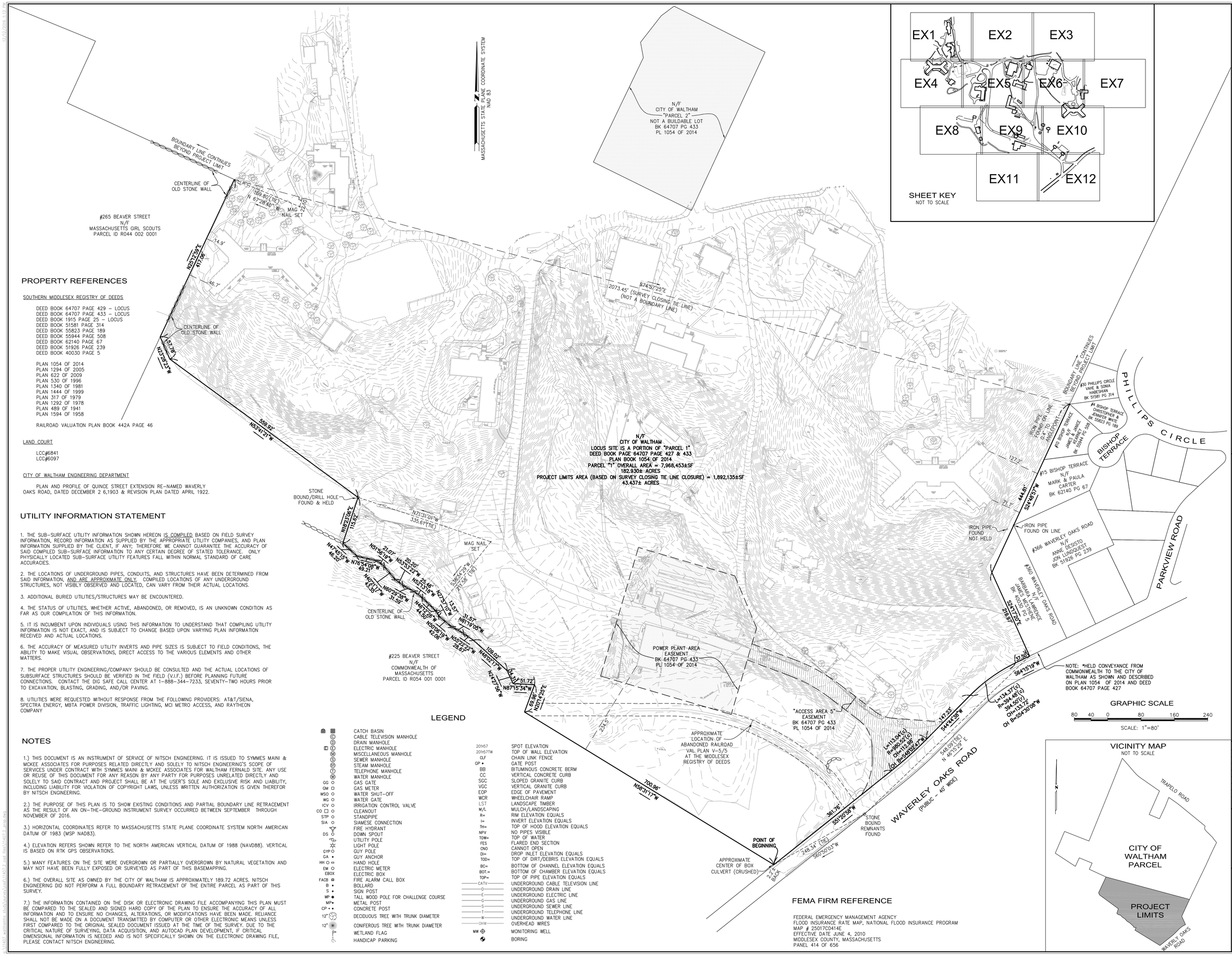
APPENDICES
K1-K7



PROPERTY REFERENCES

SOUTHERN MIDDLESEX REGISTRY OF DEEDS

DEED BOOK 64707 PAGE 429 – LOCUS
DEED BOOK 64707 PAGE 433 – LOCUS
DEED BOOK 1915 PAGE 25 – LOCUS
DEED BOOK 51581 PAGE 314
DEED BOOK 55823 PAGE 189
DEED BOOK 55944 PAGE 508
DEED BOOK 62140 PAGE 67
DEED BOOK 51926 PAGE 239
DEED BOOK 40030 PAGE 5

PLAN 1054 OF 2014
PLAN 1294 OF 2005
PLAN 622 OF 2009
PLAN 530 OF 1996
PLAN 1340 OF 1981
PLAN 1444 OF 1999
PLAN 317 OF 1979
PLAN 1292 OF 1978
PLAN 489 OF 1941
PLAN 1594 OF 1958

RAILROAD VALUATION PLAN BOOK 442A PAGE 46

LAND COURT

LCC#6841
LCC#6097

CITY OF WALTHAM ENGINEERING DEPARTMENT

PLAN AND PROFILE OF QUINCE STREET EXTENSION RE-NAMED WAVERLY OAKS ROAD, DATED DECEMBER 2 6,1903 & REVISION PLAN DATED APRIL 1922.

UTILITY INFORMATION STATEMENT

1. THE SUB-SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CLIENT, IF ANY; THEREFORE WE CANNOT GUARANTEE THE ACCURACY OF SAID COMPILED SUB-SURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.

2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS.

3. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED.

4. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.

5. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS.

6. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.

7. THE PROPER UTILITY ENGINEERING/COMPANY SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD (V.I.F.) BEFORE PLANNING FUTURE CONNECTIONS. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233, SEVENTY-TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.

8. UTILITIES WERE REQUESTED WITHOUT RESPONSE FROM THE FOLLOWING PROVIDERS: AT&T/SIENA, SPECTRA ENERGY, MBTA POWER DIVISION, TRAFFIC LIGHTING, MCI METRO ACCESS, AND RAYTHEON COMPANY

NOTES

1.) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF NITSCH ENGINEERING. IT IS ISSUED TO SYMMES MAINI & MCKEE ASSOCIATES FOR PURPOSES RELATED DIRECTLY AND SOLELY TO NITSCH ENGINEERING'S SCOPE OF SERVICES UNDER CONTRACT WITH SYMMES MAINI & MCKEE ASSOCIATES FOR WALTHAM FERNALD SITE. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT AND PROJECT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN AUTHORIZATION IS GIVEN THEREFOR BY NITSCH ENGINEERING.

2.) THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS AND PARTIAL BOUNDARY LINE RETRACEMENT AS THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY OCCURRED BETWEEN SEPTEMBER THROUGH NOVEMBER OF 2016.

3.) HORIZONTAL COORDINATES REFER TO MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (MSP NAD83).

4.) ELEVATION REFERS SHOWN REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). VERTICAL IS BASED ON RTK GPS OBSERVATIONS.

5.) MANY FEATURES ON THE SITE WERE OVERGROWN OR PARTIALLY OVERGROWN BY NATURAL VEGETATION AND MAY NOT HAVE BEEN FULLY EXPOSED OR SURVEYED AS PART OF THIS BASEMAPPING.

6.) THE OVERALL SITE AS OWNED BY THE CITY OF WALTHAM IS APPROXIMATELY 189.72 ACRES. NITSCH ENGINEERING DID NOT PERFORM A FULL BOUNDARY RETRACEMENT OF THE ENTIRE PARCEL AS PART OF THIS SURVEY.

7.) THE INFORMATION CONTAINED ON THE DISK OR ELECTRONIC DRAWING FILE ACCOMPANYING THIS PLAN MUST BE COMPARED TO THE SEALED AND SIGNED HARD COPY OF THE PLAN TO ENSURE THE ACCURACY OF ALL INFORMATION AND TO ENSURE NO CHANGES, ALTERATIONS, OR MODIFICATIONS HAVE BEEN MADE. RELIANCE SHALL NOT BE MADE ON A DOCUMENT TRANSMITTED BY COMPUTER OR OTHER ELECTRONIC MEANS UNLESS FIRST COMPARED TO THE ORIGINAL SEALED DOCUMENT ISSUED AT THE TIME OF THE SURVEY. DUE TO THE CRITICAL NATURE OF SURVEYING, DATA ACQUISITION, AND AUTOCAD PLAN DEVELOPMENT, IF CRITICAL DIMENSIONAL INFORMATION IS NEEDED AND IS NOT SPECIFICALLY SHOWN ON THE ELECTRONIC DRAWING FILE, PLEASE CONTACT NITSCH ENGINEERING.

LEGEND

	CATCH BASIN
G	CABLE TELEVISION MANHOLE
D	DRAIN MANHOLE
E	ELECTRIC MANHOLE
M	MISCELLANEOUS MANHOLE
S	SEWER MANHOLE
ST	STEAM MANHOLE
T	TELEPHONE MANHOLE
W	WATER MANHOLE
GG	GAS GATE
GM	GAS METER
WSO	WATER SHUT-OFF
WG	WATER GATE
ICV	IRRIGATION CONTROL VALVE
CO	CLEANOUT
STP	STANDPIPE
SIA	SIAMESE CONNECTION
	FIRE HYDRANT
DS	DOWN SPOUT
	UTILITY POLE
	LIGHT POLE
GYP	GUY POLE
GA	GUY ANCHOR
HH	HAND HOLE
EM	ELECTRIC METER
EBOX	ELECTRIC BOX
FACB	FIRE ALARM CALL BOX
B	BOLLARD
S	SIGN POST
WP	TALL WOOD POLE FOR CHALLENGE COURSE
MP	METAL POST
CP	CONCRETE POST
12"	DECIDUOUS TREE WITH TRUNK DIAMETER
12"	CONIFEROUS TREE WITH TRUNK DIAMETER
	WETLAND FLAG
	HANDICAP PARKING

201x57	SPOT ELEVATION
201x57TW	TOP OF WALL ELEVATION
CLF	CHAIN LINK FENCE
GP	GATE POST
BB	BITUMINOUS CONCRETE BERM
CC	VERTICAL CONCRETE CURB
SGC	SLOPED GRANITE CURB
VGC	VERTICAL GRANITE CURB
EOP	EDGE OF PAVEMENT
WCR	WHEELCHAIR RAMP
LST	LANDSCAPE TIMBER
M/L	MULCH/LANDSCAPING
R=	RIM ELEVATION EQUALS
I=	INVERT ELEVATION EQUALS
TH=	TOP OF HOOD ELEVATION EQUALS
NPV	NO PIPES VISIBLE
TOW=	TOP OF WATER
FES	FLARED END SECTION
CNO	CANNOT OPEN
DI=	DROP INLET ELEVATION EQUALS
TOD=	TOP OF DIRT/DEBRIS ELEVATION EQUALS
BC=	BOTTOM OF CHANNEL ELEVATION EQUALS
BOT.=	BOTTOM OF CHAMBER ELEVATION EQUALS
TOP=	TOP OF PIPE ELEVATION EQUALS
CATV	UNDERGROUND CABLE TELEVISION LINE
D	UNDERGROUND DRAIN LINE
E	UNDERGROUND ELECTRIC LINE
G	UNDERGROUND GAS LINE
S	UNDERGROUND SEWER LINE
T	UNDERGROUND TELEPHONE LINE
W	UNDERGROUND WATER LINE
OHW	OVERHEAD WIRES
MW	MONITORING WELL
	BORING

FEMA FIRM REFERENCE

FEDERAL EMERGENCY MANAGEMENT AGENCY
FLOOD INSURANCE RATE MAP, NATIONAL FLOOD INSURANCE PROGRAM
MAP # 25017C0414E
EFFECTIVE DATE JUNE 4, 2010
MIDDLESEX COUNTY, MASSACHUSETTS
PANEL 414 OF 656

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COMMONWEALTH OF MASSACHUSETTS
ROBERT G. MILES
NO. 51608
REGISTERED PROFESSIONAL LAND SURVEYOR

