PHASE I REQUIREMENTS/TIER CLASSIFICATION
207 MARSTON STREET
LAWRENCE, MASSACHUSETTS
RTN: 3-18126

by

Haley & Aldrich, Inc.
Boston, Massachusetts

for

Department of Environmental Protection
Northeast Regional Office
Wilmington, Massachusetts

31 March 2000
File No. 12671-040

HALEY & ALDRICH

UNDERGROUND
ENGINEERING &
ENVIRONMENTAL
SOLUTIONS

Haley & Aldrich, Inc.
465 Medford Street
Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.HaleyAldrich.com

HALEY & ALDRICH

31 March 2000
File No. 12671-040

Department of Environmental Protection
Northeast Regional Office - BWSC
205A Lowell Street
Wilmington, Massachusetts 01887

Attention: Site Management Branch

Subject: Phase I Requirements/Tier Classification
207 Marston Street
Lawrence, Massachusetts 01841
RTN 3-18126

Ladies and Gentlemen:

Transmitted herewith are the Tier Classification Form (BWSC-107), Numerical Ranking System Scoresheet (310 CMR 40.1511), and supporting documentation for Release Tracking Number (RTN) 3-18126 on the J. Tombarello & Sons, Inc. property located at 207 Marston Street in Lawrence, Massachusetts.

Haley & Aldrich has been contracted by W.Z. Baumgartner & Associates, Inc., to provide LSP support services for the preparation of this Tier Classification. This work was undertaken in accordance with Haley & Aldrich, Inc. proposal dated 20 March 2000, as authorized by W.Z. Baumgartner & Associates, Inc. W.Z. Baumgartner & Associates, Inc. is the environmental consultant for American Recycling, Inc., the current owner of the property.

Haley & Aldrich has prepared the Tier Classification using client-supplied analytical data and information obtained during previous assessments of the property conducted by W.Z. Baumgartner & Associates, Inc. and Higgins Environmental Associates (HEA). Where necessary, Haley & Aldrich has supplemented the information required to complete the Numerical Ranking Scoresheet (NRS) with information provided by persons familiar with the site, municipal officials and the Massachusetts Geographical Information System (MAGIS). Haley & Aldrich has visited the site, but has not developed additional chemical testing data or other subsurface information as part of the Tier Classification.

This Tier Classification addresses Release Tracking Number (RTN) 3-18126, for which a Notice of Responsibility (NOR) was issued by the Department of Environmental Protection (DEP) on 31 March 1999.

LIST OF PREVIOUS REPORTS

The following provides a list of previous reports and sources of information reviewed in the preparation of the Tier Classification Submittal, and the Numerical Ranking Scoresheet. We believe that the information contained with the documents listed below, as supplemented herein, satisfies the requirements of a Phase I - Initial Site Investigation as listed at 310 CMR 40.0483, and is therefore sufficient to complete a Tier Classification for RTN: 3-18126. Copies of documents listed below have been previously submitted to DEP and are currently on file at the DEP Northeast Regional Office. A table indicating where relevant Phase I information is provided as Table I.

1. "Environmental Site Assessment - John C. Tombarello & Sons, Inc., Lawrence, Massachusetts," prepared by W.Z. Baumgartner & Associates, Inc., dated August 1998.

2. "Immediate Response Action Plan - RTN 3-18126," prepared by Higgins Environmental Associates, Inc., dated 21 April 1999.

3. "Modified Immediate Response Action Plan - RTN 3-18126," prepared by Higgins Environmental Associates, Inc., dated 1 June 1999.

4. "Immediate Response Action Status Report - RTN 3-18126," prepared by Higgins Environmental Associates, Inc., dated 28 July 1999.

SUMMARY OF BACKGROUND INFORMATION

The site is located at 207 Marston Street in Lawrence, Massachusetts. Marston Street lies on the eastern boundary of the site and Hoffmann Avenue lies on the northern border of the site. A project locus is provided as Figure 1. There are residential homes across both Marston Street and Hofmann Avenue. The Sons of Italy Lodge and their soccer field lies on the southern border of the site. The western border is adjacent to Interstate 495 and the Merrimack River is located approximately 2,000 ft. to the east of the site on the other side of Interstate 495.

The site is a combination of two tracts purchased in 1941 and 1967. The first tract, purchased in 1941, became the northern half of the site where a metal recycling operations currently exists. The second tract became the southern half of the site and was purchased in 1967 from the City of Lawrence. The southern half of the site was formerly used as the community landfill and prior to 1935 was owned by a soap manufacturer.

On 20 July 1998, a Response Action Outcome (RAO) report for a Release Tracking Number (RTN) 3-16817 was filed with the MADEP following the excavation of contaminated soil from a release of heat transfer oil on 19 May 1998. The results of soil sampling following remedial actions indicated the presence of residual contamination in soils

on the 207 Marston Street property. In a letter and Request for Information (RFI), dated 2 December 1998, DEP indicated that the residual contamination may have been attributable to historic releases of oil and hazardous materials, and not exclusively to the release of heat transfer oil.

In addition to the RAO, an Environmental Site Assessment was filed by W.Z. Baumgartner & Associates, Inc. with DEP in August 1998. The information contained in the RAO and August 1998 environmental assessment report indicated that concentrations of oil and hazardous materials (OHMs) exceeding Massachusetts Contingency Plan (MCP) Reportable Conditions were present on the property.

The DEP issued a Notice of Responsibility (NOR) & Interim Deadline letter to the former operator and current site owner of the property on 31 March 1999. The NOR requested that the former operator (Tombarello Recycling, Inc.) and current site owner, (American Recycling, Inc.) prepare an Immediate Response Action (IRA) Plan to further assess environmental conditions documented in two earlier site assessment reports prepared for the property. The release was assigned RTN 3-18126. The NOR specifically requested that the IRA Plan include an Imminent Hazard (IH) Evaluation to assess a potential Imminent Hazard due to the presence of PCBs at concentrations greater than 10 parts-per-million (ppm) in potentially-accessible soils with 500 ft. of residential properties.

HEA filed a Release Notification Form (RNF) (RTN: 3-18126), and an IRA Plan on behalf of the potentially-responsible parties on 21 April 1999. The IRA Plan included the removal of a soil stockpile generated during previous work on the property, the collection and analysis of surficial soil samples, and the resampling and analysis of groundwater from existing monitoring wells for use in conducting an Imminent Hazard Evaluation.

It is understood that DEP considers the date of notification to be 31 March 1999, which is the date that DEP originally issued the NOR. Therefore, in accordance with MCP requirements, within one year of notification, the potentially-responsible party must either file a Response Action Outcome (RAO) for the release; obtain Downgradient Property Status (DPS); or, classify the release as either Tier I (A, B, or C), or Tier II.

HEA has conducted IRA activities, including additional soil and groundwater sampling to further assess the degree and extent of the release, and the installation of a fence around the area of PCB-impacted soil to mitigate the potential Imminent Hazard. The results of soil and groundwater testing completed to date have indicated that PCBs, petroleum hydrocarbons, PAHs and metals are present in soil and/or groundwater at concentrations which exceed applicable Reportable Concentrations (RCs).

HEA prepared a Modified IRA Plan on 1 June 1999 to install the fence and to replace and resample on-site monitoring wells. DEP subsequently completed an inspection on 21 June 1999, and indicated that the fence was not properly installed.

Following modifications to the fence, HEA filed an IRA Status Report on 28 July 1999, which summarized the results of soil and groundwater testing and indicated that the fence installation had been retrofitted to the satisfaction of DEP.

Haley & Aldrich is not aware of MCP compliance activities other than those associated with additional soil and groundwater testing described in the IRA Status Report and the installation and modification of the fence. In addition to Tier Classification, it is Haley & Aldrich's opinion that additional compliance activities will be required to fulfill the current MCP compliance obligations for the site (i.e. preparation of an IRA Status and/or Completion Report).

Haley & Aldrich, Inc. has been contracted to prepare the Tier Classification for this release. Although a formal Phase I – Initial Site Investigation Report has not been prepared, Haley & Aldrich, Inc. believes that the information and data contained in the previous, referenced reports on file with DEP, as supplemented herein, satisfy the Phase I requirements.

At this time, based on information available to Haley & Aldrich, Inc., the Disposal Site is considered to be the entire 207 Marston Street property as shown on the site plan attached in Appendix A. The extent of the Disposal Site will be further evaluated as part of the Phase II activities.

Groundwater Classification

The available information has also indicated that the site was originally considered to be located with a groundwater classification designated as GW-1, due to its proximity to an Interim Wellhead Protection (IWP) area. A letter provided from DEP, dated 4 March 1999, indicates that the two public water supply wells in North Andover, for which the IWP had been established, have been formally abandoned, and therefore the DEP has indicated that they are no longer authorized withdrawal points and will not be protected as public water sources under DEP programs. The current Geographical Information System (GIS) map scoring for the site confirms that the IWP has been removed. A copy of the NRS Scoring Map is included in Appendix A. Groundwater beneath the site is therefore classified as RCGW-2. Soil on the site is classified as RCS-1 due to the presence of residential properties within 500 ft.

TIER CLASSIFICATION AND NUMERICAL RANKING SYSTEM SCORESHEET CRITERIA

Based on a review of available data for the property provided by W.Z. Baumgartner & Associates, Inc., oil and hazardous materials are present at sufficient levels to conclude that a release of oil or hazardous materials exists at this property exceeding the notification requirements of 310 CMR 40.0300 and further response actions are necessary. A Tier Classification Transmittal Form (BWSC-107) and a Numerical Site Ranking (NRS) Scoresheet have been prepared and are included in Appendix B.

In accordance with 310 CMR 40.1500, a NRS Scoresheet was prepared in order to Tier Classify RTN: 3-18126 under the MCP, 310 CMR 40.0000 and Massachusetts General Law (MGL) Chapter 21E. Based upon a review of available data, MASS GIS 21E map (Appendix A), communications with local officials, and other information, an NRS Scoresheet was prepared, which indicated an NRS Score of 332, accordingly, the site should be classified as a Tier II site. The evaluations of the disposal site are based on the following information:

I. Disposal Site Information

According to the attached DEP Site scoring map (MASS GIS) dated 28 March 2000, the site does not overly a Potentially Productive (medium or high yield) Aquifer (PPA) and is not within the boundaries of a Zone II or Interim Wellhead Protection Area (IWPA). As concluded in the IRA Status Report prepared by HEA dated 28 July 1999, a fence and infrared sensors have been installed at the site, this eliminated the previously identified potential Imminent Hazard. Conditions do not exist that would merit an Imminent Hazard, as defined in 310 CMR 40.0520(2)a-l. Reportable concentrations for this site are RCS-1 for soil and RCGW-2 for groundwater.

II. (A,B,C,D,E) Exposure Pathways

Oil and/or Hazardous Material (OHM) has resulted in concentrations of petroleum hydrocarbons, heavy metals, and PCBs that are greater than or equal to RCS-1 criteria. Soil contaminants identified at the disposal site are located on or near the soils surface at least one location on the site. There was staining visible at certain locations on the soil's surface at the site. However, a fence surrounds the whole property and infrared sensors are used to restrict access. A residence is located on a portion of the property, however, access to the recycling facility (e.g. Disposal Site) is restricted by a fence and infrared sensors. Based on the presence of OHM in shallow soils, 100 points (Potential Exposure Pathway) have conservatively been assigned for the Soil Exposure Criteria, even though access to the site is limited to on-site employees.

Lead was detected in a single unfiltered groundwater sample at a concentration that is greater than or equal to RCGW-2 criteria. The filtered sample did not contain a detectable concentration of lead. According a review of municipal officials regarding water supplies, private drinking water wells are not located within 500 feet of the site. Although dissolved lead was not detectable, we have conservatively scored Groundwater Exposure Criteria as Evidence Of Contamination (20 points) since the unfiltered result was previously reported to DEP. Maximum concentrations are presented in Table II.

Levels of OHM are unlikely to contribute to the contamination of surface water since the closest body of water is approximately 2000 feet away and the types and degree of contamination at the site are unlikely to migrate significantly. Therefore, the designation for Surface Water Exposure Criteria is None or Not Applicable (0 points).

Although the types and nature of contaminants present at the site are considered to have relatively low volatility, and OHM has not been identified, and is not anticipated to be present in the air, 15 points has been assigned for Air Exposure Criteria since OHM is present in shallow soils, which may create an exposure as air-borne dust.

Because a metal recycling facility is considered to have multiple sources and types of OHM contamination, the applicable score for Section II.E of the NRS is 50 points.

III. (A,B,C,D) Disposal Site Characteristics

Because lead has been detected in soil at a concentration of 4,170 mg/kg, and in groundwater at a concentration of 1.56 mg/L 40 points are added for Section III.A. This score is considered to be conservative since only one sample within the groundwater and the soil showed excessive concentrations of lead.

