12/23/03

Rare Species Information Request Form

Please complete this form to request site-specific information from The Natural Heritage and Endangered Species Program database (Please submit only one project per request form).

Requestor Information

Name: Cindy Castleberry

Affiliation: Metcalf + Eddy, Inc.

Address: 701 Edgewater Drive

City: Wakefield State: MA Zip Code: 01880

Daytime Phone: (781)224-6350 Ext.

Project Information

Project or Site Name: Former Brookfield Mill, 59-67 Mill Street

Town: Brookfield USGS Quad Map:

Name of Landowner or Project Proponent: Town of Brookfield

Description of Proposed Project: (If necessary attach additional sheet)

The project consists of the preparation of an MCP Phase I Initial Site Investigation report for the site identified above. A MADEP Bureau of Waste Site Cleanup Site Scoring Map identified an NHESP Wetlands Habitat within 500 feet of the site. I an requesting further information regarding the specific wetland species as well as information regarding any other species of special concern of Threatened or Endangered Species that may be present in the vicinity of the site.

☐ Will this project be reviewed as a Notice of Intent by the local Conservation Commission? no

☐ Will this project be undergoing review through MEPA? no

☑ Have you enclosed the required copy of a USGS topographic map in the scale 1:24,000 or 1:25,000 (not copy reduced) with the site location clearly marked and centered on the copy page? (Copies of Atlas pages are not accepted)

Please **mail** this completed form and topographic map to:
Environmental Review
Natural Heritage and Endangered Species Program
MA Division of Fisheries and Wildlife
Rte. 135
Westborough, MA 01581

Or **fax** to: (508) 792-7275
Natural Heritage Program
Attn: Environmental Review

*Questions regarding this form should be directed to (508) 792-7270 ext. 154

Persons requesting information should expect a 4 week turnaround time (time varies on amount of requests received per week). Please do not ask for an expedited review. Requests are processed in the order that they are received.

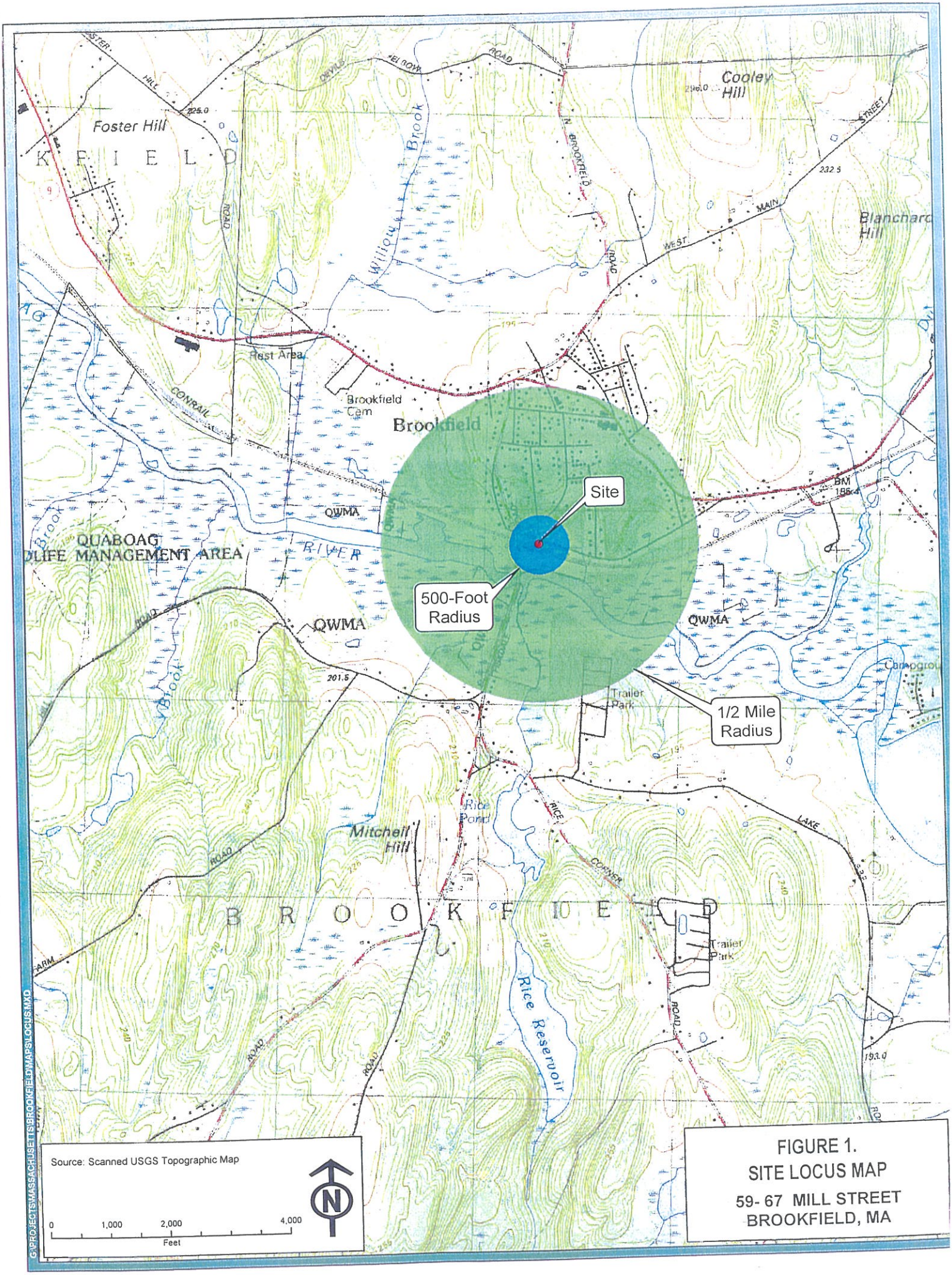


FIGURE 1.
SITE LOCUS MAP
59- 67 MILL STREET
BROOKFIELD, MA

G:\PROJECTS\MASSACHUSETTS\BROOKFIELD\MAPS\LOCUS.MXD

APPENDIX D

GEOPHYSICAL SURVEY REPORT

Hager GeoScience Inc.

596 Main Street Woburn, MA 01801

Tel 781-935-8111 Fax 781-935-2717

May 22, 2002
File 200217

Metcalf & Eddy, Inc.
30 Harvard Mill Square
P.O. Box 4071
Wakefield, Massachusetts 01880-5371
Attention: Bill Buelow

Re: Geophysical Survey
64 Mill Street
Brookfield, Massachusetts

Dear Mr. Buelow:

This letter reports the results of a geophysical survey performed by Hager GeoScience, Inc. (HGI) for Metcalf & Eddy, Inc. (M&E) at a site in Brookfield, Massachusetts

Introduction. In May 2002, HGI was contracted by M&E to perform a geophysical survey at 64 Mill Street in Brookfield, Massachusetts. The main objective of the survey was to confirm the presence and location of a suspected underground storage tank (UST) at the site. A secondary objective was to track associated piping.

Data Acquisition. HGI personnel performed the survey on May 21, 2002. The survey area was designated by an M&E representative, who was present during the fieldwork. Data were collected with a GSSI SIR System 2000 digital ground penetrating radar (GPR) system, using a 400-MHz antenna in survey wheel mode. A description of the GPR technique and its limitations is included as Appendix A of this letter report. The GPR acquisition window was set at 80 nanoseconds (ns) to enable the recording of backscattered GPR waves from depths of approximately 13 to 16 feet. GPR data were displayed on a color monitor and simultaneously recorded on the system's hard drive. They were subsequently downloaded to a PC at the HGI office for review as necessary using GSSI's RADAN for Windows® software.

Results. The presence and location of the suspect UST were confirmed and the piping tracked. HGI personnel marked the locations of targets on the ground prior to leaving the site.

Please contact us at (781) 935-8111 if you have any questions or need additional information.

Respectfully yours,
HAGER GEOSCIENCE, INC.

Jutta L. Hager, Ph.D.
President

APPENDIX A. The Ground Penetrating Radar Technique

Description of the Method. The principle of ground penetrating radar (GPR) is the same as that of weather or police radar, except that GPR transmits electromagnetic energy into the ground, and the energy is reflected back to the surface from interfaces between materials with contrasting electrical (dielectric and conductivity) and physical properties. The greater the contrast between two materials in the subsurface, the stronger the reflection observed on the GPR record. The depth of GPR signal penetration depends on the properties of the subsurface materials and the frequency of the antenna used to collect radar data. The lower the antenna frequency used, the deeper the signal penetration, but the lower the signal resolution.

We collect GPR data using a Geophysical Survey Systems SIR System 2 and 2000 digital ground penetrating radar unit, which consists of a computer connected to a transmit/receive antenna. Radar data are collected in point, continuous, or survey wheel mode while moving the antenna across the ground. They are displayed in color on the computer monitor and simultaneously recorded on the unit's hard drive for later processing and interpretation using proprietary RADAN for Windows® software. Hard copies of the data may be printed in the field on a thermal printer.

Data Analysis and Interpretation. The horizontal scale of the GPR record shows distance along the survey traverse. In the continuous data collection mode, the horizontal scale on each GPR record is determined by the antenna speed. When a survey wheel is used, as at this site, the GPR record is automatically marked at specified intervals along the survey line. The vertical scale of the radar records is determined by the recording interval. The recording interval represents the maximum two-way travel time in which data are recorded. The conversion of two-way travel time to depth depends on the propagation velocity of the GPR signal, which is site specific. In the absence of site-specific subsurface information about stratigraphy, we estimate propagation velocities from handbook values and experience at similar sites.

The size, shape, and amplitude of GPR reflections are used to interpret GPR data. Metal objects such as USTs and utilities produce reflections with high amplitude and distinctive hyperbolic shapes in GPR records when traverses are made perpendicular to their long axes. Clay or concrete pipes and boulders may produce radar signatures of similar shape but lower amplitude. The boundaries between saturated and unsaturated materials, sand and clay, and bedrock and overburden, generally also produce strong reflections.

