AGW 2/14/02

HEALTH AND SAFETY PLAN

FOR

REMEDIATION AT:

575 EAST MILL STREET
CITY OF LITTLE FALLS
HERKIMER COUNTY
LITTLE FALLS, NEW YORK
Site No. V00223-6

JANUARY 21, 2002

Prepared for:

THE NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
REGION 6
ATTN. DARREL SWEREDOSKI, P.E.
REGIONAL HAZARDOUS WASTE REMEDIATION ENGINEER

Prepared by:

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SECTION 1: DISCLAIMER

Buck Engineering (BE) and Buck Environmental Laboratories, Inc. (BEL) do not guarantee the health and safety of any person entering this site. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site without prior research and evaluation by trained personnel. While BE and BEL do not object to the use of this Health and Safety Plan by other firms or individuals, BE and BEL accept no liability for such use.

SECTION 2: GENERAL INFORMATION

INTRODUCTION: This document represents the Health and Safety Plan developed specifically for remediation activities at 575 East Mill Street, Little Falls, New York. Previous site investigation activities have determined the presence of volatile organic compounds (VOC's), polynuclear aromatic hydrocarbons (PAH's), and chromium in soils and groundwater above TAGM 4046 guidelines at the subject site. Buck Engineering, LLC (BE) has developed this Health and Safety Plan to provide information and guidance for on-site personal, visitors, and the public.

The planned scope of work at the site includes remediation of PAH and chromium contaminated soils.

Note: This Health and Safety Plan is to be used by employees of Buck Engineering, LLC and Buck Environmental Laboratories, Inc (BEL). While BE and BEL do not object to the use of this Health and Safety Plan by other firms or individuals, BE and BEL will accept no liability for such use.

SITE ADDRESS: 575 East Mill Street
Little Falls, New York
(Feldmeier Equipment)

NYSDEC SITE #: V00223-6

PROJECT SCHEDULE: Not Scheduled

BE & BEL STAFF: John H. Buck, P.E. - Project Administrator
Wayne Matteson, P. E – Project Management
Eric Monsen - Health & Safety, Project Monitoring and Air Monitoring
Peter A. Indick - Analytical Chemistry
Krystal Silvanic – Project Monitoring and Air Monitoring
Ernest Spencer – Project Monitoring and Air Monitoring

PERSONNEL COVERED BY PLAN: This Health & Safety Plan is intended only for the employees of BE and BEL. Other entities working at the site may, at their discretion, adopt this plan in whole or in part.

NOTIFICATIONS: Prior notification of field activities will be made to the Underground Facilities Protective Organization, the City of Little Falls, and the NYS Department of Environmental Conservation.

SECTION 3: SITE DESCRIPTION AND REMEDIATION OBJECTIVES

SITE DESCRIPTION: This industrial property consists of two separate lots which, together, total approximately 6.5 acres and are located at 575 East Mill Street (occupied by Feldmeier Equipment) in the City of Little Falls, Herkimer County, New York. One lot, approximately 0.75 acres in size, is located on the north side of East Mill Street, and contains the boiler building for the facility and two small parking lots. The main facility is located on the south side of East Mill Street. The Mohawk River is the southern property line. Feldmeier Equipment manufactures pharmaceutical and food processing tanks at this property.

The property has been used for numerous industrial purposes for more than 115 years. The current owner of the property (United Dominion Industries), conducted business as Waukesha Cherry-Burrell, and manufactured tanks on-site for more than 50 years. In addition to the manufacture of tanks, portions of the property have been used in the past as a knitting mill, a tannery and a coal gasification plant.

REMEDIATION OBJECTIVES: A previous VCP investigation of the subject site was conducted by Buck Engineering, LLC in Spring 2000. The results of the site investigation indicated the presence of VOC's, PAH's, and chromium in soil and groundwater exceeding TAGM 4046 guidelines. Areas targeted for remediation include:

- Historic Coal Gas Manufacturing Area
- Historic Tannery Area

The preliminary remediation action objectives identified by the NYSDEC are:

- Mitigate existing groundwater contamination by removing the contaminant source.
- Eliminate potential worker and/or public exposures to contaminated soils by either excavation and/or containment.
- Prevent future exposure to contaminated media using institutional controls.

To satisfy these objectives the following remediation strategies have been proposed:

- Excavate and dispose of PAH contaminated soils in the location of the previous gasometer in the coal gas manufacturing site located at the west end of the site
- Excavate and dispose of PAH contaminated tar-like material in the tannery location at the southeast corner of the site
- Construct a containment pavement area over the area of chromium contaminated soil in the tannery location at the east end of the site.

SECTION 4: WORK AREAS

Three (3) work areas will be established based on the individual remediation tasks to be conducted at the subject site. The following summarizes the work areas and the remediation activities:

Work Area #1: PAH and VOC contamination has been identified in soils in the historic coal gas manufacturing area located at the west end of the site adjacent to the west wall of the manufacturing plant. A gasometer was present in the coal gas manufacturing area which is suspected to be a potential source of the PAH and VOC contamination. The remediation objective in the coal gas manufacturing area is to excavate and dispose of contaminated soils in the gasometer location.

Monitoring well MW-1 and a section of a storm drain will be destroyed during excavation activities. MW-1 will be replaced in the general location of the original well and the storm line will be repaired as needed.

Work Area #2: PAH contamination has been identified in a tar-like material located below grade in the southeast corner of the site in the historic tannery area. This material is present approximately 4.5' below grade at the bedrock interface and may be MGP residue. The remediation objective is to excavate and dispose of the tar-like material. This material is located in a very confined section of the site and excavation activities will be limited based on the presence of building foundations and public utilities.

Work Area #3: Chromium contamination has been identified in soils below grade in the east end of the site in the historic tannery area. This area is currently used for employee parking and access to the building. The remediation objective is to construct a bituminous pavement containment area over this area.

SECTION 5: SITE CONTROL

EXCLUSION ZONE AND CONTAMINATION REDUCTION ZONE: Each work area will be delineated and isolated from non-work areas by orange construction fence. The area inside the fencing at each work area will be considered the exclusion zone. A contamination reduction zone will be established immediately adjacent to each work area. **No unauthorized personnel will be permitted to enter the exclusion or contamination reduction zone.**

SUPPORT ZONE: A support zone will be established at a centralized location at the site. All on-site meetings and daily safety meetings will take place in the support zone. The actual location of the support zone will be determined during the mobilization of the various parties involved in the remediation process.

SECTION 6: SITE HAZARDS

Chemical and physical hazards have been identified at 575 East Mill Street.