DECEMBER 12, 2016

TOPOGRAPHIC PLAN OF LAND

WALTHAM FERNALD SITE
WALTHAM, MASSACHUSETTS

PREPARED FOR:
SYMMES MAINI & MCKEE ASSOCIATES
1000 MASSACHUSETTS AVENUE, CAMBRIDGE, MASSACHUSETTS 02138

REV.	COMMENTS	DATE
	REVISIONS	

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DES./COMP:	RGM
FIELD BOOK:	642/643
DRAFTED BY:	PAR
CHECKED BY:	RGM

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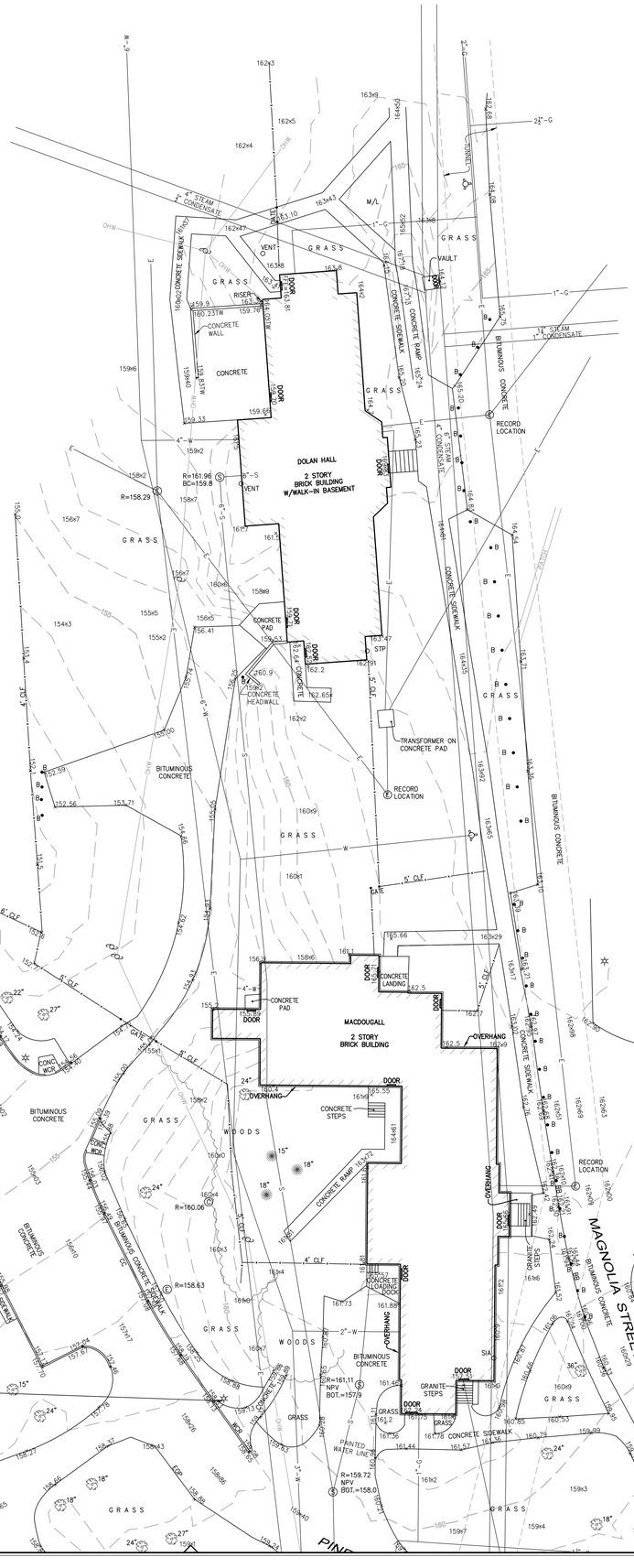
COVER

OF 12 REV.

SEE COVER SHEET FOR NOTES, LEGEND, AND REFERENCES

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM
NAD 83



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TOPOGRAPHIC PLAN OF LAND

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WALTHAM, MASSACHUSETTS

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REV.	COMMENTS	DATE
	REVISIONS	

PROJECT #: 11407
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DATE: DECEMBER 2016
DES./COMP: RGM
FIELD BOOK: 642/643
DRAFTED BY: PAR
CHECKED BY: RGM

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SEE COVER SHEET FOR NOTES, LEGEND, AND REFERENCES

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM
NAD 83

N/F
CITY OF WALTHAM
"PARCEL 2"
NOT A BUILDABLE LOT
BK 64707 PG 433
PL 1054 OF 2014

BENCH MARK
X CUT ON LIGHT POLE ANCHOR BOLT
ELEVATION=163.20' (NAVD88)
FIELD BOOK 651 PAGE 9
SET ON OCTOBER 6, 2016

PINE STREET

GRAPHIC SCALE
20 10 0 20 40 60
SCALE: 1"=20'

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REV.	COMMENTS	DATE
	REVISIONS	

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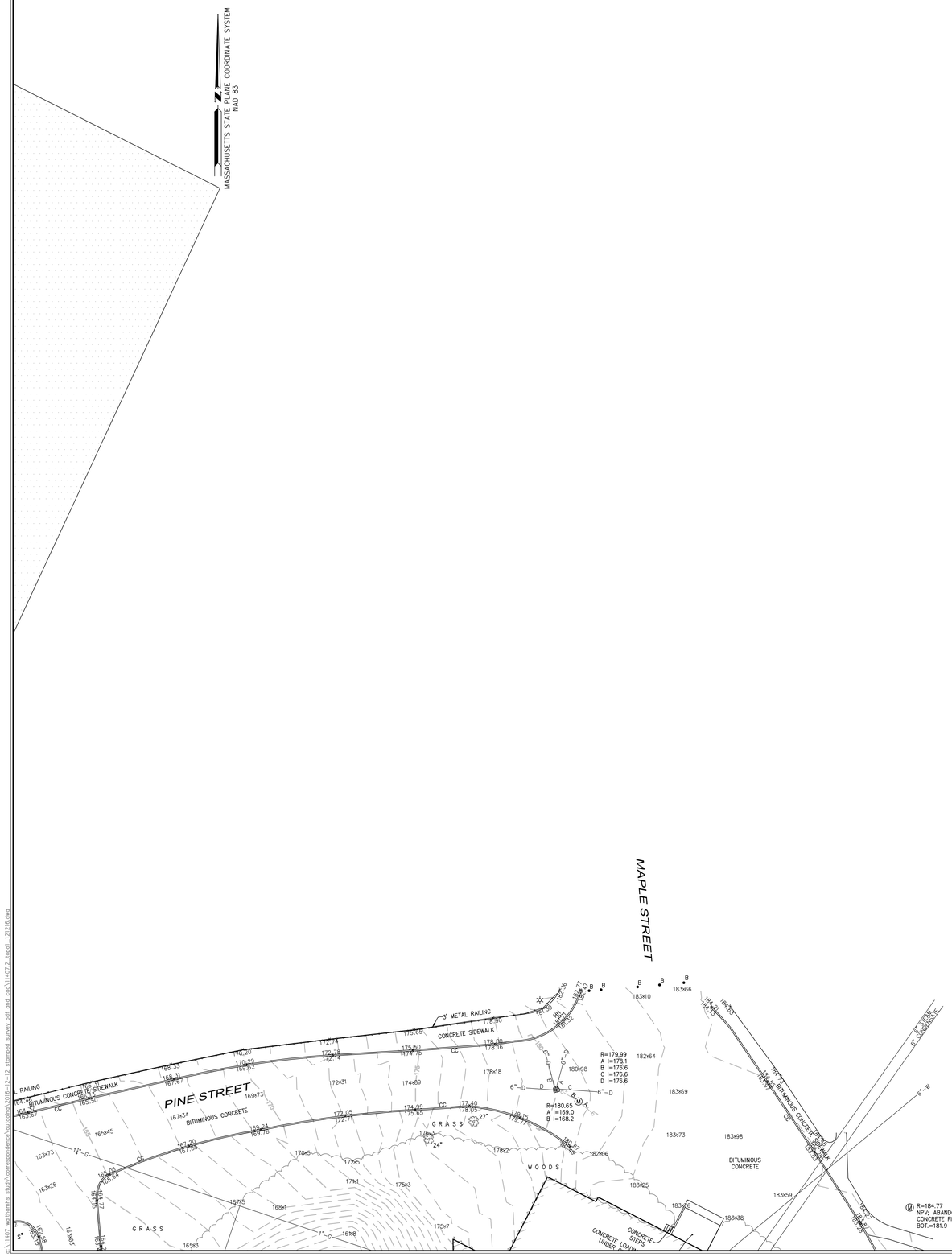
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83



GRAPHIC SCALE

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SCALE: 1"=20'

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	REVISIONS	

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FIELD BOOK:	642/643
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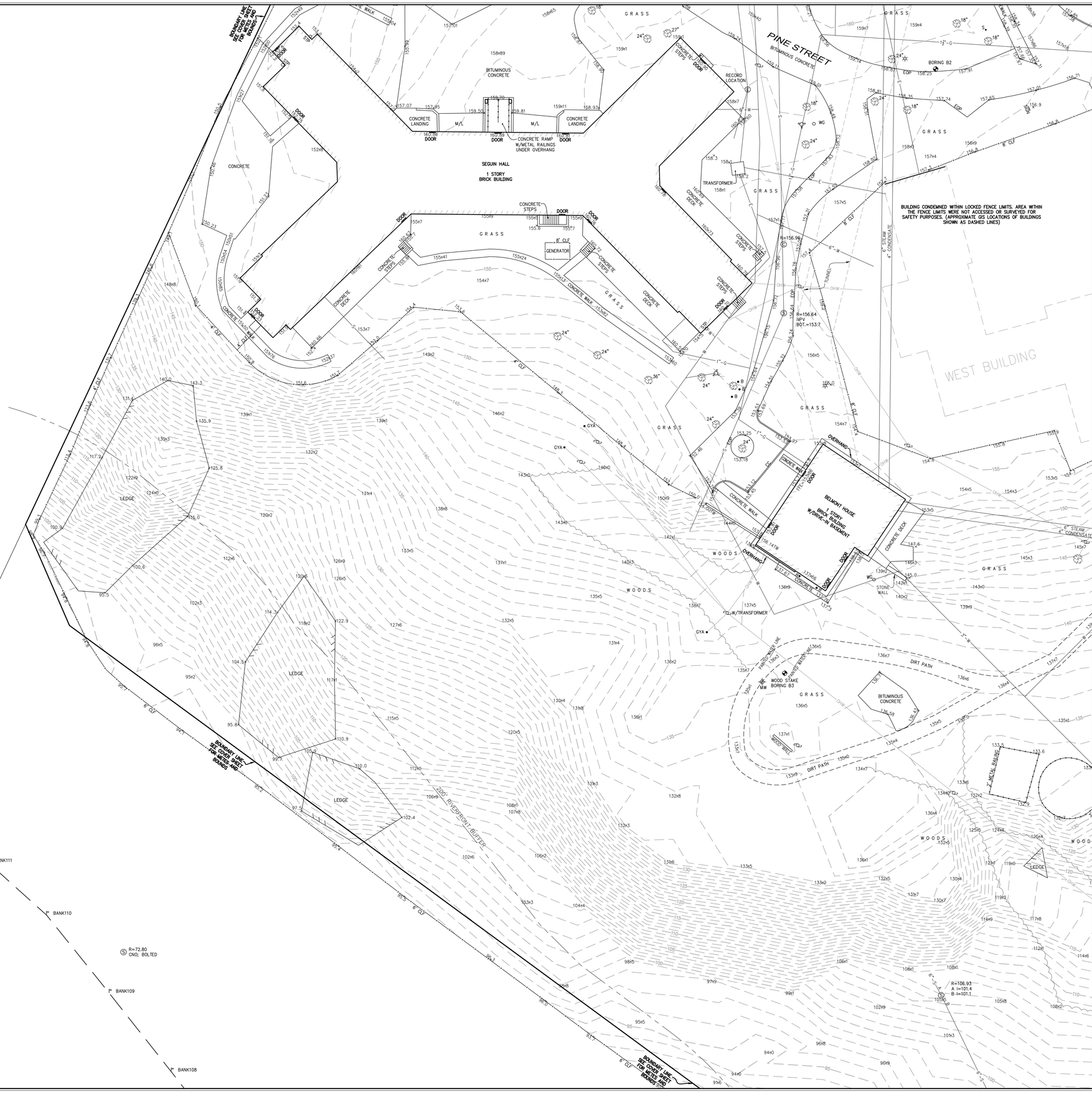
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83



GRAPHIC SCALE

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SCALE: 1"=20'

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REV.	COMMENTS	DATE
	REVISIONS	

PROJECT #	11407
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DATE:	DECEMBER 2016
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FIELD BOOK:	642/643
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TOPOGRAPHIC PLAN OF LAND