Limitations of the Method. GPR signal penetration is site specific, determined by the dielectric properties of local soil and fill materials. GPR signals propagate well in resistive materials such as sand and gravel; however, soils containing clay, ash- or cinder-laden fill, or fill saturated with brackish or otherwise conductive groundwater cause GPR signal attenuation and loss of target resolution (i.e., limited detection of small objects). Concrete containing rebar or mesh also inhibits signal penetration.

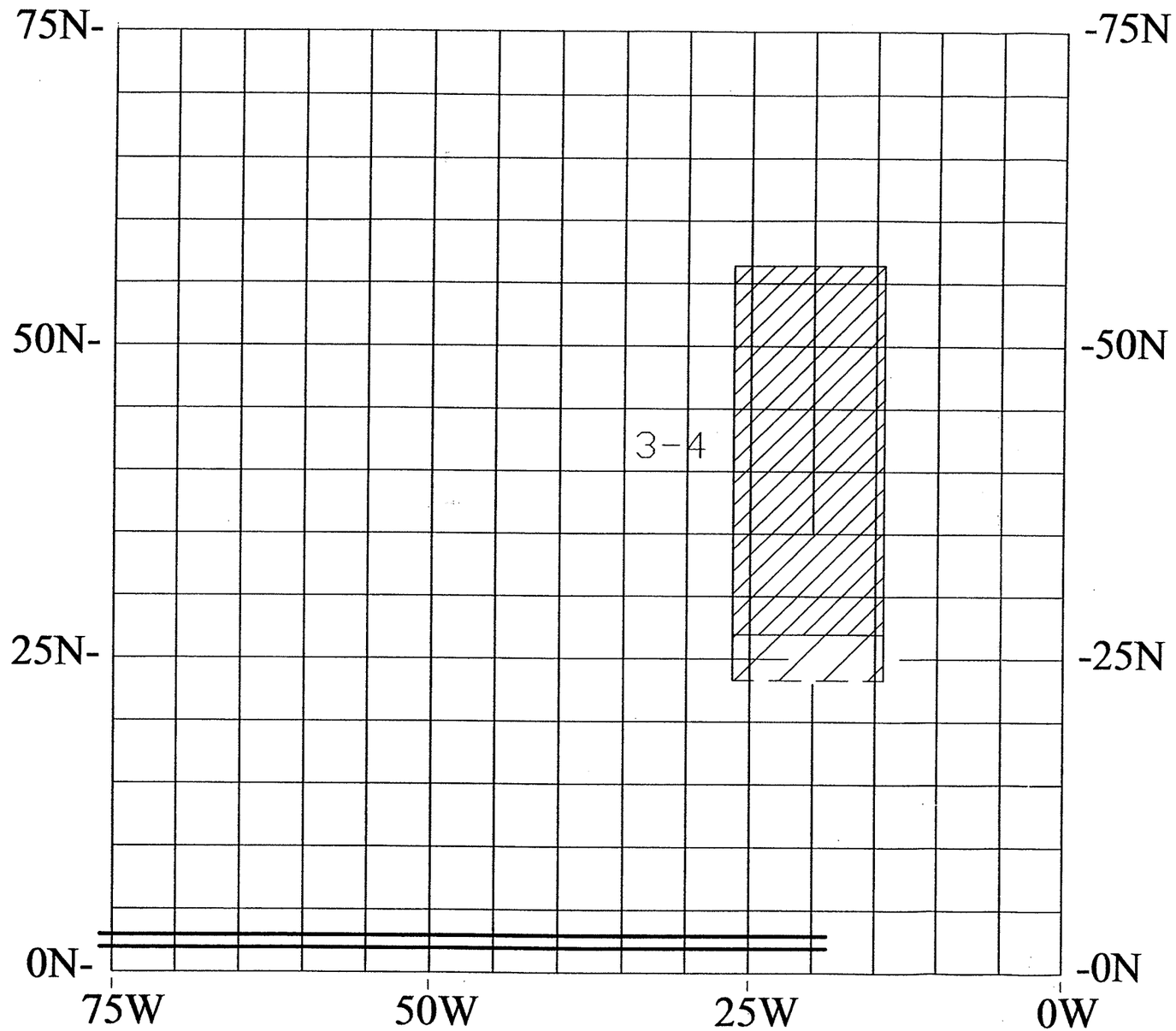
Interpreted depths of objects detected using GPR are based on on-site calibration, handbook values, and/or estimated GPR signal propagation velocities from similar sites. GPR velocities and depth estimates may vary if the medium of investigation or soil water content is not uniform throughout the site. (Electromagnetic waves do not travel as fast through water as air, so the distance to a reflector below the water table may appear farther than in actuality.)

Utilities are interpreted on the basis of reflectors of similar size and depth that show a linear trend, but GPR cannot unambiguously determine that all such reflectors are related. Fiberglass USTs or utilities composed of plastic or clay may be difficult to detect, as well as objects underneath reinforced concrete pads.

Changes in the speed at which the GPR antenna is moved between stations causes slight variations in distance interpolations, and hence in interpreted object positions.

The GPR antenna produces a cone-shaped signal pattern that emanates approximately 45 degrees from horizontal fore and aft of the antenna. Therefore, buried objects may be detected before the antenna is located directly over them, and GPR anomalies may appear larger than actual target dimensions.

GPR is an interpretive method, based on the subjective identification of reflection patterns that may not uniquely identify a subsurface target. Borings, test pits, or site utility plans must verify the results.



MILL STREET

Site sketch from HGI field notes.

LEGEND

GPR Traverse

UST & Approx. Depth (ft)

Interp. Utility

0 10 20 40

SCALE in FEET

Note:
1. UST becomes deeper to north.
2. UST appears to extend beneath pit with piping.

FIGURE 1

MAY 2002	FILE NO. 200216

GPR INTERPRETATION PLOT
64 MILL STREET
BROOKFIELD, MASSACHUSETTS

HAGER GEOSCIENCE, INC.

HAGER GEOSCIENCE, INC.
596 MAIN STREET, WOBURN, MASSACHUSETTS 01801-2924
TELEPHONE: (781) 935-8111 FAX: (781) 935-2717

To: Philippa Odgers, Metcalf & Eddy, Inc.

From: Jutta Hager

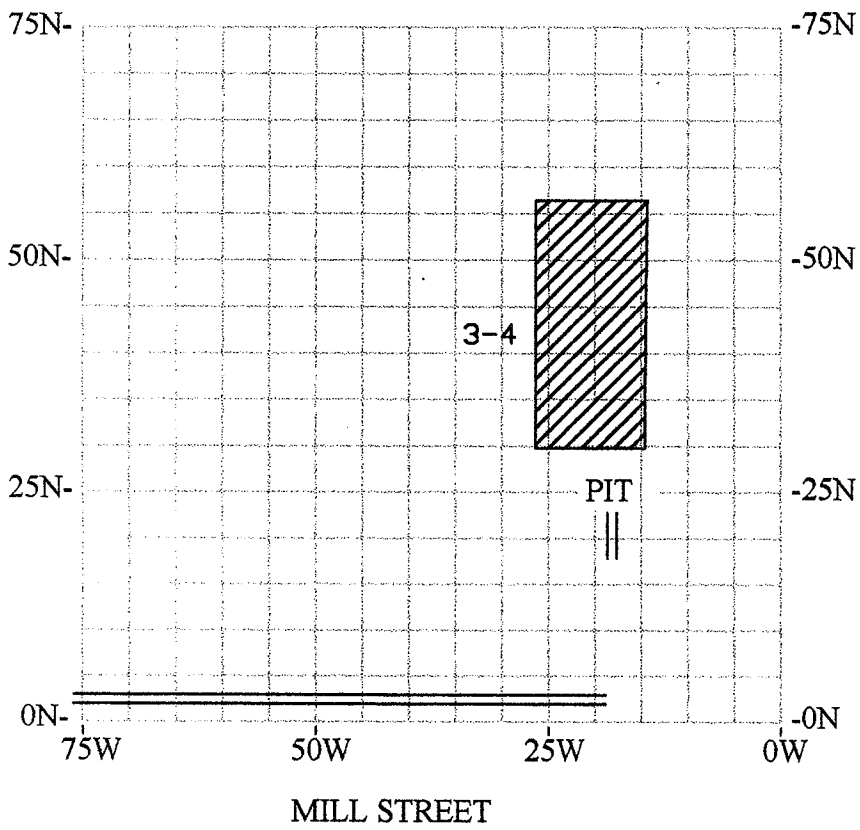
Date: May 31, 2002

Re: Addendum: Geophysical Survey, 64 Mill Street, Brookfield, Massachusetts

---

The accompanying Figure 1 serves as an additional submittal to be appended to our letter report of May 22, 2002. On it I have plotted the location of the UST that our field crew located and marked in the field during their survey on May 21.

This is a slight modification of the figure that I e-mailed you on May 30. The east-west utility in the south may be a shallow water line, and the north-south utility indicated is probably the line that our field crew mapped south of the grid.



Site sketch from HGI field notes.

LEGEND

GPR Traverse

UST & Approx. Depth (ft)

Interp. Utility

0 10 20 40

SCALE in FEET

Note:
1. UST becomes deeper to north.
2. Piping from pit mapped to the south.

FIGURE 1

MAY 2002	FILE NO. 200216

GPR INTERPRETATION PLOT
64 MILL STREET
BROOKFIELD, MASSACHUSETTS

HAGER GEOSCIENCE, INC.
781.935.8111

APPENDIX E

UST CLOSURE REPORT

Weir, Barb

From: Abrahams-Dematte, Bill

Sent: Thursday, July 31, 2003 11:33 AM

To: Weir, Barb

Subject: Mill Street Tank Pull

Barb,

I just spoke with Bill Anthony from Peak Environmental; the company that pulled the UST at 56-67 Mill Street in Brookfield. He said that the piping from the UST was sleeved in a black poly PVC pipe under the road and that Peak was able to easily pull the lines out. Mr. Anthony said that there was ~50 feet of line and that there were two lines (a delivery and a return). He also said that these lines did not appear to be attached to anything on the other side of the road because they were so easily pulled from the pipe liner.

