WESTON MANAGERS DESIGNERS/CONSULTANTS

MEMORANDUM

TO: Amory Packaging Site File
cc: John Carlson, Response Project Officer
Wayne Robinson, On-Scene Coordinator

FROM: Thomas C. Saccoccio, Roy F. Weston Inc., Superfund Technical Assessment and Response Team (START)

DATE: 4 June 1996

SUBJ: Drum Sampling Assistance Conducted on 13 May 1996
TDD No. 96-05-1005, PCS No. 1516, DC No. R-632

On 13 May 1996, Roy F. Weston Inc., Superfund Technical Assessment and Response Team (START) member Thomas Saccoccio mobilized to the Amory Packaging site located in Clinton, Worcester County, Massachusetts (See Attachment I - Site Location Map). The Massachusetts Department of Environmental Protection (MA DEP) requested EPA assistance in determining the contents of drums abandoned at the facility. START support was requested to provide technical assistance to U.S. Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) Wayne Robinson and EPA representative Alan Peterson in collecting samples from the drums.

At 1000 hours, OSC Robinson, EPA representative Alan Peterson, and START member Saccoccio arrived at the site. START member Saccoccio calibrated air monitoring equipment for use in conducting a perimeter survey of the facility and air monitoring during drum sampling. Air monitoring equipment included an HNU Photoionization Detector (HNU), a Foxboro Organic Vapor Analyzer (OVA), an MSA Passport Combustible Gas/Oxygen/Hydrogen Sulfide/Carbon Monoxide Detector (MSA Passport) and a Micro R Meter. During the calibration, representatives of the MA DEP and the Clinton Fire Department arrived at the site.

OSC Robinson, EPA representative Peterson and START member Saccoccio conducted a perimeter survey of the facility. The facility building was observed to be severely damaged with broken windows, holes in the roof, broken doors and areas which appeared to have been burned. A large steel I-beam was visible from one of the rear garage doors, which appeared to have fallen from the roof and pinned some of the drums inside of the facility. During the perimeter survey, readings of 15 to 25 units above background were observed on the HNU, readings of 1 to 3 units above background were noted on the OVA, and background readings were observed on the MSA Passport and the Micro R meter. A fuel oil odor was noted during portions of the survey. Access to the site was unrestricted.

Following the perimeter survey, OSC Robinson and START member Saccoccio entered the facility in Level B personal protection equipment (PPE) to perform a survey of the building interior. EPA representative Peterson remained on the building exterior. Approximately 100, 55-gallon drums were noted on the interior of the building. Most of the drums were in good condition with some rust present. Air monitoring was conducted during the survey but no readings above background were observed on the instruments. Visual signs of trespassers and holes in the concrete floor of the facility were observed within the building. During the walk-through, approximately 35 drums were checked for contents, and seven were found to contain adequate volume to sample. Due to piled debris, the haphazard staging of some of the drums, and the poor structural integrity of some areas of the building, it was not possible to determine the contents of some of the containers.

Between 1330 and 1420 hours, a total of six drums were sampled. The drums were designated as sample stations D001 through D006. The first drum (D001) was sampled for flashpoint and volatile organic compound (VOC) analyses. Oil identification (Oil ID.) and polychlorinated biphenyls (PCBs) samples were not collected from the location because the drum was labelled as trichloroethylene, and the contents appeared to be a clear liquid. Samples were collected from sample locations D002 through D006 for VOC, PCBs, flashpoint and Oil ID. analyses. All samples were collected directly from the containers using disposable glass sample rods, which were disposed of in an empty drum in the interior of the facility. No readings above background were obtained with the air monitoring instruments during sampling activities. A seventh drum containing material was laying on its side and was not sampled.

At approximately 1645 hours the chain-of-custody (COC) documentation was completed for the samples and all personnel departed from the site. The samples were stored in sealed paint cans with vermiculite, which were then overpacked in a sealed sample cooler with ice, and locked in the START vehicle.

Samples collected at the Amory Packaging facility were relinquished to the EPA New England Regional Laboratory on 14 May 1996 by START member Saccoccio. COC documentation for the samples is included in Attachment II. The abbreviated sample plan and the health and safety plan for the site activities are included as Attachments III and IV, respectively.

ATTACHMENT I

Site Location Map

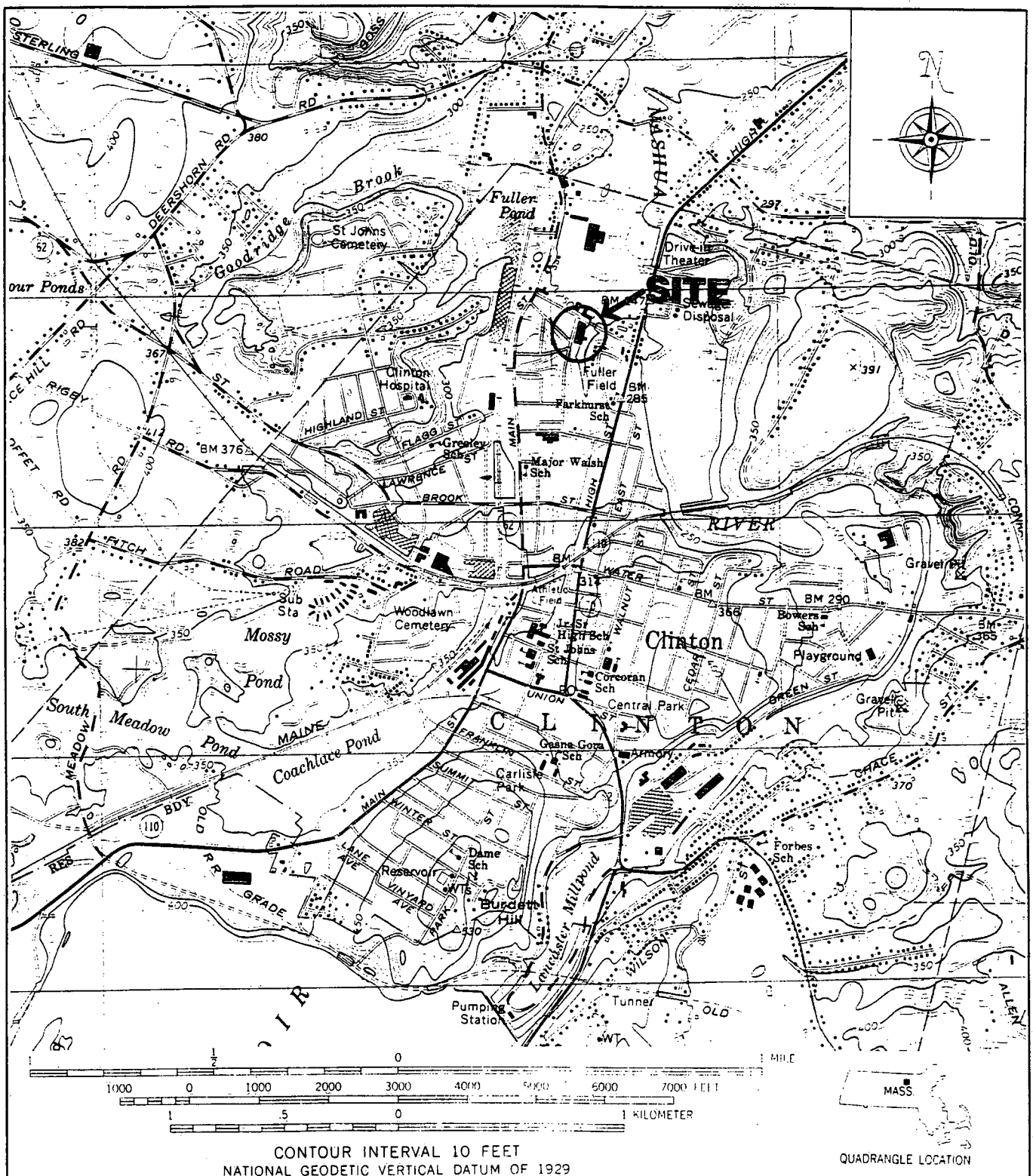


FIGURE 1
SITE LOCATION MAP
AMORY PACKAGING COMPANY
184 STONE STREET
CLINTON, MASSACHUSETTS

SCALE: 1:25 000

SOURCE:
UNITED STATES GEOLOGICAL SURVEY, CLINTON, MASS QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1979.

WESTON®
MANAGERS DESIGNERS/CONSULTANTS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

DRAWN BY	DATE	PCS #
T. SACCOCCIO	5/96	1516
APPROVED BY	DATE	TDD #
TCJ	5/96	96-05-1005

ATTACHMENT II

Chain-of-Custody Documentation

Samples collected by: Roy F. Weston, Inc., START
217 Middlesex Turnpike
Burlington, MA 01803
Phone: (617) 229-6430 Fax: (617) 272-3619

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 1
JFK Federal Building, Rm. 2203
Boston, Massachusetts 02203

CHAIN OF CUSTODY RECORD

PROJ. NO. 916267

PROJECT NAME Amory Packaging
184 Stone St.
Clinton MA

SAMPLERS: (Signature) Thos C. Sawyer

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA - STD Meth.	PCB - STD Meth.	Oil I.D.	Flash Point			REMARKS
TB001	5/13/96	0750		X	Trip Blank - Water	3x40ml	X						EPA Sample # 00789
D001	5/13/96	1330		X	Drum Labelled "TCE" - Clear Liq.	2x40ml	X			X			EPA Sample # 00790
D002	5/13/96	1345		X	Drum Sample - Clear, yellow, thick liq.	4x40ml	X	X	X	X			EPA Sample # 00791
D003	5/13/96	1350		X	Drum Sample - Brownish/black oily Liq.	4x40ml	X	X	X	X			EPA Sample # 00792
D004	5/13/96	1400		X	Drum Sample - light brown, oily Liq. Phase	4x40ml	X	X	X	X			EPA Sample # 00793
D005	5/13/96	1415		X	Drum Sample - Thick brown liq, yellow chunks	4x40ml	X	X	X	X			EPA Sample # 00794
D006	5/13/96	1420		X	Drum Sample - Clear liq with oily Phase	4x40ml	X	X	X	X			EPA Sample # 00795

* Samples D001 thru D006 collected from 55-gallon drums in level B PPE.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Thos C. Sawyer	5/14/96 1020				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		Kathy Adel	5/14/96 1120		

Remarks: ASC Wayne Robinson
JFK Federal Bldg (HBR)
Boston MA 02203-2011
Phone: (617) 573-9670

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Precautionary Measures Against Hidden Hazards in Laboratory Samples

Notice to Laboratory Personnel

Background

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment. In addition, EPA provides technical assistance to help mitigate endangerment of the public health, welfare or environment during other emergencies and natural disasters.

EPA's successful implementation of these emergency response action responsibilities requires that technical support capabilities be provided in the form of contracted Technical Assistance Teams (TAT) for each EPA Region. The WESTON TAT Contract 68-W0-0036 provides support to EPA Regions I, II, III, IV, ERT - Edison, and Headquarters - Washington.DC.

