be surveyed for radiation and contamination prior to release from the site.

A deficient instrument report will not be generated for detector mylar window light leak as indicated in HP-004, "Quality Control of Radiation Monitoring Equipment".

Plan Additions

Disposal of any IDW, liquid or solid, may only be released if approved by the USACE, regardless of radiological survey or sample results.

If directly approved by the USACE, solid IDW meeting radiological surface contamination limits may be disposed of in a municipal waste receptacle. If any solid IDW cannot be confirmed as meeting radiological surface contamination limits, or the

IDW has a "radioactive material" marking, the IDW will be containerized and labeled as radioactive material.

Liquid IDW will be containerized, labeled as radioactive material, and be presumed to be radiologically contaminated unless proven otherwise. Liquid sample analytical may will be evaluated against NRC water effluent release concentrations (10 CFR 20 Table 2 Column 2) using the "unity" rule (10 CFR 20 App. B footnote 4). If all liquid composite samples are less than water effluent release concentrations, and with direct approval from the USACE, the liquid IDW may be unconditionally radiologically released. If any composite sample exceeds water release concentrations, the affected IDW container(s) will be representatively sampled, and the compared against water release criteria as described above. Any liquid IDW exceeding release criteria will be transported to a permitted facility for disposal.

Using analytical data from Phase 1, the contaminants of concern at NFSS include U238, Ra-226, and Th-230. Based on Regulatory Guide 1.86 guidance, the most restrictive applicable release isotope at NFSS is Ra-226. Therefore, a surficial release value of 100 dpm/100cm^2 for total contamination, and 20 dpm/100cm^2 for removable contamination. will be used to evaluate equipment/material surveys at the site. Anticipated release surveys include vehicles, drill rigs, and sampling equipment. Any further releases require direct authorization by the USACE.

The DAC value used to evaluate air samples at the NFSS is based on the most restrictive applicable occupational air isotope in 10 CFR 20 (Appendix B Table 1 Column 3), Th-230. All occupational air sample concentrations will be compared to 6.E-12 µCi/ml (Th-230) to determine potential occupational dose.

All field personnel at NFSS will submit a personal dose history estimate to the RSO prior to TLD issuance, as well as other information such as home address. When personnel doses are evaluated after the field effort, each monitored individual will receive a dose report documenting their exposure while at NFSS. MAXIM Technologies in St Louis will retain all personnel dose information.

Phase Two Additional Tasks

An activity hazard analysis has been prepared to address both the intrusive and non-intrusive additional tasks.

SUPPLEMENT- Monitoring Requirements and Action Limits

Hazard or Measured Parameter	Area	Interval	Limit	Action	Tasks
Radiological total contamination with survey instrument. Alpha & Beta sensitive plastic scintillation count rate system, or equivalent.	Performed at the field office and at various work locations on personnel, vehicles, equipment, and discarded materials.	Prior to exit from the fenced restricted area and periodically as determined by Health Physics.	Less than 100 dpm/100cm^2 alpha.	Notify Project Manager, H&S Manager. Additional controls may include changes to PPE, decontamination procedures, or engineering controls	All onsite tasks
Sampling for airborne radioactive particulates	Breathing zone of selected employees	Full shift sampling on selected personnel with the highest potential of inhaling radioactive material as determined by Health Physics.	0.25 DAC-hrs/hr	Notify Project Manager, H&S Manager, Project CHP	During intrusive activities as determined by Health Physics.
Removable surface contamination determined by smearing surface of 100cm^2.	Performed at the field office and at various work locations on vehicles, the field office, and equipment.	Prior to exit from the fenced restricted area and at least once per week in break areas, office areas, etc.	Less than 30 dpm/100cm^2 alpha.	Remove by decontamination and resurvey. If contamination can not be removed, control as radioactive material.	All onsite tasks

SUPPLEMENT- HAZARD ANALYSIS

NON-INTRUSIVE ACTIVITIES: GAMMA WALKOVER SURVEYS, SAMPLING WELLS, GEOPHYSICS WORK			
Radiological surficial contamination	Low /low	PPE (Level D) Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth. Nitrile or PVC gloves for handling potentially contaminated material	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
INTRUSIVE ACTIVITIES: SOIL BORING AND SAMPLING, SEDIMENT AND SURFACE WATER SAMPLING, TRENCHING, CLEARING AND GRUBBING, AND INSTALLATION OF PERMANENT MONITORING WELLS			
Radiological surficial contamination	Low /low	PPE (Level D modified with Tyvek suits, boots, and Nitrile or PVC gloves) Exclusion zone around potentially contaminated areas. Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth.	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
Radiological airborne exposure	Very Low /Very Low	Removable contamination surveys will be performed on potentially contaminated equipment / soil. Engineering controls and/respiratory protection will be implemented if occupational air sampling indicates airborne concentrations exceeding 0.25 DAC-hrs/hr.	Occupational air sampling (lapel) on individual most likely to be exposed as determined by Health Physics.