More than one contaminant had a Toxicity Score greater than or equal to 30: lead (4,170 mg/kg in soil and 1.56 mg/L in groundwater), C19-C36 aliphatics (23,800 mg/kg in soil), and arsenic (143 mg/kg in soil). Because more than one contaminant was assigned OHM Toxicity Scores greater than or equal to 30, and therefore, 30 points are added for Section III.B.

All contaminants assigned an OHM toxicity score in III.A. greater than or equal to 20 were subsequently scored for OHM Mobility and Persistence. As a result, the OHM scored (lead) added 25 points for Section III.C.

The results of soil analyses completed to date have indicated that shallow soils on the property have been impacted by releases of OHM, including PCBs, petroleum hydrocarbons and metals. The results of groundwater analyses have indicated that the impacts of apparent OHM releases to the ground surface have been limited.

Depth to groundwater, as previously measured in monitoring wells on the property, ranged from approximately 5.1 to 10 feet below ground surface. HEA completed a groundwater elevation survey of monitoring wells on the property, and reported that shallow groundwater flow is in an easterly direction toward the Merrimack River. A review of test boring logs prepared by HEA indicates that soils at the site consist of brown very fine to fine sands with lesser proportions of silt and gravel. According to the U.S.G.S. Surficial Geology Map for the Lawrence Quadrangle, the surficial geology of the site is mapped as artificial fill overlying River-Terrace and Flood Plan Deposits consisting primarily of well-sorted fine sands and silts. Bedrock outcrops were not mapped within the vicinity of the site.

According to 310 CMR 40.1515, permeabilities for these types of soils are considered to be in the range of $10E^{-7}$ and $10E^{-3}$ cm/s and can be designated as "medium". Therefore, 12 points are added for Section III.D.

IV. (A,B,C) Human Population and Land Uses

The site is immediately surrounded by residential properties, businesses, and open space. A visual and conservative estimation of the residential population within one half mile is approximately greater than or equal to 1,000. Therefore, we have added 15 points for these criteria. Institutions (as defined in the MCP) were not encountered within 500 feet of the disposal site. Therefore, 0 points were added. The number of on-site workers is estimated between 1 and 99, therefore, 5 points were added.

The site does not overlie a Sole Source Aquifer (0 points) or a Medium Yield PPA (0 points). The disposal site is not proximal to a public drinking water supply source. Two backup water supply wells on the other side of the Merrimack River have been formally abandoned as indicated in a letter issued by DEP, dated 4 March 1999. There are no private water supplies used for drinking within 500 feet and an Alternative Public Water Supply is available. According to the Inspection Service Department (Health and Food Division) for the City of Lawrence, there are no wells of any type that exist within a 500 feet radius of the site. A score of 0 points is added for Section IV.C.

V. (A,B) Ecological Population

A review of site plans and MASS GIS Maps suggest that there are no proximal (< 500 feet) Areas of Critical Environmental Concern, no proximal (<500 feet) Species of Special Concern, Threatened or Endangered Species Habitat, no proximal (<500 feet) Wetlands, Certified Vernal Pools, or Outstanding Resource Water, and no proximal (<500 feet) Fish Habitats. Therefore each of these categories receives 0 points. Protected Open Space (Local/State/Federal/Trustee) (a local playground/park with a field) is located less than or equal to 500 feet from the disposal site (20 points) to the west across Marston Street. A total of 20 points are added for Section V.A.

Section V.B. (Environmental Toxicity Analysis) is scored if the cumulative score from V.A. is greater than or equal to 30 points. Since Sections V.A. has scored only 20 points, Section V.B. receives 0 points.

VI. Mitigating Disposal Site-Specific Conditions

No disposal site-specific conditions that warrant amending the site score are described herein.

Tier Classification

The NRS scoresheet indicates that the site is appropriately tier classified as a Tier II site under the MCP. A total of 332 points were awarded during scoring, which is less than the 350 points required for Tier I status.

Conceptual Scope of Work

A conceptual scope of work for the project is presented below in accordance with 310 CMR 40.0510(1)(e)(2). The conceptual scope of work includes a general plan for assessing contaminants of concern, potential receptors and potential exposure pathways, the likely technical approaches to be implemented, an estimate of overall schedule and timeline, interim milestones and overall cost.

- *Contaminants of Concern*. Table II lists the following compounds detected at the site for soil and groundwater. Soils: metals, petroleum hydrocarbons, PAHs and PCBs. Groundwater: petroleum hydrocarbons, PAHs, and metals.

- *Potential Receptors*. Potential receptors for current and reasonably foreseeable future uses of the site include: nearby residents, on-site workers, utility workers, on-site construction workers.

- *Potential Exposure Pathways*. Potential exposure pathways for the oil and hazardous materials detected at the site include: incidental ingestion, dermal contact, inhalation of fugitive dust, and inhalation of vapors. No surface water discharges would be anticipated given the relatively large distance to the Merrimack River (e.g. approximately 2,000 ft.) and, no drinking water exposure pathways exist at the site.

- *Technical Approaches*. Based on a review of the available data and information for the site, it is anticipated that it may be necessary to obtain additional soil and groundwater data to further delineate the nature and extent of potential soil and groundwater contamination. Additional explorations and testing will be required to collect, develop and evaluate sufficient information to support conclusions and opinions regarding:

    - the source, nature, extent and potential impacts of releases of oil and/or hazardous material;

    - the risk of harm posed by the disposal site to health, safety, public welfare and the environment; and,

    - the need to conduct remedial action at the disposal site.

- *Schedule*. Based on available information, achievement of an RAO may be possible by the 31 March 2002 deadline (2 years from tier classification) for submittal of the Phase II and III reports. The actual schedule for MCP compliance activities will depend on the results of additional investigations.

- *Overall Costs*. Costs to complete the necessary additional investigations and to fulfill Phase II reporting requirements, including a risk characterization and preparation of a

Phase III Evaluation are estimated to be in the range of at least $50,000. This cost estimate does not include costs associated with potential remedial actions, if required.

Haley & Aldrich has prepared this Tier Classification under a contract with W.Z. Baumgartner & Associates, Inc., the environmental consultant for American Recycling, Inc. Haley & Aldrich has used information and data obtained by others, including chemical testing data and subsurface information obtained by HEA as part of IRA activities conducted on the property. Haley & Aldrich has visited the site but has not conducted additional subsurface explorations or chemical testing as part of the Tier Classification, and has used the chemical testing results obtained by others for purposes of completing the NRS scoresheet.

If you should have any questions or require any additional information, please do not hesitate to contact us.

Sincerely yours,
HALEY & ALDRICH, INC.

Stewart A. Wiley
Senior Engineer

Elliot I. Steinberg
Senior Engineer

Paul P. Ozarowski
Vice President

Attachments:

Table I	- Content of Phase I Report
Table II	- Summary of Maximum and Minimum Concentrations
Appendix A	- Massachusetts GIS Map/Project Locus and Site Plan
Appendix B	- BWSC 107/Numerical Ranking System Scoresheet
Appendix C	- HEA Test Boring Logs and Well Installation Reports

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TABLE I

	CONTENT OF PHASE I REPORT Pursuant of 310 CMR 40.0483	ESA (1)	IRA Plan (2)	Modified RA Plan (3)	IRA Status Report (4)	Tier Classification
a.	General Disposal Site Information					
	1. Release Tracking Number	x	x	x	x	x
	2. Addresses, geographical location	x	x	x	x	x
	3. Site Locus Map	x	x			x
	4. Number of on-site workers					x
	5. Residential population within a 1/2 mile radius of the site					x
	6. Land uses surrounding the site	x	x			x
	7. number of institutions within 500 ft. of the site					x
	8. Natural resource areas located within 500 ft. of the site	x				x
	a. Surface waters	x				x
	b. Drinking water supplies	x			x	x
	c. Areas of Critical Environmental concern	x			x	x
b.	Disposal Site Map					
	1. Site boundaries	x	x			
	2. Property boundaries	x	x			x
	3. Other structures and areas	x	x			
c.	Disposal Site History					
	1. Owner/Operator and Operations History	x	x			x
	2. Release History	x	x	x		x
	3. OHM Use and Storage History		x	x	x	x
	4. Waste Management History		x	x	x	x
	5. Environmental Permits and Compliance History	x	x	x	x	x
	6. Potentially Responsible Parties	x	x			
d.	Site Hydrogeological characteristics					
	1. Geologic, hydrologic, geophysical and other subsurface investigations	x	x	x	x	
	2. Boring advancement, well construction and development	x	x			x
	3. General site topography	x				
	4. Geologic and stratigraphic conditions	x				x
	5. groundwater flow direction	x			x	x
e.	Nature and Extent of contamination					
	1. Evidence of releases of OHM (field screening, laboratory analyses, etc.)	x	x	x	x	
	2. OHM compounds detected at the site	x	x	x	x	x
	3. Laboratory data sheets			x		x
	4. Horizontal and vertical extent of contamination			x	x	x
	5. Presence and thickness of NAPL if encountered					
f.	Migration Pathways and Exposure Potential					
	1. Evidence/potential of OHM material migrations	x	x	x	x	x
	2. Known/potential human exposure to OHM at the site	x	x	x	x	x
	3. Known/potential impacts of OHM to environmental receptors		x	x	x	x
g.	Evaluation for Immediate Response Actions	x	x	x	x	x
h.	Conclusions	x	x	x	x	

NOTES

1. Environmental Site Assessment - John C. Tombarello & Sons, Inc. Property, prepared by W.Z Baumgartner & Associates, Inc., dated August 1998.
2. IRA Plan: Immediate Response Action Plan prepared by Higgins Environmental Associates, Inc., dated 21 April 1999
3. Modified IRA Plan: Modified Immediate Response Action Plan prepared by Higgins Environmental Associates, Inc., dated 1 June 1999.
4. IRA Status Report: Immediate Response Action Status Report prepared by Higgins Environmental Associates, Inc., dated 28 July 1999.

TABLE II
ANALYTICAL DATA RANGES USED IN NUMERICAL RANKING
PHASE I REQUIREMENAS/TIER CLASSIFICATION
LAWRENCE, MASSACHUSETTS

O&HM Released	Minimum Detected Concentration in Soil (ug/g)	Maximum Detected Concentration in Soil (ug/g)	Minimum Detected Concentration in Groundwater (ug/l)	Maximum Detected Concentration in Groundwater (ug/l)
VOLATILE ORGANIC COMPOUNDS				
1,1,1-Trichloroethane	ND	0.25	ND	3.9
1,1-Dichloroethane	ND	ND	ND	16.7
1,2,4-Trimethylbenzene	ND	0.045	ND	3.3
1,3,5-Trimethylbenzene	ND	0.035	ND	2
Benzene	ND	0.13	ND	3.4
cis-1,2-Dichloroethene	ND	ND	ND	2.4
Dichlorodifluoromethane	ND	ND	ND	17
Ethylbenzene	ND	0.28	ND	2.7
Methyl-tert-butylether	ND	0.48	ND	5
Naphthalene	ND	3.4	ND	4.1
Tetrachloroethene	ND	0.3	ND	2.6
Toluene	ND	0.85	ND	3
Trichloroethene	ND	ND	ND	4.4
Trichlorofluoromethane	ND	2.7	ND	ND
Xylenes, m- & p-	ND	1.4	ND	5.7
Xylenes, o-	ND	0.77	ND	5.7
METALS				
Arsenic	ND	17.9	ND	143(ND)
Barium	ND	552	ND	996 (70)
Cadmium	ND	8.21	1	3.6(ND)
Chromium	ND	64	ND	477(ND)
Lead	ND	4,170	ND	1,560*(6)
Mercury	ND	712	ND	0.64(ND)
Selenium	ND	0.32	ND	9(ND)
Silver	ND	20.8	ND	ND(ND)
TPH	ND	9,090	NA	NA
EPH				
Acenaphthene	ND	7.8	ND	ND
Anthracene	ND	36	ND	ND
Benzo(a)anthracene	ND	72	ND	ND
Benzo(a)pyrene	ND	44	ND	ND
Benzo(b)fluoranthene	ND	61	ND	ND
Benzo(g,h,i)perylene	ND	69	ND	ND
Benzo(k)fluoranthene	ND	53	ND	ND
Bis(2-ethylhexyl)phthalate	ND	15.8	ND	ND
Butylbenzylphthalate	ND	0.372	ND	ND
C11-C22 Aromatics	ND	620	ND	ND
C19-C36 Aliphatics	ND	23,800	ND	ND
C9-C18 Aliphatics	ND	2,400	ND	ND
Carbazole	ND	16	ND	ND
Chrysene	ND	84	ND	ND
Dibenzofuran	ND	14	ND	ND
Fluoranthene	ND	120	ND	ND
Fluorene	ND	25.8	ND	ND
Indeno(1,2,3-cd)pyrene	ND	52	ND	ND
Naphthalene	ND	5.43	ND	ND
Phenanthrene	ND	143	ND	ND
Pyrene	ND	141	ND	ND
VPH				
C5-C8 Aliphatics	ND	0.51	NA	NA
C9-C10 Aromatics	ND	8.1	NA	NA
C9-C12 Aliphatics	ND	2.7	NA	NA
POLYCHLORINATED BIPHENYLS				
PCB-1260	ND	92	ND	ND