WALTHAM FERNALD SITE
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REV.	COMMENTS	DATE
	REVISIONS	

PROJECT #	11407
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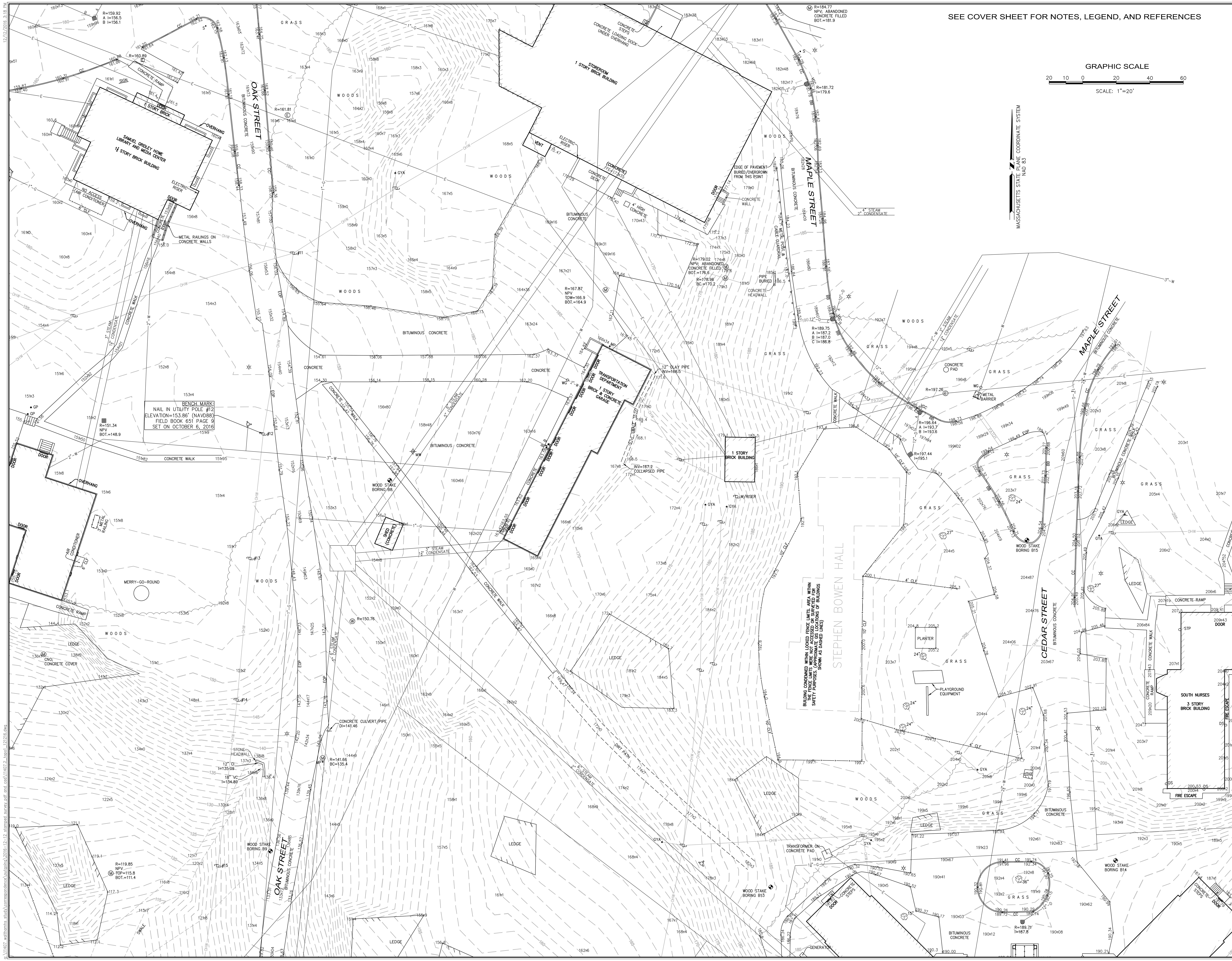
SEE COVER SHEET FOR NOTES, LEGEND, AND REFERENCES
GRAPHIC SCALE
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SCALE: 1"=20'
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83
OAK STREET
MAPLE STREET
CEDAR STREET
SAMUEL GRIDLEY HOWE LIBRARY AND MEDIA CENTER
1½ STORY BRICK BUILDING
STOREROOM 1 STORY BRICK BUILDING
TRANSPORTATION DEPARTMENT BRICK 1 STORY CONCRETE GARAGE
1 STORY BRICK BUILDING
STEPHEN BOWEN HALL
SOUTH NURSES 3 STORY BRICK BUILDING
BENCH MARK: NAIL IN UTILITY POLE #12 ELEVATION=153.86' (NAVD88) FIELD BOOK 651 PAGE 9 SET ON OCTOBER 6, 2016
MERRY-GO-ROUND
WOODS
GRASS
LEDGE
BITUMINOUS CONCRETE
CONCRETE WALK
PLAYGROUND EQUIPMENT
PLANTER
TRANSFORMER ON CONCRETE PAD
GENERATOR

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FILE: 11407.2_TOPO1_121216.dwg
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COMMONWEALTH OF MASSACHUSETTS ROBERT MICES NO. 51608 REGISTERED PROFESSIONAL ENGINEER

DECEMBER 12, 2016

TOPOGRAPHIC PLAN OF LAND

WALTHAM FERNALD SITE
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REV.	COMMENTS / REVISIONS	DATE

PROJECT # 11407
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DATE: DECEMBER 2016
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FIELD BOOK: 642/643
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GRAPHIC SCALE
SCALE: 1"=20'

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REV.	COMMENTS	DATE
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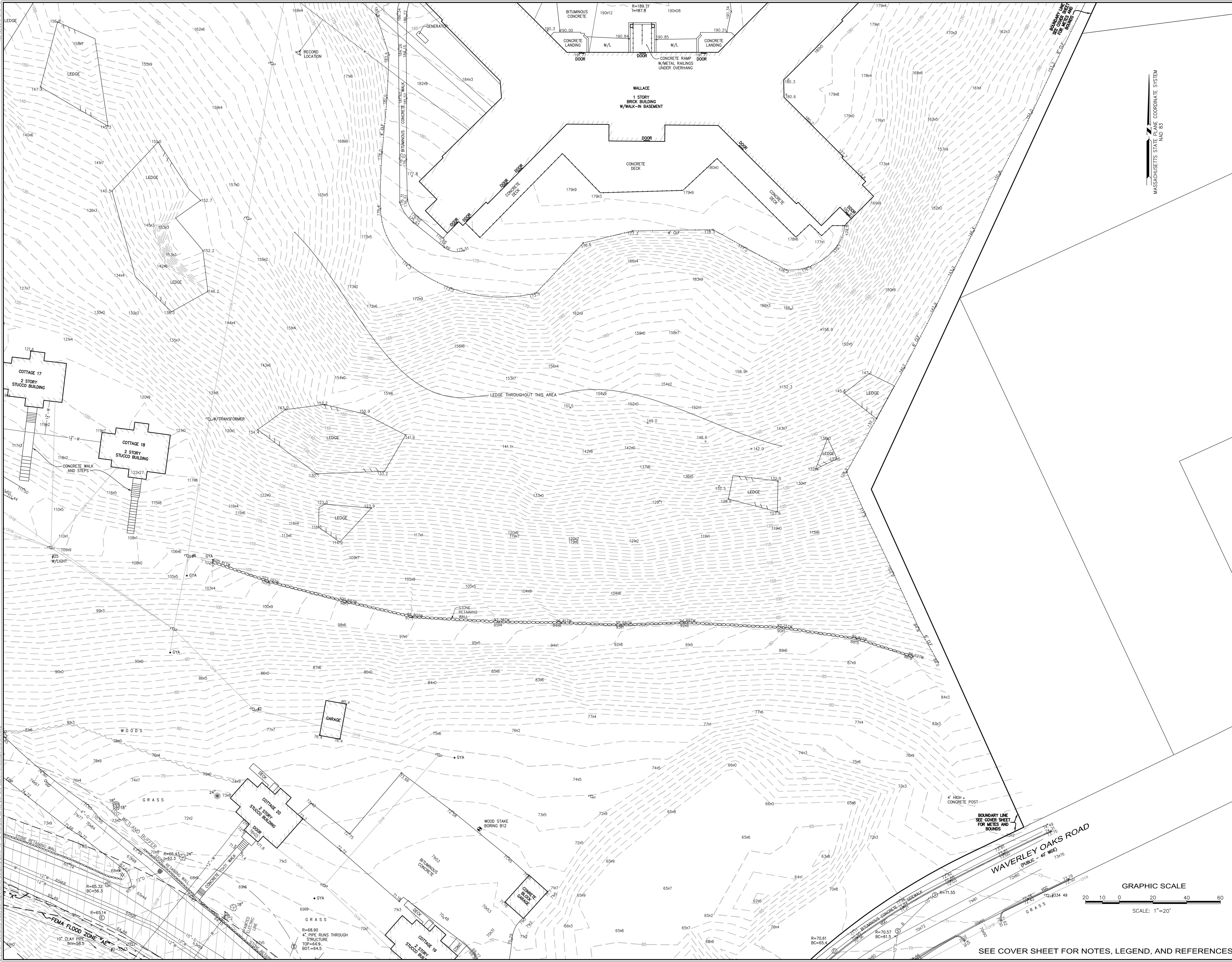
EX9

OF 12 REV.



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REV.	COMMENTS	DATE

REVISIONS

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EX10

OF 12 REV.

BOUNDARY LINE SEE COVER SHEET FOR METES AND BOUNDS

STONE WALL

MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83

FEMA FLOOD ZONE "X"

FEMA FLOOD ZONE "AE"

FEMA FLOOD ZONE "AE"

FEMA FLOOD ZONE "X"

FEMA FLOOD ZONE "AE"

FEMA FLOOD ZONE "X"

POWER PLANT AREA EASEMENT BK 64707-PD 433 PL 1054 OF 2014

NO RIM NPV BOT.=49.4

100' WETLAND BUFFER

RAILROAD TRACKS

RAILROAD TRACKS

CONCRETE WALL

2 WOOD POSTS W/ELECTRIC RISER

EDGE OF WATER

EDGE OF WATER

4' CLF

WATER

COLLAPSED BOX CULVERT INVERT

BOUNDARY LINE SEE COVER SHEET FOR METES AND BOUNDS

GRAPHIC SCALE

20 10 0 20 40 60

SCALE: 1"=20'