Hazard Communication

The samples which accompany this notice have been shipped to your laboratory for analysis in accordance with applicable D.O.T. or IATA Regulations and were collected by the WESTON TAT and were tentatively designated by the field response team as either environmental or hazardous material samples.

In general, *Environmental Samples* are collected from streams, farm ponds, small lakes, wells, and off-site soils that are not reasonably expected to be contaminated with hazardous materials. Samples of on-site soils or water, and materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are considered *Hazardous Samples*. Samples which are obtained from a known radioactive material contamination site or which demonstrate beta or gamma activity greater than three times average background as scanned with a Geiger-Mueller radiation survey meter are considered *Radioactive Samples*.

The samples which accompany this notice have been tentatively classified by the field response team as:

____ Environmental ✓ Hazardous ____ Comb. (Envir.& Haz.) ____ Radioactive

The field team which collected the samples used the following Level(s) of personal protection as designated by EPA and OSHA conventions to provide protection against possible radiological or chemical exposure:

____ Level A ✓ Level B ____ Level C ____ Level D

This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and Levels of personal protection used by the WESTON TAT are not represented to be, nor are they adequate or applicable in all situations, nor are they intended to serve as substitutes for professional/personal judgement.

This form was prepared by: Thomas C. Saccoccio 5/13/96

Analytical Services TDD No. - NA - Date __/__/__

WESTON Office: Region I START Phone: (617) 223-6430 FAX: (617) 223-3619

Laboratory Name: U.S. EPA NERL - Samples listed on C.O.C Form # 1-1886

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amory Packaging STATE MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
(PARTIAL CLOUDS) (CIRCLE ONE)

AIR TEMP ~45°F TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) Trip Blank

Bacti	☐	NH_3	☐	COD	☐
BOD	☐	NO_{2+3}	☐	PCB	☐
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	
Organics	☐	O&G	☐		
VOA's	☒				

METALS	Total	Dissolved
Cd ☐	Fe ☐	Pb ☐
Cu ☐	Hg ☐	Sn ☐
Cr (T) ☐	Mn ☐	Zn ☐
Cr (+6) ☐	Ni ☐	Other

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00789

PROJECT # ☐☐☐☐☐☐

STATION # TB001

Y Y M M D D

DATE 960513

COLLECTION TIME 0750

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amory Packaging STATE MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
(PARTIAL CLOUDS) (CIRCLE ONE)

AIR TEMP ~60°F TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) D001 (TCE)

Bacti	☐	NH_3	☐	COD	☐
BOD	☐	NO_{2+3}	☐	PCB	☐
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	Flashpoint
Organics	☐	O&G	☐		
VOA's	☒				

METALS	Total	Dissolved
Cd ☐	Fe ☐	Pb ☐
Cu ☐	Hg ☐	Sn ☐
Cr (T) ☐	Mn ☐	Zn ☐
Cr (+6) ☐	Ni ☐	Other

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00790

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D001

Y Y M M D D

DATE 960513

COLLECTION TIME 1330

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amay Packaging STATE MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °C 60°F TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) 4 x 40 ml

Bacti	☐	NH3	☐	COD	☐
BOD	☐	NO2 + 3	☐	PCB	☒
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	Oil I.D. Flashpoint
Organics	☐	O&G	☐		
VOA's	☒				

METALS		Total		Dissolved	
Cd	☐	Fe	☐	Pb	☐
Cu	☐	Hg	☐	Sn	☐
Cr (T)	☐	Mn	☐	Zn	☐
Cr (+6)	☐	Ni	☐	Other	

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00791

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D002

Y Y M M D D

DATE 960512

COLLECTION TIME 1345

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amay/Packaging STATE MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP °F 60° TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) 4 x 40 ml

Bacti	☐	NH3	☐	COD	☐
BOD	☐	NO2 + 3	☐	PCB	☒
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	Flash Point Oil I.D.
Organics	☐	O&G	☐		
VOA's	☒				

METALS		Total		Dissolved	
Cd	☐	Fe	☐	Pb	☐
Cu	☐	Hg	☐	Sn	☐
Cr (T)	☐	Mn	☐	Zn	☐
Cr (+6)	☐	Ni	☐	Other	

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00792

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D003

Y Y M M D D

DATE 960513

COLLECTION TIME 1350

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amory Packaging STATE Clinton, MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP ~~°F~~ 60 TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) 4x40 ml

Bacti	☐	NH3	☐	COD	☐
BOD	☐	NO2 + 3	☐	PCB	☒
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	Flash Point
Organics	☐	O&G	☐		Oil I.D.
VOA's	☒				

METALS	Total	Dissolved
Cd ☐	Fe ☐	Pb ☐
Cu ☐	Hg ☐	Sn ☐
Cr (T) ☐	Mn ☐	Zn ☐
Cr (+6) ☐	Ni ☐	Other _____

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00793

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D004

Y Y M M D D

DATE 960513

COLLECTION TIME 1400

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amory Packaging STATE Clinton, MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP ~~°F~~ 60 TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) 4x40mL

Bacti	☐	NH3	☐	COD	☐
BOD	☐	NO2 + 3	☐	PCB	☒
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	Flash Point
Organics	☐	O&G	☐		Oil I.D.
VOA's	☒				

METALS	Total	Dissolved
Cd ☐	Fe ☐	Pb ☐
Cu ☐	Hg ☐	Sn ☐
Cr (T) ☐	Mn ☐	Zn ☐
Cr (+6) ☐	Ni ☐	Other _____

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00794

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D005

Y Y M M D D

DATE 960513

COLLECTION TIME 1485

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I

PROJECT Amory Packaging STATE Clinton, MA

COLLECTOR T. Saccoccio

FIELD OBSERVATIONS: CLEAR, OVERCAST, RAIN, SNOW, FOG
PARTIAL CLOUDS (CIRCLE ONE)

AIR TEMP ~60 TIDE: HIGH, EBB, LOW, FLOOD

PARAMETERS (CHECK APPROPRIATE) 4x40ml

Bacti	☐	NH_3	☐	COD	☐
BOD	☐	NO_{2+3}	☐	PCB	☒
TSS	☐	TKN	☐	X-Ray	☐
Turb	☐	T-P	☐	Other	oil F.P. Flash Point
Organics	☐	O&G	☐		
VOA's	☒				

METALS	Total	Dissolved
Cd ☐	Fe ☐	Pb ☐
Cu ☐	Hg ☐	Sn ☐
Cr (T) ☐	Mn ☐	Zn ☐
Cr- (+6) ☐	Ni ☐	Other _____

EPA R-1 7500-30

*Unpreserved Sample

LAB CODE Nº 00795

PROJECT # ☐☐☐☐☐☐

STATION # ☐☐D006

Y Y M M D D

DATE 960513

COLLECTION TIME 1320

SAMPLE TEMP °C ☐☐

PROBE-D.O. (mg/l) ☐.☐

pH - S.U. ☐☐.☐

CONDUCTIVITY (micromhos/cm) ☐☐.☐

SALINITY (0/00) ☐☐.☐

TOTAL DEPTH (ft) ☐☐

SAMPLING DEPTH (ft) ☐☐.☐

ATTACHMENT III

Abbreviated Sample Plan for Emergency Response

ABBREVIATED SAMPLING PLAN FOR EMERGENCY RESPONSE

PROJECT INFORMATION

SITE NAME: Amory Packaging **TDD#** 96-05-1005 **PCS#:** 1516

SITE LOCATION: 184 Stone Street, Clinton, Worcester County, MA

SITE OR FACILITY: Same

OSC: Wayne Robinson

START PREPARER: Thomas C. Saccoccio **START REVIEWER:**

DATE: 10 May 1996

QA OBJECTIVES: Determine flashpoint, identity of oils, and PCB and VOC content of materials in drums abandoned at facility.

LABORATORY: EPA New England Regional Laboratory

SAMPLING QA/QC SUMMARY TABLE

MATRIX	NUMBER OF SAMPLES	ANALYTICAL PARAMETER	VOLUME	CONTAINER TYPE	PRESERVATIVE	ANALYTICAL METHOD	HOLDING TIME	QA/QC SAMPLES
DR	10	Oil Id.	40-ml	40-ml VOA vial	Ice	STD Meth.	None	None
DR	10	FP	40-ml	40-ml VOA vial	Ice	STD Meth.	None	None
DR	10	VOA STD METH	40-ml	40-ml VOA vial	Ice	STD Meth.	14 days	TP (3x40-ml, organic-free water)
DR	10	PCB STD METH	40-ml	40-ml VOA vial	Ice	STD Meth.	14 days	None

MATRIX:
AQ=Aqueous Liquid, SS=Surface Soil, DS=Depth Soil, SED=Sediment, DR=Drum/Container, DW=Drinking Water.

ANALYTICAL PARAMETERS:
DIS MET=Dissolved Metals, TOT MET=Total Metals, PP MET=Priority Pollutant Metals, FP=Flashpoint, CN=Cyanides,
VOA=Volatile Organics, BNA=Semi-Volatiles, PCB=Polychlorinated biphenyls, PEST=Pesticides, pH=pH Analysis.

EPA NERL PROTOCOLS/METHODS:
SCREEN= EPA NERL Screening Protocols, QTA=EPA NERL Quick-Turnaround Protocols,
STD METH=EPA NERL Standard Method Analysis.

QA/QC SAMPLES:
MS=Matrix Spike, MSD=Matrix Spike Duplicate, DUP=Duplicate, FB=Field Blank, TP=Trip Blank.

FIELD SAMPLING SUMMARY

SAMPLING METHODS: A total of 10 samples will be collected from drums utilizing disposable glass drum sample thieves.

DECONTAMINATION: Sampling equipment will be disposable, no decontamination necessary. Disposable sample gloves will be utilized as the outer glove layer and will be disposed of between sample stations.

PACKAGING: Each 40-ml vial of sample will be packed in a sealed plastic bag, then overpacked (by drum sampled) in sealed paint cans with vermiculite.

ATTACHMENT IV

Health and Safety Plan

REGION I START SITE HEALTHAND SAFETY PLAN (HASP)

Prepared by: Thomas C. Saccoccio

W.O. No.: 11098-001-001-1516-00 **Date:** 10 May 1996

Project Identification:
Site Name: Amory Packaging

TDD: 96-05-1005
EPA Contact: Wayne Robinson - EPA OSC
Site Address: 184 Stone Street
Clinton, Worcester County, Massachusetts

Site History: (describe briefly) According to verbal information, the site is an abandoned facility which was referred to EPA by the Massachusetts Department of Environmental Protection. The site was a former packaging plant with drums of unknown materials remaining in the building. According to the OSC, portions of the facilities building are not structurally sound. EPA intends to sample containers in the portions of the building which are visually sound, to determine if the site meets the qualifications for a removal actions under CERCLA.

Scope of Work: (describe briefly)
TASK #1 - Conduct a walkthrough of building and perform air monitoring to document conditions.
TASK #2 - Collect samples from 10 drums. Samples to be analyzed at NERL for polychlorinated biphenyls (PCBs), flash point, oil identification, and volatile organic compounds (VOCs).