PPE = personal protective equipment

RESPONSE TO HTRW Center of Expertise Review Comments on the SITE SAFETY AND HEALTH PLAN ADDENDUM for the Niagara Falls Storage Site Phase II Remedial Investigation

Comment # 1: Include a signature page for the project CIH (Yvonne Freix) to sign indicating she has participated in the development of this addendum and that she approves of the procedures and requirements in it.

Response: Signature page will be included in the Final Document.

Comment # 2: Section 3 would be more effective for field people if all the repeated information were eliminated Unnecessary repeats include heat and cold stress, chemical hazards, radiological hazard, biological hazards and UXO/OEW.

Response: The SSHP and SSHPA are organized in a manner that presents the hazards for each task in separate sections. This format allows on-site personnel to use the sections detailing the task-specific hazards and mitigation methodologies for each task with which they are involved. Granted there is repetition, but this repetition allows sections to stand alone for use by personnel such as drill rig operators and helpers, who may not be involved in every task conducted at the site.

Comment # 3: Section 6, PPE. Use of cotton (if laundering services can be procured) or moisture permeable disposable coveralls are recommended as replacements for TYVEK to help reduce heat stress.

Response: Given the nature of the contaminants, specifically the radiological contaminants, the release of washable, reusable garments to an off-site vendor for laundering services was deemed too time consuming and costly to justify. During some tasks, site workers will have the potential for contacting wet, saturated soils (splash hazards) which will require the use of impermeable poly-coated tyveks. Maxim agrees that the non-coated Tyvek coveralls which were specified for non-splash hazard tasks, could be replaced with a more permeable garment such as Pro/Shield.

Comment # 4: Section 9, Exposure Monitoring. Make this task easier for the SSHO by delaying explosive gas monitoring requirements (with the Gastech GX-82 monitor) until after PID readings indicate at least 100 ppm. PID readings will give sufficient warning that explosive gas monitoring may be necessary as long as methane gas generation is not an issue on this site.

Response: Comment noted. Maxim agrees that initiation of explosive gas monitoring can be triggered by a PID reading of 100 ppm or greater.

Comment # 5: Section 10, paragraph 10.1. Use of personal eyewash bottles is unacceptable for personnel handling sample preservation acids. Make sure these personnel have quick and easy access to an eyewash station meeting ANSI Z358.1-1990 requirements.

Response: Comment noted. Maxim will specify the use an eyewash station meeting the requirements of ANSI Z358 1-1990 during sample preservation activities.

Comment # 6: Table 3-1. Include the ACGIH TLV for 1,1 dichloroethene (a.k.a. vinylidine chloride in the table

Response: Comment noted. ACGIH TLV of 5 ppm will be added to Table 3-1.

Comment # 7: Table 3-1. Convert exposure limits from mg/cubic meter to ppm for VOCs in the table. Field people can relate PID readings taken in the field to exposure limits reported in ppm more easily than exposure limits reported in mg/cubic meter.

Response: Table will be amended to reflect the conversions.

Comment # 8: Table 3-1. For the benefit of the field workers, provide some sort of justification in section 3 that the activities they will be performing will cause exposure to all of these chemical at levels of occupational health concern. Otherwise, limit the chemicals in the table to the ones with realistic occupational exposure hazard potential for the activities to be performed.

Response: Comment noted. Chemicals present in Table 3-1 were selected based upon the exceedences of EPA Region 9 PRGs for residential land use, when available. While these values do not translate directly to occupational health hazards (chronic verses acute), they represent a conservative approach to selection of contaminants of concern.

RESPONSE TO USEPA COMMENTS ON
THE SITE SAFTEY AND HEALTH PLAN ADDENDUM
FOR
PHASE II OF THE REMEDIAL INVESTIGATION
NIAGARA FALL STORAGE SITE

Comment: General: The subsections on "Radiological Hazards" is section 3 refer to the Radiation Protection Plan in Appendix A of this addendum. Apparently the full Plan is not in Appendix A, and I don't have it for review.

Response: The original plan prepared for Phase I was provided to the USEPA for review prior to Phase I and was commented on by a different reviewer.

Comment: Page 8-1, Section 8.0 Dosimetry: The lower detection limit of the TLD badges should be better than 0.1 rad, especially if you are striving to keep doses to within 100 mrem/yr.

Response: The lower detection of the TLD is 0.01rem and the text has been revised to reflect this. All film badge terminology has been deleted. The revised section 8.0 of the SSHPA is attached.

Comment: Page 9-1, Section 9-2 Radiation Monitoring: Record-keeping requirements were not found in the Radiation Protection Plan Addendum in Appendix A.

Response: A paragraph describing personnel monitoring records has been added. The revised RPP is attached.