Bill

William A. Abrahams-Dematte, PG
Environmental Geologist/Hydrogeologist
Metcalf & Eddy
30 Harvard Mill Square
P.O. Box 4071
Wakefield, MA 01880
phone: 781-224-6530

PEAK ENVIRONMENTAL SERVICES, INC.

1200 Millbury Street Suite 7L
Worcester, MA 01607

Telephone 508 / 756-0700
Toll Free 866 / 756-0700
Fax 508 / 756-8859

RECEIVED
JUN 26 2003
BOARD OF SELECTMEN

Town Of Brookfield
C/O Christine McManus
6 Central Street
Brookfield, Ma. 01506

June 26, 2003

Subject: Closure report for the removal of one 20,000 gallon underground fuel storage tank located at 56 Mill Street, Brookfield, Ma.

Dear Ms McManus,

On June 25, 2003, Peak Environmental Services Inc. performed one underground tank removal which was located at 56 Mill Street, Brookfield, Ma. The size of the underground storage tank was believed to be 20,000 gallons and used for heating oil.

Upon the excavation, cleaning, removal and inspection of the said UST's, there were no visual signs of contamination, and no levels were detected according to PID meter (photo-ionization detection) readings. These readings were taken in three areas of the tank graves and were as follows: 0 ppm, 0ppm, and 0 ppm. The head space readings help determine if signs of contamination exists and in this case there were no significant signs of contamination and no remedial action will be taken to this site. Also, the Brookfield Fire Department was on site to witness the removal, inspect the tank for leakage and give permission to backfill the excavation area (if no contamination was detected), in which was the case. This was not a contaminated excavation area, and warrants no remedial action at this time.

In conclusion, all work is complete and closure to this site has been achieved.

Respectfully,

William T. Anthony

William T. Anthony, President
Peak Environmental Services Inc.

Residential Commercial Industrial

- Tank Removal
- Mold/Fungi Removal
- Excavating/Hauling
- Oil Spill Response/Clean up
- 21E Site Assessment
- Asbestos Abatements
- Hazardous Waste Disposal
- Ground Water Treatment
- Soil Remediation

Fire Department retains original application and issues duplicate as Permit.

Commonwealth of Massachusetts

Department of Fire Services – Board of Fire Prevention

APPLICATION and PERMIT

Fee: _____

for storage tank removal and transportation to approved tank disposal yard in accordance with the provisions of M.G.L. Chapter 148, Section 38A, 527 CMR 9.00, application is hereby made by:

Tank Owner

Tank Owner Name (please print) TOWN OF BROOKFIELD x William F. Lanthorne AGENT FOR (Signature (if applying for permit))

Address 56 Mill St. (Street) BROOKFIELD (City), MA. (State) 01506 (Zip)

Removal Contractor

Company Name (Print) PEAK ENVIRONMENTAL SER. INC

Address (Print) 1200 Millbury St. #L, Worc, MA. 01607

Signature (if applying for permit) William F. Lanthorne

☐ IFCI Certified Other

Contamination Assessment

Co. or Individual (Print) _____

Address (Print) _____

Signature (if applying for permit) _____

☐ IFCI Certified ☐ LSP # _____ Other _____

Tank Information

Tank Location 56 Mill St. (Street Address) BROOKFIELD (City), MA.

Tank Capacity (gallons) 20,000 UST Substance Last Stored #2

Tank Dimensions (diameter x length) 128" X 31'

Remarks: _____

Disposal Information

Firm transporting waste Alstate Power Inc State Lic. # _____

Hazardous waste manifest# MAQ396883 E.P.A. # _____

Approved tank disposal yard Grants Tank yard # 008 02137

Type of inert gas Dry-Ice Tank yard address Rear of 28 Wilcott St. Reading, MA.

Approvals

City or Town Brookfield, MA. FDID# _____ Permit# _____

Date of issue 6/25/03 Date of expiration 6/27/03

Dig safe approval number: _____ Dig Safe Toll Free Tel. Number - 800-322-4844

Signature / Title of Officer granting permit [signature]

After removal(s) send Form FP-290R signed by Local Fire Dept. to UST Regulatory Compliance Unit, One Ashburton Place, Room 1310, Boston, MA 02108-1618.

FP 732 (Revised 9/96)

Form FP 291

Commonwealth of Massachusetts
Department of Fire Services - Office of the State Fire Marshal
RECEIPT OF DISPOSAL OF UNDERGROUND STEEL STORAGE TANK

NAME AND ADDRESS OF APPROVED TANK YARD

James G. Grant Co., Inc.
28 Wolcott St.
Readville, MA 02137

APPROVED TANK YARD NO. 008 Tank Yard Ledger 502 CMR 3.03 (4) Number: 200346996

I certify under penalty of law I have personally examined the underground steel storage tank delivered to this "approved tank yard" by firm, corporation or partnership PEAK ENV and accepted same in conformance with Massachusetts Fire Prevention Regulation 502 CMR 3.00 Provisions for Approving Underground Steel Storage Tank dismantling yards. A valid permit was issued by LOCAL Head of Fire Department. FDID# 2 7 0 4 5 to transport this tank to this yard.

Name and official title of approved tank yard owner or owners authorized representative:

Mike Cola — SIGNATURE

TITLE

6/26/03 — DATE SIGNED

This signed receipt of disposal must be returned to the local head of the fire department FDID# 2 7 0 9 5 pursuant to 502 CMR 3.00.

EACH TANK MUST HAVE A RECEIPT OF DISPOSAL

TANK DATA

Gallons 20,000

Previous Contents #2

Diameter 129" Length 31'

Date Received 6/26/03

Serial # (if available) —

Tank I.D. # (Form FP-290) —

TANK REMOVED FROM

56 Mill St
(No. and Street)

Brookfield
(City or Town)

Fire Department Permit # N/A

Owner/Operator to mail revised copy of Notification Form (FP290, or FP290R) to : UST Compliance, Office of the State Fire Marshal, P.O. Box 1025 State Road, Stow, MA 01775.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS MATERIALS
One Winter Street Boston, Massachusetts 02108

Please print or type. (Form designed for use on elite (12-pitch) typewriter)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MA5088617547 Manifest Document No. 9613813

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Town of Brookfield, 56 Mill Street, Brookfield, MA 01506

4. Generator's Phone 508 867-5477

A. State Manifest Document Number: MA Q 396883

B. State Gen. ID: Same

5. Transporter 1 Company Name: Allstate Power Vac

6. US EPA ID Number: MTD010938121947

C. State Trans. ID: AE6411X W1

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone: 508 393-2537

E. State Trans. ID

9. Designated Facility Name and Site Address: Zecco, Inc, 345 West Main Street, Northboro, MA 01532

10. US EPA ID Number: MAD052142415

F. Transporter's Phone ( )

G. State Facility's ID: NOT REQUIRED

H. Facility's Phone: (508) 351-9660

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	Unit Wt./Vol.	WASTE NO.
a. State Regulated Liquid Non-RCRA Non DOT Regulated	001	TT	18512	G	MA01
b.					
c					
d					

J. Additional Descriptions for Materials Listed Above (include physical state and hazard code.)
(L) Oil/Water
a. Profile #
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a.
b.
c.
d.

15. Special Handling Instructions and Additional Information
Emergency Contact Allstate Power Vac, Inc (508) 393-2537

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment, OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William T. Anthony Agent for | Signature | Date: Month 06 Day 25 Year 13

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jason K. Canis | Signature | Date: Month 06 Day 25 Year 13

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19
Printed/Typed Name | Signature | Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

In case of emergency or spill, immediately call the National Response Center (800) 424-8802

MA Q 396883

COPY>6: GENERATOR MAILS TO DESTINATION STATE

Form Approved OMB No. 2050-0039
EPA Form 8700-22 (Rev. 9-96) Previous editions are obsolete

COPY>6: GENERATOR MAILS TO DESTINATION STATE

APPENDIX F

TEST PIT, SOIL BORING, AND WELL INSTALLATION LOGS

GEOLOGIC LOG

METCALF & EDDY, INC.	SITE LOCATION	BORING/WELL ID
30 Harvard Mill Square Wakefield, MA 01880 (617) 246-5200	Mill Street Property Brookfield, Massachusetts	ME-1

DRILL CONTRACTOR: Geologic, Inc.
DRILLER: Tom Calvin
ENG/GEO: William Abrahams-Dematte
START DATE: June 11, 2002
FINISH DATE: June 11, 2002

DRILLING METHOD: Hollow Stem Auger
DRILLING FLUID: None
WELL INSTALLED: 12 Foot Well (see attached well construction log)

SAMPLING METHOD: 2" Split Spoon
DRILL RIG: B-57 Mobil Truck Mount Rig

Sample Types	Descriptors		
S3 = 3" Split Spoon	trace	0 to 10%	little 10 to 30%
SS = 2" Split Spoon	some	30 to 45%	

Depth Below Grade	Sample Type-No.	Blow Counts (per 6")	N - Value	Recorded Length (feet)	*PID (ppm)	Water Table	Field Classification (depths in feet)	Stratigraphic Description
0 ft	SS-1	-	7	0.2	NA [NA]		0-0.5 Concrete 0.5-0.7 FILL, grey/orange/black, medium sand, trace gravel, dry. 0.7-2.0 Void (sample taken in acetate liner that was left in spoon)	Gravel Pack --------0.6'--------
		3						
		4						
2 ft		5						
	SS-2	12	29	0.9	NA [NA]		2.0-3.1 Void 3.1-3.5 Grey, Fine SAND, some medium-coarse sand, dry. 3.5-3.9 Orange, Fine SANDY LOAM, moist at 3.9. 3.9-4.0 Tan, Fine SANDY LOAM, mottled, wet.	Fill/ Disturbed
		12						
		17						
4 ft		14				WT~3.8		
	SS-3	5	27	0.05	NA [NA]		4.0-5.95 Void 5.95-6.0 Grey, Fine SANDY LOAM with high clay content.	
		12						
		15						
6 ft		17						
	SS-4	14	26	2.0	0.0 [0.0]		6.0-7.7 Light brown, Fine SAND, zones of some silt (stratified) trace gravel, saturated (soupy). 6.7-7.2 highest zone of silt with trace clay. 7.7-8.0 Grey-blue, Fine SAND and SILT, trace gravel, wet.	------- ~6.0'-------
		14						
		12						
8 ft		17						
	SS-5	12	46	1.5	0.0 [0.0]		8.0-8.5 Void 8.5-8.9 Natural, Coarse-Very Coarse SAND, trace fine sand and silt, wet. 8.9-10.0 Grey, Fine SAND and SILT, wet, 9.6-10 little-trace gravel	SAND & SILT
		17						
		29						
10 ft		31						
	SS-6	8	67	1.8	0.0 [0.0]		10.0-10.2 Void 10.2-10.5 Grey-brown, Coarse-Very Coarse SAND and Fine SAND (slump, trouble removing stem before sample taken) 10.5-12.0 Grey-black, GRAVEL and Fine SAND, little-trace silt, dense, slightly moist.	
		28						
		39						
12 ft		54						EOB 12.0'
							End of Boring at 12 Feet.	