HAZARD ASSESSMENT

Site Workers:

Provided workers don the proper personal protective equipment and follow proper remediation procedures the overall hazard potential at the subject site would be considered **low**. Air monitoring results will be used to determine worker exposure to airborne contaminants.

Public:

The overall hazard potential for the public exposure to contaminants from the subject site would be considered **low**. Air monitoring results will be used to determine public exposure to airborne contaminants. The subject area is located in an industrial location of the City of Little Falls and no residential properties are located immediately adjacent to the site. East Mill Street and businesses located on the street will remain open to the public during remediation activities. Site workers should pay close attention to this and take necessary precautions when working in close proximity to the north side of the site or when moving equipment in and out of the work areas.

The following sections provide a listing of those chemical and physical hazards identified at the subject site.

CHEMICAL HAZARDS

The following paragraphs briefly discuss the chemical hazards identified above TAGM 4046 guidelines in each work area:

Work Area #1: Historical Gas Manufacturing Area

Polynuclear Aromatic Hydrocarbons (PAH):

Polynuclear aromatic hydrocarbon contaminated soil and sediment in soil borings SB-3, SB-4, and SB-5:

- Benzo(a) anthracene (347 to 9,240 ug/kg)
- Chrysene (457 to 8,520 ug/kg)
- Bis (2-Ethylhexl) phthalate (132,000 ug/kg)
- Benzo(b)fluoranthene (328 to 7,610 ug/kg)
- Benzo(k)fluoranthene (365 to 7,790 ug/kg)
- Benzo(a)pyrene (312 to 7,780 ug/kg)
- Indeno (1,2,3-cd) pyrene (5,180 to 6,700 ug/kg)
- Carbazole (1,080 ug/kg)
- Dibenzo (a,h) anthracene (121 to 2,570 ug/kg)

Polynuclear aromatic hydrocarbon contaminated groundwater in MW-1:

- Naphthalene (11 ppb)

Section 6, Site Hazards (Con't)

Volatile Organic Compounds (VOC):

VOC contaminated groundwater in MW-1 (4/17/00 sample):

- Benzene (71 ppb)
- Toluene (13 ppb)
- Ethylbenzene (58 ppb)
- Xylene (total) (36 ppb)

Work Area #2: Historical Tannery Area

Polynuclear Aromatic Hydrocarbons (PAH):

Polynuclear aromatic hydrocarbon contaminated tar-like material in test pit #4:

- Naphthalene (14,500 ug/kg)
- Dibenzofuran (16,200 ug/kg)
- Phenanthrene (120,000 ug/kg)
- Fluoranthene 79,800 ug/kg)
- Pyrene (98,400 ug/kg)
- Benzo(a) anthracene (61,400 ug/kg)
- Chrysene (43,000 ug/kg)
- Benzo(b)fluoranthene (36,500 ug/kg)
- Benzo(k)fluoranthene (39,800 ug/kg)
- Benzo(a)pyrene (42,500 ug/kg)
- Indeno (1,2,3-cd) pyrene (41,800 ug/kg)
- Dibenzo (a,h) anthracene (20,900 ug/kg)
- Benzo (g,h,I) perylene (52,300 ug/kg)

Work Area #3: Historical Tannery Area

Chromium:

Chromium contaminated soil and sediment in test pits TP-3 and TP-4:

- Chromium (101 to 521 mg/kg)

Section 6, Site Hazards (Con't)

The following table summarizes regulatory levels and heath hazards of chemicals and hazardous substances present at the site:

Contaminant	Source/ Location	OSHA PEL	ACGIH TLV	OSHA STEL	IDLH	Skin Absorption Hazard	Ingestion Hazard
Polynuclear Aromatic Hydrocarbons (PAH)	Soil, sediment, groundwater	0.2 mg/m^3	0.2 mg/m^3	N/A	80 mg/m^3	Yes	Yes
Volatile Organic Compounds (VOC)	Groundwater (MW-1)	Benzene: 1 ppm	0.5 ppm	5 ppm	3,000 ppm	Yes	Yes
		Toluene: 200 ppm	50 ppm	300 ppm	2,000 ppm	Yes	Yes
		Etylbenzene: 100 ppm	100 ppm	N/A	2,000 ppm	Yes	Yes
		Xylene: 100 ppm	100 ppm	N/A	1,000 ppm	Yes	Yes
Chromium	Soil, sediment	1.0 mg/m^3	0.5 mg/m^3	N/A	NE	No	Yes

OSHA: Occupational Safety and Health Administration
ACGIH: American Conference for Governmental Industrial Hygienists
PEL: Permissible Exposure Limit
TLV: Threshold Limit Value
STEL: Short Term Exposure Limit
IDLH: Immediately Dangerous to Life and Health
NE: Not Established

To lower or eliminate worker exposure to these chemical hazards site workers will don proper personal protective equipment (PPE) when working with chemical hazards. Specific PPE requirements are included in Section 7 of this health and safety plan.

To determine worker exposure to these chemicals air monitoring will be performed during remediation and abatement activities. Specific air monitoring requirements are included in Section 8 of this health and safety plan.

PHYSICAL HAZARDS

Heavy Equipment

Heavy equipment including excavators, loaders, and trucks will be used during various excavation and demolition phases of remediation. The following procedures will be implemented for all persons operating and working around heavy equipment:

- Eye Contact: Equipment operators and ground personal should make eye contact before approaching equipment or maneuvering equipment.
- Alarms: All heavy equipment will have back-up alarms.
- Utilities: Equipment operators must be aware of overhead and below grade utilities prior to starting excavation or demolition activities. Overhead utility lines are present along East Mill Street. Previous UFPO notifications have been made for the subject site. Although it is not likely that live or active underground utilities are present at the site, UFPO will be notified prior to excavation activities. A storm sewer line is present in the historical gas manufacturing area and a portion of this storm sewer line may be destroyed during the excavation process. A large municipal sewer line runs along the south property line paralleling the Mohawk River. This sewer line is exposed above grade in the southeast corner of the property and care must be taken not to disturb this line during remediation activities in work area #2.
- Hard Hats: All operators and ground personal will don hard hats when working in and around heavy equipment.

Electrical Power (OSHA 29 CFR 1910 Subpart S)

Electric service is available at the site. All power will have ground fault interrupter (GFI) as part of the circuit for each cord or electric line used for this project. The equipment shall be approved for use in hazardous atmospheres. If generators are used, the site supervisor in charge of electric service shall continuously check generator equipment for fuel and operation to avoid sudden shut-downs.

Lighting (OSHA 29 CFR 1910.120(m)

All of the work areas are located outside and all remediation will take place during daylight hours.