Comment: Page 9-2, Section 9.2.1 Internal Radioactive Material Monitoring: This section discusses personnel air monitoring for workers. The text states that the limit will be 10 CFR 20 Appendix B, Table 2, non-occupational limits. Appendix A, the Radiation Protection Plan Addendum, states the limit is 10 CFR 20 Appendix B, Table 1, occupational limits. Also what limit is or will be used for exposure to members of the general public from airborne radionuclides? Appendix A, Radiation Protection Plan: It appears that only an addendum to the radiation protection plan was included in Appendix A of the SSHP, hence the references to non-addendum material could not be reviewed. Nevertheless, with respect to Appendix "B" to establish a radiological occupational weighted DAC value, all the radionuclides of concern should be discussed as to why each is or was not included in the derivation of a weighted DAC value. At minimum, this should include actinium-227 and daughters (Ac-227+D) and proactinium-231 (Pa-231).

Response: Based upon comments received from the USACE Buffalo District, the most restrictive DAC values have been placed into the text. APPENDIX 'A' has been deleted and the text in Table 1 has been revised, no non-occupational Air Monitoring has been added. This is based upon conversations with representatives of USACE Buffalo District during Phase I of the RI, when direction was given at that time that monitoring would not be required due to the low concentrations of contaminants and the restricted access status of the property. The amended RPP is attached.

Comment: Page 11-1, section 11.3, Contamination Reduction Zone: States Radiation Protection Plan is in Appendix B.

Response: Text in section 11.3 has been amended to say: *Personnel and equipment monitoring aspects of this SSHP are detailed in Section 9.1 and the Radiation Protection Plan presented in Appendix A.*

Comment: Table 3-1: The several references to "Radionuclides are addressed in the Radiation Protection Plan Appendix A" Could not be evaluated because Appendix A is incomplete. See comment on Appendix A. Page 20 of the table indicates the Radiation Protection Plan is in both Appendix A and Appendix B. Page 8 Table 3-1, SSHP is the contaminant of concern cobalt or cobalt-60?

Response: Appendices reference has been corrected to read Radiation Protection Plan Appendix A. The contaminant is cobalt, not cobalt-60.

Comment: Appendix A, Radiation Protection Plan: It appears that only an addendum to the Radiation Protection Plan was included in Appendix A of the SSHP, hence references to non-addendum material could not be reviewed. Nevertheless, with respect to Appendix "B" to establish a radiological occupational weighted Derived Air Concentration (DAC) value, all the radionuclides of concern should be discussed as to why each is or was not included in the derivation of a weighted DAC value. At minimum, this should include actinium-227 and daughters (Ac-227+D) and proactinium-231 (Pa-231

Response: Based upon the following comment from USACE Buffalo District HP/RSO:

"Appendix A and B: Due to the lack of consistent correlation for radionuclide fractions, using the mean value of preliminary sample results is not acceptable as it does not provide a conservative basis for release criteria and occupational DAC calculations. Fractions for the source term may vary widely due to the different operations and ore residues which are at the site. Re-evaluating the isotopic distribution AFTER the Phase II data is back would be a little late for equipment already released, and possibly for the air monitoring process as well. Recommend the contractor select a more conservative value (closer to worst case) until we firm up source term data"

Maxim offers the following response: Text has been revised to present the most conservative Surficial Release Limit, Appendix B has been deleted.

RADIATION PROTECTION PLAN FOR PHASE TWO OF THE NFSS REMEDIAL INVESTIGATION CONDUCTED BY MAXIM TECHNOLOGIES

Date of Preparation: August 4, 2000 Revision 1

Purpose

This document is a supplement to the Radiation Protection Plan implemented during Phase One of the Maxim remedial investigation. Only revisions and additions to the original plan are noted.

Phase One Plan Revisions

During Phase II, lapel air samples will only be measured for alpha activity. Phase I measurements of beta/gamma activity with a 95% confidence level was impractical due to the restrictive DAC value and low volume collected on samples.

During Phase I activities, neither airborne contamination nor internal dose was detected with air sampling or bioassay. Therefore, bioassay sampling will not be performed during Phase II unless work area air sampling indicates any airborne concentration exceeding 0.25 DAC-hrs hr.

Because the field office is located within a locked area, dosimetry will not be stored in a locked receptacle.

Instead of monitoring individuals for contamination at each sampling location, workers will be monitored periodically and prior to leaving the fenced Restricted Area.

Because every sample analyzed during Phase I contained less than the 49 CFR definition of radioactive material (2000 pCi/g), sample coolers will not be labeled as Limited Quantity packages unless activity in excess of the limit is suspected. However, each cooler will continue to be surveyed for radiation and contamination prior to release from the site.

A deficient instrument report will not be generated for detector mylar window light leak as indicated in HP-004, "Quality Control of Radiation Monitoring Equipment".