Directions to Site: From the START office, take Route 128 South (≈8 miles) to exit 29 and take Route 2 West. Follow Route 2 west (≈20 miles) to Route 110. Take Route 110 South (≈9 miles) and turn right onto Allen Street. Follow Allen Street ≈0.25 mile and turn left onto Stone Street. Amory Packaging is located at 184 Stone Street

Regulatory Status:

Site regulatory status:

CERCLA/SARA	☒ US EPA	☒ State	☐ NPL Site
RCRA	☐ US EPA	☐ State	
CLEAN WATER ACT	☐ 311		
OSHA	☒ 1910	☐ 1926	☒ Hazard Communication

Review and Approval Documentation:

Reviewed by:
a. T.L. Thos C. Saccoccio Date: 5/10/96
b. P.L. [signature] Date: 5/10/96

Approved by: [signature] Date: 5/10/96

☒ START HSO

Verbal Approval (Emergency Response/Modifications)
Approval by: _____ Date: _____

Hazard Assessment and Equipment Selection

In accordance with WESTON's Personal Protective Equipment Program and 29 CFR 1910.132 at the site prior to personnel beginning work the Site Health and Safety Coordinator (SHSC) and/or the Site Manager have evaluated conditions and verified that the personal protective equipment selection outlined within this HASP is appropriate for the hazards known or expected to exist. (Refer to Safety Officer Manual Section 2 Personal Protection Program for Guidance)

☒ SHSC ☐ Site Manager Signature: Thos C. Saccoccio Date: 5/13/96

Project start date: May 10, 1996 End date: June 7, 1996	Plan expiration date: June 7, 1996	Amendments: NA

SITE SPECIFIC HAZARD EVALUATION

If box is marked a hazard evaluation form/section must be completed.

☒	CHEMICAL HAZARDS
☒	BIOLOGICAL HAZARDS
☐	RADIATION HAZARDS
☒	PHYSICAL HAZARDS

HEALTH AND SAFETY EVALUATION- CHEMICAL HAZARDS

☐ N/A

Chemical Contaminants of Concern

List chemical and concentration below and locate data sheets in Appendix A (NIOSH pocket guide, ACGIH TLV booklet, etc.) of this HASP.

☐ N/A

Chemicals taken onto Site by WESTON or subcontractors

List chemicals (reagent type chemicals, solutions, or other identified materials brought on-site) and quantities below and locate Material Safety Data Sheets (MSDS) in Appendix B of this HASP.

Chemical Name	Concentration (if known)	Chemical Name	Quantity
Unknown	unknown	Isobutylene (calibration gas) Methane (calibration gas) Pentane (calibration gas) Hydrogen (OVA Fuel)	≈103 liters ≈103 liters ≈103 liters < 1 ft^3

OSHA SITE SPECIFIC HAZARDOUS SUBSTANCES

The following substances may require specific medical, training, or monitoring based upon concentration or evaluation of risk. See the appropriate citation listed under 29 CFR 1910 or 1926 for additional information.

☐ 1910.1001 Asbestos	☐ 1910.1002 Coal tar pitch volatiles	☐ 1910.1003 4-Nitrobiphenyl
☐ 1910.1004 alpha-Naphthylamine	☐ 1910.1005 [Reserved]	☐ 1910.1006 Methyl chloromethyl ether
☐ 1910.1007 3,3'-Dichlorobenzidine (and its salts).	☐ 1910.1008 bis-Chloromethyl ether	☐ 1910.1009 beta-Naphthylamine
☐ 1910.1010 Benzidine	☐ 1910.1011 4-Aminodiphenyl	☐ 1910.1012 Ethyleneimine
☐ 1910.1013 beta-Propiolactone	☐ 1910.1014 2-Acetylaminofluorene	☐ 1910.1015 4-Dimethylaminoazobenzene
☐ 1910.1016 N-Nitrosodimethylamine	☐ 1910.1017 Vinyl chloride	☐ 1910.1018 Inorganic arsenic
☐ 1910.1025 Lead	☐ 1910.1027 Cadmium	☐ 1910.1028 Benzene (See FLD41)
☐ 1910.1029 Coke oven emissions	☐ 1910.1043 Cotton dust	☐ 1910.1044 1,2-dibromo-3-chloropropane
☐ 1910.1045 Acrylonitrile	☐ 1910.1047 Ethylene oxide	☐ 1910.1048 Formaldehyde

HEALTH AND SAFETY EVALUATION- BIOLOGICAL HAZARDS OF CONCERN ☐ NA

☐ **Poisonous Plants** (FLD 43)
Task Nos.:
Source: ☐ Known ☐ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

☐ **Insects** (FLD 43)
Task Nos.:
Source: ☐ Known ☐ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

☐ **Snakes, Reptiles** (FLD 43)
Task Nos.:
Source: ☐ Known ☐ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

☒ **Animals** (FLD 43)
Task Nos.: 1,2
Source: ☐ Known ☒ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☒ Contact ☐ Direct Penetration

FLD 43 —WESTON Biohazard Field Operating Procedures: Att. OP ☐

☐ **Sewage**
Task No(s).:
Source: ☐ Known ☐ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration
Tetanus Vaccination within Past 7 yrs: ☐ Yes ☐ No
(see Note #1 below)

☐ **Etiologic Agents (List)**
Task No(s).:
Source: ☐ Known ☐ Suspect
Route of Exposure: ☐ Inhalation ☐ Ingestion ☐ Contact ☐ Direct Penetration

FLD 44 —WESTON Bloodborne Pathogens Exposure Control Plan - First Aid Procedures: Att. OP ☒

FLD 45 —WESTON Bloodborne Pathogens Exposure Control Plan - Working with Infectious Waste: Att. OP ☐

Note #1: A tetanus injection is recommended every 10 years for employees with "normal exposure risks." However, if employees have frequent potential for exposure at "higher risk," as working with raw sewage, then a frequency of 7 years is recommended.

HEALTH AND SAFETY EVALUATION—RADIATION HAZARDS OF CONCERN ☒ NA

NONIONIZING RADIATION

Task #	Type of Nonionizing Radiation	Source On-site	TLV/PEL	Wavelength Range	Control Measures	Monitoring Instrument		

IONIZING RADIATION

				DAC (μCi/mL)				
Task #	Radionuclide	Major Radiations	Radioactive Half-Life (Years)	D	W	Y	Surface Contamination Limit	Monitoring Instrument

HEALTH AND SAFETY EVALUATION: PHYSICAL HAZARDS OF CONCERN ☐ NA			
Phy.Haz.Cond.	**Physical Hazard**	**Att.OP**	**Weston OP Titles**
Loud noise	Hearing loss/disruption of communication	☐	FLD01 - Noise Protection
Inclement weather	Rain/humidity/cold/ice/snow/lightning	☒	FLD02 - Inclement Weather
Ambient heat stress	Heat rash/cramps/exhaustion/heat stroke	☒	FLD05 - Heat Stress Prevention/Monitoring
Cold Stress	Hypothermia/frostbite	☐	FLD06 - Cold Stress
Cold/wet	Trench/paddy/immersion foot/edema	☐	FLD07 - Wet Feet
Confined spaces	Falls/burns/drowning/engulfment/ electrocution	☐	FLD08 - Confined Space Entry
Explosive vapors	Thermal burns/impaction/dismemberment	☐	FLD09 - Hot Work
Improper lifting	Back strain/abdomen/arm/leg muscle/joint injury	☐	FLD10 - Manual Lifting/Handling Heavy Objects
Uneven Surfaces	Vehicle accidents/slips/trips/falls	☐	FLD11 - Rough Terrain
Poor housekeeping	Slips/trips/falls/punctures/cuts/fires	☒	FLD12 - Housekeeping
Structural integrity	Crushing/overhead hazards/compromised floors	☒	FLD13 - Structural Integrity
Hostile persons	Bodily injury	☒	FLD14 - Site Security
Remote Area	Slips/trips/falls/back strain/communication	☐	FLD15 - Remote Area
Improper Cyl.Handling	Mechanical injury/fire/explosion/suffocation	☐	FLD16 - Pressure Systems - Compressed Gases
Water Hazards	Drowning/frostbite/hypothermia/falls/electrocution	☐	FLD19 - Working Over Water
Vehicle Hazards	Struck by vehicle/collision	☐	FLD20 - Traffic
Explosions	Explosion/fire/thermal burns	☐	FLD21 - Explosives
Moving mechanical parts	Crushing/pinch points/overhead hazards electrocution	☐	FLD22 - Heavy Equipment Operation
Working at elevation	Overhead hazard/falls/electrocution	☐	FLD25 - Working at Elevation
Working at elevation	Overhead hazard/falls/electrocution/slips	☐	FLD26 - Ladders
Trench Cave-in	Crushing/falling/overhead hazards/suffocation	☐	FLD28 - Excavating/Trenching
Improper material handling	Back injury/crushing from load shifts	☐	FLD29 - Materials Handling
Physiochemical	Explosions/fires from oxidizing, flam./corr.material	☒	FLD30 - Hazardous Materials Use/Storage
Physiochemical	Fire and explosion	☐	FLD31 - Fire Prevention/Response Plan Required
Physiochemical	Fire	☒	FLD32 - Fire Extinguishers Required
Structural integrity	Overhead/electrocution/slips/trips/falls/fire	☐	FLD33 - Demolition
Electrical	Electrocution/shock/thermal burns	☐	FLD34 - Utilities
Electrical	Electrocution/shock/thermal burns	☐	FLD35 - Electrical Safety
Burns/Fires	Heat Stress/Fires/Burns	☐	FLD36 - Welding/Cutting/Burning
Impact/thermal	Thermal burn/high pressure impaction/heat stress	☐	FLD37 - High Pressure Washers
Impaction/electrical	Smashing body parts/pinching/cuts/electrocution	☐	FLD38 - Hand and Power Tools
Poor visibility	Slips/trips/falls	☒	FLD39 - Illumination
Energy/Release	Unexpected release of energy	☐	FLD42 - Lockout/Tagout

TASK-BY-TASKRISK ASSESSMENT
(Complete One Sheet for Each Task)

TASK DESCRIPTION

Task #1 - Site Walkthrough, initial air monitoring.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

PID, FID, CGI/O_2/H_2S/CO, Radiation Meter
PPE: Level D
Safety shoes, proper uniform, hardhat, and depending on site conditions, nitrile surgical gloves, Tyvek outer garment, and latex overboots (if necessary)

POTENTIAL HAZARDS/RISKS

CHEMICAL

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What Justifies Risk Level? Containerized materials abandoned on site.

PHYSICAL

☒ Hazard Present Risk Level: ☐ H ☒ M ☐ L

What Justifies Risk Level? Abandoned building, possibly no electrical power for lighting. Structural integrity of portions of the building is questionable. Hazards will be minimized by use of flashlights and no entry will be made into buildings with questionable structural integrity.

BIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? Abandoned site, work activities will be indoors. Possible non-domesticated animals on building interior.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? No record of radiological hazard present, radiation monitoring will be conducted during initial entry.

LEVELS OF PROTECTION/JUSTIFICATION

Level D PPE to be used based on available. SHSC and EPA On-Scene Coordinator will continually evaluate the situation to determine if existing level of protection is adequate.

Note: Risk levels are defined as follows: High - very likely to come in contact with identified hazards, Medium - possible contact with identified hazards, Low - not likely to come in contact with identified hazards.

TASK-BY-TASK RISK ASSESSMENT
(Complete One Sheet for Each Task)

TASK DESCRIPTION

Task #2 - Drum Sampling.

EQUIPMENT REQUIRED/USED
(Be specific, e.g., hand tools, heavy equipment, instruments, PPE)

PID, FID, CGI/O_2/H_2S/CO, Micro-R
PPE: Level B
Safety Shoes, Saranex coveralls, nitrile surgical gloves (inner), Silver Shield gloves (mid), nitrile gloves (outer), latex overboots, SCBA, hardhat with splash shield, drum thieves, sorbent pad, bung wrench (non-sparking), flashlight and proper sample containers.

POTENTIAL HAZARDS/RISKS

CHEMICAL

☒ Hazard Present Risk Level: ☒ H ☐ M ☐ L

What Justifies Risk Level? Opening and sampling of containers of unknown materials.

PHYSICAL

☒ Hazard Present Risk Level: ☒ H ☐ M ☐ L

What Justifies Risk Level? Abandoned building, possibly no electrical power for lighting. Structural integrity of portions of the building is questionable. Hazards compounded by full-face piece respirator mask and SCBA tank.

BIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? Hazards minimal, no exposed skin during level B PPE sampling.

RADIOLOGICAL

☒ Hazard Present Risk Level: ☐ H ☐ M ☒ L

What Justifies Risk Level? No record of radiological hazard present, radiation monitoring will be conducted.

LEVELS OF PROTECTION/JUSTIFICATION

Level B PPE to be used based on available data. SHSC and EPA On-Scene Coordinator will continually evaluate the situation to determine if existing level of protection is adequate.

Note: Risk levels are defined as follows: High - very likely to come in contact with identified hazards, Medium - possible contact with identified hazards, Low - not likely to come in contact with identified hazards.

PERSONNEL PROTECTION PLAN

Engineering Controls
Describe Engineering Controls used as part of Personnel Protection Plan:

NONE

Administrative Controls
Describe Administrative controls used as part of Personnel Protection Plan:

Task(s)
40 Hours training, 8 Hour refresher (as-required), Medical Monitoring
SHSC: 8 Hour Supervisor training, field experience, current CPR and 1st Aid.

Personal Protective Equipment
Action Levels for Changing Levels of Protection. Define Action Levels for up or down grade for each task:

Task(s)
Background (BKG) - Level D after initial air monitoring at higher level of protection.
> BKG to 5 units above BKG - Level C with continuous air monitoring.
> 5 units to 500 units above BKG - Level B
2 units - Level B, no downgrade

Description of Levels of Protection

Level D

Task(s): 1

- ☒ Head - Hard Hat (as appropriate)
- ☒ Eye (Safety Glasses)
- ☐ Hearing - Ear Plugs (as appropriate)
- ☒ Appropriate Uniform
- ☒ Hand - Gloves (as appropriate)
- ☒ Foot - Safety Boots
- ☒ Other (specify) - Latex overboots (as appropriate)

Level D Modified

Task(s): 1

- ☒ Head - Hard Hat (as appropriate)
- ☒ Eye (Safety Glasses)
- ☐ Hearing - Ear Plugs (as appropriate)
- ☒ Appropriate Uniform
- ☒ Coverall (Tyvek)
- ☒ Hand -Gloves(inner)(Nitrile surgical)
- ☐ Hand - Gloves(middle)(_____)
- ☐ Hand - Gloves (outer)(_____)
- ☒ Foot - Safety Boots
- ☒ Foot - Over boots(Latex)
- ☐ Other (specify)(_____)

Level C

Task(s):

- ☐ Head - Hard Hat (as appropriate)
- ☐ Face (Splash Shield)
- ☐ Hearing - Ear Plugs
- ☐ Appropriate Uniform
- ☐ Coverall (Tyvek)
- ☐ Hand - Gloves (inner)(_____)
- ☐ Hand - Gloves (middle)(_____)
- ☐ Hand - Gloves (outer)(_____)
- ☐ Foot - Safety Boots
- ☐ Foot - Over boots(Latex)
- ☐ Respirator (Full Face APR)
- ☐ Cartridge (GMC-H)
- ☐ Other (specify)(_____)

Level B

Task(s): 2

- ☒ Head - Hard Hat (as appropriate)
- ☒ Face (Splash Shield)
- ☐ Hearing - Ear Plugs
- ☒ Appropriate Uniform
- ☒ Coverall (Saranex)
- ☒ Hand - Gloves (inner)(Nitrile surgical)
- ☒ Hand - Gloves (middle)(Silvershield)
- ☒ Hand - Gloves (outer)(Nitrile)
- ☒ Foot - Safety Boots
- ☒ Foot - Over boots(Latex)
- ☒ SCBA
- ☐ Other (_____)

SITE OR PROJECT HAZARD MONITORING PROGRAM

Direct Reading Air Monitoring Instruments

Instrument Selection and Initial Check Record

Reporting Format: ☒ Field Logbook ☐ Field Data Sheets ☐ Air Monitoring Log ☒ Trip Report ☐ Other

Instrument	Task No.(s)	Instrument Number	Checked Upon Receipt	Comment	Initials
☐ CGI/O_2			☐		
☒ CGI/O_2/H_2S/CO	1,2	#1	☒		TCS
☒ RAD	1,2	#2	☒		TCS
☒ Micro-R	1,2		☒		
☐ GM			☐		
☐ Other			☐		
☒ PID	1,2	#3	☒		TCS
☐ HNU 10.2			☐		
☒ HNU 11.7 (Intrinsically Safe)	1,2	#3	☒		TCS
☐ Photovac, Microtip			☐		
☐ OVM			☐		
☐ Other			☐		
☒ FID			☐		
☒ FOX 128	1,2	#9	☒		TCS
☐ RAM, Mini-RAM, Other			☐		
☐ Monotox			☐		
☐ H_2S			☐		
☐ CL_2			☐		
☐ HCN			☐		
☐ Other			☐		
☐ Pump - Dräeger			☐		
☐ Tubes/type:			☐		
☐ Tubes/type:			☐		
☐ Other			☐		
☐ Other					

SITE AIR MONITORINGPROGRAM

Action Levels

These Action Levels, if not defined by regulation, are some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

	Tasks	Action Level	Action
		Ambient Air Concentration	
☒ Explosive atmosphere	1,2		
		<10% LEL	Work may continue. Consider toxicity potential.
		10 to 25% LEL	Work may continue. Increase monitoring frequency.
		>25% LEL	Work must stop. Ventilate area before returning.
☒ Oxygen	1,2		
		<19.5% O_2	Leave Area. Re-enter only with self-contained breathing apparatus.
		19.5% to 25% O2	Work may continue. Investigate changes from 21%.
		>25% O_2	Work must stop. Ventilate area before returning.
☒ Radiation	1		
		< 3 times background	Continue Work
		3 Times Background to < 1 mR/hour	Possible radiation source(s) present. Continue investigation with caution. Perform thorough monitoring. Consult with a Health Physicist.
		> 1 mrem/hour	Potential radiation hazard. Continue investigation only upon the advice of Health Physicist.
☒ Organic gases and vapors	1,2		
		Background (BKG)	Level D after initial air monitoring at higher level of protection.
		> BKG to 5 units above BKG	Level C with continuous air monitoring.
		< 5 units to 500 units above BKG	Level B
☐ Inorganics and particulates			
		< 2.5 mg/m^3 (no visible dust)	Level D after monitoring for volatile organics.
		>2.5 mg/m^3 (visible dust)	Level C

Note: Action levels listed above do not include confined space entry work.

SITE SAMPLING ACTIVITIES

Sample Location

	Locations	Substances Sampled For
☒ Ambient background ☐ NA	START Office (Initial Calibration) Site support zone	MSA Passport - CGI/O_2/H_2S/CO OVA, HNU - Organics Micro R/GM - Radiation
☐ Personal samples ☒ NA		
☒ Onsite samples ☐ NA	Ambient air on building interior Breathing zone during drum sampling Drums	MSA Passport - CGI/O_2/H_2S/CO OVA, HNU - Organics Micro-R - Radiation Drum Samples - Oil Id., Flash Point, PCBs, VOAs 6 Drum Samples Collected
☐ Offsite samples ☒ NA		
☐ Background sample stations ☒ NA		

SAMPLING SUMMARY LOG

Work Location Instrument Readings

Location:	% LEL	% O_2	PID (units)	FID (units)	Aerosol Monitor (mg/m³)	Radiation Meter	Detector Tubes ( )	
Building Exterior	0%	20.7%	0-25	1-2	NA	Fig μR/hr	NA	NA
Building Interior	0%	20.7%	0-3	<1		Fig μR/hr		

CONTINGENCIES

Emergency Contacts and Phone Numbers

Agency	Contact	Phone Number
Local Medical Emergency Facility (LMF)	Clinton Hospital	(508) 365-4531
WESTON Medical Emergency Contact	EMR - Dr. Elayne Theriault	1-800-229-3674
WESTON Health and Safety	WESTON Health and Safety Department	(610) 701-7406 or (610) 692-3000
Fire Department	Clinton Fire Department	911/(508) 365-4165
Police Department	Clinton Police Department	911/(508) 365-4111
Onsite Coordinator	Wayne Robinson	(617) 573-9670
Site Telephone	START #1	(617) 966-8859
Nearest Telephone	NA	NA
Chemtrec		1-800-424-9555
ATSDR		(404) 639-0615
ATF (explosives information)		1-800-424-9555
National Response Center		1-800-942-5969

Local Medical Emergency Facility(s)