Fall Protection (OSHA 29 CFR 1910.21 through 29 CFR 1910.32)

Fall hazards will exist at the subject site once the excavation process starts. It is anticipated that the excavation in the historical gas manufacturing area (work area #1) will be 15-20 feet deep. All of the work areas will be surrounded with orange hazard fencing and warning signs.

Physical Body Protection

The subject site is a current and former industrial site and many physical hazards such as sharp objects, re-bar, metal, broken concrete, wire, glass, wood/nails, etc. exist in soils below grade. These materials will be disturbed during excavation procedures. All workers will don hardhats, steel shank and toe shoes, work gloves, and safety glasses when entering the work areas.

Cold and Heat Stress

It is the responsibility of the employer to monitor ambient temperatures in the exclusion zones to determine if employees are subject to cold or heat stress hazards. If the temperature is 40°F or below the threat of cold stress increases. Workers should wear adequate clothing to maintain a proper core body temperature. If temperatures exceed 70°F, and workers are wearing respirators or protective suits, a heat stress program will be initiated. Workers should have access to fluids and should take frequent work breaks during these periods.

Confined Space

The excavations may be classified as confined spaces depending on the depth and configuration of the excavation. In no instance will persons enter excavations without proper shoring and side wall slopes. An evaluation will be made to determine if the crawl space or sections of the crawl space are considered "Confined Space(s)" or "Permit Required Confined Space(s)" as defined by OSHA. Employers shall implement applicable procedures meeting the requirements of 29 CFR 1910.146. On-site supervisors and workers shall have the proper training and information prior to entering a confined space.

Section 6, Site Hazards (Con't)

Hearing Protection (29 CFR 1910.95)

If noise levels at the site exceed 85 dB based on an 8 hour time weighted average a hearing protection plan will be implemented.

Fire Protection/Prevention

Non-sparking tools shall be used when appropriate. Sources of ignition and fuel sources shall be removed and kept away from the exclusion zones (i.e. gas cans, matches, welding equipment, cleaning solvents etc.). All electrical equipment shall be equipped with ground fault interrupters. Fire extinguishing equipment shall be kept on site (one in job trailer and one in the exclusion zone). Emergency escape routes shall be established prior to the start of remediation activities.

Excavation (29 CFR 1926 Subpart P)

The following procedures shall be used during excavation:

- If you are working on the ground adjacent to excavation equipment do not assume that the excavator operator knows of your presence.
- Hard hats, safety glasses, and steel toed shoes are mandatory when working in and around an active excavation.
- Make sure all parties know their roles and positions before starting excavation.
- Remove all surface debris and encumbrances prior to starting excavation.
- Identify and locate all underground installations and utilities prior to the start of excavation.
- Construct or supply a means of egress so that not more than 25 feet of lateral travel is required by workers or personnel in the excavation.
- Use warning vests for workers exposed to or working close to vehicular traffic.
- Check and evaluate the excavation for hazardous atmospheres.
- Utilize barriers, barricades, or hand signals for heavy equipment working adjacent to excavations and slope grade away from the excavation.
- Provide protection from water accumulation or loose rock and soil in the excavation.
- Check and evaluate the stability of adjacent structures.

Water Hazards

In general, water hazards are not anticipated at the subject site. However, groundwater may be encountered during excavation activities in the historical gas manufacturing area (work area #1). Workers should avoid direct contact with the water.

Biological Hazards

No biological hazards in the form of animal or insect infestation were observed or identified during previous investigations at the subject site.

SECTION 7: PERSONAL PROTECTIVE EQUIPMENT (PPE)

The following will summarize personal protective equipment that may be required during remediation phases at the subject site. The two levels of personal protective equipment that are anticipated to be used at the site are Levels C and D as defined by the U.S. EPA. Respiratory equipment will be NIOSH/MSHA approved and used in accordance with OSHA 29 CFR 1910.34

LEVEL C

Level C protection is required when:

- Hazardous substance(s) require the same level of skin protection as Level B, but do not require the same level of respiratory protection;
- The types and concentrations of contaminants have been measured and information and conditions indicate that air purifying respirators are sufficient to remove or reduce air contaminants; or
- The hazardous substance has adequate warning properties, and all of the criteria for the selection of air purifying respirators has been met.

Level C Requirements

Respiratory Protection:

Air Purifying Respirators
Half face air purifying respirator (VOC's, chromium, PAH's)
Full face air purifying respirator or PAPR (may be required based on air sampling results)
Respirator Cartridges:
- Chromium: P100 (HEPA)
- VOC's and PAH's: Organic Vapor

Body Protection:

Disposal chemical resistant clothing
- Chromium: Disposable standard Tyvek or appropriate substitute
- VOC's and PAH's: Disposable chemical resistant Tyvek (i.e. poly coated or Saranex)

Disposal chemical resistant gloves
- All contaminants: 11 mil or higher Nitrile or equivalent , short term direct contact only (15 minutes or less)

Chemical resistant boots
- All contaminants: PVC, steel toe and shank, or PVC boot covers

Additional Body Protection PPE
- Sleeves to be sealed with duct tape at hand, feet, and zipper areas
- Safety glasses
- Hard hat
- Hearing protection (only required if noise levels are in excess of 85 dB)

LEVEL D

Level D protection is required when:

- The atmosphere contains no known hazard;
- The work tasks preclude splashes, immersions, or the potential for unexpected inhalation, ingestion, or direct contact with hazardous concentrations of chemicals; and
- Airborne concentrations of contaminants are less that the TLV.

Level D Requirements

Respiratory Protection:

- Not required

Body Protection:

- Standard work uniform
- Work boots with steel toe and shank (mandatory for all site activities)
- Work gloves (mandatory for all site activities)
- Safety glasses (mandatory for all site activities)
- Hearing protection (if required)
- Hard hat (mandatory for all site activities)

ACTIVITY VS. LEVEL OF PROTECTION

Activity	Level of PPE	Comments
Remediation worker (VOC/PAH/chromium)	C	Initial Level C PPE, may downgrade to Level D based on air monitoring results
Excavation Equipment Operator (VOC/PAH/Concrete)	D	Up-grade to level C based on air monitoring results
Project monitor/Industrial Hygienist	C/D	PPE dependant on task being performed
Sampling Technician	C/D	PPE dependant on task being performed
Authorized Site Visitor	C/D	PPE dependant on task being performed

Although not required for all tasks, site personal are encouraged to don Level C personal protective equipment for all phases of this project involving the removal or remediation of hazardous chemicals or substances.