Plan Additions

Disposal of any IDW, liquid or solid, may only be released if approved by the USACE, regardless of radiological survey or sample results.

If directly approved by the USACE, solid IDW meeting radiological surface contamination limits may be disposed of in a municipal waste receptacle. If any solid IDW cannot be confirmed as meeting radiological surface contamination limits, or the IDW has a "radioactive material" marking, the IDW will be containerized and labeled as radioactive material.

Liquid IDW will be containerized, labeled as radioactive material, and be presumed to be radiologically contaminated until/unless proven otherwise. Liquid sample analytical may will be

evaluated against NRC water effluent release concentrations (10 CFR 20 Table 2 Column 2) using the "unity" rule (10 CFR 20 App. B footnote 4). If all liquid composite samples are less than water effluent release concentrations, and with direct approval from the USACE, the liquid IDW may be unconditionally radiologically released. If any composite sample exceeds water release concentrations, the affected IDW container(s) will be representatively sampled, and the compared against water release criteria as described above. Any liquid IDW exceeding release criteria will be transported to a permitted facility for disposal.

Using analytical data from Phase I, the contaminants of concern at NFSS include U238, Ra-226, and Th-230. Based on Regulatory Guide 1.86 guidance, the most restrictive applicable release isotope at NFSS is Ra-226. Therefore, a surficial release value of 100 dpm/100cm^2 for total contamination, and 20 dpm/100cm^2 for removable contamination, will be used to evaluate equipment/material surveys at the site. Anticipated release surveys include vehicles, drill rigs, and sampling equipment. Any further releases require direct authorization by the USACE.

The DAC value used to evaluate air samples at the NFSS is based on the most restrictive applicable occupational air isotope in 10 CFR 20 (Appendix B Table 1 Column 3), Th-230. All occupational air sample concentrations will be compared to 6.E-12 μCi/ml (Th-230) to determine potential occupational dose.

All field personnel at NFSS will submit a personal dose history estimate to the RSO prior to TLD issuance, as well as other information such as home address. When personnel doses are evaluated after the field effort, each monitored individual will receive a dose report documenting their exposure while at NFSS. MAXIM Technologies in St. Louis will retain all personnel dose information.

Phase Two Additional Tasks

An activity hazard analysis has been prepared to address both the intrusive and non-intrusive additional tasks.

SUPPLEMENT- Monitoring Requirements and Action Limits

Hazard or Measured Parameter	Area	Interval	Limit	Action	Tasks
Radiological total contamination with survey instrument. Alpha & Beta sensitive plastic scintillation count rate system, or equivalent.	Performed at the field office and at various work locations on personnel, vehicles, equipment, and discarded materials.	Prior to exit from the fenced restricted area and periodically as determined by Health Physics.	Less than 100 dpm/100cm^2 alpha.	Notify Project Manager, H&S Manager. Additional controls may include changes to PPE, decontamination procedures, or engineering controls	All onsite tasks
Sampling for airborne radioactive particulates	Breathing zone of selected employees	Full shift sampling on selected personnel with the highest potential of inhaling radioactive material as determined by Health Physics.	0.25 DAC-hrs/hr	Notify Project Manager, H&S Manager, Project CHP	During intrusive activities as determined by Health Physics.
Removable surface contamination determined by smearing surface of 100cm^2.	Performed at the field office and at various work locations on vehicles, the field office, and equipment.	Prior to exit from the fenced restricted area and at least once per week in break areas, office areas, etc.	Less than 30 dpm/100cm^2 alpha.	Remove by decontamination and resurvey. If contamination can not be removed, control as radioactive material.	All onsite tasks

SUPPLEMENT- HAZARD ANALYSIS

Safety and Health Hazards	Probability/ Severity	Controls	Monitoring
NON-INTRUSIVE ACTIVITIES: GAMMA WALKOVER SURVEYS, SAMPLING WELLS, GEOPHYSICS WORK			
Radiological surficial contamination	Low /low	PPE (Level D) Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth. Nitrile or PVC gloves for handling potentially contaminated material	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
INTRUSIVE ACTIVITIES: SOIL BORING AND SAMPLING, SEDIMENT AND SURFACE WATER SAMPLING, TRENCHING, CLEARING AND GRUBBING, AND INSTALLATION OF PERMANENT MONITORING WELLS			
Radiological surficial contamination	Low /low	PPE (Level D modified with Tyvek suits, boots, and Nitrile or PVC gloves) Exclusion zone around potentially contaminated areas. Medical clearance for HAZWOPER work Minimal contact, wash face and hands prior to taking anything by mouth.	Contamination surveys conducted prior to fenced area exit and periodically as determined by Health Physics.
Radiological airborne exposure	Very Low /Very Low	Removable contamination surveys will be performed on potentially contaminated equipment / soil. Engineering controls and/respiratory protection will be implemented if occupational air sampling indicates airborne concentrations exceeding 0.25 DAC-hrs/hr.	Occupational air sampling (lapel) on individual most likely to be exposed as determined by Health Physics.

