RELEASE ABATEMENT MEASURE COMPLETION REPORT

89 COMMERCIAL STREET MALDEN, MASSACHUSETTS

RELEASE TRACKING NUMBER 3-0362 August 2010

Prepared For:

nationalgrid

National Grid 40 Sylvan Road Waltham, MA 02154

Prepared By:



Innovative Engineering Solutions, Inc. 25 Spring Street Walpole, Massachusetts 02081 (508) 668-0033

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Prepared for:	National Grid
-	40 Sylvan Road
	Waltham, Massachusetts 02451

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Michael Lotti, L.S.P. Project Manager and LSP of Record License Number 4208 Joseph E. Higgins, P.E., L.S.P. Project Reviewer

Release Abatement Measure Completion Report Plan

Soil Excavation 89 Commercial Street Street Malden, Massachusetts

Release Tracking Number: 3-0362

Pursuant to the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000), this Release Abatement Measure (RAM) Completion Report has been prepared by Innovative Engineering Solutions, Inc. (IESI) on behalf of Massachusetts Electric Company d/b/a National Grid (National Grid). This RAM Completion Report presents the activities that were conducted at the 89 Commercial Street property in Malden, Massachusetts to monitor construction and manage soil during the excavation and subsequent paving of a landscaped area on the property by the current tenant. Refer to Figure 1 for a Site Locus and Figure 2 for a Site Plan of the property.

The 89 Commercial Street property is part of the former Malden manufactured gas plant (MGP) Site that is listed by the Massachusetts Department of Environmental Protection (MassDEP) as a disposal site as defined by the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000). The MassDEP assigned Release Tracking Number (RTN) 3-0362 to the Malden MGP Site. Figure 2 depicts the location of the RAM Area in relation to the disposal site boundary of the former MGP. The former Malden MGP Site has achieved a Temporary Solution and a Class C Response Action Outcome Statement has been submitted to the MassDEP.

The content of this RAM Completion Report has been structured to address the specific information requirements set forth in 310 CMR 40.0446 (4)(a) through (f). The RAM Transmittal Form (Form BWSC-106) was submitted, along with this RAM Completion Report and supporting documentation, electronically via the eDEP website.

310 CMR 40.0446 (4)(a) a description of the release or threat of release, site conditions, and surrounding receptors;

The landscaped area excavation activities are being conducted as a RAM because these activities are being conducted within the known site boundary of RTN 3-0362. The site is listed due to the presence of compounds in the soil and groundwater associated with former MGP operations at the property. This site has achieved a Temporary Solution and a Class C Response Action Outcome Statement has been submitted to the MassDEP.

The information presented below describing the release, site conditions and surrounding receptors, as it relates to the 89 Commercial Street property, was gathered during response actions previously completed at the disposal site as presented in the December 2001 report entitled *Report on Phase II Comprehensive Site Assessment* (Phase II Report), the June 2003 Phase III Remedial Action Plan (Phase III Report) and the February 2004 Class C p-RAO, all of which were prepared by Haley and Aldrich, Inc. (H&A); and the February 2009 *Five-Year Periodic Review of Temporary Solution for Partial Class C Response Action Outcome Statement* by IESI.

Description of the Release

As previously stated, the subject property is part of a larger disposal site. An MGP operated for over 120 years on the larger disposal site, generating raw gas using oil and coal as feedstock, purifying the raw gas on site, and processing the waste materials from the generation and purification processes. Figure 3

depicts the historical MGP operational features. As a result of the MGP operations, coal tar and other residual wastes associated with MGP operations are present in the subsurface. The following subsections describe the subsurface conditions at the 89 Commercial Street property.