Section 7, Personal Protective Equipment (Con't)

Medical Monitoring Requirements

All personnel working at the site must be enrolled in the individual companies medical surveillance program meeting the criteria of OSHA 29 CFR 1910.120(f). Workers must have successfully passed an occupational physical during the past 12 months and be medically cleared for working at a hazardous waste site and capable of donning appropriate personal protective equipment as required.

Fit Testing Requirements

All personnel who are required to don a respirator must be familiar with the individual companies respiratory protection plan and the OSHA respiratory Standard (29 CFR 1910.134). All personnel who are required to don respiratory protection must have passed a respirator fit test in the last 12 months. The fit test must have been either a qualitative or quantitative fit test performed by a competent person. Fit testing must be performed for the actual respirator that is being worn by the user.

SECTION 8: DECONTAMINATION

In general, everything that enters the exclusion zone must be either decontaminated or disposed of upon exit through the exclusion zone. All persons entering the exclusion zone shall go through a decontamination process. A contamination reduction zone will be established at each work area during the mobilization phase of the project.

Personal Decontamination:

Personal decontamination may be necessary depending on the level of activity and the level of direct contact with hazardous substances encountered during remediation activities. The following are the general personal decontamination steps to be followed for Level C and D:

Level C Decontamination Procedures

Step 1: Segregate equipment drop
Step 2: Boot cover and glove wash
Step 3: Boot cover and glove rinse
Step 4: Tape removal
Step 5: Boot cover removal
Step 6: Outer glove removal
Step 7: Suit/safety boot wash
Step 8: Suit/safety boot rinse
Step 9: Safety boot removal
Step 10: Splash suit removal
Step 11: Inner glove wash
Step 12: Inner glove rinse
Step 13: Face piece removal
Step 14: Inner glove removal
Step 15: Inner clothing removal
Step 16: Field wash
Step 17: Redress

Level D Decontamination Procedures

Step 1: Segregate equipment drop
Step 2: Remove outer garments
Step 3: Remove gloves
Step 4: Wash hands and face

Sampling Equipment:

To be cleaned according to laboratory requirements using the appropriate cleaning agents such as nitric acid, methanol, and/or Alconox.

Equipment Decontamination:

Equipment will subject to decontamination or disposal and inspected for cleanliness prior to leaving the site. The level of equipment decontamination will be dependant on the level of equipment contaminant exposure. Decontamination pads will be established within the contamination reduction zones of Work Areas 1 and 2. The pads will be constructed with a water tight plastic liner with elevated barriers at the edges to contain the wash water. The pad will be large enough to accommodate the largest piece of equipment to be decontaminated. Materials and equipment will be either hand washed or pressure washed inside the pad area. Wash water will be collected and drummed for proper disposal. Gross contamination will be removed from heavy equipment inside the work area prior to entry to the contamination reduction zone. Remediation work being performed in Work Area #3 consists of the construction of a containment pad and subsurface soils will not be disturbed. Equipment decontamination will not be required in Work Area #3

Disposable materials and clothing are to be properly bagged or containerized prior to removal from the contamination reduction zone. All items, materials, PPE, or other clothing that cannot be properly decontaminated shall be contained on-site and disposed of with other contaminated materials.

SECTION 9: AIR MONITORING PROGRAM

Air monitoring will be performed during remediation activities at the subject site as follows:

- Fugitive Dust and Particulates (TAGM 4031, Inactive Hazardous Waste Sites)
- DOH Community Monitoring (intrusive activities)
- Worker Documentation (OSHA documentation)

Fugitive Dust and Particulates:

Air monitoring for fugitive dust and particulates will be performed in accordance with TAGM 4031 on a daily basis using real-time PM_{10} particulate meters. Airborne dust levels will be measured upwind and downwind of each work area during excavation activities to determine airborne dust concentrations at the work area perimeter. An action level of 150 ug/m^3 or 100 ug/m^3 over background will be established. Dust monitoring will be performed throughout the day and measurements will be integrated over 15 minute intervals. If the results of the particulate sampling indicate dust levels in excess of the action level then dust suppression techniques will be implemented to reduce airborne dust levels and prevent airborne contaminant migration. Additional action will be taken to protect site workers. A copy of TAGM 4031 is provided in Appendix D of this Health and Safety Plan

DOH Community Monitoring:

Air monitoring for fugitive dust and particulates, and volatile organic compounds (VOC's) will be continuously monitored during excavation activities using real-time PM_{10} particulate meters and photoionization detectors. Community monitoring will be performed at the perimeter of the work area both upwind and down wind for the duration of remediation activities in each work area in accordance with the community monitoring program. An action level of 100 ug/m^3 over background will be established. Dust monitoring will be performed throughout the day and measurements will be integrated over 15 minute intervals. If the results of the particulate sampling indicate dust levels in excess of the action level then dust suppression techniques will be implemented to reduce airborne dust levels and prevent airborne contaminant migration. An action level of 5 ppm above background will be established for VOC monitoring. If VOC levels above the action level are observed then additional monitoring will be performed according to the "Major Vapor Emission" section of the Community Monitoring Progra

Section 9 Air Monitoring Program (Con't)

Worker Documentation Monitoring (Con't)

Polynuclear Aromatic Hydrocarbons (PAH's):

Monitoring Method:	OSHA Method 58 (PAH profile)
Frequency:	One (1) sampling events per week, full shift, full duration of remediation activities involving PAH impacted soils in Work Areas 1 and 2
Number of Samples:	One per work area
Monitoring Location(s):	Most impacted worker location in Work Areas 1 and 2
Special Requirements:	None
Action Level(s):	PEL: 0.20 mg/m^3. If airborne levels of PAH's exceed the OSHA permissible exposure limit work will stop and remediation methods will be altered to lower airborne PAH concentrations in the work area.

Volatile Organic Compounds (VOC's):

Monitoring Method:	NIOSH Method 1500 (Aromatic Profile)
Frequency:	One (1) sampling events per week, full shift, full duration of remediation activities involving VOC impacted soils in Work Area 1
Number of Samples:	One per work area
Monitoring Location(s):	Most impacted worker location in Work Areas 1 and 2
Special Requirements:	None
Action Level(s):	PEL: Varies by compound (See table in Section 6 of this Health and Safety Plan). If airborne levels of VOC's exceed the OSHA permissible exposure limits work will stop and remediation methods will be altered to lower airborne VOC concentrations in the work area

Chromium:

Monitoring Method:	NIOSH Method 7300
Frequency:	One (1) sampling event per week, full shift, full duration of remediation activities in Work Area #3
Number of Samples:	One per work area
Monitoring Location(s):	Most impacted worker location
Special Requirements:	None
Action Level(s):	PEL: 1.0 mg/m^3. If airborne levels of chromium exceed the OSHA permissible exposure limit work will stop and remediation methods will be altered to lower airborne chromium concentrations in the work area

SECTION 10: SPECIAL SAFETY PROCEDURES

- All personnel working at the site must read and sign the Health & Safety Plan. No unauthorized visitors will be allowed in the exclusion or contamination reduction zone.