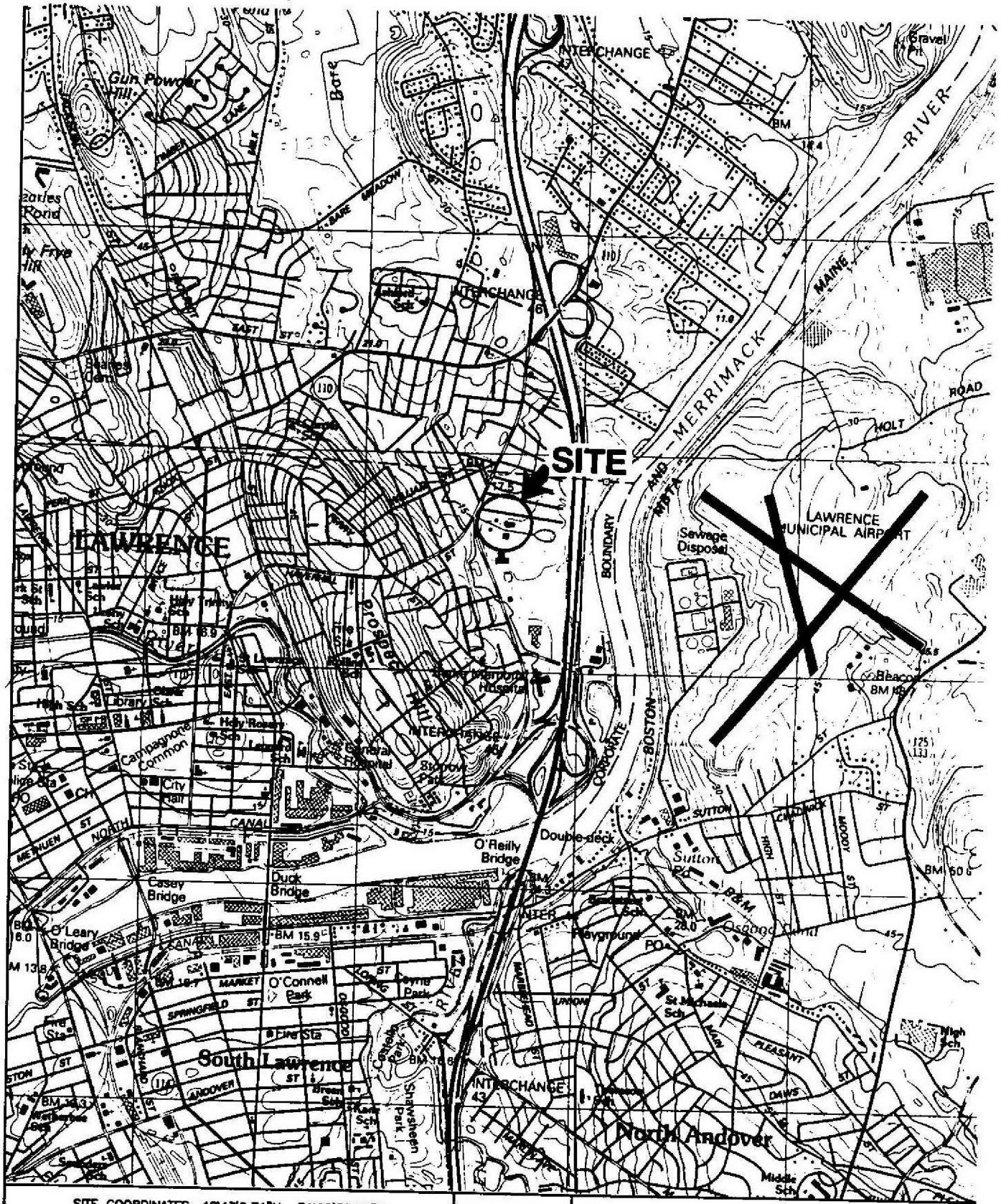
Notes:

* Value is representative of the total lead and not the dissolved lead in the groundwater. Dissolved lead was below detection limit. Number in parentheses is maximum dissolved metal concentration.

1. ND Non-Detect. Other samples were analyzed for these compounds, but the lowest detection limit may vary for each sample.
2. NA Not Available These compounds may have been analyzed, but the data is not available for this report.
3. Compounds listed are those that have detectable values.
4. Results from replacement wells, MW-2A and MW-3A, as described in August 1998 ESA report, were used as being more representative than wells MW-2 and MW-3.

APPENDIX A

Massachusetts GIS Map/Project Locus and Site Plan



SITE COORDINATES: 42°43'9.71"N 71°08'30.58"W

U.S.G.S. QUADRANGLE: LAWRENCE, MA

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

PHASE I REQUIREMENTS/TIER CLASSIFICATION
207 MARSTON ST
LAWRENCE, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1:25,000

APRIL 2000

12671-040 A01

FIGURE 1

MA DEP - Bureau of Waste Site Cleanup

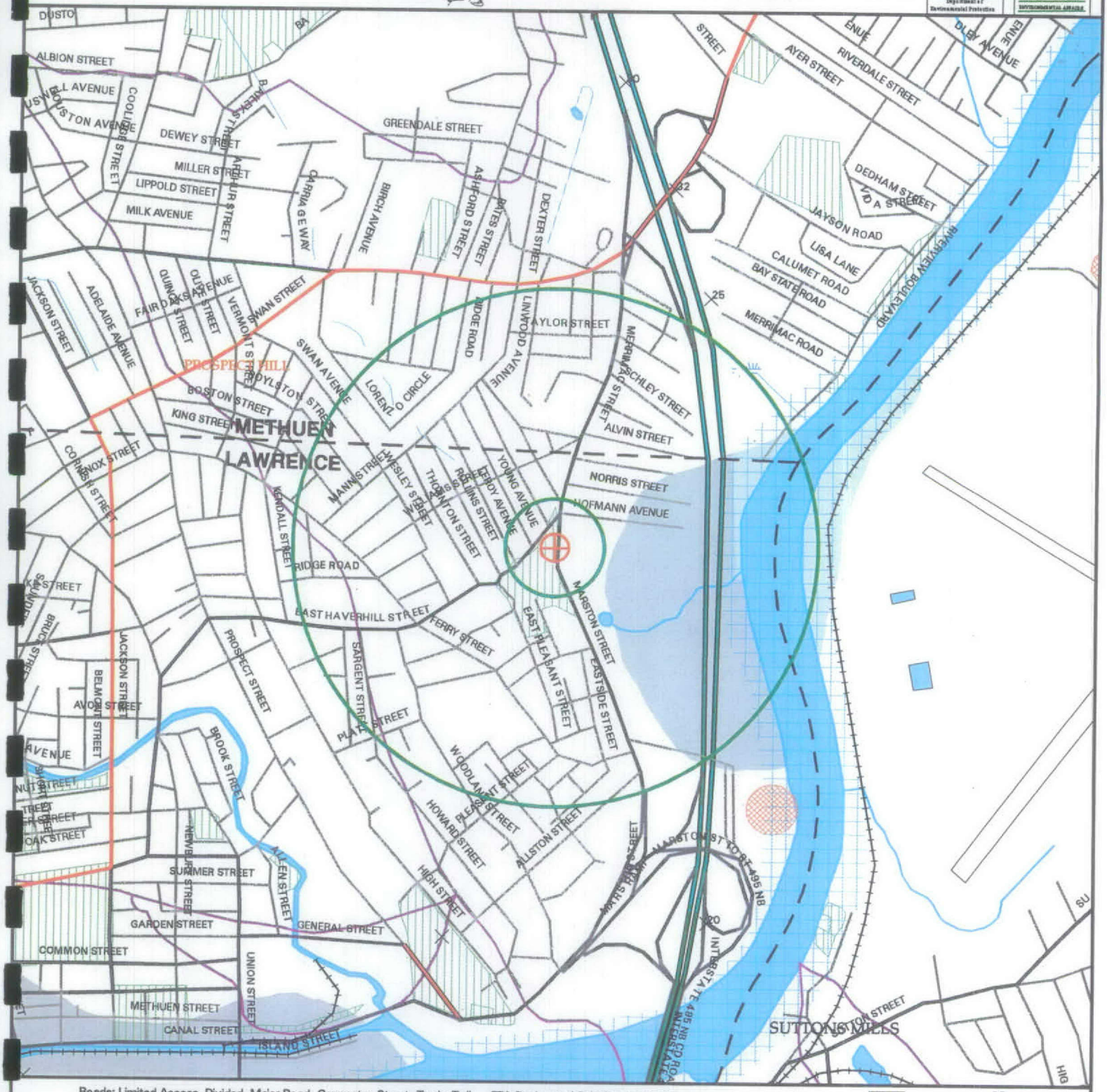
Site Scoring Map: 500 feet & 0.5 Mile Radii

SITE NAME:
Tombarello & Sons
207 Marston Street
Lawrence, MA 01841-1599
4731642n 324521ew

The information shown on this map is the best available at the date of printing. Please refer to the data source descriptions document.

MASS GIS — Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 2000

DEP — Department of Environmental Protection



Roads: Limited Access, Divided, Major Road, Connector, Street, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dams
Potentially Productive Aquifers: Medium,High Yield
Non-Potential Drinking Water Source Area: Medium,High Yield

EPA Designated Sole Source Aquifer
Public Water Supplies: Ground,Surface,Non Community
Approved Zone2; IWPA; Surface Water Supply Zone A
Hydrography: Water Feetures,Public Surface Water Supply
Wetlands: Fresh,Salt,NHESP Wetlands Habitat
Protected Open Space; ACEC
DEP Permitted Solid Waste Facilities; Certified Vernal Pools

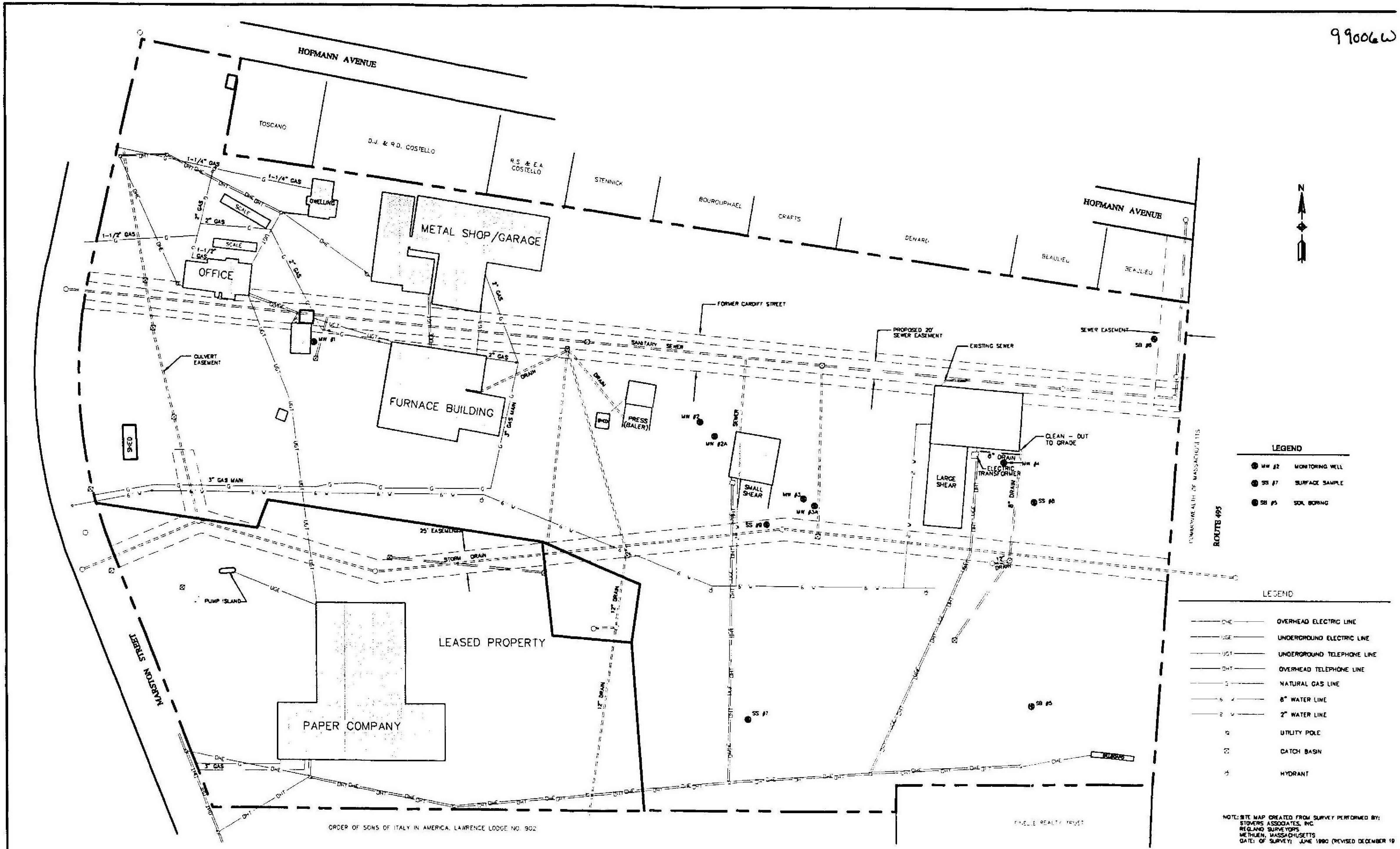
N
W
E
S

SCALE 1:15000

0 1/2 MILES
0 1/2 KILOMETERS

March 28, 2000

99006W



NO.	REVISIONS	DATE	ENGR

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

W.Z. BAUMGARTNER & ASSOCIATES, INC.
ENVIRONMENTAL ENGINEERS & CONSULTANTS

310 WILLIAMSON SQUARE
P.O. BOX 680369 (37068-0369)
FRANKLIN, TENNESSEE 37064
615-595-0026

SEAL:

DRAWN BY:	RLW/CLG
CHECKED BY:	JC
ENGINEER	WZB
DATE:	8/10/98

JOHN C. TOMBARELLO PROPERTY
FACILITY MAP WITH SAMPLING POINTS

AMERICAN RECYCLING
LAWRENCE, MASSACHUSETTS

SCALE:	1"=60'
PROJECT NO.:	98091
SHEET NO.:	2

APPENDIX B

BWSC 107/Numerical Ranking System Scoresheet

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC-107A

TIER CLASSIFICATION, TIER II EXTENSION & TIER II TRANSFER TRANSMITTAL FORM

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking Number: 3 - 18126

A. DISPOSAL SITE LOCATION:

Disposal Site Name: J. Tombarello & Sons, Inc.

Street: 207 Marston Street Location Aid: Hofmann Avenue

City/Town: lawrence ZIP Code: 01843-0000

Related Release Tracking Numbers That This Submittal Will Address: _____

B. THIS FORM IS BEING USED TO: (check all that apply)

- ☐ Submit a new or revised **Tier Classification Submittal for a Tier I Site**, including a Numerical Ranking Scoresheet (complete Sections A, B, C, I, J, K and L).
- ☑ Submit a new or revised **Tier Classification Submittal for a Tier II Site**, including a Numerical Ranking Scoresheet (complete Sections A, B, C, F, G, I, J, K and L).
- ☐ Submit a **Notice that an additional Release Tracking Number(s) is (are) being linked to this Tier Classified Site** and rescoring is not required at this time (complete Sections A, B, J, K and L). If this submittal is for a Tier I Site, you must also submit a Minor Permit Modification Transmittal Form (BWSC-109).

  List Additional Release Tracking Number(s): _____
- ☑ Submit a **Phase I Completion Statement supporting a Tier Classification Submittal** (complete Sections A, B, I, J, K and L).
- ☐ Submit a **Tier II Extension Submittal** for Response Actions at a Tier II Site (complete Sections A, B, D, F, G, I, J, K and L).
- ☐ Submit a **Tier II Extension Submittal for Response Actions taken after expiration of a Waiver,** pursuant to 310 CMR 40.0630(4) (complete Sections A, B, D, F, J, K and L, and also complete Sections G and I *or* Section H).*
- ☐ Submit a **Tier II Transfer Submittal** for a change in person(s) undertaking Response Actions at a Tier II Site (complete Sections A, B, E, F, G, I, J, K, L, M, N and O).
- ☐ Submit a **Tier II Transfer Submittal for a change in person(s) undertaking Response Actions at a Waiver Site,** pursuant to 310 CMR 40.0630(6) (complete Sections A, B, E, F, J, K, L, M, N and O, and also complete Sections G and I *or* Section H).*

You must attach all supporting documentation required for each use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

***NOTE: The Waiver expires on the effective date of this submittal and all further Response Actions must be taken as a Tier II Site.**

C. TIER CLASSIFICATION SUBMITTAL:

Numerical Ranking Score for Disposal Site: (from Numerical Ranking Scoresheet) 332

Proposed Tier Classification of Disposal Site: (check one) ☐ Tier IA ☐ Tier IB ☐ Tier IC ☑ Tier II

Check which, if any, of the Tier I inclusionary criteria are met by the Disposal Site, pursuant to 310 CMR 40.0520.

- ☐ Groundwater is located within an Interim Wellhead Protection Area or a Zone II, and there is evidence of groundwater contamination by an Oil or Hazardous Material at the time of Tier Classification at concentrations equal to or exceeding the applicable RCGW-1 Reportable Concentration set forth in 310 CMR 40.0360.
- ☐ An Imminent Hazard is present at the time of Tier Classification.

☐ Check here if this Tier Classification revises a previous submittal for this Disposal Site. You must include a revised Numerical Ranking Scoresheet with this submittal. If a Tier I Permit has been issued, you may also need to submit a Major Permit Modification Application (BWSC 10).

If incorporating additional Release(s) into the Disposal Site, list Release Tracking Number(s): _____

D. TIER II EXTENSION SUBMITTAL REQUIREMENTS:

State the expiration date of the Tier II Classification or Waiver for the Disposal Site, whichever is applicable: _____

Attach a statement summarizing why a Permanent or Temporary Solution has not been achieved at the Disposal Site.
A Tier II Extension is effective for a period of one year beyond the current expiration date of the Tier II Classification or Waiver.

E. TIER II TRANSFER SUBMITTAL REQUIREMENTS:

State the proposed effective date of the change in person(s) undertaking Response Actions at the Disposal Site: _____

Attach a statement summarizing the reasons for the proposed change in person(s) undertaking the Response Actions.
All Response Actions must be completed by the deadline applicable to the person who first filed either a Tier Classification Submittal for the Disposal Site or received a Waiver of Approvals.

TIER CLASSIFICATION, TIER II EXTENSION & TIER II TRANSFER TRANSMITTAL FORM

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking Number: 3 18126

F. DISPOSAL SITE COMPLIANCE HISTORY SUMMARY:

- If providing either a **Tier Classification Submittal for a Tier II Site** or a **Tier II Extension Submittal for a Waiver Site**, the person named in **Section J** must provide a Compliance History.
- If providing a **Tier II Extension Submittal for a Tier II Site**, the person named in **Section J** must **update** their Compliance History since the effective date of the Tier II Classification.
- If providing a **Tier II Transfer Submittal for a Tier II or Waiver Site**, the person named in **Section M** must provide a Compliance History.

Compliance History for (provide only one name per History): American Recycling of Mass

☐ Check here if there has been no change to the Compliance History of the person named above (Extension Submittal for a Tier II Site ONLY).

List all permits or licenses that have been issued by the Department that are relevant to this Disposal Site:

PROGRAM:	PERMIT NUMBER:	PERMIT CATEGORY:	FACILITY ID:
Air Quality		n/a	
Hazardous Waste (M.G.L. c. 21C)		n/a	
Solid Waste		n/a	
Industrial Wastewater Management		n/a	
Water Supply		n/a	
Water Pollution Control/Surface Water		see attached	
Water Pollution Control/Groundwater		n/a	
Water Pollution Control/Sewer Connection		see attached	
Wetland & Waterways		n/a	

List all other Federal, state or local permits, licenses, certifications, registrations, variances, or approvals that are relevant to this Disposal Site:

ISSUING AUTHORITY OR PROGRAM, OR DOCUMENTATION TYPE:	IDENTIFICATION NUMBER:	DATE ISSUED:
Office of State Fire Marshal	99 AC 11	07/26/99
Commonwealth of Massachusetts	1899	07/08/99

If needed, attach to this Transmittal Form a statement further describing the Compliance History of this Disposal Site. This statement must describe the compliance history of the person named above with the following:

(1) DEP regulations; and
(2) other laws for the protection of health, safety, public welfare and the environment administered or enforced by any other government agency.

Such a statement should identify information such as:

(1) actions relevant to the Disposal Site taken by the Department to enforce its requirements including, but not limited to, a Notice of Noncompliance (NON), Notice of Intent to Assess Civil Administrative Penalty (PAN), Notice of Intent to Take Response Action (NORA), and an administrative enforcement order;
(2) administrative consent orders;
(3) judicial consent judgements;
(4) similar administrative actions taken by other Federal, state or local agencies;
(5) civil or criminal actions relevant to the Disposal Site brought on behalf of the DEP or other Federal, state, or local agencies; and
(6) any additional relevant information.

For each action identified, provide the following information:

(1) name of the issuing authority, type of action, identification number and date issued;
(2) description of noncompliance cited;
(3) current status of the matter; and
(4) final disposition, if any.

TIER CLASSIFICATION, TIER II EXTENSION & TIER II TRANSFER TRANSMITTAL FORM

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking Number: 3 18126

G. CERTIFICATION OF ABILITY AND WILLINGNESS:

> If providing either a **Tier II Classification Submittal** or a **Tier II Extension Submittal**, the person who signs this certification **MUST** be the person named in **Section J**, or that person's agent.
> If providing a **Tier II Transfer Submittal**, the person who signs this certification **MUST** be the person named in **Section M**, or that person's agent.

I attest under the pains and penalties of perjury that (i) I/the person(s) or entity(ies) on whose behalf this submittal is made has/have personally examined and am/is familiar with the requirements of M.G.L. c. 21E and 310 CMR 40.0000; (ii) based upon my inquiry of the/those Licensed Site Professional(s) employed or engaged to render Professional Services for the disposal site which is the subject of this Transmittal Form and of the person(s) or entity(ies) on whose behalf this submittal is made, and my/that person's(s') or entity's(ies') understanding as to the estimated costs of necessary response actions, that/those person(s) or entity(ies) has/have the technical, financial and legal ability to proceed with response actions for such site in accordance with M.G.L. c. 21E, 310 CMR 40.0000 and other applicable requirements; and (iii) that I am fully authorized to make this attestation on behalf of the person(s) or entity(ies) legally responsible for this submittal. I/the person(s) or entity(ies) on whose behalf this submittal is made is aware of the requirements in 310 CMR 40.0172 for notifying the Department in the event that I/the person(s) or entity(ies) on whose behalf this submittal is made learn(s) that it/they is/are unable to proceed with the necessary response actions.

By: _____ Title: Vice President
(signature)

For: American Recycling, Inc. Date: 4/15/00
(print name of person or entity recorded in Section J or M, as appropriate)

If you are submitting either a Tier II Extension Submittal for a Waiver Site or a Tier II Transfer Submittal for a Waiver Site, you may choose to sign the alternative Ability and Willingness Certification found in Section H in place of providing the certification in Section G and the LSP Opinion in Section I.

H. ALTERNATIVE CERTIFICATION OF ABILITY AND WILLINGNESS:

> If providing a **Tier II Extension Submittal for a Waiver Site**, the person who signs this certification **MUST** be the person named in **Section J**, or that person's agent
> If providing a **Tier II Transfer Submittal for a Waiver Site**, the person who signs this certification **MUST** be the person named in **Section M**, or that person's agent.

I attest under the pains and penalties of perjury that (i) I/the person(s) or entity(ies) on whose behalf this submittal is made has/have personally examined and am/is familiar with the requirements of M.G.L. c. 21E and 310 CMR 40.0000; (ii) based upon my inquiry of the Consultant-of-Record for the disposal site which is the subject of this Transmittal Form and of the person(s) or entity(ies) on whose behalf this submittal is made, and my/that person's(s') or entity's(ies') understanding as to the estimated costs of necessary response actions, that/those person(s) or entity(ies) has/have the technical, financial and legal ability to proceed with response actions for such site in accordance with M.G.L. c. 21E, 310 CMR 40.0000 and other applicable requirements; and (iii) that I am fully authorized to make this attestation on behalf of the person(s) or entity(ies) legally responsible for this submittal. I/the person(s) or entity(ies) on whose behalf this submittal is made is aware of the requirements in 310 CMR 40.0172 for notifying the Department in the event that I/the person(s) or entity(ies) on whose behalf this submittal is made learn(s) that it/they is/are unable to proceed with the necessary response actions.