* PID reading taken from Split Spoon/ [PID readings as headspace samples] NA = Not Analyzed

GEOLOGIC LOG

METCALF & EDDY, INC.	SITE LOCATION	BORING/WELL ID
30 Harvard Mill Square Wakefield, MA 01880 (617) 246-5200	Mill Street Property Brookfield, Massachusetts	ME-2

DRILL CONTRACTOR: Geologic, Inc.
DRILLER: Tom Calvin
ENG/GEO: William Abrahams-Dematte
START DATE: June 11, 2002
FINISH DATE: June 11, 2002

DRILLING METHOD: Hollow Stem Auger
DRILLING FLUID: None
WELL INSTALLED: 12 Foot Well (see attached well construction log)

SAMPLING METHOD: 2" Split Spoon
DRILL RIG: B-57 Mobil Truck Mount Rig

Sample Types	Descriptors		
S3 = 3" Split Spoon	trace	0 to 10%	little 10 to 30%
SS = 2" Split Spoon	some	30 to 45%	

Depth Below Grade	Sample Type-No.	Blow Counts (per 6")	N - Value	Recorded Length (feet)	*PID (ppm)	Water Table	Field Classification (depths in feet)	Stratigraphic Description
0 ft	SS-1	43	8	0.1	NA [NA}	WT~1.0	0-1.9 Void 1.9-2.0 Tan, Fine-Medium SAND, dry. (basket destroyed in spoon)	
		3						
		5						
2 ft		8						
	SS-2	27	52	1.3	0.0 [0.0]		2.0-2.7 Void 2.7-2.9 Black-grey, Medium to Very Coarse SAND, saturated. 2.9-4.0 Orange-brown, Fine SAND, little coarse to very coarse sand, saturated, dense. Piece coarse gravel at 2.9'.	Fill/ Disturbed
		28						
		24						
4 ft		25						------ ~3.5'?------
	SS-3	11	26	0.4	0.0 [0.0]		4.0-5.6 Void 5.6-6.0 Same As 2.9-4.0	
		11						
		15						
6 ft		10						
	SS-4	7	39	2.0	0.0 [0.0]		6.0-7.1 Red-brown, Medium to Very Coarse SAND and GRAVEL, some fine sand, little silt, saturated, loose. 7.1-8.0 Blue-grey Fine SAND and SILT, wet, firm.	
		12						
		27						
8 ft		42						
	SS-5	40	110	1.3	0.0 [17.6]		8.0-8.7 Void 8.7-8.9 Grey/Natural, Very Coarse SAND. 8.9-9.2 Grey, Fine SAND, trace medium sand, firm. 9.2-10.0 Grey, SILT and Fine SAND, trace coarse sand and fine gravel, dense, dry.	SAND & SILT
		62						
		48						
10 ft		54						
	SS-6	23	65	1.4	0.0 [16.4]		10.0-10.6 Void 10.6-11.1 Grey, SILT and Fine SAND, little-trace clay, loose, trace pebble and fine gravel, saturated. 11.1-12.0 Same as 9.2-10.0	
		29						
		36						
12 ft		33						EOB 12.0'
							End of Boring at 12 Feet.	

* PID reading taken from Split Spoon/ [PID readings as headspace samples] NA = Not Analyzed

GEOLOGIC LOG

METCALF & EDDY, INC.	SITE LOCATION	BORING/WELL ID
30 Harvard Mill Square Wakefield, MA 01880 (617) 246-5200	Mill Street Property Brookfield, Massachusetts	ME-3

DRILL CONTRACTOR: Geologic, Inc.
DRILLER: Tom Calvin
ENG/GEO: William Abrahams-Dematte
START DATE: June 12, 2002
FINISH DATE: June 12, 2002

DRILLING METHOD: Hollow Stem Auger
DRILLING FLUID: None
WELL INSTALLED: 14 Foot Well (see attached well construction log)

SAMPLING METHOD: 2" Split Spoon
DRILL RIG: B-57 Mobil Truck Mount Rig

Sample Types	Descriptors		
S3 = 3" Split Spoon	trace	0 to 10%	little 10 to 30%
SS = 2" Split Spoon	some	30 to 45%	

Depth Below Grade	Sample Type-No.	Blow Counts (per 6")	N - Value	Recorded Length (feet)	*PID (ppm)	Water Table	Field Classification (depths in feet)	Stratigraphic Description
0 ft	SS-1	8, 25, 21, 14	46	0.5	0.0 [12]		0.0-1.5 Void 1.5-2.0 Yellow-brown, Fine SAND, trace medium sand and gravel, loose, dry.	Fill/ Disturbed
2 ft	SS-2	16, 10, 9, 23	19	0.0	NA [NA]		2.0-4.0 Void No Recovery	------- ~4.0'-------
4 ft	SS-3	6, 10, 8, 6	18	0.9	0 [0.0]	WT~6.0	4.0-5.1 Void 5.1-6.0 Blue-grey, CLAY, some silt, little-trace fine sand, mottled, dense, 1 piece gravel at ~5.5', 5.7-6.0' ribbon like.	CLAY
6 ft	SS-4	8, 14, 12, 22	26	2.0	0.0 [0.0]		6.0-6.3 Grey-brown, Clay, little silt, trace very coarse sand, mottled, wet. 6.3-6.6 Yellow-brown, Fine to Medium SAND, trace coarse sand moist.	
8 ft	SS-5	17, 38, 29, 35	67	1.3	0.0, [0.0]		6.6-7.0 Same As 6.0-6.3 7.0-8.0 Blue-grey, SILT and CLAY, little fine sand, trace gravel, wet. (tillish like material in head of spoon)	------- ~8.0'-------
10 ft	SS-6	75, 58, 120 for 4", -	-	2.0	0.0, [0.0]		8.0-8.7 Void 8.7-10.0 Blue-grey, (very) Fine SAND, little silt, little-trace fine gravel, trace clay, saturated.	
12 ft	SS-7	-, -, 56, 78	-	1.6 (spoon: 13-15')			10.0-10.9 Grey, Coarse SAND and Fine GRAVEL, saturated (possibly fall in, spoon only went 1.4 ft. before refusal) 10.9-11.2 Grey/Natural, Medium SAND, some-little fine sand, little-trace gravel, firm, wet. 11.2-11.6 Grey, Fine SAND, trace silt and gravel, dnese. 11.6-12.0 Red-brown, Fine SAND, firm.	SAND Little-Trace Gravel Trace Silt
14 ft	SS-8	120 for 5", -, EOB 15 ft.	-	^	NA [NA]		12.0-13.0 Boulder, augered through. 13.0-13.4 Void 13.4-14.0 Grey-brown, with strong orange (oxidized) zones, Fine SAND, trace medium sand and silt. 14.0-14.6 Natural, Medium SAND. 14.6-15.0 Same As 13.4-14.0	EOB 15.0'
16 ft							End of Boring at 15 Feet.	

* PID reading taken from Split Spoon/ [PID readings as headspace samples] NA = Not Analyzed

GEOLOGIC LOG

METCALF & EDDY, INC.	SITE LOCATION	BORING/WELL ID
30 Harvard Mill Square Wakefield, MA 01880 (617) 246-5200	Mill Street Property Brookfield, Massachusetts	ME-4

DRILL CONTRACTOR: Geologic, Inc.
DRILLER: Tom Calvin
ENG/GEO: William Abrahams-Dematte
START DATE: June 12, 2002
FINISH DATE: June 12, 2002

DRILLING METHOD: Hollow Stem Auger
DRILLING FLUID: None
WELL INSTALLED: 15 Foot Well (see attached well construction log)

SAMPLING METHOD: 2" Split Spoon
DRILL RIG: B-57 Mobil Truck Mount Rig

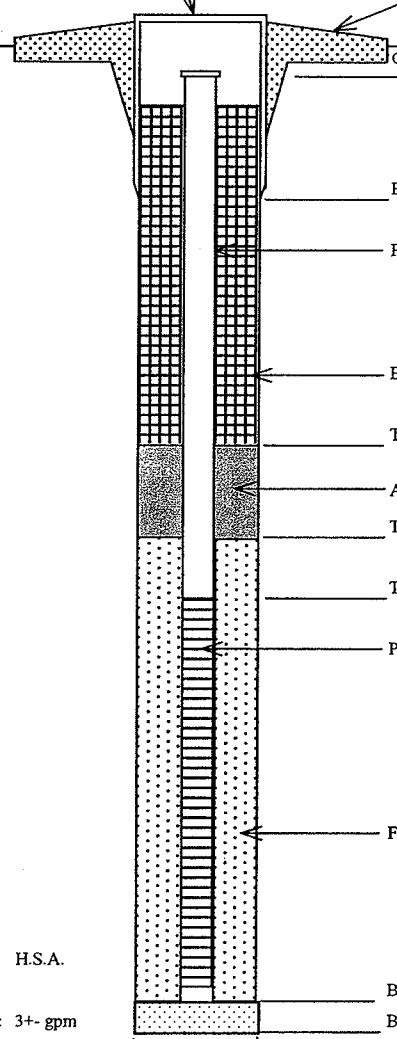
Sample Types	Descriptors		
S3 = 3" Split Spoon	trace	0 to 10%	little 10 to 30%
SS = 2" Split Spoon	some	30 to 45%	