PPE = personal protective equipment

RESPONSE TO COMMENT FROM
YVONNE FREIX, CIH
ON THE SITE SAFETY AND HEALTH PLAN ADDENDUM
FOR PHASE II OF THE REMEDIAL INVESTIGATION
AT THE NIAGARA FALL STORAGE SITE

1) There are some references in the biological hazard assessment stating that due to the time of year that there is a low potential. Wouldn't summer be considered a higher potential for biological hazards?

   Response: Comment noted. The time of year will be changed to summer/fall.

2) In section 3.6.1.1.3 – Electrical equipment; reference is made to underground utilities, which is actually dealt with in the section before. This section should be changed to reflect the expected use of electrical equipment for this task.

   Response: Comment noted. Electrical equipment will not be used during this task. This section will be deleted.

3) Section 3.7.3 is dealing with the task of clearing and grubbing and makes reference to the task only being performed in paved areas.

   Response: Text will be amended as follows: *The personnel involved in activities at the site may be exposed to threats from biological hazards such as ticks, spiders, rodents, and snakes. Irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar may occur in the areas that that this activity will be performed.*

4) Section 3.8.1.7 refers to hard hat use during coring activities; however, this section is related to clearing and grubbing.

   Response: Text will be amended as follows: *Hard hats will be required to be worn by all personnel within the exclusion zone that will be established at each clearing and grubbing location.*

5) In sections 3.9.1.1.3 and 3.9.1.2, which are addressing trenching activities, the reference is to clearing and grubbing instead of trenching.

   Response: Reference to clearing and grubbing will be changed to trenching.

6) In section 3.10 in the introduction the reference is to surface scanning and this section is dealing with trenching.

   Response: Reference to surface scanning will be changed to trenching.

7) In section 3.10.1.8 dealing with mitigation of trench hazards there should be a reference to the fact that no one should enter the trench. If there will be anyone entering you need

to describe under what conditions they can access the trench. Also, describe how the trench will be marked off.

Response: In Section 3.9.1.8, the following statement was presented: *Entry into the trenches is prohibited.* The trenches will be marked off as described in Section 3.10.1.3.

8) The name of the site health and safety officer is not specified in section 4.8. All other positions designated reference the person assigned.

Text will be amended as follows: *Depending on availability and scheduling, the following individuals may be designated Site Safety and Health Officer (SSHO) or safety officer of a field team involved in a specific task: Greg Dawdy, Tim Biggs, Nancy Dickens, Dave Germeroth, Sonja Goen, Jim Richards or Mark Sievers.*

9) Section 6.1 addresses PPE to be worn for each task. The following inconsistencies were noted.

- In the sections addressing mitigation of Pinch/Puncture/Shear Hazards there is a reference to the use of leather gloves and hard hats associated with the coring, clearing and grubbing, and trenching tasks. However, these items are not always included in section 6.1 under these tasks. Compare these sections and make sure the correct PPE is described consistently in both of these sections.

Response: Comment noted. These items have been revisited and revised to make them consistent in both sections.

10) Section 9.4 indicates that hearing protection with a minimum noise reduction rating of 25 dB shall be worn for the described tasks. Throughout section 3 it indicates a NRR of 29dB. These should be consistent and should be based on the expected level of noise.

Response: Comment noted. These items have been revisited and revised to make them consistent in both sections.

11) Section 10.10 – Hazards Communications refers to SOP 3 "Accident Prevention, Training and Medical Surveillance." Is this reference, the correct SOP number and title? Please verify. The original plan that I have does not contain such a SOP.

Response: Comment noted. SOP numbers have been corrected throughout the entire document.

12) Section 10.12 – Again check the references to the SOPs to insure they are correct.

Response: See response above..

13) Section 10.14 – Check the reference to the SOP – They do not match up with the original SSHP.

Response: See response to comment #11.

14) In Section 12.2 there is a reference to SOP 10 – Again this number does not appear to be correct. Also the SOPs are found in Appendix C of the original SSHP. Double check all references throughout and make corrections as appropriate. (I am not noting any additional ones that I find – I will assume that they will all be verified.)

Response: See response to comment #11.

15) In table 3-1 the footnote designated "2NA" is unclear to me. Does it mean Methods and Levels of Detection are not applicable in a field setting for the expected levels?

Response: Yes. The footnote will be amended.

16) In table 3-2 under the Trenching activity. Confined Spaces should include as a precautionary action that if anyone is to enter a trench deeper than four feet not only should it be monitored but also inspected and verified for stability by a competent person

Response: Comment noted. A precautionary statement is unnecessary as entry into the trenches is expressly forbidden and will not be allowed. To add a statement of this type may lead to confusion of site workers regarding trench entry protocols.