SEE COVER SHEET FOR NOTES, LEGEND, AND REFERENCES

Nitsch Engineering

www.nitscheng.com

2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

COMMONWEALTH OF MASSACHUSETTS
ROBERT G. MILES
NO. 51608
REGISTERED PROFESSIONAL LAND SURVEYOR

DECEMBER 12, 2016

TOPOGRAPHIC PLAN OF LAND

WALTHAM FERNALD SITE
WALTHAM, MASSACHUSETTS

PREPARED FOR:
SYMMES MAINI & MCKEE ASSOCIATES
1000 MASSACHUSETTS AVENUE, CAMBRIDGE, MASSACHUSETTS 02138

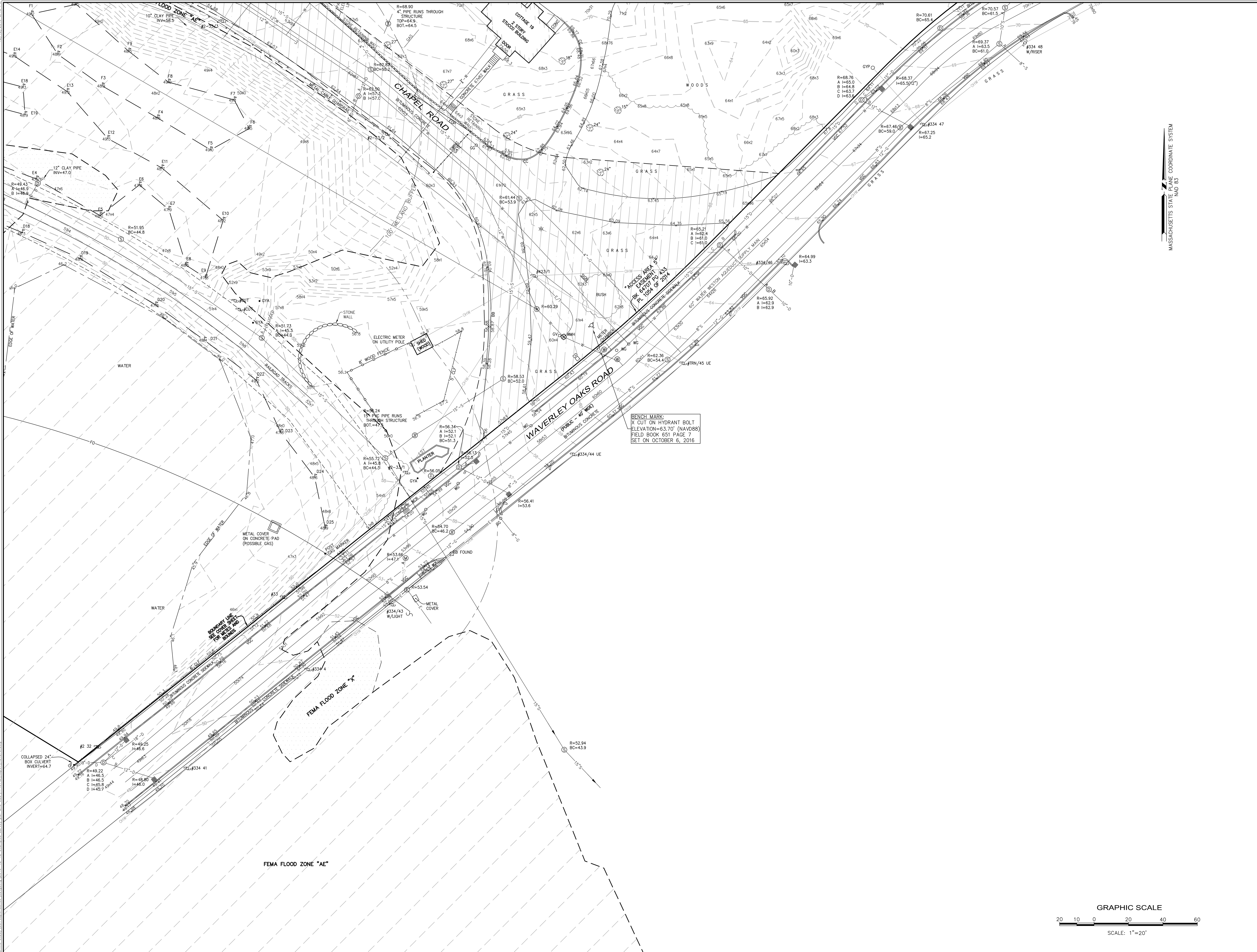
REV.	COMMENTS	DATE
	REVISIONS	

PROJECT # 11407
FILE: 11407.2_TOPO1_121216.dwg
SCALE: 1"=20
DATE: DECEMBER 2016
DES./COMP: RGM
FIELD BOOK: 642/643
DRAFTED BY: PAR
CHECKED BY: RGM

SHEET:

EX11

OF 12 REV.



SEE COVER SHEET FOR NOTES, LEGEND, AND REFERENCES

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DECEMBER 12, 2016

TOPOGRAPHIC PLAN OF LAND

WALTHAM FERNALD SITE
WALTHAM, MASSACHUSETTS

PREPARED FOR:

SYMMES MAINI & MCKEE ASSOCIATES

1000 MASSACHUSETTS AVENUE, CAMBRIDGE, MASSACHUSETTS 02138

REV.	COMMENTS	DATE

REVISIONS

PROJECT #	11407
FILE:	11407.2_TOPO1_121216.dwg
SCALE:	1"=20
DATE:	DECEMBER 2016
DES./COMP:	RGM
FIELD BOOK:	642/643
DRAFTED BY:	PAR
CHECKED BY:	RGM

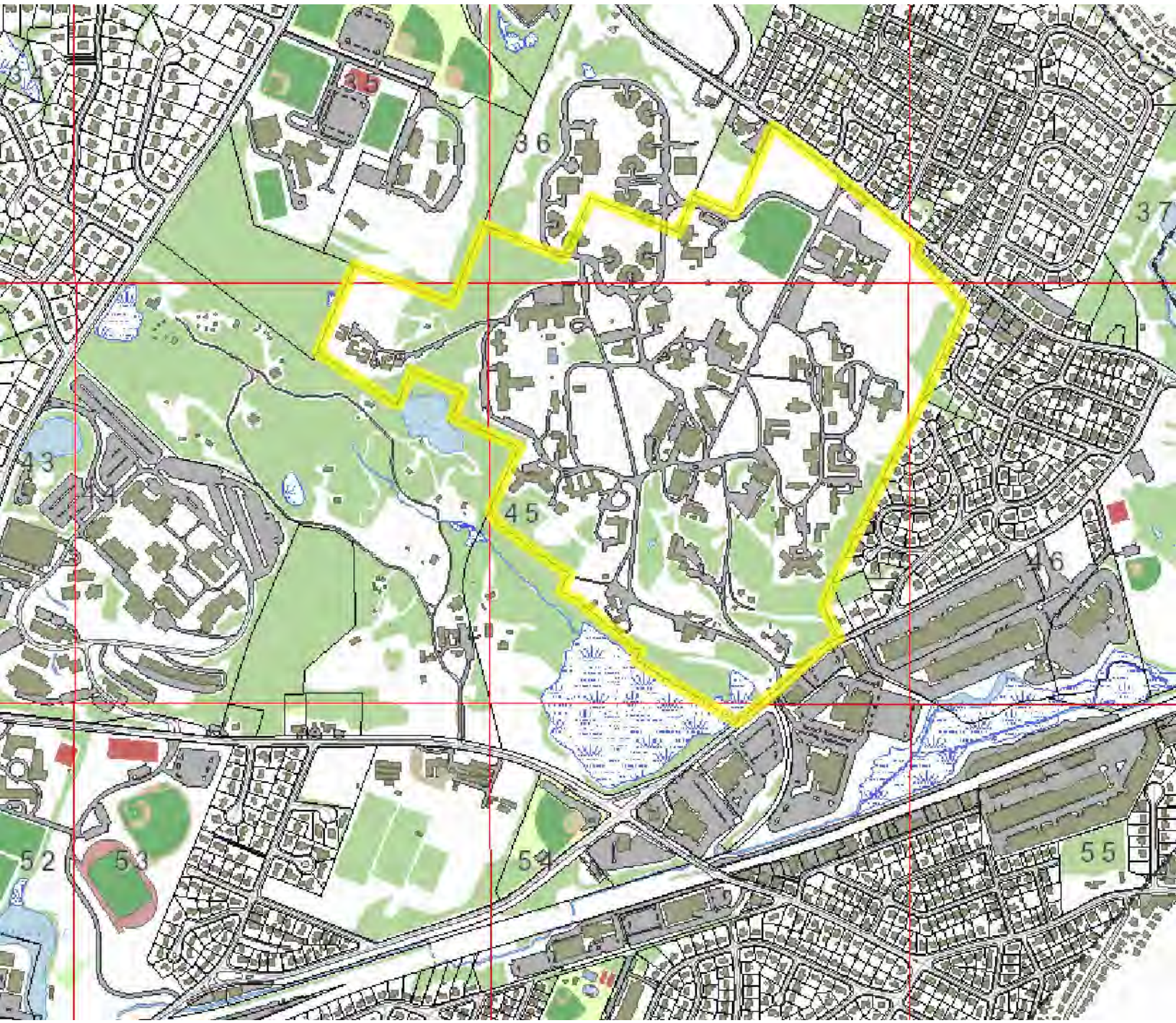
SHEET:

EX12

OF 12 REV.

APPENDIX A

Assessor's Map & Card


36
37
43
45
46
52
53
54
55

R045	001	0001		1 of 66 COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD	!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr: Own Oc:
Postal	02452-5552 Type:

PREVIOUS OWNER

Owner	COMM. OF MASS -
Owner	FERNALD , WALTER STATE SCHOOL -
Street	200 TRAPELO ROAD
Twn/Cit	WALTHAM
St/Prov	MA Cntr:
Postal	02452

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OFFICE Building Built about 1933, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,010,900		6821496.500	1,539,400	2,550,300
Total Card	1,010,900		156.600	1,539,400	2,550,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 146.23 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date
2016	903	FV	54,303,700	300	6,821,496.5	1,539,400	55,843,400	55,843,400	year end	12/16/2015
2015	914	EX	54,013,000	300	6,821,496.5	1,539,400	55,552,700	55,552,700	Year End Roll	11/25/2014
2015	914	FV	54,013,000	300	6,821,496.5	1,539,400	55,552,700	55,552,700	Year End Roll	12/22/2014
2014	914	FV	54,013,000	300	6,821,496.5	1,539,400	55,552,700	55,552,700	Year End Roll	12/13/2013
2013	914	FV	54,015,300	300	6,821,496.5	1,539,400	55,555,000	55,555,000	Year End	12/12/2012
2012	914	FV	50,438,400	300	7,102,458.	1,602,800	52,041,500	52,041,500	Year End Roll	12/20/2011
2011	914	FV	50,438,400	300	7,102,458.	1,602,800	52,041,500	52,041,500	year end	12/17/2010
2010	914	FV	50,438,400	300	7,102,458.	1,602,800	52,041,500	52,041,500	year end	12/3/2009

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes
COMM. OF MASS,	64707-427		12/23/201	INVOLVED GV	3,700,000	No	No				
COMMONWEALTH	5600-550		10/22/193			No	No				

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment
9/1/1988	591		150,000					

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		156.6		ACRES	RESIDUAL		0	10,000.	0.983	N4		DOR							1,539,378						1,539,400	.983

Sign: ___/___/___

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:03:2

LAST R

Date	Time
08/05/1	11:12:5

apro

Total AC/H	156.60001	Total SF/S	6821496.50	Parcel LU	903 MUNICPL	Prime NB D	N4

Total:	1,539,37	Spl Cre		Total:	1,539,40

apro

EXTERIOR INFORMATION

Type:	71 - OFFICE		
Sty Ht:	2 - 2 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: ADMINISTRATION BLDG..

RESIDENTIAL GRID

1st Res G		Des							# Unit					
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath		H	4						

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1933	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

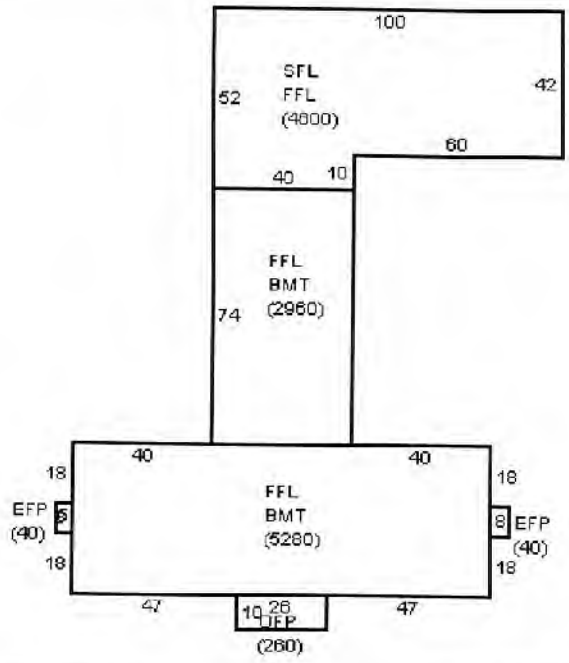
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	0.8688073
Const Adj.:	0.9548099
Adj $ / SQ:	66.364
Other Features	10000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1444124
Depreciation:	433237
Depreciated Tot	1010886

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	73.00
Special Featur	0	Val/Su Ne	38.85
Final Total:	1010900	Val/Su Sz	57.96

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	12,840	66.360	852,109
BMT	BASEMENT	8,240	16.590	136,709
SFL	SECOND FLOOF	4,600	66.360	305,273
OFP	OPEN PORCH	260	18.690	4,860
EFP	ENCL PRCH	80	48.600	3,888

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	26,020			Total:	1,302,839
Size A	17440	Gross Ar	26020	FinAr	17440

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		2 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1968, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	3,596,800		0.000		3,596,800
Total Card	3,596,800		0.000		3,596,800
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 58.63 | /Parc 63.3

Legal Description

User Acct: 112899

GIS Ref:

GIS Ref:

Insp Date:

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:03:5

LAST R

Date	Time
08/05/1	11:13:4
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign

VERIFICATION OF ASSESSMENT ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:	3 - 3		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1988	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	28.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	28.9	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.7500000
Const Adj.:	0.9455399
Adj $ / SQ:	70.916
Other Features	39000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	5058740
Depreciation:	1461976
Depreciated Tot	3596764

COMMENTS

LOT # SQ.FT. 7,102.414 : 190
TRAPELO ROAD: SHRIVER CENTER.