Site Conditions

The property is generally paved and relatively flat; the ground surface rises steeply to the west of the property, where active railroad tracks for the Massachusetts Bay Transit Authority (MBTA) are located. The existing single-story concrete block building was vacant for 3+ years and is currently being renovated to house a sports training complex (i.e., baseball/softball batting cage and instruction):

- West of the property is the MBTA railroad tracks and, beyond the railroad tracks, an athletic field which is part of the City-owned Callahan Park.
- East of the property is Commercial Street and a National Grid (formally KeySpan) operations facility.
- North of the property is a liquor store, and
- South of the property is a building that is occupied by commercial/light industrial businesses.

The Phase II Report indicated that subsurface investigations were conducted at this property (1997 through 2000), which included drilling 4 soil borings (97A-B608-OW, 97A-B609, 97A-B610-OW, 97A-B611), installing monitoring wells in two of the borings (97A-B608-OW and 97A-B610-OW), collecting soil and groundwater samples for laboratory analysis, and gauging monitoring wells. Based on this information, it appears the property is underlain to approximately 11.5 feet to 15 feet below grade with urban fill that contains primarily slag, cinders, sand, and gravel. An organic silt/peat layer is located below this fill layer and is 1.5 feet to 3 feet thick. Groundwater is present in monitoring wells on site at approximately 7 feet below grade. The shallow groundwater appears to flow toward the culverted Malden River in the northern portion of the property.

Dense Non-Aqueous Liquids (DNAPL) were observed in monitoring well 97A-B610-OW during the gauging conducted by H & A in 1997 through 1999 and also by IESI in November 2006, February 2009, and July 2010. The DNAPL thickness has ranged from 0.1 feet to 0.6 feet.

The soil borings indicate that coal tar saturated soils were observed in the subsurface. The coal tar saturated soils were observed from 11.5 feet to 12.5 feet below grade in 97A-B608-OW, 9 feet to 13 feet below grade in 97A-610-OW, and 12 feet to 15 feet below grade in 97A-611B.

A human health risk characterization was conducted for the former MGP site and included in the Phase II Report. As part of the risk characterization, the subject property was included in the terrestrial portion of the site. The risk characterization concluded that for current site uses, a condition of No Significant Risk of harm to human health exists at the property. However, a condition of No Significant Risk to public welfare cannot be demonstrated for the subject property due to the presence of UCL exceedences (i.e., DNAPL in the subsurface greater than 1/2 -inch and concentrations of chrysene in the deeper soil obtained from 97A-B608B-OW). A condition of No Significant Risk to public safety exists for the site.

More recently, once National Grid learned of the tenant's intention to install a patio on the leased property, IESI was requested to collect a sample of soil from the area designated for shallow excavation. On June 14, 2010, IESI personnel collected a composite sample from the planned patio area and submitted the samples, under a signed chain of custody, to Groundwater Analytical, Inc. of Buzzards Bay, Massachusetts. The soil samples were analyzed for Volatile and Extractable Petroleum Hydrocarbons (VPH and EPH) via MassDEP Methods, VOC via EPA Method 8260, polycyclic aromatic hydrocarbons (PAH) via EPA Method 8270, RCRA 8 Metals (various EPA Methods), total Cyanide,

Physiologically Available Cyanide, polychlorinated biphenyls (PCBs), Sulfur Content, Ignitability and Reactivity. Based on the detected lead concentration (220 milligrams per kilogram (mg/kg)), TCLP lead analysis was requested by the potential receiving facility. The laboratory data was included in the RAM Plan.

In general, the soil exhibited the characteristics of an urban fill; however, because of its presence within the boundary of the former MGP site and the PAHs present within the soil at concentrations exceeding reportable concentrations, the soil was managed as a remediation waste once excavated.

Surrounding Receptors

The residential population within a one-half mile radius of the property is estimated at greater than 15,000 people. No institutions, as defined by 310 CMR 40.0006, are located within 500 feet of the property.

According to MassGIS, except for the culverted Malden River, no other surface water bodies, including wetlands, vernal pools, ponds, lakes, streams, rivers, Outstanding Resource Waters, and reservoirs, are located within 500 feet of the site. In addition, there are no Areas of Critical Environmental Concern, habitats for Species of Special Concern or Threatened or Endangered Species, within 500 feet of the property.