Depth Below Grade	Sample Type-No.	Blow Counts (per 6")	N - Value	Recorded Length (feet)	*PID (ppm)	Water Table	Field Classification (depths in feet)	Stratigraphic Description
0 ft	SS-1	-	31	1.3	0.0 [0.0]	WT~7.0	0.0-0.5 Asphalt 0.5-0.7 Void 0.7-1.3 Brown, Fine SAND, little-trace silt, trace gravel, asphalt chips, dry, dense.	Asphalt --------0.6'--------
		22						
		9						
2 ft		6						
	SS-2	36	370 for 6"	0.4	0.0 [0.0]		1.3-1.6 Red-brown, Fine SAND, little gravel, loose, dry. 1.6-2.0 Dark brown, Fine SAND, trace silt and gravel, firm, dry. 2.0-3.6 Void 3.6-4.0 Orange-red, Fine SAND, trace asphalt chips, loose, dry.	Fill/ Disturbed
		120						
		250 for 0"						
4 ft		-						
	SS-3	27	50	1.5	0.0 [0.0]		4.0-4.5 Void 4.5-4.7 Red-brown, Fine SAND, trace medium sand and gravel. 4.7-5.5 Olive-brown, CLAY, little-trace silt and gravel. 5.5-6.0 Red-brown, Fine SAND, little-trace silt, redder at 5.5'	
		31						
		19						
6 ft		22						
	SS-4	41	114	1.4	0.0 [0.0]		6.0-6.6 Void 6.6-7.6 Red-brown, Fine SAND, little silt, trace coarse sand, moist 7.0-7.2 Grey, Coarse piece GRAVEL and Coarse SAND 7.6-7.7 Brown, Coarse SAND 7.7-7.8 Black, Fine SAND 7.8-8.0 Brown-red, Fine and Medium SAND	-------- ~7.5'--------
		54						
		60						
8 ft		56						
	SS-5	31	134	1.7	0.0 [7.6]		8.0-8.3 Void 8.3-9.0 Mix brown/black/red, Fine and Medium SAND, little-trace silt. 9.0-9.2 Tan, Fine SAND 9.2-10.0 Mix yellow/orange/red, Fine and Medium SAND, trace gravel	
		54						
		80						
10 ft		36						
	SS-6	18	44	1.4	0.0, [0.0]		10.0-10.6 Void 10.6-10.8 Brown, Fine SAND, wet, loose. 10.8-11.3 Brown, Medium to Very Coarse SAND, some fine sand, (variable compostion - stratified), wet. 11.3-11.8 Grey, SILT and CLAY, slightly moist, dense. 11.8-12.0 Red-tan, Fine SAND, moist-wet.	SAND & GRAVEL trace silt & clay
		21						
		23						
12 ft		25						
	SS-7	33	94	2.0	0.0, [0.0]		12.0-13.2 Red, Fine SAND, trace gravel at 12.0, moist-wet. 13.2-14.0 Yellow-brown, Fine SAND, moist-wet. At 13.6 & 13.8 lens of Coarse Sand.	
		45						
		49						
14 ft		52						
	SS-8	11	45	2.0	NA, [NA]		14.0-14.2 Red-brown, Fine SAND, saturated. 14.2-14.4 Olive-grey, Fine SAND, saturated. 14.4-15.2 Grey, Fine SAND, some-little silt, trace gravel, wet. 15.2-15.5 Grey, CLAY, some silt, little-trace fine sand. 15.5-16.0 Grey, Fine SAND, little fine gravel, one pce. coarse gravel At 15.8' pocket of white very coarse sand size chips with a piece of gravel.	EOB 16.0'
		12						
		33						
16 ft		46						
							End of Boring at 16 Feet.	

* PID reading taken from Split Spoon/ [PID readings as headspace samples] NA = Not Analyzed

MONITORING WELL INSTALLATION LOG

PROJECT: **Mill St. Prop., Brookfield, MA - TBA**	JOB NO. **200100-6-114**	WELL NO. **ME-1**
DRILLING CONTRACTOR: Geologic	COORDINATES:	
BEGUN: 06/11/2002	GEOLOGIST William Abrahams-Dematte	WATER LEVEL (Depth/Elev.) ~3.8 ft below grade surface on 6/12/02
FINISHED: 06/11/2002	DRILLER: Tom Calvin	



FLUSHMOUNT SURFACE CASING:
DIA.: 4"
TYPE: Alum. - Pentagonal nut

CONCRETE

GENERALIZED GEOLOGIC LOG

Refer to Boring Log

METHOD DRILLED: H.S.A.

METHOD DEVELOPED: 3+- gpm Wale pump

TIME DEVELOPED: ~1 Hour

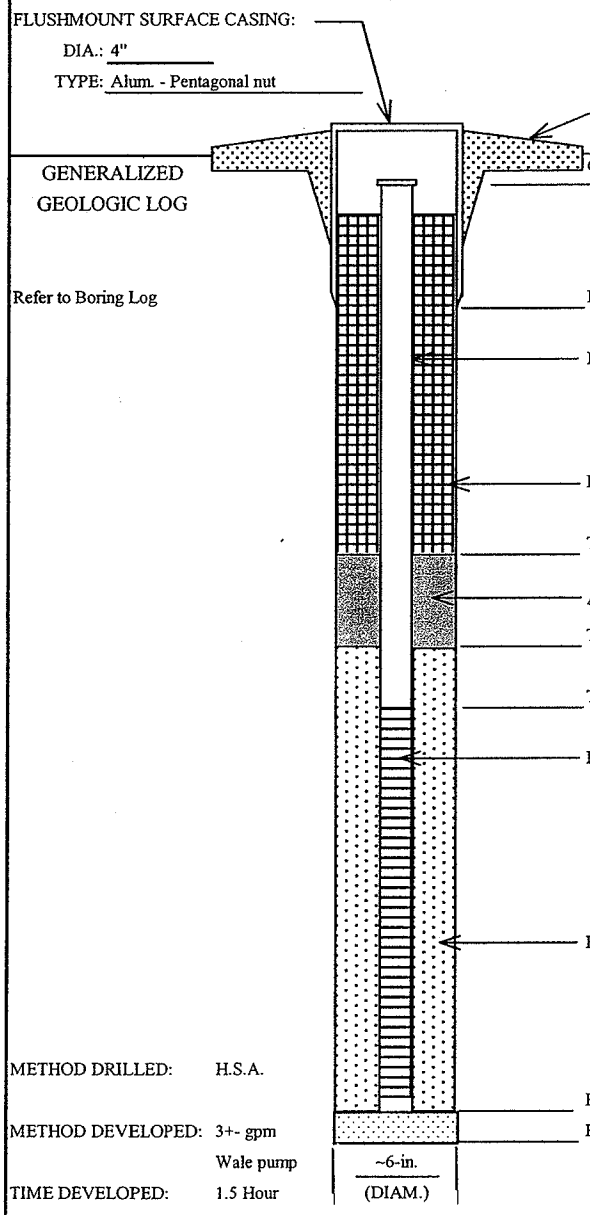
~6-in. (DIAM.)

	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
GROUND SURFACE	0.0'	
TOP OF PVC RISER		
BOTTOM OF PROTECTIVE PIPE	0.7'	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Morie Sand #1		
TOP OF ANNULAR SEAL	0.5'	
ANNULAR SEAL: TYPE: Bentonite Chips		
TOP OF FILTER PACK	1'	
TOP OF WELL SCREEN	2'	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: #1 Morie sand/equiv. SIZE: medium sand		
BOTTOM OF SCREEN	12'	
BOTTOM OF HOLE*	12'	

M&E

MONITORING WELL INSTALLATION LOG

PROJECT: **Mill St. Prop., Brookfield, MA - TBA**	JOB NO. **200100-6-114**	WELL NO. **ME-2**
DRILLING CONTRACTOR: Geologic	COORDINATES:	
BEGUN: 06/11/2002	GEOLOGIST William Abrahams-Dematte	WATER LEVEL (Depth/Elev.) ~0.5' ft below grade surface on 6/12/02
FINISHED: 06/11/2002	DRILLER: Tom Calvin	



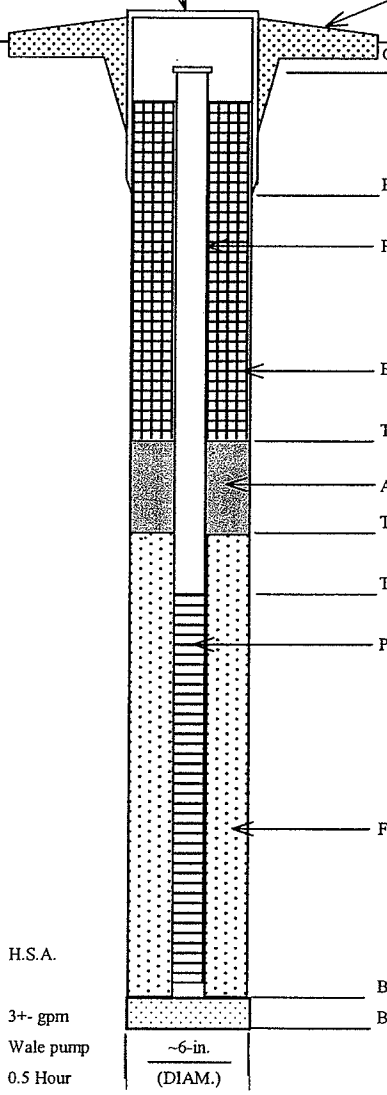
	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
GROUND SURFACE	0.0'	
TOP OF PVC RISER		
BOTTOM OF PROTECTIVE PIPE	0.7'	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Morie Sand #1		
TOP OF ANNULAR SEAL	0.5'	
ANNULAR SEAL: TYPE: Bentonite Chips		
TOP OF FILTER PACK	1'	
TOP OF WELL SCREEN	2'	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: #1 Morie sand/equiv. SIZE: medium sand		
BOTTOM OF SCREEN	12'	
BOTTOM OF HOLE*	12'	