Comment Sheet for the Draft Site Safety and Health Plan Addendum Phase II Edition Remedial Investigation at the Niagara Fall Storage Site, June 2000		
Reviewer: Nancy Dickens, CPG		
Page/Location	**Comment**	**Response**
General Comment 1	Throughout the text there seems to be a problem with the lettering of the Appendices. In some instances, it appears you may be referring to appendices in the original SSHP, but the text does not indicate that is the case. The SOPs are cited as being in Appendix C and later are cited as being in Appendix D. Please review the lettering scheme for the appendices. Applicable portions of the text have been marked with blue ink.	The citation of Appendices will be corrected. SOP numbers will be corrected throughout the document.
General Comment 2	Please review your use and definition of acronyms. Applicable portions of the text have been marked with blue ink.	Comment noted. Acronyms will be corrected or defined as appropriate.
General Comment 3	Some of the sections are not paginated. Could you make sure each section has page numbers?	Section 3 will be paginated.

General Comment 4	Many exhibits and tables are referred to that are not included in this document. Are you referring to tables and exhibits from the original SSHP? Applicable portions of the text are marked with blue ink.	These reference are to tables and figures presented in the original SSHP and not duplicated for inclusion in the SSHPA. References will be included in the SSHPA that these figures and tables are included in the original document.
Comment 1, Page 2-1, Section 2.1	Was well installation covered in the original SSHP?	Yes
Comment 2, Section 3.1, first sentence	The sentence is not grammatically correct. Please revise.	The sentence will be modified as follows: *Prior to preparation of this document, the Site Manager, Project Health and Safety Officer and the Radiation Protection Officer performed a preliminary evaluation of each study area. This evaluation includes the overall site characteristics, hazards associated with investigative tasks and identifies hazardous conditions.*
Comment 3, Section 3.4.3	Is antibacterial soap necessary? Alcohol wipes might do just as well and some may prefer to use them.	I have no preference, as far as I am concerned we can use both. The primary advantage to most waterless, antibacterial soaps is that these products usually include an agent to prevent excessive drying of the skin, a condition that is often prevalent following prolonged use of alcohol wipes.

Comment 4, Section 3.9.1.2	Change "clearing and grubbing" to "trenching".	Comment noted. Text amended as requested.
Comment 5, Section 4	Do you need to repeat this section since there have been no changes. Also, if this section is included, the USACE project manager should be referred to as Dr. Judith Leithner.	Yes this section will be included, and all references to Ms. Judith Leithner will be changed to Dr. Judith Leithner.
Comment 5, Section 4	In the final SSHP, only one site manager was referred to - Mr. Tim Biggs.	In the SSHP the following people were identified as potential Site Managers: : Bob Bessent, Tim Biggs, Steve Bochenik, Greg Dawdy, Nancy Dickens, Dave Germeroth, Sonja Goen, Brad Lindenbusch, Dan Logan, Jim Richards or Mark Sievers. In the SSHPA the following people are identified as potential Site Managers: Tim Biggs, Nancy Dickens, Dave Germeroth, Sonja Goen, Dan Logan, Jim Richards or Mark Sievers.

Comment 6, Section 5.3	Fit testing is performed annually, not "prior to commencement of field activities".	This annual testing is done prior to the commencement of field activities. Subcontractor personnel must demonstrate to the SSHO or Site Manager, that fit-testing has been conducted, prior to the approval of work assignments.
Comment 7, Section 6, paragraph 5	The text of this paragraph seems to anticipate the use of respirators. Is respirator use anticipated?	Respirators were **not** used during Phase I. However, this does not preclude the possibility that the use of respirators will not be required during Phase II.
Comment 8, Table 3-1	The text refers to alpha beta - do you mean alpha and beta radiation? Particles?	The word radiation will be added to the table following the words alpha and beta
Comment 9, Table 3-1, page 18	Is "TOV" a type (TLV?)?	TOV = Total Organic Vapor, and will be defined in the footnotes of Table 3-1 as follows: TOV = Total Organic Vapor
Table 5-1	Please update the fit testing dates for Greg Dawdy and Jim Richards.	Comment noted, updated fit testing documents were not available for Mr. Dawdy or Mr. Richards at the time of submission of the SSHPA. Updated fit-testing documentation will be provided in the final document.