The site is not located within any Current or Potential Drinking Water Source Areas as defined by 310 CMR 40.0006. Drinking water is supplied to the area by the Massachusetts Water Resource Authority (MWRA). The property is located in a medium yield Non-Potential Drinking Water Source Area. Callahan Park, a protected open space is located west of the property beyond the elevated MBTA railroad tracks from the 89 Commercial Street property. Callahan Park is part of the disposal site; response actions have been conducted at Callahan Park and have achieved a Class A-3 RAO. As part of the Class A-3 RAO, a Grant of Environmental Restriction has been recorded for Callahan Park. Another protected open space associated with the City of Malden is located approximately 500 feet northeast of the property.

310 CMR 40.0446 (4)(b) a description of the Release Abatement Measure completed at the disposal site, including work undertaken in response to any conditions of approval imposed by the Department;

The objective of the RAM Plan was to monitor construction and manage soil during excavation of the landscaped area. The estimated 18 feet long by 18 feet wide patio area was excavated with a rubber-tire backhoe to approximately one foot below surface grade. Approximately 7 cubic yards of soil were excavated during the activities. The excavated soil was loaded directly into a dump truck and immediately transported to the Environmental Soil Management, Inc. (ESMI) thermal desorption facility located in Loudon, New Hampshire for thermal treatment and recycling. A copy of the Bill of Lading used to transport the material to ESMI is included as Appendix A. This submittal of the completed BOL as part of the RAM Completion is intended to satisfy the requirement of 310 CMR 40.0034 (5). This work was started and completed on August 2, 2010.

310 CMR 40.0446 (4)(c) all investigatory and monitoring data obtained during the implementation of the Release Abatement Measure;

The work associated with this RAM was conducted in accordance with the site specific Health and Safety Plan which was included as part of the RAM Plan. In accordance with the Health and Safety Plan, routine monitoring of the ambient air for total volatile organics was conducted with a photoionization

detector (PID) during the RAM. The PID was calibrated with a 100 parts per million (ppm) isobutylene reference standard to respond as benzene. There were no PID responses observed greater than background during the excavation. No visible dust was observed during the limited excavation activities.

310 CMR 40.0446 (4)(d) a succinct statement of findings and conclusions resulting from implementation of the Release Abatement Measure, including a statement as to whether the objectives of the Release Abatement Measure have been met;

The objective of this RAM was to monitor, manage, and dispose of the excess soil generated during the excavation and subsequent paving of a small (18 feet by 18 feet) landscaped area near the southeast corner property. This objective was accomplished by completing the work in accordance with the RAM Plan as described above.