- All injuries, regardless of severity, must be reported immediately.

- No sealed drummed materials have been identified at the subject site. If drummed materials are discovered during remediation activities these drums will not be disturbed, moved, or opened. A safety meeting will be conducted to determine an appropriate plan of action.

- Any hazardous material or situation discovered at the subject site during remediation activities not identified in this HSP will be reported to the Heath and Safety Officer immediately. In no instance will any person or individual make a decision regarding remediation of unidentified materials or situations without prior authorization.

SECTION 11: EMERGENCY RESPONSE/CONTINGENCY PLAN

EMERGENCY ESCAPE ROUTES: The normal escape would be to the north to East Mill Street and proceed west to Route 167.

Note: In the event of an emergency, all project staff are to meet as soon as possible at the established support zone No personnel may re-enter the property until authorized to do so.

EMERGENCY ASSISTANCE:
Ambulance: 911
Fire Department: 911 or 315-823-2233
Police: 911 or 315-823-1122
Little Falls Hospital: 315-823-1000
NYSDOH Herkimer: 315-866-6879
USEPA Region II: 212-264-2525
NYSDEC 24 hour spill response: 800-457-7362
National Response Center: 800-424-8802
Center for Disease Control: 404-488-4100

DIRECTIONS TO NEAREST HOSPITAL: (Little Falls Hospital)

Exit the site and go left on East Mill Street.

Bear right on West Mill Street.

Turn right on Route 167 for a short distance.

Turn right on Albany Street and proceed on Albany Street to Main Street.

Turn left on Main Street and proceed a short distance.

Turn right on Saulsbury Street.

Turn right onto Burwell Street.

The Hospital is located at 140 Burwell Street (315-823-1000).

WHOM TO CONTACT IN CASE OF EMERGENCY
Buck Engineering: Mr. John Buck, 607-753-3403
Feldmeier Equipment: Mr. Jake Feldmeier, 315-823-2000
NYSDEC, Region 6 (Watertown): Mr. Phillip G. Waite, 315-785-2513

PERSON THAT PREPARED THE PLAN:
Eric Monsen

DESIGNATED SAFETY OFFICER: Eric Monsen

APPENDIX A

PLAN REVIEW AND APPROVAL:

Eric Monsen — Date: 1/21/02

Wayne Matteson, P.E. — Date: 1/21/02

John H. Buck, P.E. — Date: 1/21/02

PROJECT STAFF ACKNOWLEDGMENTS: Please sign below indicating that you have read this plan, that you understand this plan, and that all safety related questions have been addressed to your satisfaction.

John H. Buck — Date: 1/21/02

Wayne Matteson — Date: 1/21/02

Eric Monsen — Date: 1/21/02

Peter Indick — Date: 1-21-02

APPENDIX B

RECORD OF SAFETY MEETINGS

Date	Conducted By	Names of persons attending

RECORD OF SAFETY MEETINGS

Date	Conducted By	Names of persons attending

APPENDIX C

MSDS Sheets for contaminants identified in the remediation work areas of 575 East Mill Street are provided on the following pages.

MATERIAL SAFETY DATA SHEET

ULTRA Scientific
401-294-9400

250 Smith Street
North Kingstown, RI 02852

DATE: 8/24/94

SECTION I PRODUCT IDENTIFICATION

Catalog Number: US-106

Name: Polynuclear Aromatic Hydrocarbons Mixture at 2000 µg/mL in Methylene Chloride/Benzene (1:1)

SECTION II HAZARDOUS INGREDIENTS

Component	CAS #	%	LD_{50}	RTECS #
methylene chloride	75-09-2	48.54	2136 mg/kg oral rat	PA8050000
benzene	71-43-2	48.54	3320 mg/kg oral rat	CY1400000
acenaphthene	83-32-9	0.182	N/A	AB1255500
acenaphthylene	208-96-8	0.182	N/A	AB1254000
anthracene	120-12-7	0.182	N/A	CA9350000
benz[a]anthracene	56-55-3	0.182	N/A	CV9275000
benzo[b]fluoranthene	205-99-2	0.182	N/A	CU1400000
benzo[k]fluoranthene	207-08-9	0.182	N/A	DF6350000
benzo[ghi]perylene	191-24-2	0.182	N/A	DI6200500
benzo[a]pyrene	50-32-8	0.182	N/A	DJ3675000
chrysene	218-01-9	0.182	N/A	GC0700000
dibenz[a,h]anthracene	53-70-3	0.182	N/A	HN2625000
fluoranthene	206-44-0	0.182	2000 mg/kg oral rat	LL4025000
fluorene	86-73-7	0.182	N/A	LL5670000
indeno[1,2,3-cd]pyrene	193-39-5	0.182	N/A	NK9300000
naphthalene	91-20-3	0.182	1780 mg/kg oral rat	QJ0525000
phenanthrene	85-01-8	0.182	700 mg/kg oral rat	SF7175000
pyrene	129-00-0	0.182	N/A	UR2450000

SECTION III PHYSICAL DATA

Appearance: liquid

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Pt.: N/A

Extinguishing Media: Carbon dioxide, dry chemical powder, or water spray

SECTION V HEALTH HAZARD DATA

Contains carcinogen(s) or cancer suspect agent(s)

Toxic; irritant

All chemicals should be considered hazardous - direct physical contact should be avoided.

FIRST AID: In case of eye or skin contact, flush with copious amounts of water. If inhaled remove to fresh air - give oxygen, if necessary. Contact physician.

SECTION VI REACTIVITY DATA

Stability: stable
Incompatibilities: strong oxidizers
Hazardous decomposition products: N/A

SECTION VII SPILL OR LEAK PROCEDURES

Spills or leaks: Due to the small quantity involved, spills or leaks should not pose a significant problem. A leaking bottle may be placed in a plastic bag and normal disposal procedures followed. Liquid samples may be absorbed on vermiculite or sand.

Waste disposal: Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local laws concerning disposal.

SECTION VIII PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Use appropriate OSHA/MSMA approved safety equipment. Wear chemical goggles, face shield, gloves, and chemical resistant clothing such as a laboratory coat and/or a rubber apron to prevent contact with eyes, skin, and clothing. Keep tightly at and store in a cool, dry place.

SECTION IX SPECIAL PRECAUTIONS AND COMMENTS

This material should only be used by those persons trained in the safe handling of hazardous chemicals.