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

DOCUMENT REVIEW RECORD

DOCUMENT PREPARER:

DOCUMENT TITLE: Site Safety and Health Plan Addendum for Phase II of the Remedial Investigation at the Niagara Falls Storage Site

DOCUMENT NUMBER:

REVISION: Draft

DATE TRANSMITTED:

REVIEW TYPE: x TECHNICAL ☐ EDITORIAL

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

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT
3.3.1.7	The hazard description in the SSHP 3.6.1.7 is more clearly stated and understandable than the way it has been stated here.	Section 3.3.1.7 describes whether or not this hazard is present during this task and what equipment, i.e. field vehicles, may have these hazards associated with their use. Section 3.6.1.7 is not describing the hazards associated with this task, but rather, describes mitigation methodologies (PPE, monitoring, etc.) that will be employed to deal with the pinch/puncture/shear hazards associated with the operation of coring equipment. Therein lies the difference.	
3.3.3	It should be noted that Table 3-3 is in the SSHP	Comment noted, reference to Table 3-3 in original SSHP has been added to this section.	
3.3.1.5.1 & 3.3.1.5.2	Why do these sections not cite the heat stress cold stress SOP as they are cited in sections 3.4.1.5.1 & 3.4.1.5.2? (See comment below)	These sections are describing if these hazards will be present during on-site activities and presents rationale for this decision. Section 3.4.1.5.1 and 3.4.1.5.2 presents mitigation methodologies which will be employed to protect workers from these hazards. The SOPs are therefore presented in the sections dealing with hazard mitigation.	
3.4.1.5.1 & 3.4.1.5.2	These sections on heat stress and cold stress cite SOP 14 (Emergency Response and Fire Protection). SOP 27, Heat and Cold Stress and Biological Agents, is the correct SOP.	SOP #s will be corrected throughout the text	
3.4.2, 3.6.2, 3.8.2, & 3.10.2	If chemical contamination is a concern, why are odor and vision the method of detection? Why are you not using air-monitoring instruments to protect your workers?	3.4.2 – As described in Section 3.3.2, this task is non-intrusive and chemical hazards should not be encountered. Since this task is non-intrusive, and chemical hazards are not expected, Section 3.4.2 advises workers involved in this task to be observant and aware of any indications of contamination which would include odors or visual observations. PID and Toxic gas monitoring will be performed during pavement coring, clearing and grubbing and trenching. Sections 3.6.2, 3.8.2 and 3.10.2 have been amended to clarify this requirement by the addition of the following text: *During intrusive investigations, ambient air monitoring will be accomplished in accordance with SOP 2.0 "Exposure Monitoring during Sample Collection". The atmosphere in the work zone will be monitored during intrusive activities (i.e., drilling, pavement coring, and trenching) using a PID. If monitoring indicates the presence of volatile organic compounds colorimetric indicator tubes will be used in an attempt to identify these compounds If a PID indication of 100 ppm or greater is realized explosive gas monitoring using a TMX 412 toxic gas meter or equivalent will be initiated. If the Gastech GX-82 toxic gas meter exceeds the present standards (10 % LEL, < 19.5 % or > 23.5 % O_2, hydrogen sulfide - 10 ppm. Carbon monoxide 10ppm all work will stop and all personnel will move in an upwind direction away from the work area. After evaluating the data, the Site Safety and Health Officer (SSHO), in*	

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

DOCUMENT REVIEW RECORD

DOCUMENT PREPARER:

DOCUMENT TITLE: Site Safety and Health Plan Addendum for Phase II of the Remedial Investigation at the Niagara Falls Storage Site

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

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT
		consultation with the Maxim CIH and USACE Site Manager, will decide on the proper action to protect all personnel. Work will continue only after proper respiratory protection has been donned. If safe work standards cannot be met, the safety officer will contact the project manager and USACE contracting officer for instructions. These monitoring requirements are also presented in Section 9 of this document. A list of environmental monitoring equipment is listed in SOP -- and Table 9-1 of the SSHP.	
3.4.3, 3.6.3, 3.8.3, 3.10.3, & 10.14	The citation for SOP 15, Bloodborne Pathogens Program, does not seem entirely appropriate for the subject as discussed in this section, biological hazards -- insect and animal bites.	SOP # will be corrected throughout the document	
3.5	General -- Is the pavement coring going to generate dust and, if so, what control measures will be taken to protect workers?	Yes, this operation is likely to generate some dust Water will be used as a dust control measure. A SOP for safety and health procedures for pavement coring is being prepared for the final submittal.	
3.5.1.2	Is there not a fire hazard associated with the pavement coring equipment? Since the equipment is powered by the drill rig, there would be the same fire hazards associated with that task (see Section 3.6.1.2).	Concur, fire hazards associated with the use equipment powered by internal combustion engines will be added to Sections 3.5.1.2, 3.7.1.2 and 3.9.1.2.	
3.6.1.5.1 & 3.6.1.5.2	Wrong SOP cited, see comment on section 3.4.1.5.1.	SOP #s will be corrected throughout the document	
3.6.1.8	The lockout/tagout SOP is number 11 in Appendix C, not 12 as is cited here. SOP 6 not in SSHP.	SOP #s will be corrected throughout the document	
3.7.1.2	Are any powered equipment tools planned to be used for clearing? If so, are they gas powered and pose a fire hazard.	See response to 3.5.1.2.	
3.7.3	Are there "paved areas that will be sampled" during the clearing and grubbing task.	No. Section 3.7.3 will be amended as follows: *The personnel involved in these activities at the site may be exposed to biological hazards such as ticks, spiders, rodents, and snakes and irritant plants such as poison ivy, poison oak, poison sumac, and greenbriar. Table 3-3 of the SSHP lists poisonous spiders and other animals and plants common to the work area.*	