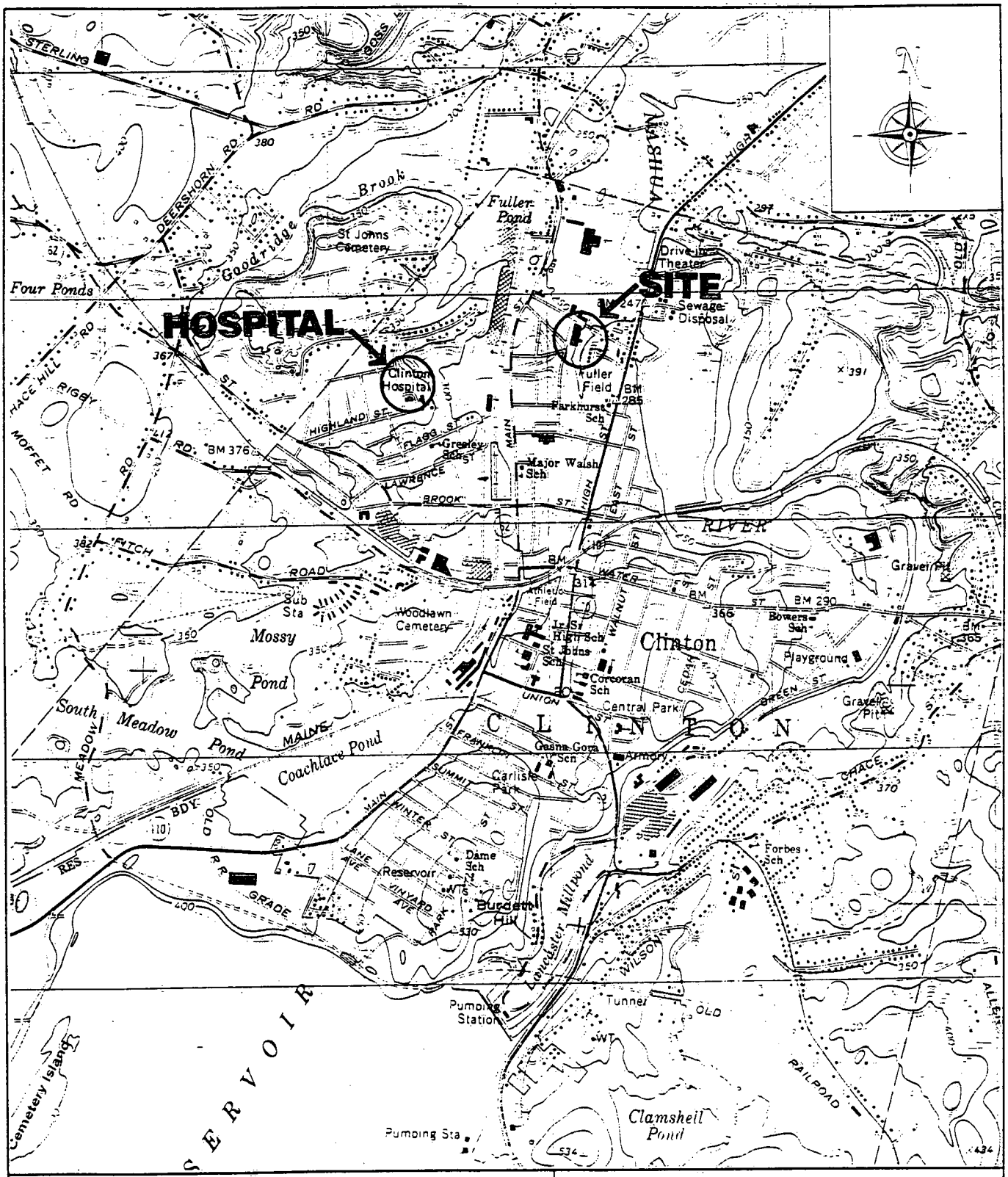
Name of Hospital: Clinton Hospital

Address: 201 Highland Street Clinton, MA 01510		**Phone No.:** (508)365-4531
Name of Contact: Joan Bitone (Nurse Manager)		**Phone No.:** Same
Type of Service: ☐ Physical trauma only ☐ Chemical exposure only ☒ Physical trauma and chemical exposure ☒ Available 24 hours	**Route to Hospital (written detail):** Exit site onto Stone Street. Follow Stone Street South and at end, turn right onto Plain Street. Follow Plain Street to end and turn left onto Main Street. Take first right off of Main Street onto Brook Street. Take third right from Brook Street onto Greely Street. Take third right off of Greelyl Street onto Highland Street. Clinton Hospital is located at 201 Highland Street.	**Travel time from site:** ≈5 minutes **Distance to hospital:** ≈1.25 miles **Name/No. of 24-hr Ambulance Service:** 911 Clinton Ambulance

Secondary or Specialty Service Provider ☒ NA

Name of Hospital:

Address:		**Phone No.:**
Name of Contact:		**Phone No.:**
Type of Service: ☐ Physical trauma only ☐ Chemical exposure only ☐ Physical trauma and chemical exposure ☐ Available 24 hours	**Route to Hospital (written detail):**	**Travel time from site:** **Distance to hospital:** **Name/No. of 24-hr Ambulance Service:**



SCALE: 1:25 000

HOSPITAL LOCATION MAP

AMORY PACKAGING COMPANY
184 STONE STREET
CLINTON, MASSACHUSETTS

SOURCE:
UNITED STATES GEOLOGICAL SURVEY, CLINTON, MASS QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1979.

WESTON®
MANAGERS DESIGNERS/CONSULTANTS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

DRAWN BY	DATE	PCS #
T. SACCOCCIO	5/96	1516
APPROVED BY	DATE	TDD #
	5/96	96-05-1005

HEALTHAND SAFETY EVALUATION-- ☐ CHEMICALHAZARDS

Hazardous Substance/Tasks	Physical Properties	Normal Physical State	State At Site/Proj. Temp.	Characteristics	Exposure Limits	Route(s) of Exposure/ Symptoms	Monitoring Instruments/ Ionization Potential + % Response
UNKOWN	☐ Explosive ☐ Flammable ☐ Corrosive ☐ Reactive ☐ Water Reactive ☐ Oxidizer ☐ Radioactive ☐ Other	☐ Solid ☐ Liquid ☐ Gas	☐ Solid ☐ Liquid ☐ Gas	pH: FP: LEL: UEL: Auto. Ig.: BP:	☐ CA ☐ PEL _____ ☐ TLV _____ ☐ IDLH _____ ☐ Only toxicological data available ☐ Other:	☐ Inhalation ☐ Ingestion ☐ Skin Absorption ☐ Contact ☐ Direct Penetration ☐ Other:	☐ PID ☐ 11.7 eV ☐ 10.2 eV ☐ OVM ☐ CGI ☐ OVA ☐ _____
CAS No:		Incompatible With:		MP: Sp. Gr.:			
Synonyms:				Vap. D.: Vap. P.: H_2O Sol.: Other:		Symptoms:	IP: % Response:

ATTACHMENT "A"

CHEMICAL CONTAMINANTS

DATA SHEETS

(Attach appropriate data sheets.)

HEALTHAND SAFETY PLAN APPROVAL/SIGNOFF FORM

Site Name: Amory Packaging **WO#** 11098-011-001-1516-00

Address: 184 Stone Street, Clinton, Worcester County, MA

I understand, agree to and will conform with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing(s).

Name	Signature	Date
Thomas C. Saccoccio	Thomas C. Saccoccio	5/13/96
Alan Peterson	Alan Peterson	5/13/96
Wayne M. Robinson	Wayne M. Robinson	5/13/96

SITE PERSONNEL AND CERTIFICATION STATUS

WESTON

Name: Thomas C. Saccoccio **Title:** Environmental Engineer **Task(s):** 1,2 **Certification Level or Description:** B-S ☒ Medical Current ☒ Training Current ☒ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** Wayne Robinson **Title:** EPA On-Scene Coordinator **Task(s):** 1,2 **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: Alan Peterson **Title:** EPA Site Investigator **Task(s):** 1,2 **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)
Name: **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)	**Name:** **Title:** **Task(s):** **Certification Level or Description:** ☐ Medical Current ☐ Training Current ☐ Fit Test Current (Qual.) ☐ Fit Test Current (Quant.)

TRAINING CURRENT - Training: All personnel, including visitors, entering the exclusion or contamination reduction zones must have certifications of completion of training in accordance with OSHA 29 CFR 1910, 29 CFR 1926 or 29 CFR 1910.120.

FIT TEST CURRENT - Respirator Fit Testing: All persons, including visitors, entering any area requiring the use or potential use of any negative pressure respirator must have had as a minimum, a qualitative fit test, administered in accordance with OSHA 29 CFR 1910.134 or ANSI within the last 12 months. If site conditions require the use of a full face negative pressure, air purifying respirator for protection from Asbestos or Lead, employees must have had a quantitative fit test, administered according to OSHA 29 CFR 1910.1001 or 1025 within the last 6 months.

MEDICAL CURRENT - Medical Monitoring Requirements: All personnel, including visitors, entering the exclusion or contamination reduction zones must be certified as medically fit to work, and to wear a respirator, if appropriate, in accordance with 29 CFR 1910, 29 CFR 1926/1910 or 29 CFR 1910.120.

The Site Health and Safety Coordinator is responsible for verifying all certifications and fit tests.

SITE SPECIFIC HEALTH AND SAFETY PERSONNEL

The Site Health and Safety Coordinator (SHSC) for activities to be conducted at this site is: Thomas C. Saccoccio.

The SHSC has total responsibility for ensuring that the provisions of this Site HASP are adequate and implemented in the field.

Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, the personnel assigned as SHSCs are experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120

Qualifications:

☒ 40 Hour OSHA Training
☒ 8 Hour Refresher Training
☒ 8 Hour Site Safety Coord. Training
☐ Non-rescue Confined Space Training
☒ Extensive field experience

Designated alternates include:

DECONTAMINATION PLAN

Personnel Decontamination

Levels of Protection Required for Decontamination Personnel

The levels of protection required for personnel assisting with decontamination will be: (One level of protection lower than site activities)

☐ Level B ☒ Level C ☒ Level D

Modifications include:

Equipment Decontamination

Decontamination procedure required for site personnel:

☒ Dry decon

☒ Wet decon - Level C and Level B activities (as required)

- ☒ Wash boots and gloves
- ☒ Remove outer boots
- ☒ Remove outer gloves

Sampling Equipment Decontamination

Sampling equipment will be decontaminated in accordance with the following procedure:

☐ Not applicable disposable sampling equipment.

☒ Wash with soap and water

☐ Rinse with distilled water

☐ Rinse with isopropanol

☐ Rinse with methanol

Disposition of PPE and Decontamination Wastes

Provide a description of waste disposition including identification of storage area, hauler, and final disposal site, if applicable:

PPE and decontamination fluids to be disposed of in an appropriate manner as determined by contaminate and degree of contamination.

CONTINGENCY

Response Plans

Medical - General

Provide First Aid as trained, assess and determine need for further medical assistance.
Transport or arrange for transport after decontamination.

First Aid Kit required: ☒ Yes	Type - Standard field including bloodborne pathogen kit	Location - START vehicle or command post	Special First Aid Procedures: Cyanides on site ☐ Yes ☒ No. If yes, contact LMF. Do they have antidote kit? ☐ Yes ☐ No
Eyewash required ☐ Yes ☒ No	Type	Location	Hydrogen Fluoride on site ☐ Yes ☒ No. If yes, need neutralizing ointment for First Aid kit. Contact LMF.
Shower required ☐ Yes ☒ No	Type	Location	
Spills: In the event of a spill or release, ensure safety, assess situation and perform containment and control measures as appropriate:	a. If small spill, clean up per MSDS; Notify Emergency Coordinator. b. If large spill, Sound Alarm; Notify Emergency Coordinator. c. Evaluate to pre-determined safe place. d. Account for all personnel. e. Determine if Team can respond safely.	Spill Response Equipment (Type)	Location
Fire/Explosion: In the event of a fire or explosion, ensure personal safety, assess situation and perform containment and control measures as appropriate:	a. Sound Alarm and call assistance, Notify Emergency Coordinator b. Evacuate to predetermined safe place c. Account for personnel d. Use fire extinguisher, only if safe and trained e. Standby to inform Emergency responders of materials and conditions	Fire Extinguisher (Type) 1 - 10 ABC	Location - START vehicle or command post, within 50 feet of drum sampling activities.