The above information is believed to be correct, but does not purport to be all inclusive. This data should be used only as a guide in handling the material. ULTRA SCIENTIFIC, INC. shall not be held liable for any damage resulting from handling or from contact with the above product.

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer.....:

AccuStandard Inc.
25 Science Park, Suite 687
New Haven, CT 06511

Preparation Date.: 10/24/94
Date MSDS Printed.: Oct 24, 1994

Information Phone Number.: 203-786-5290
Hours: Mon. to Fri. 9-5
Emergency Phone Number 203-786-5290

Catalog Number(s):
M-8240B-R

Product Name.....:
Volatile Organics for Method 8240B (to Nov.'90)
Synonyms.....:
None
Chemical Family..: Standard Solution
Formula.....:
Solution

Molecular Weight.: N/A

2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS #	Appr %
Acetone	67-64-1	0.02%
Acrolein	107-02-8	0.02%
Acrylonitrile	107-13-1	0.02%
Benzene	71-43-2	0.02%
Dichlorobromomethane	75-27-4	0.02%
Bromoform	75-25-2	0.02%
2-Butanone (MEK)	78-93-3	0.02%
Carbon disulfide	75-15-0	0.02%
Carbon Tetrachloride	56-23-5	0.02%
Chlorobenzene	108-90-7	0.02%
Dibromochloromethane	124-48-1	0.02%
2-Chloroethyl vinyl ether	110-75-8	0.02%
Chloroform		

Dibromomethane	67-66-3	0.02%
1,4-Dichloro-2-butene(cis & trans)	74-95-3	0.02%
1,1-Dichloroethane	764-41-0	0.02%
1,2-Dichloroethane	75-34-3	0.02%
1,1-Dichloroethylene	107-06-2	0.02%
trans-1,2-Dichloroethene	75-35-4	0.02%
1,2-Dichloropropane	156-60-5	0.02%
cis-1,3-Dichloropropene	78-87-5	0.02%
trans-1,3-Dichloropropene	10061-01-5	0.02%
Ethanol	10061-02-6	0.02%
Ethylbenzene	64-17-5	0.02%
Ethyl methacrylate	100-41-4	0.02%
2-Hexanone	97-63-2	0.02%
Iodomethane	591-78-6	0.02%
Methylene Chloride	74-88-4	0.02%
4-Methyl-2-pentanone	75-09-2	0.02%
Styrene	108-10-1	0.02%
1,1,2,2-Tetrachloroethane	100-42-5	0.02%
Tetrachloroethene	79-34-5	0.02%
Toluene	127-18-4	0.02%
1,1,1-Trichloroethane	108-88-3	0.02%
1,1,2-Trichloroethane	71-55-6	0.02%
Trichloroethene	79-00-5	0.02%
1,2,3-Trichloropropane	79-01-6	0.02%
Vinyl acetate	96-18-4	0.02%
o-Xylene	108-05-4	0.02%
m-Xylene	95-47-6	0.02%
	108-38-3	0.02%

p-Xylene	106-42-3	0.02%
Methanol	67-56-1	99.18%

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

Symptoms of Exposure:
Toxic by ingestion and inhalation. Can be toxic by skin absorption. After ingestion or inhalation, initial symptoms may be only that of mild intoxication, but may become severe after 12 to 18 hours. Affects Central Nervous System, especially optic nerve. Marked impairment of vision and enlargement of the liver has been reported with chronic exposure. Chronic exposure may also cause damage to kidneys and Central Nervous System. Causes dizziness, nausea, muscle weakness, narcosis, respiratory failure. Ingestion can produce blindness (as little as 30 ml) or death (as little as 100 ml). Prolonged or repeated skin contact may cause irritation. Fetal development abnormalities and effects on embryo or fetus have been reported from prolonged exposure to methyl alcohol in laboratory tests involving pregnant rats.

Medical Cond. Aggravated by Exposure:
Skin conditions, eye problems, impaired liver or kidney function

Routes of Entry.....:
Inhalation, ingestion or skin contact

Carcinogenicity.....:
The material is not listed (IARC, NTP, OSHA) as cancer causing agent. Contains component(s) which are cancer hazard(s) in quantities less than 0.1%. Notification of carcinogenic ingredients in quantity less than 0.1% is not required under Federal Hazard Communication Law.

4. FIRST AID MEASURES

Emergency First Aid:
GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.
Skin: Immediately flush thoroughly with large amounts of water.
Eyes: Immediately flush thoroughly with water for at least 15 minutes.
Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion: If conscious, drink water and induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Remove contaminated clothing and wash before reuse.

5. FIRE FIGHTING MEASURES

Flash Point (F).....: 52F (tcc)
Flammable Limits LEL (%).: 6.7
Flammable Limits UEL (%).: 36.5
Extinguishing Media.....:
Use water spray, foam, dry chemical, or CO_2.

Fire Fighting Procedures.:
Wear self-contained breathing apparatus and protective clothing.

Fire & Explosion Hazards.:
Dangerous fire and explosive hazard.
Closed containers may explode upon heating.
Vapor can travel distances to ignition source and flash back.

6. ACCIDENTAL RELEASE MEASURES

Spill Response:
Wear suitable protective equipment listed under Expose /Personal Protection.
Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.
Contain the release and eliminate its source, if this can be done without risk.
Dispose as hazardous waste.
Comply with Federal, State and local regulations.

7. HANDLING AND STORAGE

Handling & Storage:
Keep container closed.
Store in a cool area away from ignition sources and oxidizers.
Do not breath vapor or mist.
Do not get in eyes, on skin, or on clothing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection
Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering

and/or administrative controls should be implemented to reduce exposure.
Material should be handled or transferred in an approved fume hood or with adequate ventilation.
Protective gloves must be worn to prevent skin contact (Butyl Rubber, Viton or equivalent)
Safety glasses with side shields must be worn at all times.