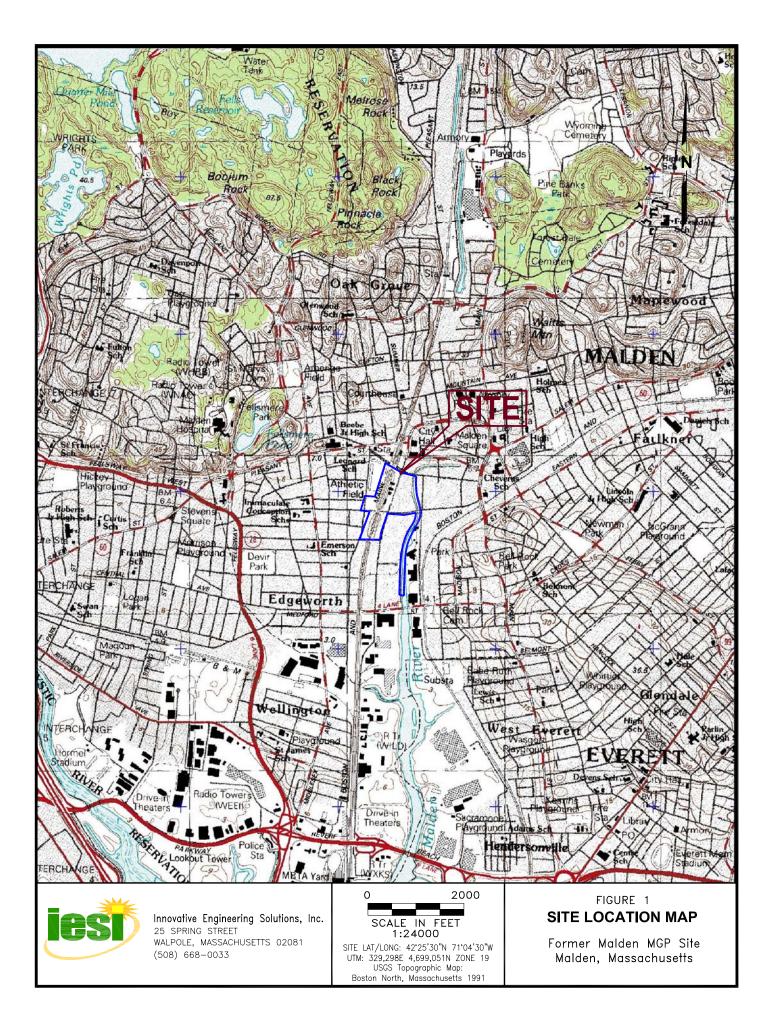
310 CMR 40.0446 (4)(e) details and documentation on the management of any Remediation Waste, Remedial Wastewater and/or Remedial Additives managed at the site as part of the Release Abatement Measure;

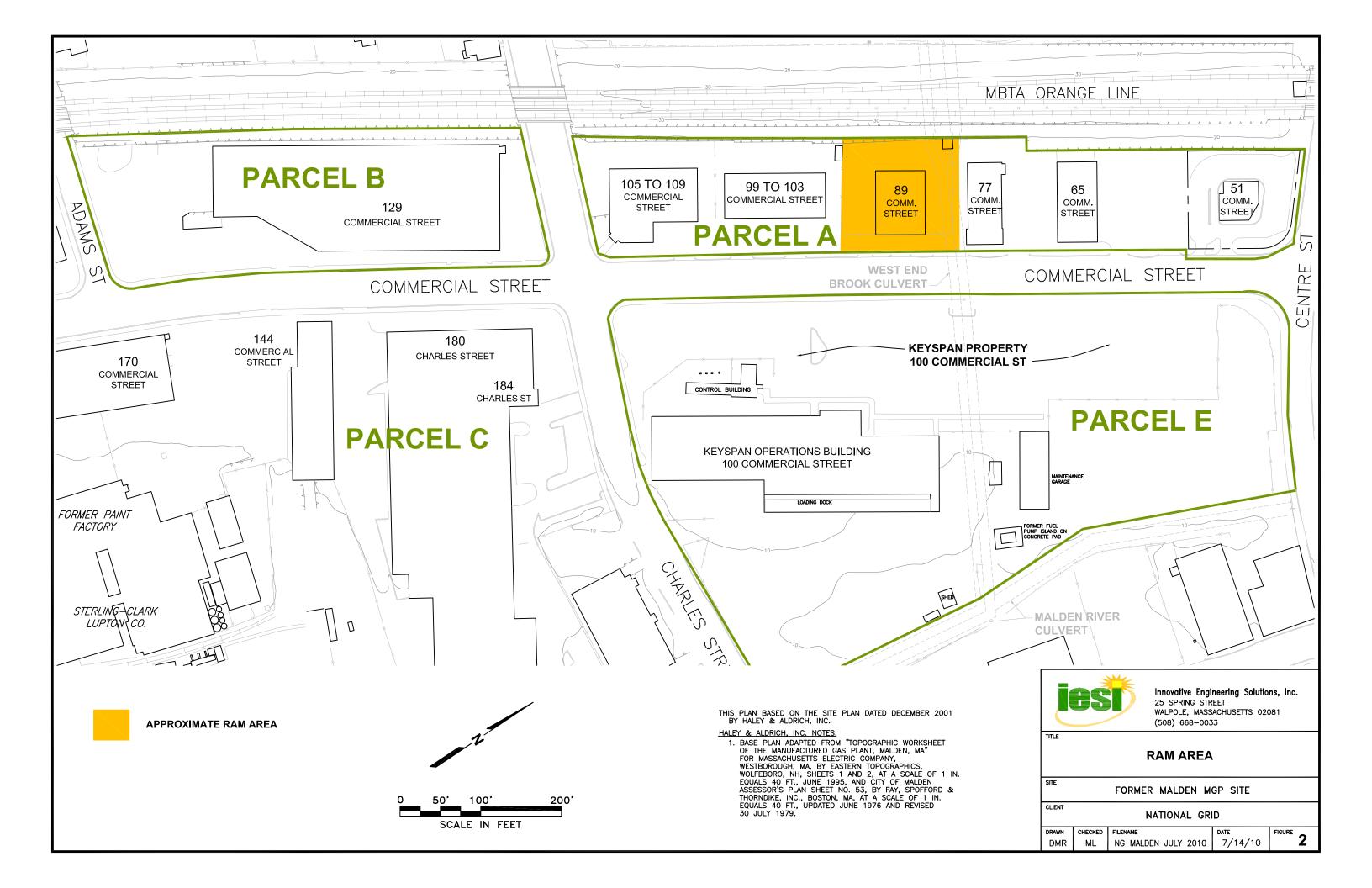
As indicated above, a total of 9.98 tons of Remediation Waste (i.e., soil) were generated as part of the RAM activities and subsequently transported to ESMI on August 2, 2010 for thermal treatment and recycling. A copy of the completed BOL is included as Appendix A.