Security Problems: Contact local police if not already on-site.

ATTACHMENT "B"

MATERIAL SAFETY DATA SHEETS

(MSDS)

Scott Specialty Gases
ROUTE 611 NORTH, PLUMSTEADVILLE, PA 18949 (215) 766-8861
Electronics Group
2330 HAMILTON BOULEVARD, P.O. BOX 848, SOUTH PLAINFIELD, N.J. 07080 (201) 754-7700

REGIONAL PHONE NUMBERS

PA (215) 766-8861 · CA (714) 887-2571 · MI (313) 589-2950 · TX (713) 844-4820
NJ (201) 754-7700 · CA (415) 659-0162 · CO (303) 442-4700 · MA (617) 245-8707

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME: Isobutylene in Air

CHEMICAL FORMULA: C_4H_{10}/Air

CHEMICAL FAMILY: Alkene in gas mixture

DATE PREPARED: 4/23/92

SUPPLIER: Scott Specialty Gases, Inc.

ADDRESS: 2330 Hamilton Blvd., South Plainfield, NJ 07080

In Case of Emergency, call (908) 754-7700

OTHER DESIGNATIONS: None

SECTION II - HAZARDOUS INGREDIENTS

			EXPOSURE LIMITS (PPM)		
			ACGIH	OSHA	
COMPONENT	CAS #	CONCENTRATION	TLV	PEL	OTHER
Isobutylene	115-11-7	100 ppm	None established		
Air	25635-88-5	Balance	None established		

SECTION III - PHYSICAL DATA

BOILING POINT (°C): -194.4

SPECIFIC GRAVITY (H_2O = 1) @ 20°C: 0.88

VAPOR PRESSURE @ 20°C: N/A

PERCENT, VOLATILE BY VOLUME (%): 100%

VAPOR DENSITY (AIR = 1): 1.2 kg/m^3

EVAPORATION RATE (_____ = 1): N/A

SOLUBILITY IN WATER 20°C: Insoluble

APPEARANCE AND ODOR: Colorless gas with a possible slight olefinic odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT AND METHOD	FLAMMABLE LIMITS	LEL	UEL
Nonflammable	N/A		

EXTINGUISHING MEDIA: Use what is appropriate for surrounding fire

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and full protective clothing. Use water spray to keep fire exposed cylinders cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Compressed air at high pressures will accelerate the burning of flammable materials.

SECTION V – REACTIVITY DATA

STABILITY: Stable under normal storage conditions.

INCOMPATIBILITY (MATERIALS TO AVOID): None

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION IV – HEALTH HAZARD DATA

ROUTES OF ENTRY: Inhalation

EFFECTS OF OVEREXPOSURE: (ACUTE): The concentration of isobutylene in this mixture should not present any symptoms of toxicity. (CHRONIC): None (MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE): None

CARCINOGENICITY - NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO

EMERGENCY AND FIRST AID: Inhalation - Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN: Evacuate and ventilate area. Remove leaking cylinder to exhaust hood or safe outdoors are if this can be done safely.

WASTE DISPOSAL METHOD: Return cylinders to supplier for proper disposal with any valve outlet plugs or caps secured and valve protection cap in place. Allow gas to discharge at a slow rate to the atmosphere in an unconfined area or exhaust hood.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): Use a self-contained breathing apparatus in case of emergency or non-routine use.

VENTILATION: Provide adequate general and local exhaust ventilation.

OTHER PROTECTIVE EQUIPMENT: Wear safety goggles, rubber gloves, and safety shoes. A safety shower and eyewash station should be readily available.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in well ventilated areas only. Keep valve protection cap on cylinders when not in use and secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Move cylinder with adequate hand truck. Cylinder should be refilled by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION
1145 CATALYN STREET
SCHENECTADY, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP.

No. 440

METHANE

Date July 1980

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: METHANE
DESCRIPTION: Compressed gas (2265 psig) in cylinders.
OTHER DESIGNATIONS: CH_4, Methyl Hydride, Marsh Gas, Natural Gas, CAS #000 074 828
MANUFACTURER: Available from many sources, including:

Air Products & Chemicals Inc.	AIRCO Industrial Gases	Union Carbide Corp.
23320 S. Alameda Street	575 Mountain Ave.	Linde Div., Sp. Gases
Long Beach, CA 90810	Murray Hill, NY 07974	270 Park Avenue
(213) 830-5200	(201) 464-8100	New York, NY 10017
		(212) 551-5453

SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Methane	93 min*	Simple asphyxiant**
Typical Impurities: (See ASTM D1945 for method of analysis)		
Ethane	<4	Simple asphyxiant
Propane	<1	Simple asphyxiant
Butanes	<0.4	Simple ashpyxiant
C_xH_{2x+2} (x=5 and above)	<0.1	
Carbon dioxide	<0.7	
Nitrogen	<0.6	
Oxygen	<0.1	

*"Commercial" methane or a high-methane natural gas (a trace of mercaptan may be added as an odorizer). Purified methane is >99% CH_4 with very low impurity levels.
**The TLV (ACGIH, 1979) requires a minimal oxygen content of 18% by volume in workplace air at 1 atm.

SECTION III. PHYSICAL DATA

Boiling point at 1 atm, deg C	-161.5	Density at -162 C, liquid, g/cc	0.43
Critical temperature, deg C	-82.1	Freezing point at 1 atm, deg C	-182.6
Critical pressure, atm	45.8	Molecular weight	16.04
Specific gravity, gas (Air=1)	0.55		

Appearance & Odor: Colorless, odorless and tasteless gas (Unless mercaptan added to odorize). Also has been shipped and handled as cold liquid in insulated containers.

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air, % by volume	LOWER	UPPER
-306 F	1004 F		5.0	15

Extinguishing Media: Flame can be extinguished with CO_2, dry chemical or halocarbon gas. A hazard of re-ignition or explosion exists if flame is extinguished without stopping flow of gas or cooling the surroundings! Use water spray to cool surroundings! Control and then shut off gas flow when feasible, but it may be necessary or desirable to allow flame at cylinder or storage tank to continue burning while cooling containers and surroundings with water from a safe distance or from un-manned hose stations. Danger of rocketing cylinders and explosion exists. [Methane cylinders have fusible metal (165 F or 212 F) safety devices for pressure relief.]

SECTION V. REACTIVITY DATA

When suitably contained and kept unmixed with air or other oxidizing agents, methane is stable under normal storage and handling conditions. It does not polymerize; it is non-corrosive. However, it readily forms flammable/explosive mixtures with air (see Sect. IV).
In the presence of catalysts or sources of ignition, violent or explosive reactions can occur between methane and oxidizing agents, such as chlorine, bromine pentafluoride, oxygen difluoride, and nitrogen trifluoride. It explodes spontaneously on mixing with chlorine dioxide.
A mixture of liquid methane and liquid oxygen is an explosive. Even at -190 C liquid fluorine explodes on contact with liquid methane.

NO. 440

SECTION VI. HEALTH HAZARD INFORMATION

TLV Simple Asphyxiant (See Sect. II)

Methane is non-toxic. However, it can act as an asphyxiant by displacing the air required to support life. Workers exposed to oxygen deficient atmospheres become cyanotic, experience diminished mental alertness and impaired muscular coordination, and dyspnea. Collapse and death can occur at very low oxygen levels. Contact with liquefied methane can produce freeze burns.

FIRST AID:

Contact of liquid with skin: Remove victim from contact. Flush affect area with lots of tepid water. Do not apply direct heat to area. Loosely apply dry sterile, bulky dressings to protect area from infection/injury. Get medical help.

Inhalation: Remove to fresh air. Quickly restore and/or support breathing as required; have trained person administer oxygen if available. (Mouth-to-mouth resuscitation should be used immediately for a victim of methane asphyxiation!) Get medical help.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel. Evacuate area. Provide optimum, explosion-proof ventilation. Shut off methane source if possible. Remove sources of heat or ignition if feasible. Minor leaks can be located by painting suspected area of leakage with soap solution. Never use a flame to detect leaks.

DISPOSAL: Remove leaking cylinder to isolated area outdoors or place into a hood with adequate forced ventilation. Keep concentration of gas below 25% of LEL by ventilation. Allow gas to discharge at controlled, slow to moderate rate. Defective cylinders tagged to indicate defect. Close valve and return to supplier.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate general and local exhaust ventilation (explosion proof) to prevent workplace atmospheres from reaching 25% of LEL. Thoroughly test methane lines for leakage with nitrogen pressure before use, especially in enclosed areas. Give special attention to ventilation for enclosed areas.

Provide air supplied or self-contained breathing equipment for emergency or nonroutine situations where methane level is excessive. (The use of cartridge or canister respirators may result in suffocation.)

Safety shield, gloves, glasses and safety shoes are recommended when handling cylinders.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store cylinders in a well-ventilated, low fire-risk area. Outdoor or detached storage preferred. Keep cylinders away from oxidizing agents and sources of heat or ignition. Protect cylinders aginst physical damage. Follow general safety procedures for handling and storing compressed gas cylinders. No part of a cylinder should be exposed to temperature above 125 F.

Ground all lines and equipment used with methane to prevent static sparks. Use non-sparking tools. No Smoking where methane is used or stored.

A 19% oxygen concentration in the air is the minimum recommended for working without special breathing equipment. (Air/methane at 19% oxygen is near the LEL.)

DATA SOURCE(S) CODE: 2.4-11.17-18.23.25

APPROVALS: MIS J. M. Nielsen
CRD

Industrial Hygiene and Safety 7-25-80

MEDICAL REVIEW: 5 August 1980

Material Safety Data Sheet

From Genium's Reference Collection
Genium Publishing Corporation
1145 Catalyn Street
Schenectady, NY 12303-1836 USA
(518) 377-8855

No. 523
n-PENTANE
(Revision A)

Issued: October 1986
Revised: August 1987

SECTION 1. MATERIAL IDENTIFICATION

MATERIAL NAME: *n*-PENTANE

DESCRIPTION (Origin/Uses): Prepared by dehydration and subsequent hydrogenation of 2- and 3-pentanol. Found in petroleum and is a constituent of petroleum ether. Used as an industrial solvent.

OTHER DESIGNATIONS: Amyl Hydride; C_5H_{12}; NIOSH *RTECS* #RZ9450000; CAS #0109-66-0

MANUFACTURER/SUPPLIER: Available from several suppliers, including: Ashland Chemical Co., Industrial Chemicals & Solvents Division, PO Box 2219, Columbus, OH 43216; Telephone: (614) 889-3844

COMMENTS: *n*-Pentane is a serious fire and explosion hazard.