M&E

MONITORING WELL INSTALLATION LOG

PROJECT: Mill St. Prop., Brookfield, MA - TBA	JOB NO. 200100-6-114	WELL NO. ME-3
DRILLING CONTRACTOR: Geologic	COORDINATES:	
BEGUN: 06/12/2002	GEOLOGIST William Abrahams-Dematte	WATER LEVEL (Depth/Elev.) 2.85' ft below grade surface on 6/13/02
FINISHED: 06/12/2002	DRILLER: Tom Calvin	

	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
FLUSHMOUNT SURFACE CASING: DIA.: 4" TYPE: Alum. - Pentagonal nut; CONCRETE		
GENERALIZED GEOLOGIC LOG; GROUND SURFACE	0.0'	
TOP OF PVC RISER		
Refer to Boring Log; BOTTOM OF PROTECTIVE PIPE	0.7'	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Morie Sand #1		
TOP OF ANNULAR SEAL	2'	
ANNULAR SEAL: TYPE: Bentonite Chips		
TOP OF FILTER PACK	3'	
TOP OF WELL SCREEN	4'	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: #1 Morie sand/equiv. SIZE: medium sand		
BOTTOM OF SCREEN	14'	
BOTTOM OF HOLE*	15'	



METHOD DRILLED: H.S.A.

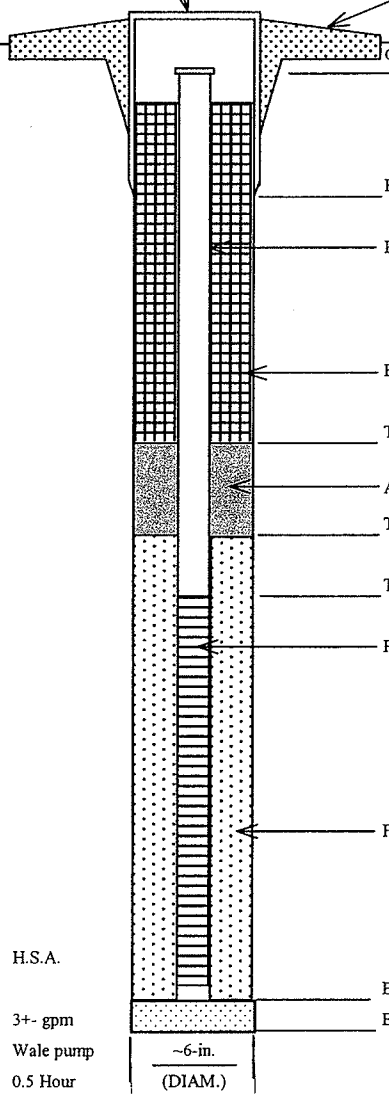
METHOD DEVELOPED: 3+- gpm Wale pump

TIME DEVELOPED: 0.5 Hour

M&E

MONITORING WELL INSTALLATION LOG

PROJECT: Mill St. Prop., Brookfield, MA - TBA	JOB NO. 200100-6-114	WELL NO. ME-4
DRILLING CONTRACTOR: Geologic	COORDINATES:	
BEGUN: 06/12/2002	GEOLOGIST William Abrahams-Dematte	WATER LEVEL (Depth/Elev.) ~7' ft below grade surface on 6/13/02
FINISHED: 06/12/2002	DRILLER: Tom Calvin	



	DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
FLUSHMOUNT SURFACE CASING: DIA.: 4" TYPE: Alum. - Pentagonal nut; CONCRETE		
GROUND SURFACE	0.0'	
TOP OF PVC RISER		
BOTTOM OF PROTECTIVE PIPE	0.7'	
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.		
BACKFILL TYPE: Morie Sand #1		
TOP OF ANNULAR SEAL	2'	
ANNULAR SEAL: TYPE: Bentonite Chips		
TOP OF FILTER PACK	3'	
TOP OF WELL SCREEN	5'	
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.		
FILTER PACK TYPE: #1 Morie sand/equiv. SIZE: medium sand		
BOTTOM OF SCREEN	15'	
BOTTOM OF HOLE*	16'	

GENERALIZED GEOLOGIC LOG

Refer to Boring Log

METHOD DRILLED: H.S.A.

METHOD DEVELOPED: 3+- gpm Wale pump

TIME DEVELOPED: 0.5 Hour

~6-in. (DIAM.)

M&E

MONITORING WELL INSTALLATION LOG

PROJECT: **Mill St. Prop., Brookfield, MA - TBA**	JOB NO.	WELL NO. **Lycott #5**
DRILLING CONTRACTOR: Unknown	COORDINATES:	
BEGUN: Unknown	GEOLOGIST Unknown	WATER LEVEL (Depth/Elev.) ~8' ft below grade surface on 6/13/02
FINISHED: Unknown	DRILLER: Unknown	

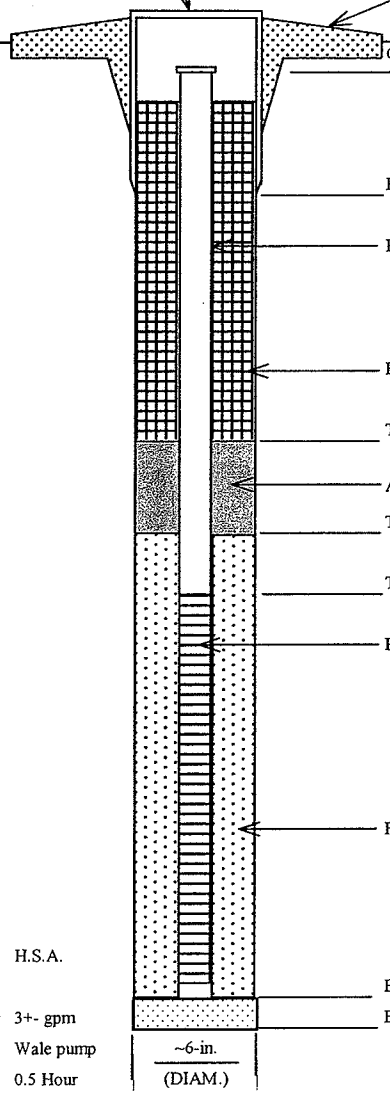
RECOVERED WELL FROM PREVIOUS INVESTIGATION BY LYCOTT ENVIRONMENTAL, INC.
DOWN HOLE MEASUREMENTS FOUND A 5 FT SECTION OF RISER FOLLOWED BY TWO 10 FT SECTIONS OF PIPE WHICH ARE BELIEVED TO BE SCREENED. UNABLE TO POSITIVELY ID SCREEN INTERVAL.

DEPTH BGS HEIGHT AGS (FT)	ELEV. (FT) NGVD DATUM
DEPTHS AND SCREEN ARE BEST GUESS	

FLUSHMOUNT SURFACE CASING:
DIA.: 4"
TYPE: Water shut off box.

GENERALIZED GEOLOGIC LOG

Refer to Boring Log



CONCRETE	
GROUND SURFACE	0.0'
TOP OF PVC RISER	
BOTTOM OF PROTECTIVE PIPE	5'
PVC RISER CASING: SCH.: 40 DIAM.: 2-in.	
BACKFILL TYPE: Morie Sand #1	
TOP OF ANNULAR SEAL	3'
ANNULAR SEAL: TYPE: Bentonite Chips	
TOP OF FILTER PACK	4'
TOP OF WELL SCREEN	5'
PVC SCREEN: SCH.: 40 DIAM.: 2-in. SLOT SIZE: 0.010-in.	
FILTER PACK TYPE: #1 Morie sand/equiv. SIZE: medium sand	
BOTTOM OF SCREEN	25'
BOTTOM OF HOLE*	

METHOD DRILLED: H.S.A.

METHOD DEVELOPED: 3+- gpm Wale pump

TIME DEVELOPED: 0.5 Hour

~6-in. (DIAM.)

M&E

SOIL BORING LOG

Metcalf & Eddy

Former Mill Street Prop.
64-67 Mill Street
Brookfield, Massachusetts

Location/ID:	Soil Boring 1 (SB-1)	Direct Push Operator:	Geologic Services
Date:	August 5, 2003	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	10.5 feet bgs

0 to 4 FEET	4 to 10.5 FEET
Brick, rock, sandy loam soils.	Approximately 3 feet of clean sandy fill followed by a mix of silty sands, brick and burnt materials. Water table ~7 ft.

Location/ID:	Soil Boring 2 (SB-2)	Direct Push Operator:	Geologic Services
Date:	August 5, 2003	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	12 feet bgs

0 to 4 FEET	4 to 12 FEET
Dark brown sandy loam, brick and rock.	Approximately 0.5 feet of clean fill. Perched water table at 6.75 feet; soils denser with higher clay content. From 8.0 to 8.5 feet soil was dry and from 8 to 12 feet soils were silty sand; with less brick than SB-1. Water table ~9 ft.

Location/ID:	Soil Boring 3 (SB-3)	Direct Push Operator:	Geologic Services
Date:	August 5, 2003	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	12 feet bgs

0 to 4 FEET	4 to 12 FEET
Brick, wood, burnt material, some slag like pieces and possibly coal chips.	No clean fill, brick, burnt material, some wood, rock. Water table ~9.5 ft.

Location/ID:	Soil Boring 4 (SB-4)	Direct Push Operator:	Geologic Services
Date:	August 5, 2003	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	8 feet bgs

0 to 4 FEET	4 to 8 FEET
Half tan, half black, burnt odor, wood, little brick.	Same as 0 to 4 feet, less stone. Water table ~7.5 ft.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P1

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/6/03
FINISH DATE: 8/6/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 8 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description [1]	Stratigraphic Description
0.0			NA			WT	0.0-0.7	Black, organic, topsoil.	Topsoil
	1	0-4		4	NS	~1.2 ft	0.7-1.0	Brown, silt loam, roots.	Loams
							1.0-4.0	Orange, silt loam, roots.	
2.0									
								END OF BORING 8.0 FEET [1]	
4.0								PIEZOMETER SCREENED 0.5 TO 7.5 FEET.	
	2	4-8							
6.0									
8.0									
	3	8-12							
10.0									
12.0									
	4	12-16							
14.0									
16.0									

NA - Not Applicable, NS - Not Sampled.