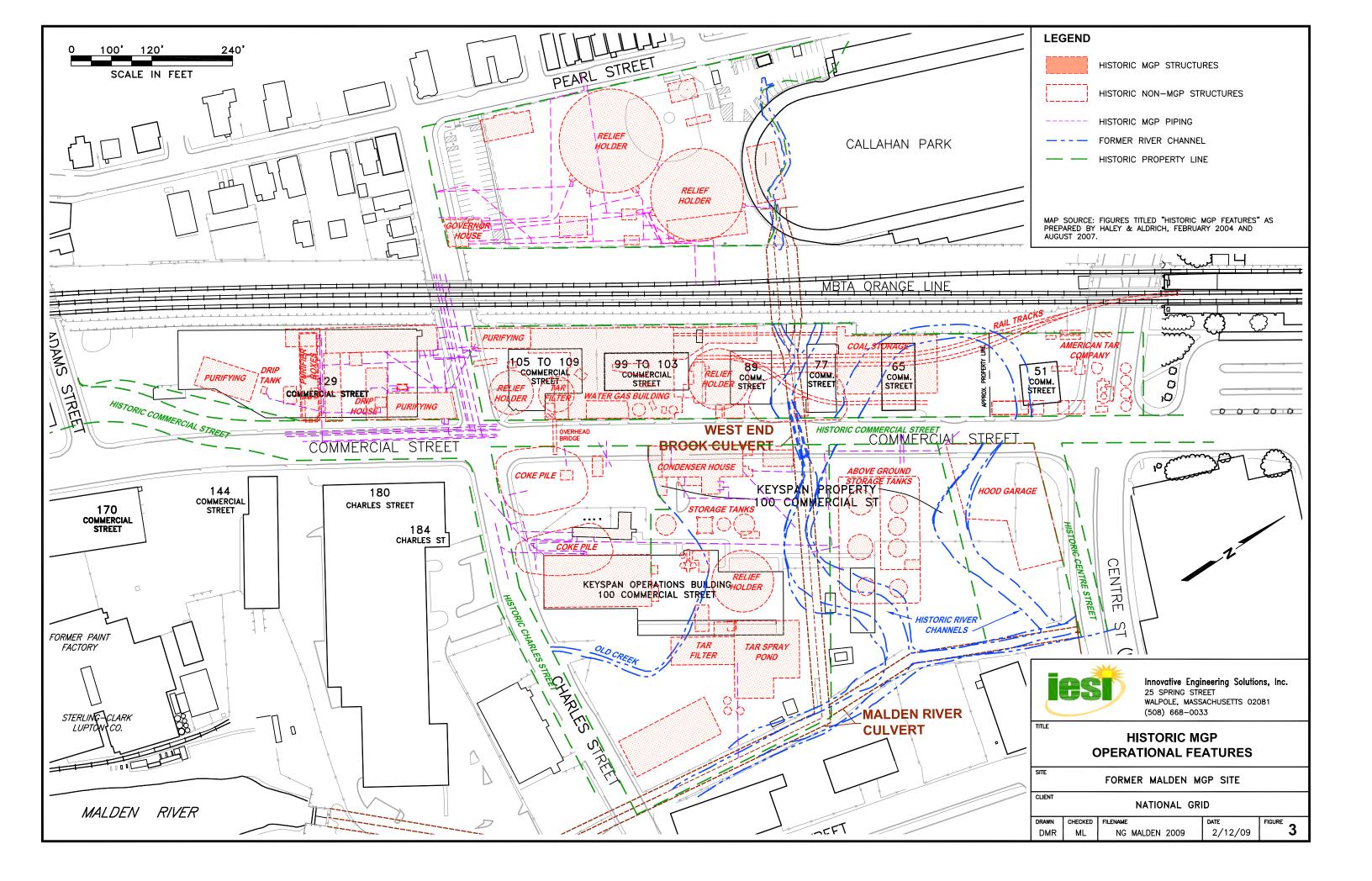
310 CMR 40.0446 (4)(f) a description of any ongoing activities related to the Release Abatement Measure that will be conducted at the disposal site, including monitoring activities, and the maintenance of fences, caps, and other passive systems.