HMIS	
H 1	
F 4	R 1
R 0	I -
PPE*	S 1
*See sect. 8	K 4

SECTION 2. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
n-Pentane, CAS #0109-66-0; NIOSH *RTECS* #RZ9450000	>99	TOXICITY DATA
		Human, Inhalation, LC_{Lo}: 130000 ppm
$H_3C-CH_2-CH_2-CH_2-CH_3$		Human, Inhalation, TC_{Lo}: 90000 ppm/5 Min.
NIOSH REL 1986		Mouse, Intravenous, LD_{50}: 446 mg/kg
10-Hr TWA: 120 ppm, 350 mg/m^3		
15-Min Ceiling: 610 ppm, 1800 mg/m^3		IDLH* Level: 15000 ppm
Current OSHA PEL-TWA: 1000 ppm (2950 mg/m^3).		
The 1987-88 ACGIH TLVs are TWA = 600 ppm (1800 mg/m^3) and STEL = 750 ppm (2250 mg/m^3).		
*Immediately dangerous to life and health		

SECTION 3. PHYSICAL DATA

Boiling Point ... 97°F (36.1°C)
Vapor Pressure ... 400 Torr at 65.3°F (18.5°C)
Vapor Density (Air = 1) ... 2.5
Solubility in Water ... 0.04% at 68°F (20°C)
Viscosity ... 0.43 at 32°F (0°C)
Specific Gravity ... 0.626 at 68°F (20°C)
Melting Point ... -202°F (-130°C)
Evaporation Rate (n-BuAc = 1) ... 28.6
Volatiles, % ... 100
Molecular Weight ... 72.15 Grams/Mole

Appearance and odor: Clear, colorless, mobile liquid. Mild gasolinelike odor. Threshold odor concentration: 50% recognition at 990 ppm.

COMMENTS: *n*-Pentane's high vapor density, volatility, and evaporation rate will generate explosive and flammable concentrations of vapor.

SECTION 4. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temperature	Flammability Limits in Air	LOWER	UPPER
<-40°F (<-40°C)	500°F (260°C)	% by Volume	1.5%	7.8%

EXTINGUISHING MEDIA: Use carbon dioxide, dry chemical, or foam. Water is ineffective in putting out a fire involving *n*-pentane, and a water stream will spread flames; but a water spray should be used to cool fire-exposed containers to prevent pressure rupture. Also, water spray may be used to flush spills away from exposures to sources of ignition. This flammable liquid is a dangerous fire hazard and a dangerous explosion hazard. Fight fire from a safe distance. UNUSUAL FIRE/EXPLOSION HAZARDS: The heavier-than-air vapors of *n*-pentane may travel along low-lying surfaces to distant sources of ignition and then flash back to the original source of the material. SPECIAL FIRE-FIGHTING PROCEDURES: *n*-Pentane is an OSHA class IA flammable liquid. Wear a self-contained breathing apparatus with a full facepiece operated in a pressure-demand or other positive-pressure mode. This material is extremely flammable. Exercise due caution to protect against flashbacks.

SECTION 5. REACTIVITY DATA

n-Pentane is stable. Hazardous polymerization cannot occur.

CHEMICAL INCOMPATIBILITIES: *n*-Pentane is incompatible with oxidizing agents.

CONDITIONS TO AVOID: Avoid sources of ignition such as sparks, excessive heat, open flame, and lighted tobacco products.

PRODUCTS OF HAZARDOUS DECOMPOSITION can include oxides of carbons.

SECTION 6. HEALTH HAZARD INFORMATION

n-Pentane is not listed as a carcinogen by the NTP, IARC, or OSHA.

SUMMARY OF RISKS: Vapors of this material are mildly narcotic and may cause irritation to the respiratory passages. (It has been reported that human exposures at 5000 ppm for 10 minutes did not cause mucous membrane irritation.) Extremely high and sustained concentrations may cause central nervous system depression and narcosis. This material is a defatting agent; repeated or prolonged skin contact with its liquid may result in drying, cracking, and dermatitis. Eye contact can be irritating. Swallowed liquid can vaporize (BP 97°F [36.1°C]) in the trachea. Aspiration into the lungs will cause dilution of alveolar air (asphyxiation hazard). TARGET ORGANS: Eyes, skin, respiratory system. PRIMARY ENTRY: Inhalation. ACUTE EFFECTS: Eyes, skin, and respiratory tract irritation; and possibly central nervous system depression. CHRONIC EFFECTS: Unknown. MEDICAL CONDITIONS AGGRAVATED BY LONG-TERM EXPOSURE: None reported.

FIRST AID: EYE CONTACT: Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes. Get medical help.* . SKIN CONTACT: Remove contaminated clothing. Flush affected area with water; wash with soap and water. Get medical help.* INHALATION: Remove victim to fresh air. Restore and/or support his breathing as required. Get medical help.* INGESTION: Do not induce vomiting. Never give anything by mouth to someone who is unconscious or convulsing. Get medical help.*

* GET MEDICAL ASSISTANCE = IN PLANT, PARAMEDIC, COMMUNITY. Get medical help for further treatment, observation, and support after first aid.

SECTION 7. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL/LEAK: Notify safety personnel of *n*-pentane spills or leaks. If a spill or leak has not ignited, use water spray to disperse the gas or vapor and to protect those who are attempting to stop a leak. Keep upwind of a leak or spill. Remove sources of heat or ignition. Provide maximum explosion-proof ventilation. Cleanup personnel need protection against inhalation of vapors and contact with liquid. Flush waste to the ground and away from sensitive areas with a cold water spray. Small spills can be absorbed with vermiculite, picked up with nonsparking tools, or allowed to evaporate with good ventilation or in a hood or open area. Pick up large spills if it is safe to do so and place them into an appropriate container for recovery or disposal. Keep waste out of sewers or places where it can vaporize into confined spaces. DISPOSAL: Burn properly (because of material's low flash point) in an approved incinerator. Follow Federal, state, and local regulations. Aquatic Toxicity, TLm 96: 100-10 ppm. *n*-Pentane is reported in the 1980 EPA TSCA Inventory. EPA Hazardous Waste Number (40 CFR 261.21, Ignitability): D001. *n*-Pentane is not designated as a hazardous substance by the EPA (40 CFR 116.4). EPA Reportable Quantity (40 CFR 117.3): Not Listed.

SECTION 8. SPECIAL PROTECTION INFORMATION

GOGGLES: Wear chemical safety goggles or eyeglasses to prevent eye contact where splashing is possible.

GLOVES: Wear rubber or neoprene gloves to prevent skin contact.

RESPIRATOR: For emergency or nonroutine exposures above the TLV, use a NIOSH-approved respirator with an organic vapor canister or air-supplied or self-contained breathing apparatus below 5000 ppm.

VENTILATION: Provide general and local explosion-proof exhaust ventilation to meet TLV requirements. The ventilation systems must be explosion proof and nonsparking.

SAFETY STATIONS: Make eyewash stations, washing facilities, and safety showers available in areas of use and handling.

CONTAMINATED EQUIPMENT: Contact lenses pose a special hazard; soft lenses may absorb irritants, and all lenses concentrate them.

OTHER PERSONAL PROTECTIVE EQUIPMENT: Wear protective clothing appropriate to the work situation to prevent skin contact. Remove soiled clothing and launder it before wearing it again, because it is a health and fire hazard.

COMMENTS: Practice good personal hygiene. Keep materials off of your clothes and equipment. Avoid transferring materials from hands to mouth while eating, drinking, or smoking.

SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

STORAGE SEGREGATION: Store *n*-pentane in tightly closed containers in a cool, well-ventilated area away from oxidizing agents and sources of heat and ignition. Protect containers from physical damage. SPECIAL HANDLING/STORAGE: Ground and bond containers during transfers to prevent the generation of static sparks. Use nonsparking tools. Use metal safety cans for handling small amounts. Storage and handling must be suitable for an OSHA Class IA flammable liquid. Do not smoke where this material is stored or used. ENGINEERING CONTROLS: The heavier-than-air *n*-pentane vapors may travel to distant sources of ignition and flash back. These vapors collect in low-lying areas; minimize sources of ignition there. OTHER PRECAUTIONS: Avoid breathing *n*-pentane vapors! Prevent its contact with skin and eyes! Do not eat this material! Consider exposure-monitoring and record-keeping requirements that have been proposed by NIOSH for alkanes.

TRANSPORTATION DATA (per 49 CFR 172.101-2):

DOT Shipping Name: Pentane
DOT Hazard Class: Flammable Liquid
DOT Required Label: Flammable Liquid
DOT ID No. UN1265
IMO Class: 3.1
IMO Label: Flammable Liquid

References: 1-12, 14, 16, 23, 25, 27, 31, 34, 38, 42, 45, 47, 49, 54, 55, 58, 59, 63, 73, 75, 82, 87-04, CK

Approvals
Indust. Hygiene/Safety 12/87
Medical Review 12/87

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

B

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

Issued: September, 1981 SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Liquid Air Corporation	(415) 765-4500

ADDRESS (Number, Street, City, State, and ZIP Code)
One Embarcadero Center, San Francisco, CA 94111

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
Hydrogen	Hydrogen

CHEMICAL FAMILY	FORMULA
Diatomic Gas	H_2

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Reacts with oxidizing agents such as Chlorine, Fluorine,		
Oxygen, etc.		

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	-422.99	SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.) @ B.P.	760	PERCENT, VOLATILE BY VOLUME (%)	100%
VAPOR DENSITY (AIR=1)	.0696	EVAPORATION RATE (ether =1)	Greater than 1
SOLUBILITY IN WATER	Neg.		

APPEARANCE AND ODOR Colorless and odorless gas/liquid

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
None (gas)	In air	4.1	74.2

EXTINGUISHING MEDIA
Water, dry chemical, CO_2

SPECIAL FIRE FIGHTING PROCEDURES
Stop the flow of gas. Use large quantities of water for cooling affected area and surrounding exposures.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Highly flammable. Can react explosively with oxidizing agents such as Chlorine, Fluorine, Oxygen, etc. May produce an almost invisible flame. Use caution when approaching suspected fire.

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
Not life supporting.

EFFECTS OF OVEREXPOSURE
Asphyxia.

EMERGENCY AND FIRST AID PROCEDURES
Remove victim to open area. Give artificial respiration or resuscitation if necessary. Call doctor.

SECTION VI - REACTIVITY DATA

STABILITY			CONDITIONS TO AVOID
	UNSTABLE		
	STABLE	X	Any ignition source; uncontrolled release of gas or liquid to atmosphere.

INCOMPATABILITY *(Materials to avoid)*
None.

HAZARDOUS DECOMPOSITION PRODUCTS
None.

HAZARDOUS POLYMERIZATION			CONDITIONS TO AVOID
	MAY OCCUR		
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
If leak cannot be stopped by closing valve, carefully remove cylinder to an open area away from ignition sources. Avoid skin contact with liquid Hydrogen.