RESIDENTIAL GRID

1st Res G		Des							# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H	4					

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

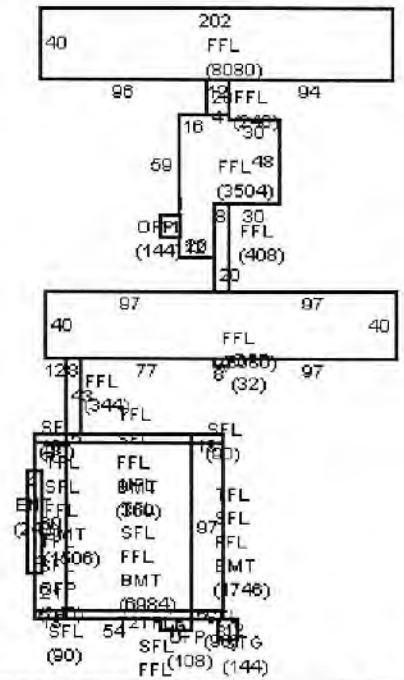
COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V

Juris. Factor:		Before De	78.01
Special Featur	0	Val/Su Ne	49.13
Final Total:	3596800	Val/Su Sz	58.63

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	31,612	70.920	2,241,781
SFL	SECOND FLOOF	11,556	70.920	819,499
TFL	THIRD FLOOR	11,196	70.920	793,970
BMT	BASEMENT	10,956	17.730	194,238
UFL	UPPER FLOOR	6,984	70.920	495,274
OFP	OPEN PORCH	524	16.080	8,424
ENT	ENTRY	240	23.910	5,738
STG	SM STORAGE	144	6.470	931
Net Sketched Area:		73,212	Total:	4,559,854
Size A	61348	Gross Ar	73212	FinAr 61348

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID

R045 001 0001

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		2 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
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Owner	
Owner	
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Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1968, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	3,596,800		0.000		3,596,800
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Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0			SQ. FT.	SITE		0	0.	0.000	N4																

LAND SECTION (First 7 lines only)

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D N4

Total: | Spl Cre | Total:

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

User Acct	
112899	
GIS Ref	
GIS Ref	
Insp Date	

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:04:1

LAST R

Date	Time
08/05/1	11:13:4
apro	
112899	

Sign _____ / / /

Patriot Properties Inc.

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:	3 - 3		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

COMMENTS

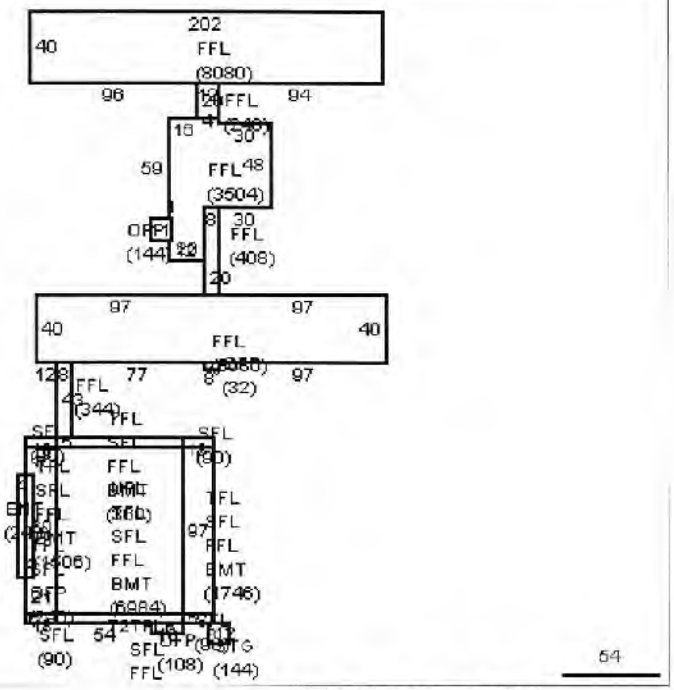
LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: SHRIVER CENTER.

RESIDENTIAL GRID

1st Res G	Des		# Unit	
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR		Bath		H	4

SKETCH



GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1968	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con	AV - Average	28.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	28.9	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.7500000
Const Adj.:	0.9455399
Adj $ / SQ:	70.916
Other Features	39000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	5058740
Depreciation:	1461976
Depreciated Tot	3596764

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	78.01
Special Featur	0	Val/Su Ne	49.13
Final Total:	3596800	Val/Su Sz	58.63

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	31,612	70.920	2,241,781
SFL	SECOND FLOOF	11,556	70.920	819,499
TFL	THIRD FLOOR	11,196	70.920	793,970
BMT	BASEMENT	10,956	17.730	194,238
UFL	UPPER FLOOR	6,984	70.920	495,274
OFP	OPEN PORCH	524	16.080	8,424
ENT	ENTRY	240	23.910	5,738
STG	SM STORAGE	144	6.470	931
Net Sketched Area:		73,212	Total:	4,559,854
Size A	61348 Gross Ar	73212	FinAr	61348

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID

R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045 | 001 | 0001 | | 3 of 66 | COMMERCIAL | TOTAL ASSESSED: 55,843,400
Map | Block | Lot | Unit | CARD | !112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1880. Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	441,500		0.000		441,500
Total Card	441,500		0.000		441,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 76.15 | /Parc 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Entered Lot Size

Total Land:

Land Unit Type:

Insp Date

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:04:3

LAST R

Date	Time
08/05/1	11:13:5

apro

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:	Spl Cre	Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	58 - SCHOOL		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade: C+ - AVERAGE+			
Year Blt	1880	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	17 - QUARRY TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	1.0069679
Const Adj.:	0.9548099
Adj $ / SQ:	76.917
Other Features	10000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	630729
Depreciation:	189219
Depreciated Tot	441511

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD; WORKSHOP
STEPHEN BOWEN HALL.

RESIDENTIAL GRID

1st Res G		Des						# Unit					
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H	4					

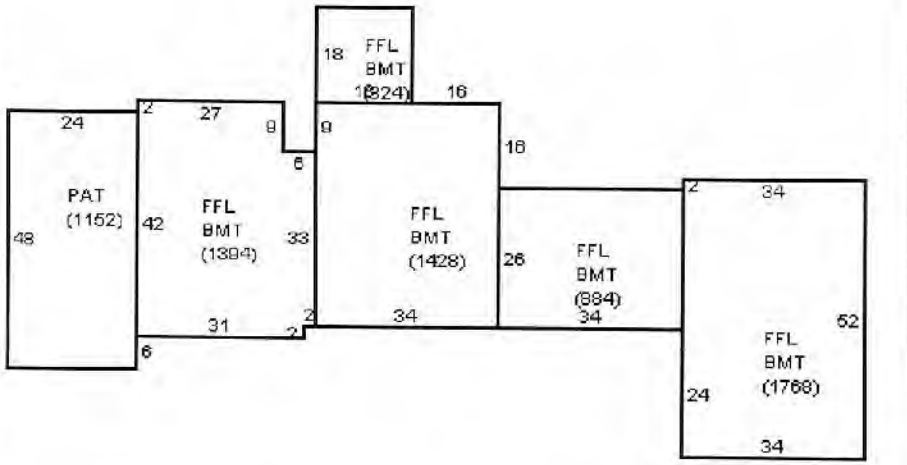
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	84.61
Special Featur	0	Val/Su Ne	34.63
Final Total:	441500	Val/Su Sz	76.15

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	5,798	19.230	111,491
FFL	FIRST FLOOR	5,798	76.920	445,965
PAT	PATIO	1,152	5.150	5,934

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	12,748			Total:	563,390
Size A	5798	Gross Ar	12748	FinAr	5798

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ FT. of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1960, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 8 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,131,900		0.000		1,131,900
Total Card	1,131,900		0.000		1,131,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 59.69 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

PRINT

Date	Time
05/04/1	14:04:5

LAST R

Date	Time
03/24/1	09:55:0
apro	

User Acct / GIS Ref / GIS Ref / Insp Date

User Acct: 112899

Entered Lot Size | Total Land: | Land Unit Type:

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Total AC/H 0.00000 | Total SF/S 0.00 | Parcel LU 903 | MUNICPL | Prime NB D N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	58 - SCHOOL		
Sty Ht:	2 - 2		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1960	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	8	Ratin	Average
A HBth		Ratin	
OthrFix	12	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	0.8632777
Const Adj.:	0.9548099
Adj $ / SQ:	65.941
Other Features	26000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1616985
Depreciation:	485095
Depreciated Tot	1131889

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD; MANUAL TRAINING BLDG.

RESIDENTIAL GRID

1st Res G	Des	# Unit
Level	FY LR DR D K FR RR BR FB HB L O	
Othe		
Upp		
Lvl 2		
Lvl 1		
Low		
Total	RMs: BR Bath H 8	

REMODELING

Exterior	
Interior:	
Addition	
Kitchen	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

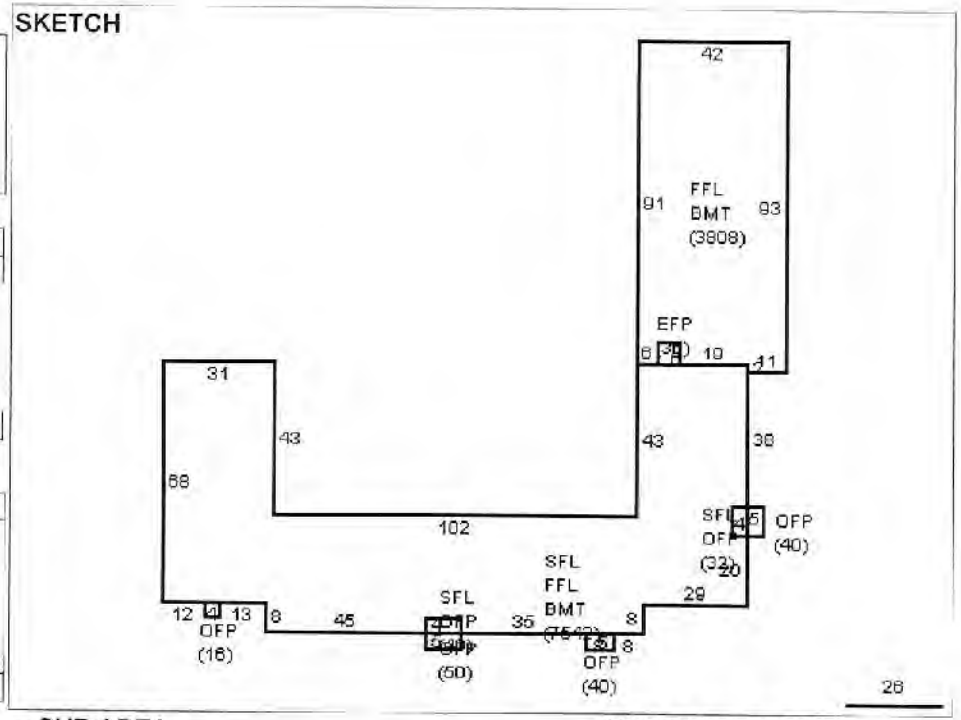
No Uni	RMS	BRS	FL
Totals			

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:		Before De	72.54		
Special Featur	0	Val/Su Ne	37.03		
Final Total:	1131900	Val/Su Sz	59.69		

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	11,350	16.490	187,108
FFL	FIRST FLOOR	11,350	65.940	748,434
SFL	SECOND FLOOF	7,614	65.940	502,077
OFP	OPEN PORCH	218	19.690	4,293
EFP	ENCL PRCH	36	57.600	2,074

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	30,568		Total:	1,443,986	
Size A	18964	Gross Ar	30568	FinAr	18964

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	
				Total:	

R045	001	0001		5 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) WAREHOUSE Building Built about 1928, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	442,300		0.000		442,300
Total Card	442,300		0.000		442,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 32.25 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:05:0

LAST R

Date	Time
08/05/1	11:14:4
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Sign

VERIFICATION OF UNIT ADJ DT: __/__/__

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	43 - WAREHOUSE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1928	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	0.9593613
Const Adj.:	0.9548099
Adj $ / SQ:	36.640
Other Features	10000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	680401
Depreciation:	238140
Depreciated Tot	442261

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD; LAUNDRY.