By: _____ Title: _____
(signature)

For: _____ Date: _____
(print name of person or entity recorded in Section J or M, as appropriate)

I. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

> *if Section B of this form indicates that a **Tier I or Tier II Classification Submittal** which relies upon a previously submitted Phase I Completion Statement is being submitted*, this Tier Classification Submittal has been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> *if Section B of this form indicates that a **Phase I Completion Statement** or a **Tier I or Tier II Classification Submittal** which does not rely upon a previously submitted Phase I Completion Statement is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

SECTION I IS CONTINUED ON THE NEXT PAGE

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC-107A

TIER CLASSIFICATION, TIER II EXTENSION & TIER II TRANSFER TRANSMITTAL FORM

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking Number: 3 - 18126

I. LSP OPINION: (continued)

> *if Section B of this form indicates that a **Tier II Extension Submittal** or a **Tier II Transfer Submittal** is being submitted,* the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

☑ Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

LSP Name: Elliot I. Steinberg LSP #: 9663 Stamp:

Telephone: 617-886-7454 Ext.:

FAX: (optional) 617-886-7754

Signature:

Date: 5 April 2000

COMMONWEALTH OF MASSACHUSETTS
ELLIOT I. STEINBERG
No. 9663
REGISTERED LICENSED SITE PROFESSIONAL

J. PERSON MAKING SUBMITTAL: (For Transfer Submittals describe person currently undertaking response actions, not transferee)

Name of Organization: American Recycling, Inc.

Name of Contact: Peter Prinz Title: Vice President

Street: P.O. Box 76488

City/Town: Highland Heights State: KY ZIP Code: 41706-0000

Telephone: 606-572-0199 Ext.: FAX: (optional)

K. RELATIONSHIP TO DISPOSAL SITE OF PERSON MAKING SUBMITTAL: (check one)

☑ RP or PRP Specify: ☑ Owner ○ Operator ○ Generator ○ Transporter Other RP or PRP:

☐ Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ Any Other Person Making Submittal Specify Relationship:

L. CERTIFICATION OF PERSON MAKING SUBMITTAL:

I, Peter Prinz, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the ~~person or entity~~ on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: Title: Vice President
(signature)

For: American Recycling, Inc. Date: 4/5/00
(print name of person or entity recorded in Section J)

Enter address of the person providing certification(s), including Ability and Willingness Certification where applicable, if different from address recorded in Section J:

Street:

City/Town: State: ZIP Code:

Telephone: Ext.: FAX: (optional)

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE, AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES.

Attachment to BWSC 107A
Section F

Response actions at the site have been subject to the following DEP issued notices:

- Request for Information (RFI) (RTN 3-16817), dated 2 December 1998. The RFI established an Interim Deadline of 22 January 1999 for providing information relative to environmental conditions on the property.

- Notice of Responsibility (NOR) & Interim Deadline (RTN 3-18126) dated 31 1999. The NOR established an Interim Deadline of 17 April 1999 for preparation of an IRA Plan to mitigate a potential Imminent Hazard. According to an IRA Status Report, dated July 1999, the potential Imminent Hazard has been mitigated.

GREATER LAWRENCE SANITARY DISTRICT

RICHARD S. HOGAN, EXECUTIVE DIRECTOR

LAWRENCE
[illegible]
[illegible]

METHUEN
[illegible]
[illegible]

ANDOVER
[illegible]

NORTH ANDOVER
[illegible]

SALEM, NH
[illegible]
[illegible]
[illegible]

June 17, 1998

Mr. John C. Tombarello
John C. Tombarello & Sons, Inc.
207 Marston Street
Lawrence, MA 01841

Re: Tombarello - Letter of June 8, 1998

Dear Mr. Tombarello

In reference to your letter of June 8, 1998; under current G.L.S.D. Rules and Regulations issuance of an Industrial Discharge Permit is not required and will not be necessary for your facility. As previously outlined, the containment and drainage conditions at the site must be maintained and the pretreatment inspectors of the District must be allowed access for future inspections. Compliance with these conditions will satisfy all District requirements. John C. Tombarello is hereby allowed to continue its current practice of area discharge to the District's north bank interceptor in compliance with the conditions stated in our May 4, 1998 letter to Mr. DiFruscio (attached).

No further documentation will be necessary at this time. Please feel free to contact this office if you have any comments or questions.

Sincerely,

GREATER LAWRENCE SANITARY DISTRICT

Richard S. Hogan

Richard S. Hogan, P.E.
Executive Director

[illegible] CHARLES STREET • NORTH ANDOVER, MASS 01845 [illegible] • TEL. 978-685-1612 FAX 978-[illegible]

The Commonwealth of Massachusetts
Department of Fire Services
Office of the State Fire Marshal
P.O. Box 1025, State Road, Stow, MA 01775

Form FP 6 Rev. 1997

PERMIT

LAWRENCE, MASS. (City or Town) Permit No. 99AC 11 (If Applicable) Date: JULY 26 19 99

In Accordance with the provisions of M.G.L. Chapter 148 as provided in _____

This Permit is granted to: AMERICAN RECYCLING OF MASS. INC. (Full name of person, Firm or Corporation)

for STORAGE AND USE OF ACETELENE TANKS FOR TORCH CUTTING.

DIG SAFE NUMBER M.G.L. C. 82, S. 40

Start Date _____

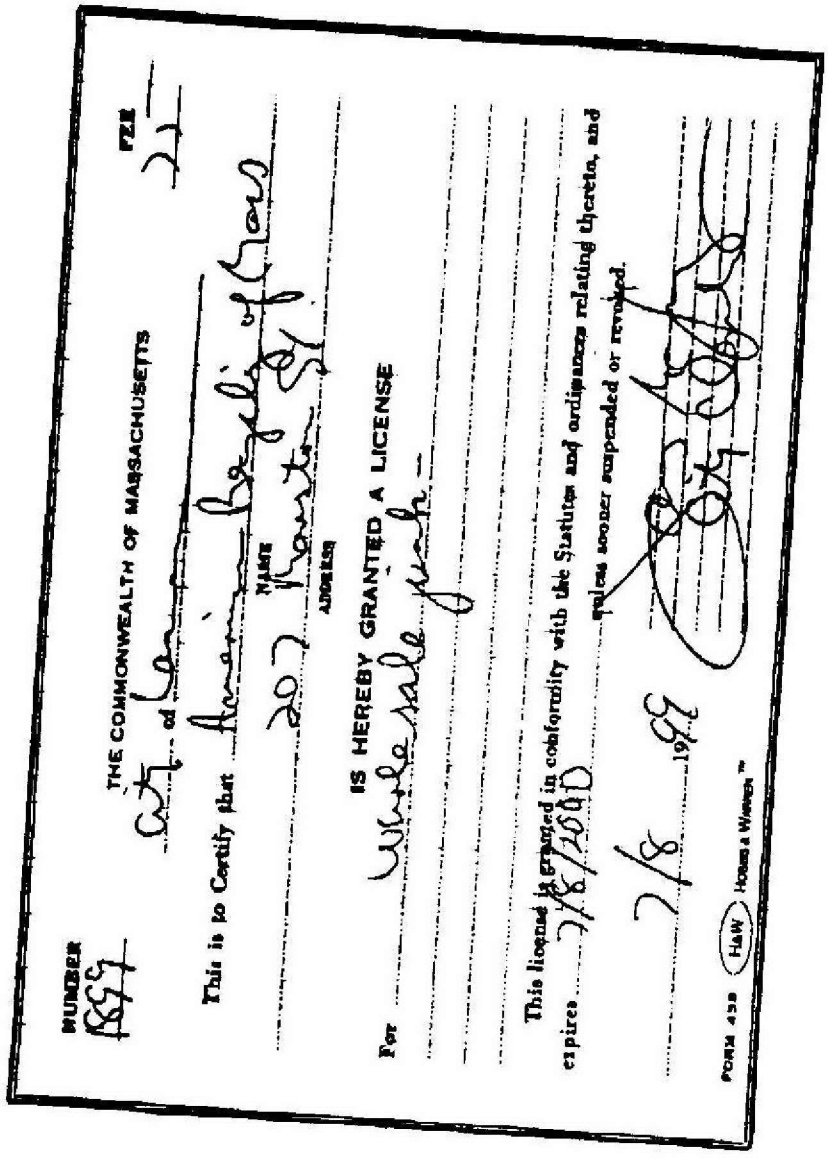
Restrictions: APPLICANT IS REQUIRED TO MEET ALL SAFTEY REQUIREMENTS.

at _____
(Give location by street and no., or describe in such manner as to provide adequate identification of location)

Fee Paid $: 25.00

This Permit will expire JULY 26 2000 _____ Inspector
(Signature of official granting permit) (Title)

THIS PERMIT MUST BE CONSPICUOUSLY POSTED UPON THE PREMISES



NUMBER 857

THE COMMONWEALTH OF MASSACHUSETTS

City of Lawrence FEE 25

This is to Certify that American Recycling of Mass

NAME

207 Hampton St

ADDRESS

IS HEREBY GRANTED A LICENSE

For Wholesale junk

This license is granted in conformity with the Statutes and ordinances relating thereto, and expires 7/8/2000 unless sooner suspended or revoked.

7/8 1999

FORM 430 H&W Holbrook & Warren™

UNDERGROUND
ENGINEERING &
ENVIRONMENTAL
SOLUTIONS

Haley & Aldrich, Inc.
465 Medford Street
Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.HaleyAldrich.com

HALEY & ALDRICH

6 April 2000
File No. 12671-040

City of Lawrence
Mayor' Office
200 Common Street
Lawrence, Massachusetts 01840-1517

Attention: Ms. Patricia A. Dowling

Subject: Legal Notice
Pursuant to MCP 40.1403(6)(b)
207 Marston Street
Lawrence, Massachusetts
RTN: 3-18126

Dear Ms. Dowling:

Pursuant to the Massachusetts Contingency Plan (MCP) 40.1403(6)(b), Haley & Aldrich, Inc. is submitting the attached legal notice to the City of Lawrence Mayor's Office on behalf of American Recycling, Inc.. The notice will be published in the *Boston Globe* on 12 April 2000. If there are any questions or comments, please do not hesitate to call or write.

Sincerely yours,
HALEY & ALDRICH, INC.

Stewart A. Wiley
Senior Engineer

Enclosure

F:\12671\040\CITYNOT.DOC

OFFICES
Charles Town
West Virginia
Cleveland
Ohio
Denver
Colorado
Detroit
Michigan
Hartford
Connecticut
Los Angeles
California
Manchester
New Hampshire
Newark
New Jersey
Portland
Maine
Rochester
New York
San Diego
California
San Francisco
California
Washington
District of Columbia

UNDERGROUND
ENGINEERING &
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Suite 2200
Boston, MA 02129-1400
Tel: 617.886.7400
Fax: 617.886.7600
www.HaleyAldrich.com

HALEY & ALDRICH

6 April 2000
File No. 12671-040

City of Lawrence
Inspection Services
Health and Food Division
200 Common Street
Lawrence, Massachusetts 01840-1517

Attention: Health Agent

Subject: Legal Notice
Pursuant to MCP 40.1403(6)(b)
207 Marston Street
Lawrence, Massachusetts
RTN: 3-18126

Pursuant to the Massachusetts Contingency Plan (MCP) 40.1403(6)(b), Haley & Aldrich, Inc. is submitting the attached legal notice to the City of Lawrence Health and Food Division on behalf of American Recycling, Inc.. The notice will be published in the *Boston Globe* on 12 April 2000. If there are any questions or comments, please do not hesitate to call or write.

Sincerely yours,
HALEY & ALDRICH, INC.

Stewart A. Wiley
Senior Engineer

Enclosure

\\BOS\DATA\PROJECTS\12671\040\BDHLTH.DOC

OFFICES
Charles Town
West Virginia
Cleveland
Ohio
Denver
Colorado
Detroit
Michigan
Hartford
Connecticut
Los Angeles
California
Manchester
New Hampshire
Newark
New Jersey
Portland
Maine
Rochester
New York
San Diego
California
San Francisco
California
Washington
District of Columbia

NOTICE OF AN INITIAL SITE INVESTIGATION AND TIER II CLASSIFICATION

207 MARSTON STREET
RELEASE TRACKING NUMBER 3-18126

Pursuant to the Massachusetts Contingency Plan (310 CMR 40.0480), an Initial Site Investigation has been performed at the above referenced location. A release of oil and/or hazardous materials had occurred at this location which is a disposal site (defined by M.G.L. c. 21E, Section 2). This site has been classified as **Tier II**, pursuant to 310 CMR 40.0500. Response actions at this site will be conducted by **AMERICAN RECYCLING, INC.** who has employed **ELLIOT I. STEINBERG** to manage response actions in accordance with the Massachusetts Contingency Plan (310 CMR 40.0000).