No further activities associated with this RAM will be conducted at the site.

If additional information is needed or questions regarding this plan arise, please contact Michael Lotti by telephone at (508) 668-0033 x 231 or by email at <u>m.lotti@IESIonline.com</u>.







APPENDIX A

COPY OF COMPLETED BILL OF LADING

Massachusetts Department of Enviro Bureau of Waste Site Cleanup	onmental Protection BWSC-012A
BILL OF LADING (pursuant to 310 CMR 40.	0030) Release Tracking Number* 3 -
A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION	WASTE WAS GENERATED:
Release Name (optional): Former Malden MGP Site	
	_ Location Aid:
City/Town: Malden	_ ZIP Code:
Date/Period of Generation: 08/02/2010 to: 08/02/2010	_
Additional Release Tracking Numbers Associated with this Bill of Lading: * Note: If this Bill of Lading is the result of a Limited Removal Action (LRA) tail	ken prior to Notification, a Release Tracking Number is not needed.
B. PERSON CONDUCTING RESPONSE ACTION ASSOCIATED WITH Name of Organization:National Grid	HBILL OF LADING:
Name of Contact:Michele Leone	Title:
40 Sylvan Road	
City/Town: Waltham	State: MA ZIP Code: 02154
Telephone: (781)907-3651 Ext.:	State 211 5666
C. RELATIONSHIP TO RELEASE OF PERSON CONDUCTING RESP	ONSE ACTION ASSOCIATED WITH BILL OF LADING:
RP or PRP Specify: V Owner Operator Generator	
Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(
Other Person:	
If an owner and/or operator is not conducting the response action assoc	
contact person, address and telephone number, including D. TRANSPORTER OR COMMON CARRIER INFORMATION:	any area code and extension, for each, if known.
Transporter/Common Carrier Name: T Ford Company, Inc.	
Contact Person: Jack Enos	Title: Vice President
Street: 118 Tenney Street	
	MA 710 Code: 01833
City/Town:	State: ZIP Code:
E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:	
Operator/Facility Name: Environmental Soil Management, 1	Inc.
Contact Person: Steven Raper	Title: Compliance Manager
Street: 67 International Drive	
City/Town: Loudon	State: NH ZIP Code:
Telephone: (603) 783-0228 Ext.:	
Type of Facility: Asphalt Batch/Cold Mix Landfill/Disposal	- Incinerator Temporary Storage
(check one) Asphalt Batch/Hot Mix Landfill/Daily Cover	Other:
Thermal Processing	II EPA Identification #: NH5986485852
Division of Hazardous Waste/Class A Permit #:NA Divis	ion of Solid Waste Management Permit #:
Actual/Anticipated Period of Temporary Storage (specify dates if applicable):	TA to:
Reason for Temporary Storage:	