RESIDENTIAL GRID

1st Res G	Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H	4					

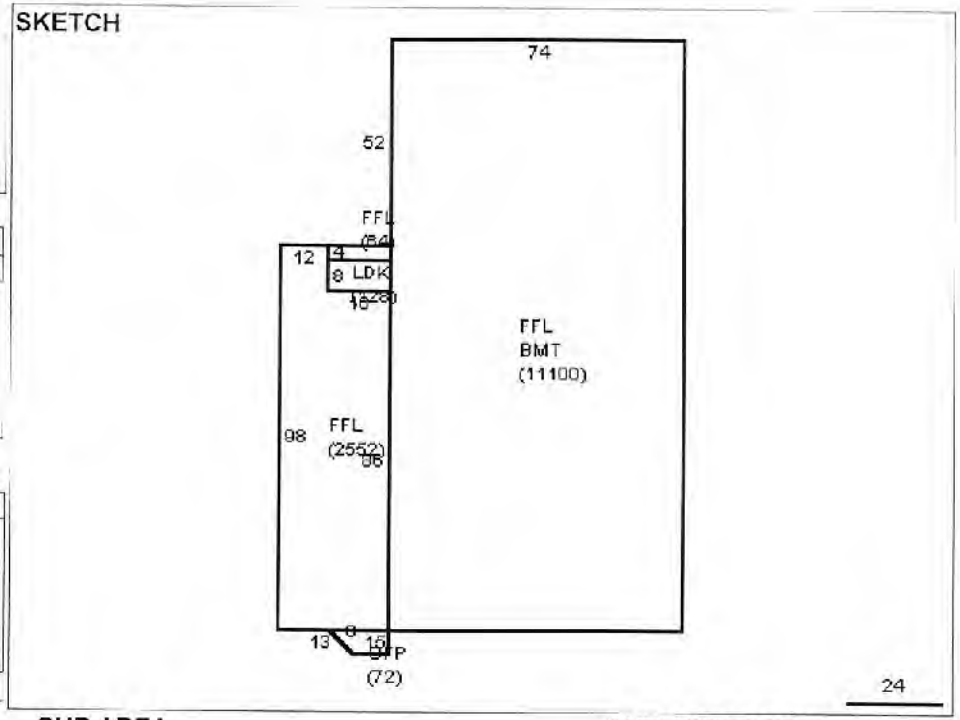
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	13,716	36.640	502,558
BMT	BASEMENT	11,100	9.180	101,677
LDK	LOADING DOCK	128	15.540	1,989
OFP	OPEN PORCH	72	32.250	2,322

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

WtAv$/S		AvRat		Ind.V	
Juris. Factor:			Before De	40.30	
Special Featur	0		Val/Su Ne	17.68	
Final Total:	442300		Val/Su Sz	32.25	

Net Sketched Area:	25,016		Total:	608,546	
Size A	13716	Gross Ar	25016	FinAr	13716

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		6 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1899. Having Primarily BRICK Exterior and ASPHALT Roof Cover, with 1 Units, 0 Baths, 8 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,214,500		0.000		1,214,500
Total Card	1,214,500		0.000		1,214,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 66.57 | /Parc 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:05:2

LAST R

Date	Time
08/05/1	11:15:0
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	3 - 3		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:		%	
Roof Stru	04 - FLAT		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1899	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W		%	
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	8	Ratin	Average
A HBth		Ratin	
OthrFix	24	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8657750
Const Adj.:	0.9548099
Adj $ / SQ:	78.532
Other Features	32000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1735068
Depreciation:	520521
Depreciated Tot	1214548

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD;ACTIVITIES CTR BOYS DORM..

RESIDENTIAL GRID

1st Res G	Des		# Unit
Level	FY LR DR D K FR RR BR FB HB L O		
Othe			
Upp			
Lvl 2			
Lvl 1			
Low			
Total	RMs:	BR	Bath H 8

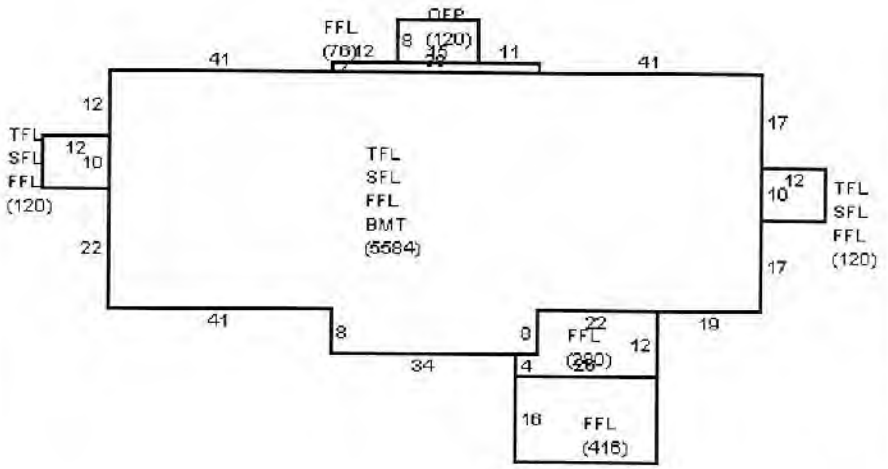
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	86.38
Special Featur	0	Val/Su Ne	50.71
Final Total:	1214500	Val/Su Sz	66.57

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	6,596	78.530	517,995
SFL	SECOND FLOOF	5,824	78.530	457,369
TFL	THIRD FLOOR	5,824	78.530	457,369
BMT	BASEMENT	5,584	19.630	109,630
OFP	OPEN PORCH	120	24.750	2,970

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	23,948			Total:	1,545,334
Size A	18244	Gross Ar	23948	FinAr	18244

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item	Total Special Feature	Total:

R045 Map | 001 Block | 0001 Lot | Unit

7 of 66 CARD | COMMERCIAL

TOTAL ASSESSED: 55,843,400 !112899!

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552 Own Oc / Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6.821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OFFICE Building Built about 1981, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths. 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	731,200		0.000		731,200
Total Card	731,200		0.000		731,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 57.04 | /Parc 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year	
LandReas	
BldReason	

User Acct	GIS Ref	GIS Ref	Insp Date
112899			

PRINT

Date	Time
05/04/1	14:05:3

LAST R

Date	Time
08/05/1	11:15:2

apro

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	71 - OFFICE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1981	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	10	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	25. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	25.5 %

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	0.8936037
Const Adj.:	0.9548099
Adj $ / SQ:	68.258
Other Features	15000
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	981506
Depreciation:	250284
Depreciated Tot	731222

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD; WOODSIDE WORKSHOP.

RESIDENTIAL GRID

1st Res G	Des		# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	4

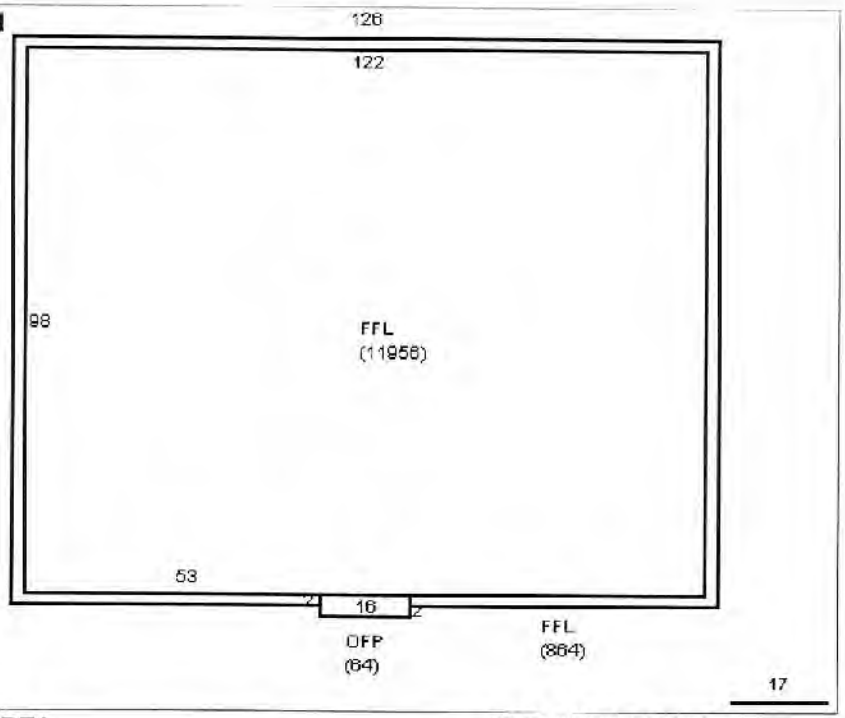
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	12,820	68.260	875,064
OFP	OPEN PORCH	64	34.590	2,214

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	75.08
Special Featur	0	Val/Su Ne	56.75
Final Total:	731200	Val/Su Sz	57.04

Net Sketched Area:	12,884		Total:	877,278	
Size A	12820	Gross Ar	12884	FinAr	12820

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID

R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		8 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) COLD STORAGE Building Built about 1925, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 3 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	301,300		0.000		301,300
Total Card	301,300		0.000		301,300
Total Parcel	54,303,700	300	156,600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 35.72 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:05:4

LAST R

Date	Time
08/21/1	10:14:3
apro	
112899	

Sign

__/__/__

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	26 - COLD STORA		
Sty Ht:	1 - 1 story		
(Liv) Units		Total: 35	
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C+ - AVERAGE+		
Year Blt	1925	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	03 - OTHER		
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	3	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	1.0278093
Const Adj.:	0.9548099
Adj $ / SQ:	39.255
Other Features	7500
Grade Factor:	1.10
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	463583
Depreciation:	162254
Depreciated Tot	301329

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD; POWER PLANT.

RESIDENTIAL GRID

1st Res G		Des							# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H 3

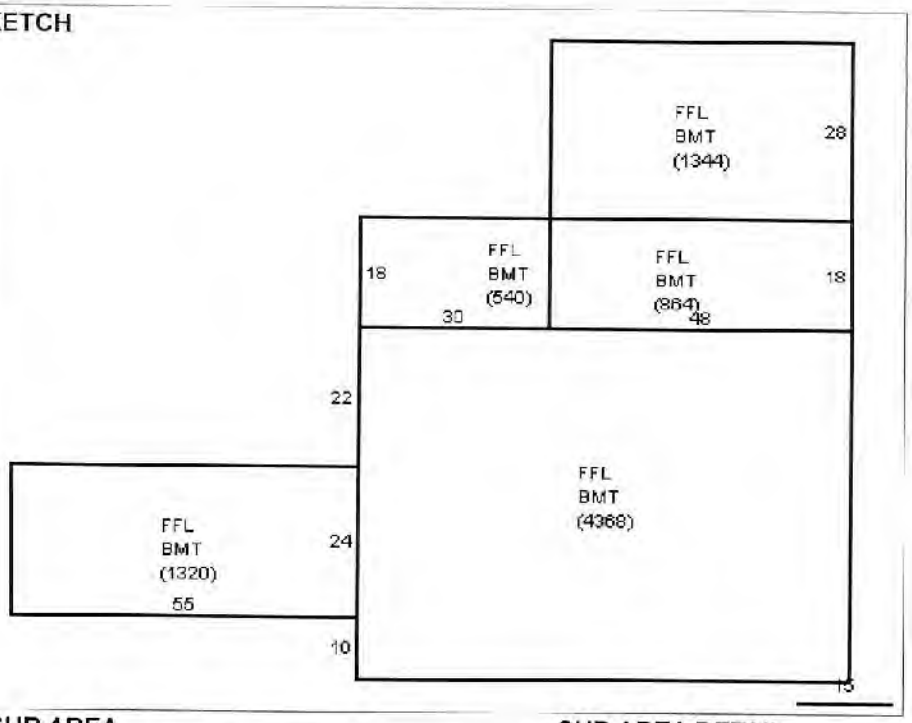
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	8,436	9.810	82,788
FFL	FIRST FLOOR	8,436	39.250	331,151

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	43.18
Special Featur	0	Val/Su Ne	17.86
Final Total:	301300	Val/Su Sz	35.72

Net Sketched Area:	16,872		Total:	413,939	
Size A	8436	Gross Ar	16872	FinAr	8436

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		9 of 66 COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	!112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr Own Oc
Postal	02452-5552 Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1953, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 0 Baths, 8 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	4,960,400		0.000		4,960,400
Total Card	4,960,400		0.000		4,960,400
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 65.41 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC | PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:06:0