M.G.L. c. 21E and the Massachusetts Contingency Plan provide additional opportunities for public notice of and involvement in decisions regarding response actions at disposal sites: 1) The Chief Municipal Official and Board of Health of the community in which the disposal site is located will be notified of major milestones and events, pursuant to 310 CMR 40.1403; and 2) Upon receipt of a petition from ten or more residents of the municipality in which the disposal site is located, or of a municipality potentially affected by a disposal site, a plan for involving the public in decisions regarding response actions at the site will be prepared and implemented, pursuant to 310 CMR 40.1405.

To obtain more information on this disposal site and the opportunities for public involvement during its remediation, please contact **MR. PETER PRINZ, VICE PRESIDENT, AMERICAN RECYCLING, INC., 207 MARSTON STREET, LAWRENCE, MASSACHUSETTS 01841** at **978-682-5226.**

f:\00100\notices\frm06ii.doc

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Waste Site Cleanup

NUMERICAL RANKING SYSTEM SCORESHEET
(310 CMR 40.1511)

CLASSIFICATION SUBMITTAL	
Initial Submittal	Re-Classification
☒	☐

DISPOSAL SITE SCORE					
II	III	IV	V	VI	TOTAL
185	107	20	20	0	332

Disposal Site Tier Classification	I			II
Permit Category (Tier I Only)	A	B	C	

****

I. DISPOSAL SITE INFORMATION

DEP Release Tracking Number(s)	3-18126
DEP Disposal Site Number(s)	

UTM Coordinates	N: 71° 08' 35"
	E: 42° 43' 09"

Disposal Site Name	J. Tombarello & Sons, Inc.
Disposal Site Address	207 Marston Street
	City: Lawrence Zip:01841

Is the Disposal Site classified Tier I because it is located within the boundaries of a Zone II or Interim Wellhead Protection Area and groundwater concentrations equal or exceed RCGW-1 at the time of Tier Classification pursuant to 310 CMR 40.0520(2)(a)1.?	Yes ☐	No ☒
Is the Disposal Site classified Tier I because an Imminent Hazard is present at the time of Tier Classification pursuant to 310 CMR 40.0520(2)(a)2.?	Yes ☐	No ☒

I attest under the pains and penalties of perjury that I have personally completed this Numerical Ranking System Scoresheet, and have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this submittal, and in my professional opinion and judgment based upon: (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief, this Scoresheet was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000. I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

Licensed Site Professional Signature

9663
LSP Registration Number

5 April 2000
Date

ELLIOT I. STEINBERG
LSP Name (Printed)

Haley & Aldrich, Inc.
Company Name

617-886-7454
Telephone Number

American Recycling, Inc.
Responsible Party, Potentially Responsible Party, or Other Person who will provide certification in accordance with 310 CMR 40.0009.

COMMONWEALTH OF MASSACHUSETTS
ELLIOT
I.
STEINBERG
No. 9663
REGISTERED
LICENSED SITE PROFESSIONAL

II. EXPOSURE PATHWAYS

II. EXPOSURE PATHWAYS *Score according to 40.1512 - Exposure Pathway Designation Criteria*				
MEDIA	*DESIGNATION*			
	NONE *or* NOT APPLICABLE	EVIDENCE OF CONTAMINATION	POTENTIAL EXPOSURE PATHWAY	LIKELY OR CONFIRMED EXPOSURE PATHWAY
A. SOIL (Includes Sediment)	0	15	(100)	150
B. GROUNDWATER	0	(20)	100	150
C. SURFACE WATER (Includes Wetlands)	(0)	20	100	150
D. AIR	0	(15)	100	200

Note: Score only the highest value for each media, i.e., score None or Not Applicable *or* Evidence of Contamination *or* Potential Exposure Pathway *or* Likely or Confirmed Exposure Pathway.

II. (A - D)	*Summary Rationale for Section II A - D Values and Phase I Report References*
A.	OHM has been identified in soil at concentrations exceeding applicable RCs and staining is visible in certain locations on the soil's surface at the site. The property is surrounded by a fence, and infrared sensors are used to restrict access.
B.	OHM has been identified in groundwater at concentrations exceeding the applicable RCs; however, there are no exposure pathways.
C.	OHM has likely not attributed to contamination of any surface water since the closest body of water is approximately 2000 ft. away and the types and degree of contamination at the site are unlikely to migrate significantly.
D.	OHM has not been identified in air. It is not anticipated to be identified in air due to the low volatility of the compounds. However, the OHM is visible in certain locations on the soil's surface and there is a potential for the OHM to transfer into the air.

II.E. OHM SOURCES			
Number of OHM Sources: Refuse metal recycling facility	1 0	2 25	≥ 3 (50)

SECTION II SCORE (A. + B. + C. + D. + E.)					
A.	B.	C.	D.	E.	TOTAL: (15 - 700)
100	20	0	15	50	185

Check here if Section VI has been used to amend the score for this Section of the NRS. ☐

III. DISPOSAL SITE CHARACTERISTICS

III.A. OHM TOXICITY SCORE

Highest OHM Toxicity Score
From Table III.A. or Worksheet III.A.1. on Following Pages.

OHM Scored: Lead Concentration and Media: 4,170 µg/g in soil	Toxicity Score (1 - 80) 40

III.B. MULTIPLE OHMs

More Than One OHM With an OHM Toxicity Score of ≥ 30	No 0	Yes (30)

III.C. OHM MOBILITY and PERSISTENCE

Score according to 40.1514 – OHM Mobility and Persistence

OHM Scored: Lead: 4,170 µg/g in soil	Score (0 - 50) 25

III.D. DISPOSAL SITE HYDROGEOLOGY

Score according to 40.1515 - Soil Permeability

DEPTH TO GROUNDWATER (in feet)	SOIL PERMEABILITY		
	Low	Medium	High
> 25	2	4	8
10.1 - 25	4	8	12
5.1 - 10	8	(12)	16
0 - 5	12	16	20

SECTION III SCORE (A + B + C + D)

A.	B.	C.	D.	TOTAL: (3 - 180)
40	30	25	12	107

Check here if Section VI has been used to amend the score for this Section of the NRS. ☐

40.1511: continued

Table III.A.	OHM TOXICITY SCORE						
OHM	*CONCENTRATION* (soil/sediment: µg/g; surface/groundwater µg/l)						
	≤ 99	100 - 999	1,000 - 9,999	10,000 - 100,000	> 100,000 NAPL < 0.5"	NAPL 0.5" - 12"	NAPL > 12"
Aliphatics C5-C8	5	15	25	35	45	55	65
C9-C12	1	10	20	30	40	50	60
C9-C18	1	10	20	30	40	50	60
C19-C36	1	10	20	30	40	50	60
Arsenic	20	30	40	50	60		
Aromatics C9-C10	5	15	25	35	45	55	65
C11-C22	5	15	25	35	45	55	65
Benzene	15	25	35	45	55	65	75
Bis(2-ethylhexyl)phthalate	10	20	30	40	50	60	70
Cadmium	20	30	40	50	60		
Carbon Tetrachloride	20	30	40	50	60	70	80
Chlorobenzene	5	15	25	35	45	55	65
Chromium III	1	10	20	30	40		
Chromium VI	10	20	30	40	50		
Coal Tar	10	20	30	40	50	60	70
Cyanide	5	15	25	35	45		
1,1 Dichloroethane	10	20	30	40	50	60	70
1,2 Dichloroethane	10	20	30	40	50	60	70
Ethylbenzene	5	15	25	35	45	55	65
Ethylene Dibromide	20	30	40	50	60	70	80
#2 Fuel Oil (virgin product)	5	15	25	35	45	55	65
Gasoline (virgin product)	10	20	30	40	50	60	70
Lead	20	30	40	50	60		
Mercury	20	30	40	50	60	70	80
Methylene Chloride	10	20	30	40	50	60	70
Methyl Ethyl Ketone	1	10	20	30	40	50	60
Methyl *Tert* Butyl Ether	5	15	25	35	45	55	65
Nickel	5	15	25	35	45		

40.1511: continued

Table III.A. - continued

OHM	OHM TOXICITY SCORE CONCENTRATION (soil/sediment µg/g, surface/groundwater µg/l)						
	≤ 99	100 - 999	1,000 - 9,999	10,000 - 100,000	> 100,000 NAPL < 0.5"	NAPL 0.5" - 12"	NAPL > 12"
Phenol	1	10	20	30	40	50	60
PAHs	10	20	30	40	50	60	70
PCBs	20	30	40	50	60	70	80
Tetrachloroethylene	10	20	30	40	50	60	70
Toluene	1	10	20	30	40	50	60
1,1,1 Trichloroethane	5	15	25	35	45	55	65
Trichloroethylene	15	25	35	45	55	65	75
Vinyl Chloride	15	25	35	45	55	65	75
Xylenes	1	10	20	30	40	50	60
Zinc	1	10	20	30	40		

Use Worksheet III.A.1. to determine the OHM Toxicity Score for OHM not listed in Table III.A.
See 40.1513 for Human Health-Based Toxicity Values for each OHM.

Worksheet III.A.1 **OHM TOXICITY SCORE**

HUMAN HEALTH-BASED TOXICITY VALUE	*CONCENTRATION* Use µg/g for Soil and µg/l for Surface Water and Groundwater						
	≤ 99	100 - 999	1,000 - 9,999	10,000 - 100,000	> 100,000 NAPL < 0.5"	NAPL 0.5" - 12"	NAPL > 12"
< 5	1	10	20	30	40	50	60
5 - 19	5	15	25	35	45	55	65
20 - 29	10	20	30	40	50	60	70
30 - 39	15	25	35	45	55	65	75
40 - 50	20	30	40	50	60	70	80

III.A.1. *OHM and Concentrations Used in Section III.A.1.*

OHM	Human Health-Based Toxicity Value	Concentration (Soil - µg/g)	Concentration (Water - µg/l)	**OHM Toxicity Score**
1,2,4-Trimethylbenzene (PAHs)		0.045		10
1,3,5-Trimethylbenzene (PAHs)		0.035		10
Acenaphthene	8	7.8		5
Anthracene	4	36		1
Barium	8	552		15
Benzo(a)pyrene	44	44		20
Benzo(b)fluoranthene	28	61		10
Benzo(g,h,i)perylene (PAHs)		69		10
Benzo(k)fluoranthene	28	53		10
Butlybenzylphthalate	20	0.372		10
Carbazole (PAHs)		16		10
Chrysene	28	84		10
Dibenzofuran	25	14		10
Fluoranthene	18	120		15
Fluorene	18	25.8		5
Indeno(1,2,3-cd)pyrene (PAHs)		52		10
Naphthalene	18	5.43		5
Phenanthrene	25	143		20

Pyrene	18	141		15
Selenium	25	0.32		10
Silver	25	20.8		10
Trichlorofluoromethane	4	2.7		1

III.C. *OHM and Concentrations Used in Section III.C.*

OHM	CONCENTRATION (Soil - µg/g)	OHM TOXICITY SCORE	**MOBILITY SCORE**
Arsenic	17.9	20	15
Benzo(a)pyrene	72	20	20
C9-C18 Aliphatics	2,400	20	20
C19-C36 Aromatics	23,800	30	20
Cadmium	8.21	20	15
Lead	4,170	40	25
Mercury	712	30	15
PCBs	92	20	20
Phenanthrene	143	20	15
TPH (#2 Fuel Oil)	9,090	25	10

40.1514(1) Users shall use the Mobility and Persistence Scores found in the following pages. If a OHM is not found in 310 CMR 40.1514(2) - Organic Compounds or 310 CMR 40.1514(3) - Metals, develop a Mobility and Persistence Score using 40.1514(4) - OHM Mobility and Persistence Factors.