1 - Soil description from first attempt by air hammer jacking, which failed. Direct push eventually used, but time limited access meant no sample c

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P2

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/6/03
FINISH DATE: 8/6/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 11 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0			NA				0.0-1.7	Void	Topsoil
	1	0-4		2.3	NS		1.7-1.8	Cinders	Loams
							1.8-2.6	Yellow/Orange-brown, FINE-MEDIUM SAND	
2.0						WT		some silt, little gravel, slightly moist.	
						~2.5 ft.	2.6-3.2	Same As 1.8-2.6 ft., but grey and moist.	
							3.2-3.8	Black, MEDIUM-VC SAND, saturated, slight marshy odor..	Sands
4.0							3.8-4.0	Grey, FINE SAND AND SILT, some to little clay, firm, mottled.	
	2	4-8		4.0			4.0-4.3	Same As 3.8-4.0 feet.	
							4.3-4.6	Same As 32.-3.8 feet.	
6.0							4.6-5.3	Yellow-brown, FINE SAND, little pebbles.	
							5.3-7.0	Same As 4.6-5.3, but orange-brown.	
							7.0-8.0	Yellow-brown till like material.	
							8.0-9.6	Void	
8.0							9.6-10.3	Grey, FINE-MEDIUM SAND, wet.	
							10.3-11.0	Orange, MEDIUM SAND, trace pebble, wet.	
	3	8-12		1.4			11.0-12.0	Not Sampled - refusal.	
10.0								END OF BORING 11 FEET	
								PIEZOMETER SCREENED 1 TO 11 FEET.	
12.0									
	4	12-16							
14.0									
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P3

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/6/03
FINISH DATE: 8/6/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 12 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	2.2	NS	WT ~2.5 ft.	0.0-1.8	Void	Sands little-trace silt & clay
							1.8-1.9	Cinders	
							1.9-2.4	Orange-brown, FINE-MEDIUM SAND, trace silt and fine gravel.	
2.0							2.4-3.6	Black, FINE-MEDIUM SAND, organic layer, loose, wet.	
4.0							3.6-4.0	Dark orange-brown, FINE-MEDIUM SAND, little fine-coarse gravel, firm to dense, dry, mottled.	
6.0	2	4-8		3.6			4.0-4.4	Void	
							4.4-6.0	Black/tan/grey, mottled, FINE-MEDIUM SAND, saturated.	
8.0							6.0-7.5	Orange-brown, till like material, very dense, moist.	
							7.5-8.0	Grey, CLAY, shattered rock at 7.5 ft.	
10.0	3	8-12		4.0			8.0-8.4	FINE-MEDIUM SAND, little fine-coarse gravel, trace clay, dense, moist.	
							8.4-10.0	Grey, CLAY, trace medium sand, very dense, moist.	
							10.0-12.0	Grey, FINE-COARSE SAND AND GRAVEL, trace silt, till like, loose, saturated.	
12.0								END OF BORING 12 FEET	
14.0	4	12-16						PIEZOMETER SCREENED 2 TO 12 FEET.	
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P4

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/5/03
FINISH DATE: 8/5/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 12 ft.

PAGE 1 of 1

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	1.5	NS		0.0-2.5 2.5-3.0 3.0-4.0	Void Fill Concrete, Wet at 4 feet.	Fill
2.0							4.0-6.2 6.2-6.8 6.8-7.2	Void Gravel. Orange-brown, FINE-MEDIUM SAND, some coarse sand, saturated.	Sands little-trace silt & gravel
4.0						WT ~4.0 ft.	7.2-8.0	Grey/brown, FINE SAND, wet-moist.	
6.0	2	4-8		1.8			8.0-8.5 8.5-9.0 9.0-12.0	Void Natural, FINE-VC SAND AND FINE GRAVEL Grey, FINE SAND, some silt, saturated below 10.0 feet, wet above.	
8.0									
10.0	3	8-12		3.5					
12.0								END OF BORING 12 FEET	
14.0	4	12-16						PIEZOMETER SCREENED 4.5 TO 12 FEET. Bentonite Plug spans concrete flooring, separating water perched on concrete floor form ground water beneath the floor.	
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P5

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/6/03
FINISH DATE: 8/6/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 12 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	3	NS		0.0-1.0	Void	Fill
							1.0-1.2	Asphalt	
							1.2-2.8	Dark brown/brown FINE SANDY LOAM	
2.0							2.8-3.1	Light brown, FINE-MEDIUM SAND.	
							3.1-4.0	Orange/yellow-brown, MEDIUM SAND, quartz stone at 4 feet.	Sands little-trace silt & clay
4.0							4.0-4.8	Void	
							4.8-5.5	Natural, MEDIUM-COARSE SAND, broken gravel.	
6.0	2	4-8		3.2			5.5-8.0	Orange-brown, FINE SAND, little medium sand, white rock at 6.0 & 7.2 feet, grey clay lens at 6.8-7.0 feet., variably moist.	
8.0							8.0-11.0	Same As 5.5-8.0 feet, but more silt and clay content. Top 0.4' saturated, rest wet, slightly firm.	
						WT ~8.0	11.0-12.0	Orange-brown, SANDY TILL	
10.0	3	8-12		4.0					
12.0								END OF BORING 12 FEET	
14.0	4	12-16						PIEZOMETER SCREENED 2 TO 12 FEET.	
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P6

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/5/03
FINISH DATE: 8/5/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 12 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	2.0	NS		0.0-2.0 2.0-2.8 2.8-4.0	Void Topsoil, dark brown-black, loamy. Yellow-brown FINE-MEDIUM SAND, some some silt.	Topsoil
2.0									
4.0							4.0-6.5 6.5-8.0	Same As 2.4-4.0, but becomes more orange and dense, with a trace of gravel, and moist to wet from 5.5-6.5 feet. Orange-red variable, stratified FINE SAND, some medium sand, dense pebble lens at 7.5 ft.	Sands little-trace silt & clay
6.0	2	4-8		4.0			8.0-10.0	Same As 6.5-8.0, but saturated from 8 to 9 ft. and coarser (medium sand, some fine sand) from 9.0-10.0 feet.	
8.0						WT	10.0-11.3 11.3-12.0	Orange/red-brown FINE SAND AND SILT, trace clay, dense. Dense Till.	Till
10.0	3	8-12		4.0		~8.0			
12.0								END OF BORING 12 FEET	
14.0	4	12-16						PIEZOMETER SCREENED 2 TO 12 FEET.	
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P7

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/5/03
FINISH DATE: 8/5/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 8.5 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	4.0	NS		0.0-0.5	Topsoil	Topsoil
							0.5-4.0	Yellow/orange-brown, FINE-MEDIUM SAND little-trace coarse sand, trace pebble, firm.	Sands
2.0							4.0-4.8	Same As 0.5-4.0 feet.	
							4.8-5.3	Yellow-brown, MEDIUM SAND, some silt, trace gravel, dense.	
4.0							5.3-7.0	Grey-brown, FINE SAND, trace gravel, very dense	
	2	4-8		4.0		WT ~5 ft.	7.0-8.0	Brown-red FINE-MEDIUM SAND, and black micacious rock fragments - phyllite - at 7 & 8 ft.	
6.0							8.0-8.5	Refusal, no recovery.	
8.0									
	3	8-12							
10.0									
								END OF BORING 8.5 FEET	
12.0									
	4	12-16						PIEZOMETER SCREENED 2 TO 8 FEET.	
14.0									
16.0									

NA - Not Applicable, NS - Not Sampled.

METCALF & EDDY	SITE LOCATION	BORING NUMBER
701 Edgewater Drive Wakefield, MA 01880 (781)-246-5200	Former Mill Street Property 64-67 Mill Street Brookfield, Massachusetts	P8

CONTRACTOR: Earth Exploration / Geologic
DRILLER: Emil
INSPECTOR: William Abrahams-Dematte
START DATE: 8/5/03
FINISH DATE: 8/5/03

DRILLING METHOD: Direct Push
WELL INSTALLED: Piezometer
SAMPLING METHOD: Ded. Polyethylene Sleeves
SIZE I.D.: 2
TOTAL DEPTH: 12 ft.

Depth	No.	Range (ft.)	Sample Blows	Recovery (ft.)	PID* (ppm)	Water Table	Interval (ft.)	Sample Description	Stratigraphic Description
0.0	1	0-4	NA	3.2	NS		0.0-0.8	Void	Topsoil
							0.8-1.5	Topsoil	
							1.5-2.2	Orange-brown FINE-MEDIUM SAND.	
2.0							2.2-3.3	Yellow-brown SILT-CLAY, very moist.	
							3.3-4.0	Orange-brown FINE-MEDIUM SAND, little to trace coarse sand, trace gravel, dense.	Sands little-trace silt & clay
4.0							4.0-4.9	Yellow-brown SANDY SILT CLAY, saturated	
							4.9-5.7	Black, coarse grained, micacious phyllite with quartz, feldspar, and copper colored mica	
6.0	2	4-8		4.0		WT ~6 ft	5.7-8.0	Orange/red-brown, MEDIUM-COARSE SAND little VC sand, little-trace gravel, dense ground water flow zones (wet).	
8.0							8.0-8.7	Brown/Natural, FINE-VC SAND, little fine gravel, moist.	
							8.7-9.2	Red-brown, FINE-MEDIUM SAND AND GRAVEL, dense.	Till
10.0	3	8-12		4.0			9.2-9.8	Orange FINE SAND, little-trace fine gravel.	
							9.8-12.0	Black/grey TILL, predominantly fine sand and silt, very dense.	
12.0								END OF BORING 12 FEET PIEZOMETER SCREENED 2 TO 12 FEET.	
14.0	4	12-16							
16.0									

NA - Not Applicable, NS - Not Sampled.