Work / Hygenic Practices:
Wash thoroughly after handling.
Do not take internally.
Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

Component	TWA PPM	TWA MG/M^3	STEL PPM	STEL MG/M^3	CL PPM	CL MG/M^3	Skin
Acetone	750	1800	1000	2400			
Acrolein	0.1	0.25	0.3	0.8			
Acrylonitrile	2				10		
Benzene	1		5				
Dichlorobromomethane							
Bromoform	0.5	5					X
2-Butanone (MEK)	200	590	300	885			
Carbon disulfide	4	12	12	36			X
Carbon Tetrachloride	2	12.6					
Chlorobenzene	75	350					
Dibromochloromethane							
2-Chloroethyl vinyl ether							
Chloroform	2	9.78					
Dibromomethane							
1,4-Dichloro-2-butene(cis & trans)							
1,1-Dichloroethane	100	400					
1,2-Dichloroethane	1	4	2	8			

1,1-Dichloroethylene	1	4					
trans-1,2-Dichloroethene							
1,2-Dichloropropane	75	350	110	510			
cis-1,3-Dichloropropene							
trans-1,3-Dichloropropene							
Ethanol	1000	1900					
Ethylbenzene	100	435	125	545			
Ethyl methacrylate							
2-Hexanone	5	20					
Iodomethane	2	10					X
Methylene Chloride	500				1000		
4-Methyl-2-pentanone	50	205	75	300			
Styrene	50	215	100	425			
1,1,2,2-Tetrachloroethane	1	7					X
Tetrachloroethene	25	170					
Toluene	100	375	150	560			
1,1,1-Trichloroethane	350	1900	450	2450			
1,1,2-Trichloroethane	10	45					X
Trichloroethene	50	270	200	1080			
1,2,3-Trichloropropane	10	60					
Vinyl acetate	10	30	20	60			
o-Xylene							
m-Xylene							
p-Xylene							
Methanol	200	260	250	325			X

ACGIH - TLV:

Component	TWA PPM	TWA MG/M^3	STEL PPM	STEL MG/M^3	CL PPM	CL MG/M^3	Skin

Acetone	750	1780	1000	2380	
Acrolein	0.1	0.23	0.3	0.69	
Acrylonitrile	2	4.3			X
Benzene	10	32			
Dichlorobromomethane					
Bromoform	0.5				X
2-Butanone (MEK)	200	590	300	885	
Carbon disulfide	10	31			
Carbon Tetrachloride	5	31			X
Chlorobenzene	10	46			
Dibromochloromethane					
2-Chloroethyl vinyl ether					
Chloroform	10	49			
Dibromomethane					
1,4-Dichloro-2-butene(cis & trans)					
1,1-Dichloroethane	200		250		
1,2-Dichloroethane	10	40			
1,1-Dichloroethylene	5	20	20	79	
trans-1,2-Dichloroethene					
1,2-Dichloropropane	75	347	110	508	
cis-1,3-Dichloropropene					
trans-1,3-Dichloropropene					
Ethanol	1000	1880			
Ethylbenzene	100	434	125	543	
Ethyl methacrylate					
2-Hexanone	5				X
Iodomethane	2				X
Methylene Chloride					

	50	174			
4-Methyl-2-pentanone					
	50	205	75	307	
Styrene					
	50	213	100	426	X
1,1,2,2-Tetrachloroethane					
	1	6.9			X
Tetrachloroethene					
	50	339	200	1357	
Toluene					
	50	188			X
1,1,1-Trichloroethane					
	350	1910	450	2460	
1,1,2-Trichloroethane					
	10	55			X
Trichloroethene					
	50	269	200	1070	
1,2,3-Trichloropropane					
	10				X
Vinyl acetate					
	10		20		
o-Xylene					
	100	434	150	651	
m-Xylene					
	100	434	150	651	
p-Xylene					
	100	434	150	651	
Methanol					
	200	262	250	328	X

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (C 760 mmHg).: 65
Melting Point (C).....: -98
Specific Gravity (H20 = 1).: 0.791
Vapor Pressure (mm Hg).....: 97 20C
Percent Volatile by Vol (%): 99.9+
Vapor Density (Air = 1).....: 1.1
Evaporation Rate (BuAc = 1): 5.9
Solubility in Water (%).....: Soluble
Appearance.....:
Clear liquid

10. STABILITY AND REACTIVITY

Stability.....: Yes

Hazardous Polymerization:
Does not occur

Hazardous Decomposition.:
CO_x, Formaldehyde

Conditions To Avoid.....:
Heat; contact with ignition sources

Materials To Avoid.....:
( ) Water
(X) Acids
( ) Bases
( ) Corrosives
(X) Oxidizers
(X) Other :
Reactive metals

11. OTHER INFORMATION

Comments:
Contains component(s) which is listed by the State of California as being known to cause reproductive toxicity.

| = Revised Section
N/A = Not Available
N/E = None Established

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SPEX CHEMICAL DIVISION
203 NORCROSS AVE. METUCHEN, N.J. 08840
908-549-7144 FAX: 908-603-9647

MATERIAL SAFETY DATA SHEET

Emergency Phone Number (24 hours) CHEMTREC 1-800-424-9300

SECTION I

NAME: Custom Plasma Standard - This solution is comprised of one of the following depending on the catalog number:
10,000 ppm Chromium in 5% Nitric Acid - PLCR2-3X
10,000 ppm Chromium in 5% Nitric Acid - PLCR2-3Y
1,000 ppm Chromium in 2% Nitric Acid - PLCR2-2X
CHEMICAL FAMILY: Dilute Acid Solution.
COMMON NAME OR SYNONYMS: None.
SPEX CATALOG NUMBER: PLCR2-3X or PLCR2-2X or PLCR2-2Y or PLCR2-3Y

PRECAUTIONARY DATA

WARNING: IRRITANT. OXIDIZER. CORROSIVE LIQUID. CARCINOGEN.

Avoid inhalation, ingestion and contact with eyes and skin.
Wear chemical resistant glasses, gloves and clothing.
Wear MSHA/NIOSH approved respirator.
Use in a chemical fume hood.
Wash carefully after use.
Keep tightly sealed when not in use.

Symptoms and Health Hazards for dilute Nitric Acid are expected to be less severe than exposure to concentrated Nitric Acid. However, since Nitric Acid is in the solution at 1% (or 10,000 ppm) or greater, the Health Hazards for concentrated Nitric Acid are given.

This solution is subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372.
The components of this solution are reported in the EPA TSCA Inventory List.
WHMIS Classification (Canada): CLASS C, CLASS D and CLASS E

SECTION II

HAZARDOUS INGREDIENTS

MATERIAL	%	TLV UNITS	CAS NUMBER
HNO_3	2-5	5 mg/m^3 TWA	[7697-37-2]
$Cr(NO_3)_3 \cdot 9H_2O$	~0.77-7.7	0.5 mg/m^3 as Cr TWA	[7789-02-8]
NON HAZARDOUS:			
Water	~88-98	N/A	[7732-18-5]

SECTION III
PHYSICAL DATA

SPECIFIC GRAVITY: Approximately 1.
SOLUBILITY IN WATER: Soluble in water.
APPEARANCE AND ODOR: Transparent with an acrid odor.