	Aassachusetts Department of Environment	al Protection	BWSC-012A
			Release Tracking Number*
DEP	BILL OF LADING (pursuant to 310 CMR 40.0030)		3 - 0362
	LITY/TEMPORARY STORAGE LOCATION (continued) :		
Temporary Storage Addr			
		ZIP Code	
F. DESCRIPTION OI (check all that apply)	REMEDIATION WASTE:		
Contaminated Med	lia (check all that apply): 🕢 🕢 Soil 🔿 Groundwater 🔿) Surface Water 🔿 Oth	er:
Contaminated Det	ris (check all that apply): Vegetation or Organic Debris Inorganic Absorbant Materials Other:	Demolition/Constr	uction Waste
Non-hazardous Ur	containerized Waste (check all that apply): O Non-aqueous Phas	se Liquid 🛛 Other:	
Non-hazardous Co		ges O Containers (Drums
Type of Contamination (c		Oil #4 Oil	#6 Oil Waste Oil
Estimated Volume of Ma	erials: Cubic Yards: 15 Tons:	Other	
Contaminant Source (ch			Other: Historic Fill
Remediation Waste Cha	Utility-Related Abatement Measure Limited Removal Action cterization Support Documentation attached: ation Sampling and Analytical Methods and Procedures v porting documentation is not appended, provide an attachment stating to document such information was previously submitted	Laboratory Data	sive Response Action Field Screening Data th what
G. LICENSED SITE	PROFESSIONAL (LSP) OPINION:		
Name of Organization:	Innovative Engineering Solutions, Inc.		
LSP Name: Michael	LS. Lotti Title: Princi	pal Geologist	
Telephone: 508-66			
	nd penalties of perjury that I have personally examined and am familiar of tall. In my professional opinion and judgment based upon application of 200 CMR 4 02(1)		any and all documents
	ons of 309 CMR 4.02(2) and (3), and		
this submittal for accepta permitted to accept Rem	Ige, information and belief, the assessment actions undertaken to chara noe at the facility identified in this submittal comply with the applicable (adiation Waste having the characteristics described in this submittal. I a tes and imprisonment, if I submit information which I know to be false, in	provisions of 310 CMR 40.00	000, and such facility is nalties may result, including, but
	Multt Seal:	MICHAEL S. LOTTI	
Date: July27, 2 License Number: 420	08	No. 4208	
	3	SED SITE PROFESSION	
	•	PPTTTTTTTTT	