TEST PIT LOG

Former Mill Street Prop.
54-67 Mill Street
Brookfield, Massachusetts

Location/ID:	Test Pit 1	Excavator:	Geologic Services
Date:	June 10, 2002	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	7 feet bgs

0-2.0 ft	Red-light brown, Medium SAND, little bricks, trace glass and coal slag, dry.
2.0-4.0 ft	Red-brown, Fine and Medium SAND, little brick, several cobbles, trace wood and coal slag.
4.0-6.0 ft	Dug out crushed tin canister and ran into foundation wall. Moved 5 ft. south. Red-brown, Fine and Medium SAND, little cobble and brick, little-trace burnt wood and sheet metal. Loose, dry.
6.0-7.0 ft	A small transformer, a large roll of half burnt vinyl flooring, and many burnt beams. A 4" cast iron pipe, trending east-west, prevented further digging. Dry.

Small transformer.

Debris in pit. Vinyl flooring bottom right.

View of Test Pit 1 at 4-5 foot depth.

PID = Photo Ionization Detector (readings in parts per million-ppm) – Readings taken every two feet, all 0 ppm.

Metcalf & Eddy

TEST PIT LOG

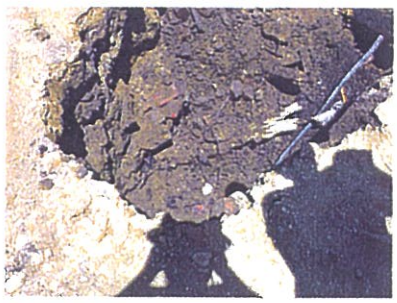
Former Mill Street Prop.
54-67 Mill Street
Brookfield, Massachusetts

Location/ID:	Test Pit 2	Excavator:	Geologic Services
Date:	June 10, 2002	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	7 feet bgs

0-1.5 ft	Tan and brown Fine SANDY LOAM, little brick, gravel, and wood with trace coal slag.
1.5-2.5 ft	Medium brown, Fine SANDY LOAM and Gravel, little-trace brick and wire, trace coal.
2.5-3.0 ft	Dark brown, Fine SANDY LOAM, little brick, large boulder.
3.0-4.0 ft	Red-brown Fine SANDY LOAM, brick, charred wood, trace fabric and fibrous material, Steel ring with graphite like material in it. At around 3.5 ft, sparkly black material with nail through it. Streaks like graphite.
4.0-6.5 ft	Brown-grey, Fine SANDY LOAM, and debris; mostly wood but many pipes and wires. Large piece steel, large beam across pit, graphite like material in wall of test pit. Pocket of orange fine sand.
6.5-7.0 ft	Boulder and burned material mixed with sandy textured material. Could not advance pit deeper due to footing or debris. Used hand auger to collect VPH. Bottom of pit was moist, wood was composting at depth as evidenced from steam and warm black wood material.

Asphalt like material.

Metal rings with sparkly black material.



View of pit at approximately 4-5 feet.

PID = Photo Ionization Detector (readings in parts per million-ppm) – Readings taken every two feet, all 0 ppm.

Metcalf & Eddy

TEST PIT LOG

Former Mill Street Prop.
54-67 Mill Street
Brookfield, Massachusetts

Location/ID:	Test Pit 3	Excavator:	Geologic Services
Date:	June 10, 2002	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	9 feet bgs

0-2.5 ft	Dark brown and yellow-brown, Fine SANDY LOAM, loose, gravelly, little bricks, trace roots, wires, burnt paper and aluminum in pit.
2.5-4.0 ft	Light brown, Fine SAND, some to little medium sand, little silt and gravel. Little brick and wood, trace coal slag and white decomposed concrete like material.
4.0-6.0 ft	Brown, Fine SANDY LOAM, peppery look, metal, shiny black graphite like material (trace), wood beams, clay pipe, machinery part.
6.0-7.5 ft	Pipes at 6 feet, Orange-brown Fine SAND, some-little silt, little gravel, and couple boulders. Becomes more brown to yellowish brown and woodier below 7 ft.
7.5-8.5 ft	Yellow-brown Fine SANDY LOAM. Becomes moist at 8 ft.
8.5-9.0 ft.	Olive Fine SANDY LOAM, mottled, wet. No floor encountered, though from observations of floor to south, one should have been encountered. Slab/large boulders on south side of pit.

View of test pit.

View of waste pile (facing north)

PID = Photo Ionization Detector (readings in parts per million-ppm) – Readings taken every two feet, all 0 ppm.

TEST PIT LOG

Former Mill Street Prop.
54-67 Mill Street
Brookfield, Massachusetts

Location/ID:	Test Pit 4	Excavator:	Geologic Services
Date:	June 10, 2002	M&E Geologist:	W. Abrahams-Dematte
Coordinates:	See separate figure	Total Depth:	7.5 feet bgs

0-3 ft	Brown, Fine SANDY LOAM, gravelly, little-trace brick, trace wires, nails, various metal objects including 2" steel pipe (fuel line?), some charred wood.
3-4 ft	Mostly black, charred material, possibly creosote odor or petroleum odor.
4-6 ft	Black, Fine to Coarse SANDY LOAM, wood, brick, several boulders, became moist around 5 ft.
6-7.5 ft	Black, mostly charred wood, wires, moist-slightly wet. Floor reached at 7.5 feet.

View of waste pile, top 3 feet. Below similar.

West facing view of pit.

PID = Photo Ionization Detector (readings in parts per million-ppm) – Readings taken every two feet, all 0 ppm.

APPENDIX G

FIELD WATER LEVEL WORKSHEETS

Mill Street, Brookfield, MA 8/6/03 - FIELD SURVEY NOTES

Shot #	Hor. Angle (Az. Angle)	Rod (Ft.)	Stadia (Ft.) High	Stadia (Ft.) Low	Stadia Difference	Shot Dist. (ft.)	Comments	Elevation ft	GW depth below top pvc (ft)	GW depth below top pvc (ft)	GW Elev. (ft) 8/6/2003	GW Elev. (ft) 9/12/2003
1	0	4.74	5.1	4.38	0.72	72	UP 30 - BM (Arbitrary 100 ft)	100.00	8/6/2003	09/12/03		
2	137	12.98	13.165	12.784	0.381	38.1	ME-1 TOP PVC - ALL WELLS	91.76	1.44	2.27	90.32	89.49
3	78.5	13.07	13.69	12.44	1.25	125	ME-2	91.67	0.36	1.22	91.31	90.45
4	50	8.05	8.9	7.2	1.7	170	ME-3	96.69	2.77	4.33	93.92	92.36
5	265	5.24	6.102	4.367	1.735	173.5	ME-4	99.50	6.61	7.76	92.89	91.74
6	18	0.35	2.875	1.11	1.765	226.5	LYCOTT-5 - VERTICAL EST. ONLY	104.39				
7	243	13.12	13.642	12.638	1.004	100.4	P1	91.62	1.71	2.5	89.91	89.12
8	177	14.33	14.562	14.08	0.482	48.2	P2	90.41	2.86	3.07	87.55	87.34
9	118.5	15.05	15.52	14.575	0.945	94.5	P3	89.69	0.65	1.52	89.04	88.17
10	93	10.93	11.165	10.7	0.465	46.5	P4	93.81	2.99	3.65	90.82	90.16
11	319	4.395	4.692	4.19	0.502	50.2	P5	100.35	5.82	7.99	94.53	92.36
12	321	2.43	2.93	1.91	1.02	102	P6	102.31	4.62	8.11	97.69	94.20
13	8.25	3.82	4.122	3.265	0.857	85.7	P7	100.92	4.76	7.14	96.16	93.78
14	43	6.7	7.21	6.05	1.16	116	P8	98.04	3.21	5.38	94.83	92.66
15	311	2.96	3.47	2.44	1.03	103	UP 31	101.78				
16	359	4.75	4.86	4.64	0.22	22	1 - BLDG CRN EAST	99.99				
17	358	4.76	4.92	4.62	0.3	30	2 - BLDG CRN WEST	99.98				
18	68	7.15	7.59	6.72	0.87	87	3 - BLDG CRN SUB WEST (IE SO.)	97.59				
19	270	4.32	4.68	3.96	0.72	72	SB-1	100.42				
20	268	4.65	4.87	4.43	0.44	44	SB-2	100.09				
21	293	4.56	4.6	4.51	0.09	9	SB-3	100.18				
22	56.5	5.54	5.72	5.35	0.37	37	SB-4	99.20				

AFTER SHOTS 1-15 BM CHECKED - VERT SAME AZIMUTH OFF 2.6 READ. CORRECTED AND SHOTS 16-22 COMPLETED, BM CHECKED OFF READ 1.6

LYCOTT WAS NOT VISIBLE DUE TO ITS LOCATION, ELEVATION ESTIMATED ONLY - WATER LEVEL NOT TAKEN

Mill Street, Brookfield
Groundwater Monitoring

Date	Time	Location	Depth to Water	From TOC/TOPVC	Well Secure Yes/No	Comments
9/12/03	1130	P-1	2.50 ft	TOPVC	yes	no stake
	1135	P-2	3.07 ft	TOPVC	yes	
	1137	P-3	1.52 ft	TOPVC	yes	slight obc at 1.49 ft - orange staining
	1143	P-4	3.65 ft	TOPVC	yes	
	1150	P-5	7.99 ft	TOPVC	yes	stake broken
	1156	P-6	8.11 ft	TOPVC	yes	silt / mud in probe
	1200	P-7	~ 7.14 ft	TOPVC	yes	silt (~~f. orange tarry~~) covering probe + blocking signal
	1205	P-8	5.38 ft	TOPVC	yes	signal not clear; trace silt
	1140	ME-1	2.27 ft	TOPVC	yes	
	1145	ME-2	1.22 ft	TOPVC	yes	
	1210	ME-3	4.33 ft	TOPVC	yes	
	1153	ME-4	7.76 ft	TOPVC	yes	
	1213	MW-5	10.80 ft	TOC	yes	