40.1514(2) Mobility and Persistence Values and Scores: Organic OHMs

ORGANIC OHM	MOBILITY AND PERSISTENCE VALUES AND SCORES										
	Solubility (mg/l)		Vapor Pressure (mm Hg)		K_{ow}		Degradation Potential [A]		Specific Gravity (at 20°) [B]		TOTAL SCORE
	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	
Acenaphthene	3.4E+00 [2]	5	1.55E-03 [1(b)]	0	1.0E+04 [2]	5	N-P [8]	0	1.069 (95°/95°) [16]	10	20
Acetone	1.0E+06 [*]	10	2.70E+02 [1(f)]	10	5.8E-01 [1(f)]	10	N-P [15]	0	.791 [16]	0	30
Benzene	1.8E+03 [1(a)]	10	9.52E+01 [1(a)]	10	1.3E+02 [1(a)]	5	N-P [7]	0	.879 [16]	0	25
Benzo(a)pyrene	1.2E-03 [2]	0	5.60E-09 [1(a)]	0	1.2E+06 [2]	0	P [8,10]	10	1.35 (25°) [19]	10	20
Benzo(g,h,i)perylene	7.0E-04 [2]	0	1.03E-10 [1(a)]	0	3.2E+06 [2]	0	P [8,10]	10	NA	10	20
Benzoic Acid	2.7E+03 [2]	10	(0) [*]	0	7.4E+01 [2]	5	N-P [8]	0	1.316 (28°/4°) [16]	10	25
Bromodichloromethane	4.4E+03 [2]	10	1.5E+01	10	7.6E+01 [2]	5	P [7]	10	2.006 (15°/4°) [16]	10	45
Bromoform (Tribromomethane)	3.0E+03 [1(b)]	10	5.00E+00 [1(b)]	10	2.5E+02 [1(b)]	5	P [7]	10	2.903 (15°) [16]	10	45
Carbon Tetrachloride	7.6E+02 [1(a)]	5	9.00E+01 [1(a)]	10	4.4E+02 [1(a)]	5	P [7]	10	1.594 [16]	10	40
Chlorobenzene	4.7E+02 [1(a)]	5	1.17E+01 [1(a)]	10	6.9E+02 [1(a)]	5	N-P [7]	0	1.106 [16]	10	30
Chloroethane	5.7E+03 [2]	10	(34)	5	3.5E+01 [2]	5	N-P [12]	0	.903 [16]	0	20
Chloroform (Trichloromethane)	8.2E+03 [1(a)]	10	1.51E+02 [1(a)]	10	9.3E+01 [1(a)]	5	P [7]	10	1.49 (20°) [17]	10	45

ORGANIC OHM	MOBILITY AND PERSISTENCE VALUES AND SCORES										
	Solubility (mg/l)		Vapor Pressure (mm Hg)		K_{ow}		Degradation Potential [A]		Specific Gravity (at 20°) [B]		TOTAL SCORE
	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	
2-Chlorophenol	2.9E+04 [2]	10	(0.93)	0	1.5E+01 [2]	5	N-P [7]	0	1.241 (18.2°/15°) [16]	10	25
p-Dichlorobenzene(1,4)	7.9E+01 [2]	5	1.18E+00 [1(b)]	10	4.0E+03 [2]	5	P [7]	10	1.458 (21°) [16]	10	40
1,1-Dichloroethane	5.5E+03 [1(a)]	10	1.82E+02 [1(a)]	10	6.2E+01 [1(a)]	5	P [7]	10	1.176 [16]	10	45
1,2-Dichloroethane	8.5E+03 [1(a)]	10	6.40E+01 [1(a)]	10	3.0E+01 [1(a)]	5	P [7]	10	1.253 [16]	10	45
1,1-Dichloroethylene	2.3E+03 [1(a)]	10	6.00E+02 [1(a)]	10	6.9E+01 [1(a)]	5	P [7]	10	1.250 (15°) [16]	10	45
cis-1,2-Dichloroethylene	3.5E+03 [1(a)]	10	2.09E+02 [1(a)]	10	5.0E+00 [1(a)]	10	P [7]	10	1.27 (25°) [17]	10	50
trans-1,2-Dichloroethylene	6.3E+03 [1(a)]	10	3.24E+02 [1(a)]	10	3.0E+00 [1(a)]	10	P [7]	10	1.27 (25°) [17]	10	50
2,4-Dichlorophenoxyacetic Acid (2,4-D)	6.2E+02 [2]	5	4.00E-01 [1(a)]	5	6.5E+02 [2]	5	N-P [8]	0	1.255 [20]	10	25
Dimethyl Phthalate	4.3E+03 [2]	10	(0)	0	1.3E+02 [2]	5	N-P [11]	0	1.189 (25°/25°) [16]	10	25
2,6-Dinitrotoluene	1.3E+03 [2]	10	1.80E-02 [1(b)]	5	1.0E+02 [2]	5	P [8,11]	10	1.283 (111°) [16]	10	40
1,4-Dioxane	4.3E+05 [2]	10	3.99E+01 [1(d)]	10	1.0E+00 [2]	10	P [14]	10	1.034 [16]	10	50
Ethylbenzene	1.5E+02 [1(a)]	5	7.00E+00 [1(a)]	10	1.4E+03 [1(a)]	5	N-P [7]	0	.867 [16]	0	20
bis(2-Ethylhexyl)phthalate (DEHP)	2.9E-01 [2]	0	(0)	0	9.5E+03 [2]	5	P [8,11]	10	.9843 [16]	0	15
Fuel Oil (virgin product)											20

ORGANIC OHM	MOBILITY AND PERSISTENCE VALUES AND SCORES										
	Solubility (mg/l)		Vapor Pressure (mm Hg)		K_{ow}		Degradation Potential [A]		Specific Gravity (at 20°) [B]		TOTAL SCORE
	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	
Gasoline (virgin product)											25
Heptachlor	1.8E-01 [2]	0	3.00E-04 [1(e)]	0	2.5E+04 [2]	0	P [8]	10	1.57 [1(f)]	10	20
Hexachlorobenzene	6.0E-03 [1(e)]	0	1.09E-05 [1(e)]	0	1.7E+05 [1(e)]	0	P [7]	10	2.044 [14]	10	20
Hexachloroethane	5.0E+01 [2]	5	4.00E-01 [1(e)]	5	4.0E+04 [2]	0	N-P [8]	0	2.090 [20]	10	20
2-Hexanone	1.4E+04 [2]	10	(1.6)	0	2.5E+01 [2]	5	N-P [11]	0	.815 (18°/4°) [16]	0	15
Isophorone	1.2E+04 [2]	10	(0.3)	0	5.0E+01 [2]	5	N-P [11]	0	.921 (25°) [17]	0	15
Methylene Chloride	2.0E+04 [1(e)]	10	4.31E+03 [1(e)]	10	1.9E+01 [1(e)]	5	N-P [7]	0	1.366 [14]	10	25
Methyl Ethyl Ketone	2.7E+05 [1(e)]	10	7.75E+01 [1(e)]	10	1.8E+00 [1(e)]	10	N-P [15]	0	.805 [16]	0	30
Methyl Naphthalene	2.5E+01 [2]	5	(3.2)	0	1.3E+04 [2]	0	N-P [7]	0	1.025 (14°/4°) [16]	10	15
Methyl Tert-Butyl Ether	4.8E+00 [3]	5	(196)	10	NA	5	NA	0	.731 [16]	0	20
Naphthalene	3.2E+01 [2]	5	(20)	5	2.8E+03 [2]	5	N-P [7]	0	1.145 [16]	10	25
Nitrobenzene	1.9E+03 [2]	10	1.50E-01 [1(e)]	5	7.1E+01 [2]	5	N-P [8]	0	1.203 [16]	10	30
Pentachlorophenol	1.4E+01 [1(e)]	5	1.10E-04 [1(e)]	0	1.0E+05 [1(e)]	0	P [7]	10	1.978 (22°) [16]	10	25
Phenol	9.3E+04 [1(e)]	10	3.41E-01 [1(e)]	5	2.9E+01 [1(e)]	5	N-P [7]	0	1.071 (25°/4°) [16]	10	30
PCBs	1.2E-02 [2]	0	7.70E-05 [1(e)]	0	1.1E+06 [2]	0	P [8,9]	10	1.5 (25°) [18]	10	20
1,1,2,2-Tetrachloroethane	2.9E+03 [2]	10	5.00E+00 [1(e)]	10	2.5E+02 [2]	5	P [8,11]	10	1.600 [16]	10	45

ORGANIC OHM	MOBILITY AND PERSISTENCE VALUES AND SCORES										
	Solubility (mg/l)		Vapor Pressure (mm Hg)		K_{ow}		Degradation Potential [A]		Specific Gravity (at 20°) [B]		TOTAL SCORE
	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	Value [ref.]	score	
Tetrachloroethylene	1.5E+02 [1(a)]	5	1.8E+01 [1(a)]	10	4.0E+02 [1(c)]	5	P [7]	10	1.631 (15°/4°) [16]	10	40
Tetrahydrofuran	3.0E-01 [4]	0	(2)	0	6.6E+00 [4]	10	N-P [13]	0	.888 (21°/4°) [16]	0	10
Toluene	5.3E+02 [1(a)]	5	2.81E+01 [1(a)]	10	5.4E+02 [1(c)]	5	N-P [7]	0	.866 [16]	0	20
1,2,4-Trichlorobenzene	3.0E+01 [1(a)]	5	2.90E-01 [1(a)]	5	2.0E+04 [2]	0	P [8]	10	1.446 (26°) [14]	10	30
1,1,1-Trichloroethane	1.5E+03 [1(a)]	10	1.23E+02 [1(a)]	10	3.2E+02 [1(b)]	5	P [7]	10	1.346 (15°/4°) [16]	10	45
1,1,2-Trichloroethane	4.5E+03 [1(a)]	10	3.00E+01 [1(a)]	10	3.0E+02 [1(a)]	5	P [7]	10	1.441 (25.5°/4°) [16]	10	45
Trichloroethylene (TCE)	1.1E+03 [1(a)]	10	5.79E+01 [1(a)]	10	2.4E+02 [1(a)]	5	P [7]	10	1.466 (20°/20°) [14]	10	45
2,4,6-Trichlorophenol	8.0E+02 [3]	5	1.20E-02 [1(a)]	5	7.4E+03 [3]	5	N-P [6]	0	1.490 (75°/4°) [16]	10	25
Vinyl Chloride	2.7E+0 [1(a)]	5	2.66E+03 [1(a)]	10	2.4E+01 [1(a)]	5	P [7]	10	.908 (25°/25°) [16]	0	30
Xylenes	2.0E+02 [1(a)]	5	1.00E+01 [1(a)]	10	8.9E+02 [1(a)]	5	N-P [7]	0	.880 [14]	0	20

NOTES

[A] Degradation Potential: N-P = Non-Persistent; P = Persistent. Score for "N-P" = 0; "P" = 10.
[a] Specific gravity of compound at 20°C referred to water at 4°C (20°/4°) unless otherwise specified.
[c] Numbers in parentheses are Henry's Law Constant in atm m^3 water/m^3 air.

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40.1514(3) Metals

METAL	Mobility	Score
Arsenic - H_2AsO_4	Slowly mobile	15
Asbestos - > 2μ	Immobile	5
Asbestos - < 2μ	Slowly mobile	15
Beryllium - Be^{++}	Moderately mobile	25
Cadmium - Cd^{++}	Slowly mobile	15
Chromium - Cr^{+++} or Cr^{+6}	Slowly mobile	15
Copper - Cu^{++}	Moderately mobile	25
Cyanide - CN^-	Relatively mobile	35
Lead - Pb^{++}	Moderately mobile	25
Mercury - Hg^{++}	Slowly mobile	15
Selenium - $HSeO_4^-$ & SeO_3^{--}	Relatively mobile	35
Zinc - Zn^{++}	Moderately mobile	25

[1] Fuller, "Movement of Selected Metals, Asbestos, and Cyanide in Soils: Application to Waste Disposal Problems," EPA-600/2-77-020, April 1977.

40.1514(4) OHM Mobility and Persistence Factors for Other Organic Compounds

OHM MOBILITY AND PERSISTENCE FACTORS Organic Compounds						
FACTOR	*RANGE and VALUE*					
	LOW	(Value)	MEDIUM	(Value)	HIGH	(Value)
Solubility (mg/L)	< 1	(0)	1 - 1,000	(5)	> 1,000	(10)
Vapor Pressure (mm Hg)	< 0.01	(0)	0.01 - 1	(5)	> 1	(10)
K_{oc}	> 10,000	(0)	10 - 10,000	(5)	< 10	(10)
Degradation Potential	Non-Persistent (NP)	(0)			Persistent (P)	(10)
Specific Gravity (20° C)	< 1	(0)			> 1	(10)
Radionuclides **Radionuclides present in quantities greater than their federal Reportable Quantity (40 CFR Part 302.4, Appendix B) where the quantity is known or in concentrations greater than background where the quantity is not known shall be assigned a *Mobility and Persistence Score* equal to 40.**						

40.1515 Soil Permeability Criteria

SOIL PERMEABILITY	
VALUES	*CRITERIA*
LOW	Permeability: < 10E-7 cm/s Soil or Bedrock Type: clay; shale; compact till; unfractured metamorphic and igneous rocks.
MEDIUM	Permeability: 10E-7 to < 10E-3 cm/s Soil or Bedrock Type: silt, fine sand and silty sand; loess; silty clays; clay loams, silty loams, sandy loams, and loamy sands; less to moderately permeable limestones, dolomites, and sandstone; moderately permeable to coarse till; moderately fractured igneous and metamorphic rocks. Fill is considered moderately permeable unless disposal site-specific condition indicate otherwise.
HIGH	Permeability: ≥ 10E-3 cm/s Soil or Bedrock Type: gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite.