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	Massachusetts Department of Environment Bureau of Waste Site Cleanup	BWSC-012A			
	BILL OF LADING (pursuant to 310 CMR 40.0030)		Release Tracking Number*		
	·· ·				
I certify under penalties documents accompanyi material information con	H. CERTIFICATION OF PERSON CONDUCTING RESPONSE ACTION ASSOCIATED WITH THIS BILL OF LADING: I certify under penalties of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained herein is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties, including, but not limited/the, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.				
Signature:	Vieone	Date: July 24,2010			
Name of Person (print):	Michele V. Leone				
	· · · · ·				
Revised 10/3/94			Page 3 of 3		

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Massachusetts Department of Env Bureau of Waste Site Cleanup	ironmental Protection	BWSC-012B
BILL OF LADING (pursuant to 310 CMR	40.0030)	Release Tracking Number
	1	3-0362
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8/02/10 AM 19 PM	Date of Receipt Time of Re	
ruck/Tractor Registration: Trailer Registration (if any):	3/2/10 2.2	
MA 70639	Load Size (cu. yds./tons):) 9-9	Y
-oad 2: Signatiure of Transporter Representative:		در
Nau Z.	Receiving Facility/Temporary Storage Repr	esentatve:
Date of Shipment: Time of Shipment		
AM PM	Date of Receipt: Time of R	eceipt:
an a		
Truck Tractor Registration: Traile Registration (Flany).	Loac Size (cu. vds./tons):	
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Load 3: Signatiure of Transporter Representative:	Receiving Facility/Temporary Storage Repi	esentative:
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	Date of Receipt: Time of F	
Fruck/Tractor Registration: Trailer Registration (if any).		
	Load Size (cu. yds./tons):	
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Load 4: Signature of Transporter Representative:	Receiving Facility/Temporary Storage Rep	resentative:
Date of Shipment: Time of Shipment.		通道
	Date of Receipt: Time of P	
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Truck/Tractor Registration: Trailer Registration (if any):		
	r Load Size (cu. yds./tons):	· · · · · · · · · · · · · · · · · · ·
Load 5: Signatiure of Transporter Representative:	Receiving Facility/Temporary Storage Re	presentative:
Date of Shipment: Time of Shipment:	Date of Receipt Time of	Receipt
AM PM		
Truck/Tractor Registration: Trailer Registration (if any):		
	Load Size (cu. yds./tons):	•
Load 6: Signatiure of Transporter Representative:		
	Receiving Facility/Temporary Storage R	epresentative:
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Revised 10/3/94		Page 1 of

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	Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup			BWSC-012C		
D E P		DING (pursuant to 3				Release Tracking Number $3 - 0362$
K. SUMMARY C Date of S		Date of Rece	ipt:	Number of Loa	ds Shipped:	Daily Volume Shipped (cu. yds./tons):
800	010	8210	010			9.98
						
	B aran yang dari katan dari k					
			·			
	Summar	y Sheet Total Shippe	d:			9.98
	Bill of La (only if c	ding Total Shipped lifferent):				

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	Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup	BWSC-012C
	BILL OF LADING (pursuant to 310 CMR 40.0030	Release Tracking Number
DEP	SUMMARY SHEET	3-0362
ONLY	OMPLETE ONE COPY OF THIS PAGE AND ATTACH TO THE FINAL COPY OF THE	SUMMARY SHEET.
ACKNOWLE	DGMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEN	PORARY STORAGE:
eiving Facility/T	emporary Storage Representative (print):	e Hanager
nature:	Ull Hell Date: 8-9-	-10 0
ACKNOWL	EDGMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON	
	NG RESPONSE ACTION ASSOCIATED WITH THIS BILL OF LADING:	
cuments accomp terial information	Ities of law that I have personally examined and am familiar with the information contained in this submit banying this certification, and that, based on my inquiry of those individuals immediately responsible for on contained in herein is, to the best of my knowledge and belief, true, accurate and complete. I am award b, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete.	obtaining the information, the ethat there are significant
0	Aller Date: 08/16	12010
nature:	Date: Date:	1.010
me of Person (p	Drint): MICHELE LEONE	
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