WASTE DISPOSAL METHOD
Controlled venting: Slow venting of gas (by use of regulator if possible) to atmosphere away from buildings, people, sources of ignition, by use of vent stack or other approved methods.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*
Adequate ventilation.

VENTILATION			
	LOCAL EXHAUST	Required	SPECIAL
	MECHANICAL *(General)*	Desirable	OTHER

PROTECTIVE GLOVES	EYE PROTECTION
Leather gauntlet gloves for liquid handling.	Faceshield or chemical goggles when handling liquid.

OTHER PROTECTIVE EQUIPMENT

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Keep ignition sources away. Store with adequate ventilation and away from combustible and oxidizing materials.

OTHER PRECAUTIONS
Do not drop cylinders. Do not store near heat sources. Avoid cylinder contact with energized equipment.

Additional info
DOT Identification # UN1049
CAS # 1333-74-0
EPA # A948-7546

ATTACHMENT "C"

SAFETY PROCEDURES/FIELD OPS

(FLDOP'S)
See Accompanying Field OP Binder

ATTACHMENT "D"

SITE SPECIFIC HAZARD COMMUNICATION PROGRAM

Location Specific Hazard Communications Program/Checklist

In order to ensure an understanding of and compliance with the Hazard Communication Standard, WESTON will utilize this checklist/document (or similar document) in conjunction with the WESTON Written Hazard Communications Program as a means of meeting site or location specific requirements.

While responsibility for activities within this document reference the WESTON Safety Officer, it is the responsibility of all personnel to effect compliance. Responsibilities under various conditions can be found within the WESTON Written Hazard Communication Program.

To ensure that information about the dangers of all hazardous chemicals used by WESTON are known by all affected employees, the following hazardous information program has been established. All affected personnel will participate in the hazard communication program. This written program as well as WESTON's Corporate Hazard Communication Program will be available for review by any employee, employee representative, representative of OSHA, NIOSH or any affected employer/employee on a multi-employer site.

✓ Site or other location name/address: Amoco Packaging, 184 Stone St., Clinton, MA

✓ Site/Project/Location Manager: T. Saccoccio

✓ Site/Location Safety Officer: T. Saccoccio

✓ List of chemicals complied, format: HASP: ✓ Other: ____

✓ Location of MSDS Files: Attached to HASP

✓ Training Conducted by (name and date): T. Saccoccio 5/13/96

✓ Indicate format of training documentation: Field Log: ✓ Other: ____

✓ Client briefing conducted regarding hazard communication:

NA If multi-employer site, indicate name of affected companies: _____

NA Other employer(s) notified of chemicals, labelling and MSDS information:

NA WESTON notified of other employer's or clients hazard communication program as necessary.

List of Hazardous Chemicals

A list of known hazardous chemicals used by WESTON personnel must be prepared and attached to this document or in a centrally identified location with the MSDS's. Further information on each chemical may be obtained by reviewing the appropriate MSDS's. The list will be arranged to enable cross reference with the MSDS file and the label on the container. The SO or location manager is responsible for ensuring the chemical listing remains up-to-date.

Container Labeling

The WESTON Safety Officer (SO) will verify that all containers received from the chemical manufacturer, importer or distributor for use on site will be clearly labeled.

The SO is responsible for assuring labels are placed where required and for comparing MSDS's and other information with label information to ensure correctness.

Material Safety Data Sheets (MSDS)

The SO is responsible for establishing and monitoring WESTON's MSDS program for the location. The SO will make sure procedures are developed to obtain the necessary MSDS's and will review incoming MSDS's for new or significant health and safety information. He/she will see that any new information is passed on to the affected employees. If an MSDS is not received at the time of initial shipment, the SO will call the manufacturer and have a MSDS delivered for that product in accordance with the requirements of WESTON's Written Hazard Communication Program.

A log for, and copies of, MSDS's for all hazardous chemicals in use will be kept in the MSDS folder at a location known to all site workers. MSDS's will be readily available to all employees during each work shift. If an MSDS is not available, immediately contact the WESTON SO or designated alternate. When revised MSDS's are received the SO will immediately replace the old MSDS's.

Employee Training and Information

The SO is responsible for the WESTON site-specific personnel training program. The SO will ensure that all program elements specified below are supplied to all affected employees.

At the time of initial assignment for employees to the work site or whenever a new hazard is introduced into the work area employees will attend a health and safety meeting or briefing that includes the information indicated below.

- Hazardous chemicals present at the worksite
- Physical and health risks of the hazardous chemicals
- The signs and symptoms of overexposure

- Procedures to follow if employees are overexposed to hazardous chemicals
- Location of the MSDS file and written hazard communication program
- How to determine the presence or release of hazardous chemicals in the employees work area
- How to read labels and review MSDS's to obtain hazard information
- Steps WESTON has taken to reduce or prevent exposure to hazardous chemicals
- How to reduce or prevent exposure to hazardous chemicals through use of controls procedures, work practices and personal protective equipment
- Hazardous, non-routine tasks to be performed (if any)
- Chemicals within unlabeled piping (if any)

Hazardous Non-Routine Tasks

When employees are required to perform hazardous non-routine tasks the affected employee(s) will be given information by the SO about the hazardous chemicals he or she may utilize during such activity. This information will include specific chemical hazards, protective and safety measures the employee can use and steps WESTON is using to reduce the hazards. These steps include, but are not limited to, ventilation, respirators, presence of another employee and emergency procedures.

Chemicals in Unlabeled Pipes

Work activities may be performed by employees in areas where chemicals are transferred through unlabeled pipes. Prior to starting work in these areas, the employee shall contact the SO at which time information as to; the chemical(s) in the pipes, potential hazards of the chemicals or the process involved, and safety precautions which should be taken will be determined and presented.

Multi-Employer Worksites

It is the responsibility of the SO to provide other employers with information about hazardous chemicals imported by WESTON to which their employees may be exposed, along with suggested safety precautions. It is also the responsibility of SO and the site manager to obtain information about hazardous chemicals used by other employers to which WESTON employees may be exposed. WESTON's chemical listing will be made available to other employers as requested. MSDS's will be available for viewing as necessary.

The location, format and/or procedures for accessing MSDS information must be relayed to affected employees.

ATTACHMENT "E"

OSHA JOB SAFETY POSTER

JOB SAFETY & HEALTH PROTECTION

The Occupational Safety and Health Act of 1970 provides job safety and health protection for workers by promoting safe and healthful working conditions throughout the Nation. Provisions of the Act include the following:

Employers

All employers must furnish to employees employment and a place of employment free from recognized hazards that are causing or are likely to cause death or serious harm to employees. Employers must comply with occupational safety and health standards issued under the Act.

Employees

Employees must comply with all occupational safety and health standards, rules, regulations and orders issued under the Act that apply to their own actions and conduct on the job.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor has the primary responsibility for administering the Act. OSHA issues occupational safety and health standards, and its Compliance Safety and Health Officers conduct jobsite inspections to help ensure compliance with the Act.

Inspection

The Act requires that a representative of the employer and a representative authorized by the employees be given an opportunity to accompany the OSHA inspector for the purpose of aiding the inspection.

Where there is no authorized employee representative, the OSHA Compliance Officer must consult with a reasonable number of employees concerning safety and health conditions in the workplace.

Complaint

Employees or their representatives have the right to file a complaint with the nearest OSHA office requesting an inspection if they believe unsafe or unhealthful conditions exist in their workplace. OSHA will withhold, on request, names of employees complaining.

The Act provides that employees may not be discharged or discriminated against in any way for filing safety and health complaints or for otherwise exercising their rights under the Act.

Employees who believe they have been discriminated against may file a complaint with their nearest OSHA office within 30 days of the alleged discriminatory action.

Citation

If upon inspection OSHA believes an employer has violated the Act, a citation alleging such violations will be issued to the employer. Each citation will specify a time period within which the alleged violation must be corrected.

The OSHA citation must be prominently displayed at or near the place of alleged violation for three days, or until it is corrected, whichever is later, to warn employees of dangers that may exist there.

Proposed Penalty

The Act provides for mandatory civil penalties against employers of up to $7,000 for each serious violation and for optional penalties of up to $7,000 for each nonserious violation. Penalties of up to $7,000 per day may be proposed for failure to correct violations within the proposed time period and for each day the violation continues beyond the prescribed abatement date. Also, any employer who willfully or repeatedly violates the Act may be assessed penalties of up to $70,000 for each such violation. A minimum penalty of $5,000 may be imposed for each willful violation. A violation of posting requirements can bring a penalty of up to $7,000.

There are also provisions for criminal penalties. Any willful violation resulting in the death of any employee, upon conviction, is punishable by a fine of up to $250,000 (or $500,000 if the employer is a corporation), or by imprisonment for up to six months, or both. A second conviction of an employer doubles the possible term of imprisonment. Falsifying records, reports, or applications is punishable by a fine of $10,000 or up to six months in jail or both.

Voluntary Activity

While providing penalties for violations, the Act also encourages efforts by labor and management, before an OSHA inspection, to reduce workplace hazards voluntarily and to develop and improve safety and health programs in all workplaces and industries. OSHA's Voluntary Protection Programs recognize outstanding efforts of this nature.

OSHA has published Safety and Health Program Management Guidelines to assist employers in establishing or perfecting programs to prevent or control employee exposure to workplace hazards. There are many public and private organizations that can provide information and assistance in this effort, if requested. Also, your local OSHA office can provide considerable help and advice on solving safety and health problems or can refer you to other sources for help such as training.

Consultation

Free assistance in identifying and correcting hazards and in improving safety and health management is available to employers, without citation or penalty, through OSHA-supported programs in each State. These programs are usually administered by the State Labor or Health department or a State university.

Posting Instructions

Employers in States operating OSHA approved State Plans should obtain and post the State's equivalent poster.

Under provisions of Title 29,Code of Federal Regulations, Part 1903.2(a)(1) employers must post this notice (or facsimile) in a conspicuous place where notices to employees are customarily posted.

More Information

Additional information and copies of the Act, specific OSHA safety and health standards, and other applicable regulations may be obtained from your employer or from the nearest OSHA Regional Office in the following locations:

Atlanta, GA	(404) 347-3573
Boston, MA	(617) 565-7164
Chicago, IL	(312) 353-2220
Dallas, TX	(214) 767-4731
Denver, CO	(303) 844-3061
Kansas City, MO	(816) 426-5861
New York, NY	(212) 337-2378
Philadelphia, PA	(215) 596-1201
San Francisco, CA	(415) 744-6670
Seattle,WA	(206) 553-5930

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Lynn Martin

Lynn Martin, Secretary of Labor

U.S. Department of Labor

Occupational Safety and Health Administration

To report suspected fire hazards, imminent danger safety and health hazards in the workplace, or other job safety and health emergencies, such as toxic waste in the workplace, call OSHA's 24-hour hotline: 1-800-321-OSHA.

This information will be made available to sensory impaired individuals upon request. Voice phone: (202) 219-8615; TDD message referral phone: 1-800-326-2577

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