SECTION IV
FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY: Concentrated HNO_3 is not combustible, but is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Can react with metals to release flammable hydrogen gas.
FLASH POINT: Not Applicable.
EXTINGUISHING MEDIA: Appropriate to surrounding fire conditions.
SPECIAL HAZARDS/PROCEDURES: Concentrated HNO_3 reacts explosively with combustible organic or readily oxidizable materials such as; alcohol, wood, turpentine, metal powders, hydrogen sulfide, etc.

SECTION V
HEALTH HAZARD

THRESHOLD LIMIT VALUE: Concentrated HNO_3--5 mg/m^3 TWA.
$Cr(NO_3)_3 \cdot 9H_2O$--0.5 mg/m^3 as Cr TWA.

HEALTH HAZARD: This solution may cause irritation if inhaled, ingested or absorbed through the skin. It will cause irritation if it comes into contact with the eyes. Chromium salts are considered to be carcinogenic according to OSHA, NTP, and IARC.

Carcinoma of the lung is of greatest concern associated with industrial exposure to chromium. Prolonged exposure can cause damage to the liver and kidneys and promote stomach pains, vomit diarrhea, and gastric cancer. Blood changes such as leukocytosis, leukopenia, monocytosis, and eosinophilla may also occur following exposure to chromium compounds.

Concentrated Nitric acid may be fatal if too much is inhaled or absorbed through the skin. Concentrated Nitric acid vapor or mist is an irritant of the eyes, mucous membranes and skin. In contact with the eyes, it produces severe burns which may result in permanent damage and visual impairment. On the skin, the liquid or concentrated vapor produces immediate, severe and penetrating burns; concentrated solutions cause deep ulcers and stain the skin a bright yellow or yellowish brown color. The vapor and mist may erode the exposed teeth with prolonged exposure. Ingestion of the liquid will cause immediate pain and burns of the mouth, esophagus and gastrointestinal tract. Inhalation may be fatal causing spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms include; burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA: Concentrated HNO_3--RTECS#-QU5775000
orl-hmn LDLo: 430 mg/kg
unk-man LDLo: 110 mg/kg
ihl-rat LC50: 224 ppm(NO_2)/30M

$Cr(NO_3)_3$-$9H_2O$--RTECS#-GB6300000
orl-rat LD50: 3250 mg/kg

FIRST AID: EYES: Flush with water for at least 15 minutes occasionally lifting upper and lower eyelids. SKIN: Remove contaminated clothing, then flush with water for at least 15 minutes. Wash clothing thoroughly before reuse. INHALATION: Move to fresh air. INGESTION: DO NOT INDUCE VOMITING. GET IMMEDIATE MEDICAL HELP. Only if the patient is conscius, give large quantities of water or milk.

If irritation continues, get medical attention immediately.

SECTION VI
REACTIVITY DATA

INCOMPATIBILITIES: Concentrated HNO_3 is a powerful oxidizing agent. It reacts explosively with combustible organic or readily oxidizable materials such as; alcohol, wood, turpentine, metal powders, hydrogen sulfide, etc. Contact with strong bases will cause violent splattering.

HAZARDOUS DECOMPOSITION PRODUCTS: Will release toxic nitrogen oxide fumes and vapors.

STABILITY: Stable under normal storage and use. Elevated temperatures may cause containers to burst and liberate toxic oxides of nitrogen.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION VII
SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN: Ventilate area. Dilute spill with water and neutralize with soda ash, limestone etc. Wipe up and put into a sealed container for proper disposal. Wash spill site off with water after material pick up is complete. Wear chemical resistant glasses, gloves and clothing. Wear MSHA/NIOSH approved respirator.

WASTE DISPOSAL: Contact local Hazardous or Chemical waste disposal agency for regulations.

SECTION VIII
SPECIAL PROTECTION

GLOVES [XX] GOGGLES [XX] EXHAUST: Chemical Fume Hood.

OTHER PROTECTIVE EQUIPMENT: Lab Coat. MSHA/NIOSH approved respirator.

SECTION IX
SPECIAL PRECAUTIONS

HANDLING/STORAGE: Concentrated Nitric Acid will attack some forms of plastics, rubber, and coatings.
Store at room temperature. Keep tightly sealed when not in use. Have immediate availability of an eye wash in case of emergency.

LABELING: Irritant, Oxidizer, Corrosive, and Carcinogen.

NOTICE

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Date: October 12, 1994

References:
NIOSH/OSHA, Occupational Health Guideline for Nitric Acid, (Sept. 1978).

NIOSH/OSHA Occupational Health Guideline for Soluble Chromic and Chromous Salts (as Chromium), (Sept. 1978).

The Sigma/Aldrich Library of Chemical Safety Data, Ed. I, (1985).

Registry of Toxic Effects of Chemical Substances, 1981-82.

Patty's Industrial Hygiene and Toxicology, Vol. 2A, 3rd Revised Edition, (1981).

Threshold Limit Values and Biological Exposure Indices for 1988-1989. ACGIH.

Authorized signature Susha Ramana
MSDS Coordinator

APPENDIX D

A copy of TAGM 4031 and the DOH Community Monitoring Program are provided on the following pages.

TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM #4031

FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

TO: Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs

FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation

SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM -- FUGITIVE DUST SUPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

DATE: Oct 27, 1989

Michael J. O'Toole, Jr. (signed)

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be

averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40°C
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Community Air Monitoring Plan

(Intrusive Activities)

Real-time air monitoring, for volatile compounds and particulate levels at the perimeter of the work area is necessary. The plan must include the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the work area on a **continuous** basis. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

- Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations. If the downwind particulate level is 100 $\mu g/m^3$ greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

- if organic vapor levels are approaching 5 ppm above background.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

Major Vapor Emission Response Plan:

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will be notified.

2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minutes intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

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Community Air Monitoring Plan

(Non-Intrusive Activities)

Real-time air monitoring, for volatile compounds and particulate levels at the perimeter of the work area is necessary. The plan must include the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the work area daily at **2 hour intervals.** If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

- Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations. If the downwind particulate level is 100 $\mu g/m^3$ greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background, and

- more frequent intervals of monitoring, as directed by the Safety Officer, are conducted.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Community Air Monitoring Plan

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

- if organic vapor levels are approaching 5 ppm above background.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

Major Vapor Emission Response Plan:

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will go into effect.

2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minutes intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

APPENDIX E

A copy of the site location map is provided on the following page showing the location of the nearest hospital.

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3845 ROUTE 11 SOUTH, CORTLAND, N.Y. 13045
P.O. BOX 5150 607-753-3403

JOB 575 East Mill Street, Little Falls, NY

SHEET NO. _____ OF _____

CALCULATED BY EHM DATE 6/2/99

CHECKED BY _____ DATE _____

SCALE _____