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

DOCUMENT REVIEW RECORD

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

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT
9.5	Change reference to SOP 14 to SOP 27.	Amended as requested.	
10.0	Change reference to Appendix D to Appendix C.	Amended as requested	
10.1, 10.2, 10.3, 10.5	SOP 4 is Exposure Monitoring not "Field Safety" as stated here.	SOP #s will be corrected throughout the document	
10.7 10.10 & 16.0	SOP 7 is Hearing Protection not SOP 11 (Lockout /Tagout) SOP 3 is "Construction Materials Engineering Safety Practices" not "Accident Prevention, Training, and Medical Surveillance."	SOP #s will be corrected throughout the document SOP #s will be corrected throughout the document	
10.12	SOP 12 is Hazard Communication Program not Field Equipment Repair Lockout/Tagout" and SOP 13 is Shipping of Hazardous Materials/Samples not "Electrical Lockout/Tagout."	SOP #s will be corrected throughout the document	
11.5	Emergency contact information is in Section 15.0 not 17.0.	Text will be amended as follows: *Emergency contact information as presented in Section 15.0 of this SSHPA will be prominently posted in the project site office and in all on-site vehicles.*	
12.2 & 13.0	SOP 10.0 is Confined Space Entry not "Personnel/Equipment Decontamination Procedures" and is in Appendix C not D.	SOP #s will be corrected throughout the document	
14.0	Change Appendix D to F.	Amended as requested.	
15.0	SOP 5 is Laboratory Chemical Hygiene Plan not "Emergency Response and Contingency Procedures"	SOP #s will be corrected throughout the document	
16.0	Change Appendix F to H.	Amended as requested.	
Table 3-1 page 1/21	What does the acronym/abbreviation N.R. represent?	N.R. = No recommendation as provided in the NIOSH Pocket Guide to Chemical Hazards. The definition will be added to the footnotes of Table 3-1.	
Table 3-1 general	Why is the column "Action Levels" without data for many of the contaminants?	Some of these were inadvertently left blank. Information will be added as appropriate.	
Table 3-1 General	Why are compounds and/or chemicals that are found at trace levels (as defined in footnotes) in the sediment considered contaminants of concern?	All contaminants presented in the table were selected based on the results of analysis of samples collected during Phase I of the RI.	
Table 3-1 page 3/21	What does the acronym/abbreviation TOV represent?	Total Organic Vapor. The definition will be added to the footnotes.	

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DOCUMENT REVIEW RECORD

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

PAGE OR SECTION/ PARAGRAPH	REVIEWER COMMENTS	PREPARER RESPONSE	REVIEWER ACCEPT/ REJECT
Table 3-1 page 5/21	Why are Work Practice Controls blank?	Work Practice Controls will be added where appropriate.	
Table 3-1 page 7/21	Is the contaminant chloromethane going to cause frostbite?	No.	
Table 3-1 page 8/21	Is there copper dust on site?	No.	
Table 3-1 page 14/21	Do you intend to wear all this PPE to preserve rinsate samples?	Yes.	
Table 3-1 page 19/21	See comments for frostbite and N.R..	Comment noted, see response to frostbite and N.R. comments.	
Table 3-1 page 20/21	For Radioactive Contaminants, are the Action Levels 2 mrem/hr or 2mrem/hr above background?	In consultation with the Project RSO, Doug Haas it has been determined that the information concerning radioactive contaminants presented in Table 3-1 is not relevant and will be deleted. Radiological contaminants are addressed in the RPPA.	
Table 3-2 Page 1	Premonone should be spelled Permanone. For Biologicals do you plan to use both Permanone and Tyvek coveralls?	Comment noted, spelling of Permanone will be corrected. Yes, both Permanone and Tyveks may be used, based upon the task the personnel are involved in and the presence of biological hazards The use of Permanone will not be allowed by field personnel collecting samples which will be subjected to VOC analysis.	
Table 3-2 Page 2	Equipment Malfunctions references Appendix F, Which is First Aid Kit Information.	Reference to Appendix F will be deleted.	
Table 3-2 Page 2	Explosives/Fires – Why are you using non-sparking tools for clearing and grubbing and pavement coring?	This statement will be deleted from the table.	
	Where is the MSDS for nitric acid?	It should be presented in Appendix A of the original SSHP.	
	Is there going to be dust suppression during coring task?	Yes, water will be used.	

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