LAST R

Date	Time
08/05/1	11.16:0
apro	
112899	

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total: 35	
Foundatio	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1953	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:			
Insulation:			
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	8	Ratin	Average
A HBth		Ratin	
OthrFix	74	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ	95.00
Size Adj.:	0.8158227
Const Adj.:	1.0505999
Adj $ / SQ:	81.425
Other Features	62000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	7086233
Depreciation:	2125870
Depreciated Tot	4960363

COMMENTS

LOT # SQ FT 7,102,414 : 190
TRAPELO ROAD: GREENE UNIT

RESIDENTIAL GRID

1st Res G	Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H 8						

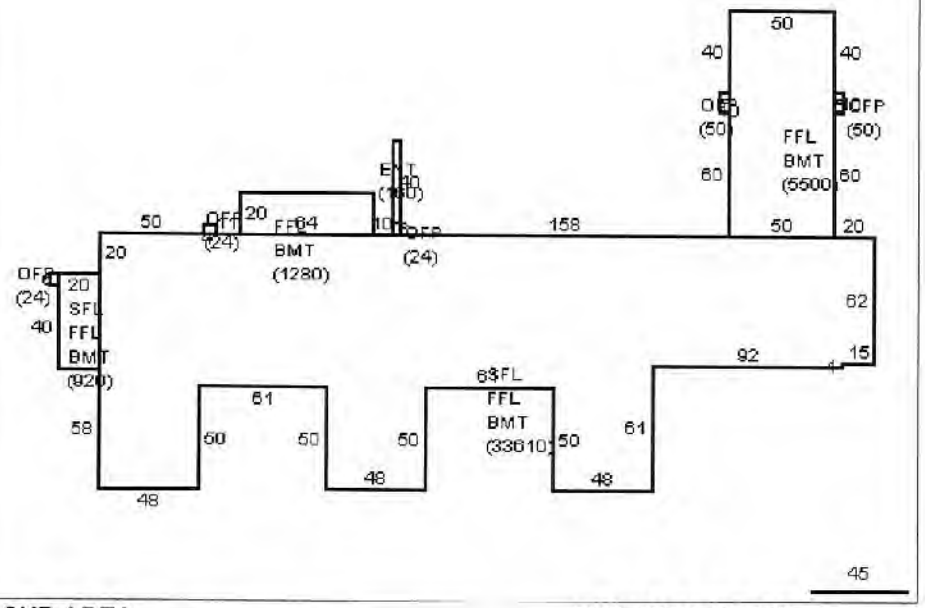
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	81.42
Special Featur	0	Val/Su Ne	42.22
Final Total:	4960400	Val/Su Sz	65.41

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	41,310	20.360	840,915
FFL	FIRST FLOOR	41,310	81.420	3,363,659
SFL	SECOND FLOOF	34,530	81.420	2,811,599
OFP	OPEN PORCH	172	21.350	3,672
ENT	ENTRY	160	27.420	4,388

Net Sketched Area:	117,482		Total:	7,024,233	
Size A	75840	Gross Ar	117482	FinAr	75840

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		10 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) GARAGE Building Built about 1937, Having Primarily CONC BLOCK Exterior and ASPHALT Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	41,300		0.000		41,300
Total Card	41,300		0.000		41,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 36.88 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz.				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/___

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:06:1

LAST R

Date	Time
08/05/1	11:16:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	30 - GARAGE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	21 - CONC BLOC		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1937	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	35.00
Size Adj.:	1.2999999
Const Adj.:	0.9269999
Adj $ / SQ:	42.179
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	59050
Depreciation:	17715
Depreciated Tot	41335

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD:FARM GARAGE FOR TRACTORS.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H

REMODELING

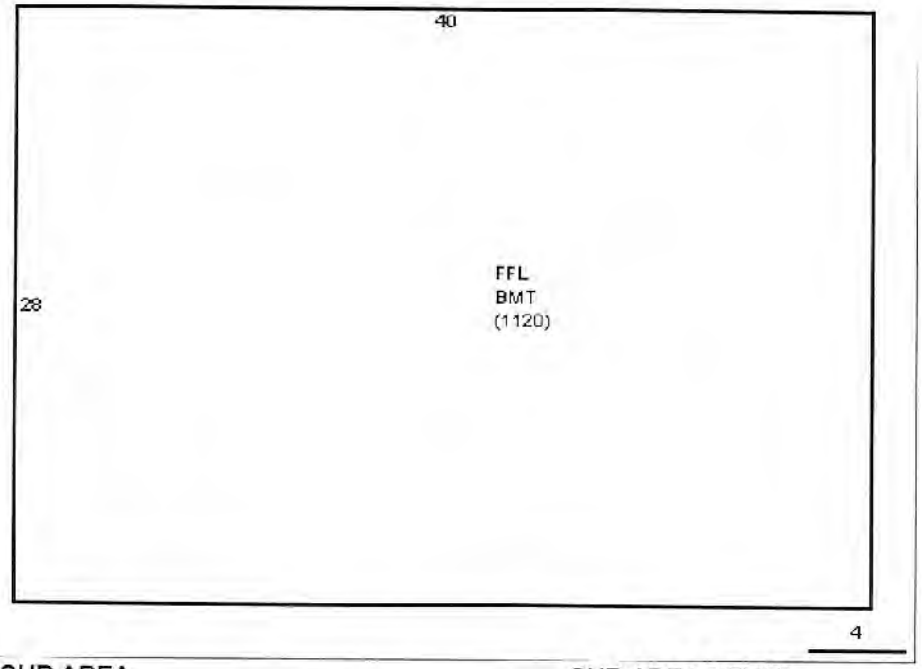
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	42.18
Special Featur	0	Val/Su Ne	18.44
Final Total:	41300	Val/Su Sz	36.88

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	1,120	10.540	11,810
FFL	FIRST FLOOR	1,120	42.180	47,240

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	2,240				Total:	59,050	
Size A	1120	Gross Ar	2240	FinAr	1120		

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More N

Total Yard Item

Total Special Featue

Total:

R045	001	0001		11 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6.821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) COLD STORAGE Building Built about 1960, Having Primarily STEEL Exterior and METAL Roof Cover, with 0 Units, 1 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	115,100		0.000		115,100
Total Card	115,100		0.000		115,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 38.37 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:06:2

LAST R

Date	Time
08/21/1	10:16:3
apro	
112899	

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	26 - COLD STORA		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa	22 - STEEL		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	09 - METAL		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1960	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy			
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba 1	Ratin	Average	
A Bath:	Ratin		
3/4 Bat	Ratin		
A 3QBt	Ratin		
1/2 Bat	Ratin		
A HBth	Ratin		
OthrFix	Ratin		

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	1.2500000
Const Adj.:	0.9179999
Adj $ / SQ:	45.900
Other Features	5000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	177125
Depreciation:	61994
Depreciated Tot	115131

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD; FARM & GROUNDS METAL.

RESIDENTIAL GRID

1st Res G		Des						# Unit					
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:			BR		Bath	1		H				

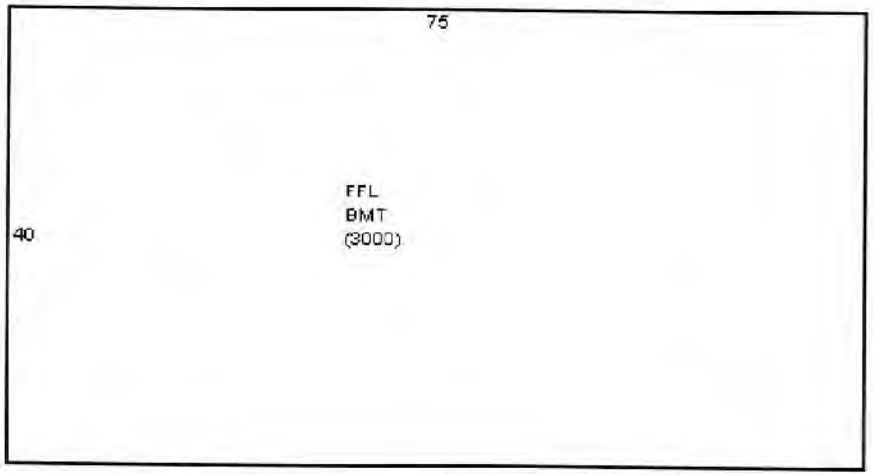
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



8

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	45.90
Special Featur	0	Val/Su Ne	19.18
Final Total:	115100	Val/Su Sz	38.37

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	3,000	11.480	34.425
FFL	FIRST FLOOR	3,000	45.900	137.700

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	6,000		Total:	172.125	
Size A	3000	Gross Ar	6000	FinAr	3000

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		12 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) COLD STORAGE Building Built about 1927, Having Primarily WOOD SHING Exterior and ASPHALT Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths, 0 3/4

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	4,700		0.000		4,700
Total Card	4,700		0.000		4,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card N/A | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test:		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:06:4

LAST R

Date	Time
08/21/1	10:16:0
apro	

Sign ____/____/

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	26 - COLD STORA		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1927	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	1.0000000
Const Adj.:	0.8999999
Adj $ / SQ:	36.000
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	7273
Depreciation:	2546
Depreciated Tot	4727

COMMENTS

LOT # SQ.FT. 7.102.414 : 190
TRAPELO ROAD: SHED.

RESIDENTIAL GRID

1st Res G	Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H

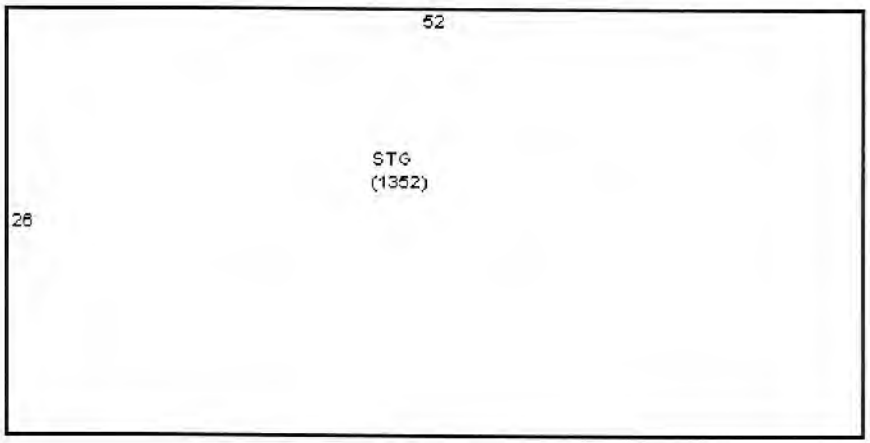
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



6

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
STG	SM STORAGE	1,352	5.380	7,273

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	36.00
Special Featur	0	Val/Su Ne	3.48
Final Total:	4700	Val/Su Sz	

Net Sketched Area:	1,352		Total:	7,273	
Size A		Gross Ar	1352	FinAr	0

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) UTIL BLDG Building Built about 1930, Having Primarily STUCCO Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths. 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	40,200		0.000		40,200
Total Card	40,200		0.000		40,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 47.86 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC | PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

PRINT

Date	Time
05/04/1	14:06:5

LAST R

Date	Time
08/05/1	11:17:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Sign ___/___/

EXTERIOR INFORMATION

Type:	59 - UTIL BLDG		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	06 - STUCCO		
Sec Wall:		%	
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1930	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W		%	
Partition:			
Prim Floo			
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	55.00
Size Adj.:	1.2999999
Const Adj.:	0.9089999
Adj $ / SQ:	64.994
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	57421
Depreciation:	17226
Depreciated Tot	40194

COMMENTS

LOT # SQ.FT. 7,102.414 : 190
TRAPELO ROAD: SHED SUBSTATION.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H