IV. HUMAN POPULATION AND LAND USES

IV.A. HUMAN POPULATION

Residential Population Within ½ Mile	None 0	1 - 99 5	100 – 999 10	≥ 1,000 (15)
Institutions Within 500 feet	None (0)		One or More 10	
On-Site Workers	None 0	1 - 99 (5)	100 – 999 10	≥ 1,000 15

IV.B. AQUIFERS

Sole Source Aquifer Name: _____	No (0)	Yes 25
Potentially Productive Aquifer	No (0)	Medium or High 15

IV.C. WATER USE

Proximity of Disposal Site to Public Drinking Water Supply Source	Not Applicable (NA) (0)			Zone A 20	Zone II, IWPA, or SW Intake ≤ 400' 50
Persons Served by Public Drinking Water Supply	NA (0)	25 - 999 5	1,000 - 4,999 10	5,000 - 49,999 20	≥ 50,000 25
Private Water Supplies Within 500 Feet	None (0)		Commercial Industrial 10	Agriculture Residential (Not Ingested) 15	Drinking Food Processing 25
Alternative Public Water Supply Available (Viable Public Water Supply in Disposal Site Community *and* Public Water Connection ≤ 500 Feet from Site)	Yes (0)		No 25		

SECTION IV SCORE (A + B + C)

A.	B.	C.	TOTAL: (0 - 205)
20	0	0	20

Check here if Section VI has been used to amend the score for this Section of the NRS. ☐

V. ECOLOGICAL POPULATION

V.A. ENVIRONMENTAL RESOURCE AREAS			
RESOURCE	*LOCATION*		
Area of Critical Environmental Concern	> 500' from Site (0)	≤ 500' from Site 20	On-Site 30
Species of Special Concern, Threatened or Endangered Species Habitat	> 500' from Site (0)	On-Site or ≤ 500' from Habitat 30	
Wetlands, Certified Vernal Pool, or Outstanding Resource Water	> 100' from Site (0)	≤ 100' from Site 20	On-Site 30
Fish Habitat	> 500' from Site (0)	≤ 500' from Site 20	On-Site 30
Protected Open Space (Local/State/Federal/Trustee)	> 500' from Site 0	≤ 500' from Site (20)	On-Site 30

SCORE SECTION V.B. *ONLY* IF SECTION V.A. SCORE IS ≥ 30.

V.B. ENVIRONMENTAL TOXICITY SCORE *Highest Environmental Toxicity Score From Table V.B. or Worksheet V.B.1. on Following Pages.*	
OHM Scored: _____ Concentration and Media: _____	Toxicity Score (1 – 35) 0

SECTION V. SCORE (A. + B.)		
A. 20	B. 0	TOTAL: (0 - 185) 20

Check here if Section VI has been used to amend the score for this Section of the NRS. ☐

40.1511 (Continued)

Table V.B.	ENVIRONMENTAL TOXICITY SCORE				
OHM	*CONCENTRATION* (soil/sediment: µg/g; surface/groundwater µg/l)				
	< 1	1 - 99	100 - 999	1,000 - 9 999	≥ 10,000
Arsenic	5	10	15	20	25
Benzene	0	1	5	10	15
Bis(2-ethylhexyl)phthalate *	5	10	15	20	25
Cadmium	10	15	20	25	30
Carbon Tetrachloride	0	1	5	10	15
Chlorobenzene *	5	10	15	20	25
Chromium III	1	5	10	15	20
Chromium VI	5	10	15	20	25
Coal Tar *	5	10	15	20	25
Cyanide	5	10	15	20	25
1,1 Dichloroethane *	5	10	15	20	25
1,2 Dichloroethane	0	1	5	10	15
Ethylbenzene	0	1	5	10	15
Ethylene Dibromide *	5	10	15	20	25
#2 Fuel Oil (virgin product) *	1	5	10	15	20
Gasoline (virgin product) *	5	10	15	20	25
Lead	5	10	15	20	25
Mercury	15	20	25	30	35
Methylene Chloride *	5	10	15	20	25
Methyl Ethyl Ketone *	5	10	15	20	25
Methyl Tert Butyl Ether *	1	5	10	15	20
Nickel	1	5	10	15	20
Phenol	0	1	5	10	15
PAHs *	5	10	15	20	25
PCBs	15	20	25	30	35
Tetrachloroethylene	0	1	5	10	15
Toluene	0	1	5	10	15
1,1,1 Trichloroethane	0	1	5	10	15
Trichloroethylene	0	1	5	10	15

Table V.B.	ENVIRONMENTAL TOXICITY SCORE				
OHM	*CONCENTRATION* (soil/sediment: µg/g: surface/groundwater µg/l)				
	< 1	1 - 99	100 - 999	1,000 - 9,999	≥ 10 000
Vinyl Chloride *	5	10	15	20	25
Xylenes *	5	10	15	20	25
Zinc	1	5	10	15	20

* Scores derived by default methods 40.1516(2).

40.1511 (Continued)

Use Worksheet V.B.1. to determine Environmental Toxicity Scores for OHM not listed in Table V.B.
See 40.1516 for Environmental Toxicity Values for each OHM.

Worksheet V.B.1	**ENVIRONMENTAL TOXICITY SCORE**				
ENVIRONMENTAL TOXICITY VALUE	*CONCENTRATION* Use μg/g for Soil and μg/l for Surface Water or Groundwater				
	< 1	1 - 99	100 - 999	1,000 - 9,900	≥ 10,000
10	0	1	5	10	15
20	1	5	10	15	20
30	5	10	15	20	25
40	10	15	20	25	30
50	15	20	25	30	35

V.B.1.	*OHM and Concentrations Used in Section V.B.1.*			
OHM	Environmental Toxicity Value	Concentration (Soil - μg/g)	Concentration (Water - μg/l)	**Environmental Toxicity Score**

VI. MITIGATING DISPOSAL SITE-SPECIFIC CONDITIONS
Disposal site-specific conditions that warrant amending the site score. Changes directly related to NRS Sections or Subsection scores may not reduce the score more than the relevant subsection value assigned for the disposal site in that subsection. Section VI must reference specific pages of the Phase I. Section VI may not exceed ± 50 Points and may be scored only in 5-point increments. Attach additional pages as necessary.

Disposal Site Score Amendment (Not to Exceed ± 50 Points)	Score

APPENDIX C

HEA Test Boring Logs and Well Installation Reports

SOIL BORING/MONITORING LOG

PROJECT NO.	03014-99	DATE STARTED	6/1/99	SOIL BORING/WELL NO.	**SB5/MW5**
PROJECT	Tombarello's	DATE COMPLETED	6/1/99	SHEET	1 of 1
LOCATION	Lawrence, MA	DRILLING CO.	NH Boring	CHECKED BY	JBH
HEA PERSONNEL	JBH	FOREMAN:	Greg Levitt		

DRILLING METHOD		SAMPLER	
MAKE	Failing	TYPE	2ft x 2inch Split Spoon
MODEL:	track-mounted	HAMMER	140 lbs.
TYPE.	4.25" IDHSA	FALL:	30 Inches

GROUND WATER MEASUREMENTS

DATE	DEPTH(ft)	DATUM	STABILIZATION
6/1/99	7	BGS	Drilling

Depth(ft.)	Sample No.	Sample Per/Rec. (inches)	Sample Depth (feet)	Sample Blows	Sample Description	Stratum Description	Well Schematic	Field Screening (PPM) (1)	Notes
					Earthen		Concrete		
1					HSA to five feet below grade.				
					Brown, C-F SAND, Some Subang. Fine Gravel	Sand			
2					Dry.				
3									
4									
							Bentonite		
5									
	S1	24/14	5-7	4-4	Light Brown, VF-F SAND, little/trace Silt, Wet.				
6				6-7	Saturated in tip. M. Dense.			0.0	1
7									
8									
							Sand Pack		
9									
10									
	S2	24/19	10-12	7-7	Similar to S1 except Saturated. some/little M Sand.				
11				9-13				0.0	
12									
13									
14									
15									
	S3	16/12	15-16.2	18-75/0.2"	15-15.8ft: Similar to 10-12ft. 15.8-16.2ft: Ang. Rock fragments (Gabbro diorite)	Bedrock		0.0	

Granular Soils		Cohesive Soils	
Blows/Ft.	Density	Blows/Ft.	Consistency
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>30	Hard

Composition of Soil	
Percentage	Description
0-10	Trace
10-20	Little
20-35	Some
35-50	And

Notes:
1. Field Headspace Screening with an 11.7 eV Photoionization Detector

SOIL BORING/MONITORING LOG

PROJECT NO.	03014-99	DATE STARTED	6/1/99	SOIL BORING/WELL NO.	SB6/MW6
PROJECT	Tombarello's	DATE COMPLETED	6/1/99	SHEET	1 of 1
LOCATION	Lawrence, MA	DRILLING CO.:	NH Boring	CHECKED BY	JBH
HEA PERSONNEL	JBH	FOREMAN:	Greg Levitt		

DRILLING METHOD		SAMPLER	
MAKE:	Failing	TYPE:	2ftx2inch Split Spoon
MODEL	track-mounted	HAMMER	140 lbs
TYPE:	4.25" IDHSA	FALL:	30 Inches

GROUND WATER MEASUREMENTS

DATE	DEPTH(ft)	DATUM	STABILIZATION
6/1/99	7	BGS	Drilling

Depth(ft.)	Sample No	Sample Pen/Rec (inches)	Sample Depth (feet)	Blows	Sample Description	Stratum Description	Well Schematic	Field Screening (PPM) (1)	Notes
					Earthen		Concrete		
1					HSA to five feet below grade.				
					Brown, F SAND, some Silt Dry	Sand			
2									
3									
4									
							Bentonite		
5									
	S1	24/24	5-7	5-5	Light Brown, F SAND, some Silt, little C-F Sand			0 0	1
6				6-7	layers. Saturated at 7 feet. M. Dense				
7									
8									
							Sand Pack		
9									
10									
	S2	24/20	10-12	13-20	Light Brown-Gray, F SAND, some Silt, little subang			0 0	
11				26-28	Gravel, trace Clay Dense				
12									
13									
14									
15									
	S3	24/15	16-17	23-20	Similar to S2.			0 0	
				40-21					

Granular Soils		Cohesive Soils	
Blows/Ft.	Density	Blows/Ft.	Consistency
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>30	Hard

Composition of Soil	
Percentage	Description
0-10	Trace
10-20	Little
20-35	Some
35-50	And

Notes

1 Field Headspace Screening with an 11 7 eV Photoionization Detector

SOIL BORING/MONITORING LOG

PROJECT NO	03014-99	DATE STARTED:	6/1/99	SOIL BORING/WELL NO.:	**SB7/MW7**
PROJECT	Tombarello's	DATE COMPLETED:	6/1/99	SHEET	1 of 1
LOCATION:	Lawrance, MA	DRILLING CO.:	NH Boring	CHECKED BY:	JBH
HEA PERSONNEL	JBH	FOREMAN:	Greg Levitt		

DRILLING METHOD		SAMPLER	
MAKE:	Failing	TYPE:	2foc2inch Split Spoon
MODEL:	track-mounted	HAMMER	140 lbs
TYPE:	4.25" IDHSA	FALL:	30 inches

GROUND WATER MEASUREMENTS			
DATE	DEPTH(ft)	DATUM	STABILIZATION
6/1/99	8	BGS	Drilling

Depth(ft.)	Sample No	Sample Pen/Rec (inches)	Sample Depth (feet)	Sample Blows	Sample Description	Stratum Description	Well Schematic	Field Screening (PPM) (1)	Notes
					SAND and Gravel at Grade		Concrete		
1					HSA to five feet below grade.				
						Sandy Fill			
2					2-3ft Fill. Dark Gray to Black, C-F SAND and BRICK,			1.7	1
					WOOD, GLASS, little M-F Subang. - Rounded				
3					Gravel.				
4									
							Bentonite		
5									
	S1	24/2	5-7	4-1	Similar to above off augers Very Loose Wet in tip				
6				1-3				0.0	
7									
8									
							Sand Pack		
9									
10									
	S2	24/8	10-12	3-1	Similar to S1 Saturated				
11				2-3				0.0	
12									
13									
14									
15									
	S3	24/4	15-17	2-1	Similar to S2.				
				1-2				0.0	

Granular Soils	
Blows/Ft.	Density
0-4	V. Loose
4-10	Loose
10-30	M. Dense
30-50	Dense
>50	V. Dense

Cohesive Soils	
Blows/Ft.	Consistency
<2	V. Soft
2-4	Soft
4-8	M. Stiff
8-15	Stiff
15-30	V. Stiff
>30	Hard

Composition of Soil	
Percentage	Description
0-10	Trace
10-20	Little
20-35	Some
35-50	And

Notes:
1 Field Headspace Screening with an 11.7 eV Photoionization Detector