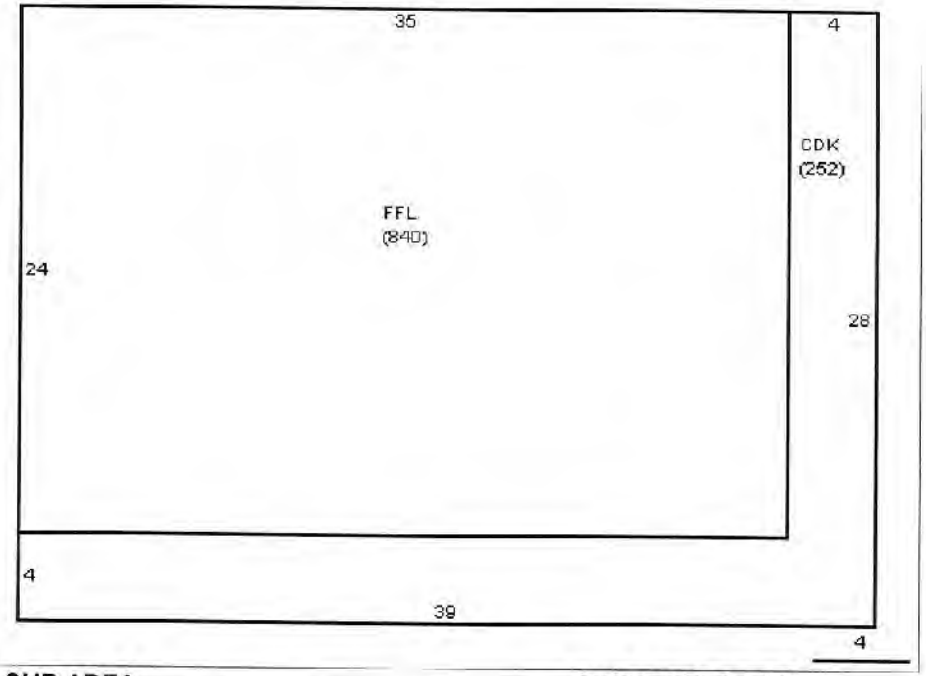
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	840	64.990	54,595
CDK	CONCRETE DEC	252	11.210	2,826

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	64.99
Special Featur	0	Val/Su Ne	36.81
Final Total	40200	Val/Su Sz	47.86

Net Sketched Area:	1,092		Total:	57,421	
Size A	840	Gross Ar	1092	FinAr	840

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	[112899]

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD. WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821.497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1890. Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 4 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	316,700		0.000		316,700
Total Card	316,700		0.000		316,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 101.77 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

User Acct / GIS Ref / GIS Ref / Insp Date

User Acct: 112899

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:07:0

LAST R

Date	Time
08/05/1	11:17:4
apro	

112899

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Sign ___/___/

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total:		Spl Cre	Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1890	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	4	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	1.1856041
Const Adj.:	0.9548099
Adj $ / SQ:	107.543
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	452462
Depreciation:	135739
Depreciated Tot	316724

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: BELMONT HOUSE.

RESIDENTIAL GRID

1st Res G		Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath	4		H	2					

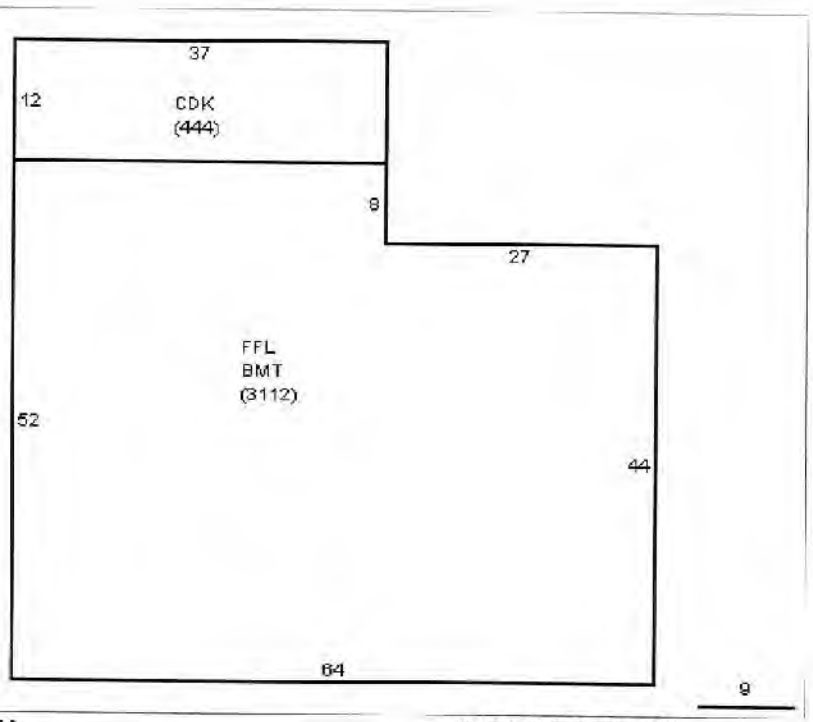
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	3,112	26.890	83,668
FFL	FIRST FLOOR	3,112	107.540	334,672
CDK	CONCRETE DEC	444	9.280	4,122

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	107.54
Special Featur	0	Val/Su Ne	47.50
Final Total:	316700	Val/Su Sz	101.77

Net Sketched Area:	6,668		Total:	422,462	
Size A	3112	Gross Ar	6668	FinAr	3112

IMAGE

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		15 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1891, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 6 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,715,300		0.000		1,715,300
Total Card	1,715,300		0.000		1,715,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 51.06 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/___

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:07:2

LAST R

Date	Time
08/05/1	11:18:0
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	58	- SCHOOL	
Sty Ht:	3	- 3	
(Liv) Units		Total:	35
Foundatio	03	- BRK/STN	
Frame:	03	- CONCRETE	
Prime Wa	07	- BRICK	
Sec Wall:			%
Roof Stru	04	- FLAT	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1891	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02	- PLASTER	
Sec Int W			%
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	05	- STEAM	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	6	Ratin	Average
A HBth		Ratin	
OthrFix	24	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	30 %

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	0.8357185
Const Adj.:	0.9548099
Adj $ / SQ:	63.836
Other Features	32000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	2450427
Depreciation:	735128
Depreciated Tot	1715299

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: WAVERLY (CLASSROOMS).

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H	6					

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

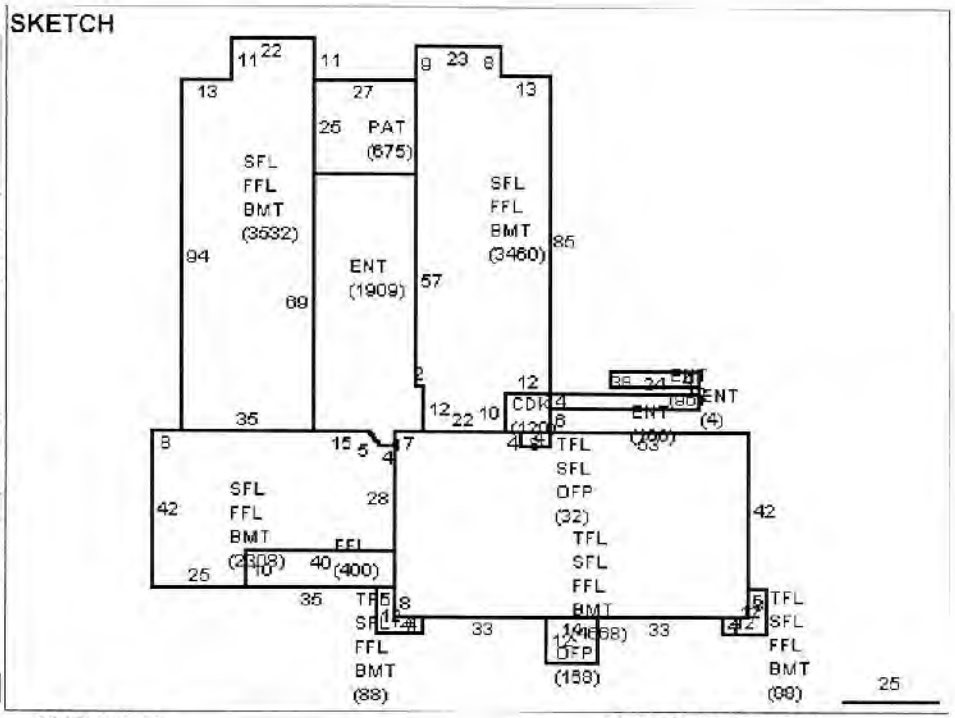
COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V

Juris. Factor:		Before De	63.84
Special Featur	0	Val/Su Ne	33.70
Final Total:	1715300	Val/Su Sz	51.06

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	14,544	63.840	928,433
SFL	SECOND FLOOF	14,176	63.840	904,942
BMT	BASEMENT	14,144	15.960	225,725
TFL	THIRD FLOOR	4,876	63.840	311,265
ENT	ENTRY	2,169	17.650	38,289
PAT	PATIO	675	5.610	3,788
OFP	OPEN PORCH	200	20.250	4,050
CDK	CONCRETE DEC	120	16.130	1,935
	Net Sketched Area:	50,904	Total:	2,418,426
Size A	33596	Gross Ar	50904	FinAr 33596

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID: R045 001 0001

More	N	Total Yard Item		Total Special Featue	Total:

AssessPro Patriot Properties, Inc

R045	001	0001		16 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1898, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 12 Baths, 2 HalfBaths, 0 3/4 Baths, 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,037,700		0.000		1,037,700
Total Card	1,037,700		0.000		1,037,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 66.00 | /Parc: 63.3

Legal Description

Entered Lot Size
Total Land:
Land Unit Type:

User Acct	GIS Ref	GIS Ref	Insp Date
112899			

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:07:3

LAST R

Date	Time
08/05/1	11:18:2
apro	
112899	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.:

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign: _____ __/__/__

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total:		Spl Cre		Total:	

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units:	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1898	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	12	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8763262
Const Adj.:	0.9548099
Adj $ / SQ:	79.489
Other Features	70000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1482424
Depreciation:	444727
Depreciated Tot	1037697

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: MACDOUGALL HALL..

RESIDENTIAL GRID

1st Res G	Des	# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath 1	H 2

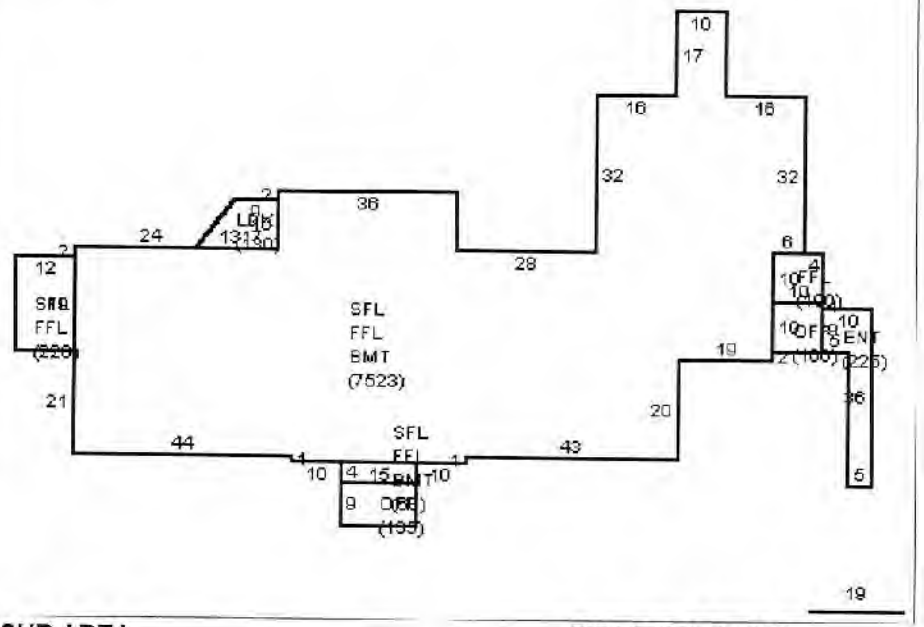
REMODELING

Exterior	
Interior:	
Addition	
Kitchen.	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat	Ind.V	
Juris. Factor:		Before De	79.49
Special Featur	0	Val/Su Ne	43.43
Final Total:	1037700	Val/Su Sz	66.00

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	7,911	79.490	628,836
SFL	SECOND FLOOF	7,811	79.490	620,888
BMT	BASEMENT	7,583	19.870	150,691
OFP	OPEN PORCH	235	19.240	4,522
ENT	ENTRY	225	24.360	5,484
LDK	LOADING DOCK	130	15.400	2,003

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	23,895		Total:	1,412,423	
Size A	15722	Gross Ar	23895	FinAr	15722

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		17 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1921, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	293,600		0.000		293,600
Total Card	293,600		0.000		293,600
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 71.96 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:07:4

LAST R

Date	Time
08/05/1	11:18:3
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Sign ___/___/___

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1921	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	31.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	31	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.8323530
Const Adj.:	0.9548099
Adj $ / SQ:	79.474
Other Features	24000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	425502
Depreciation:	131906
Depreciated Tot	293596

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: SOUTHARD RESEARCH LAB..

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:	BR	Bath	H	4

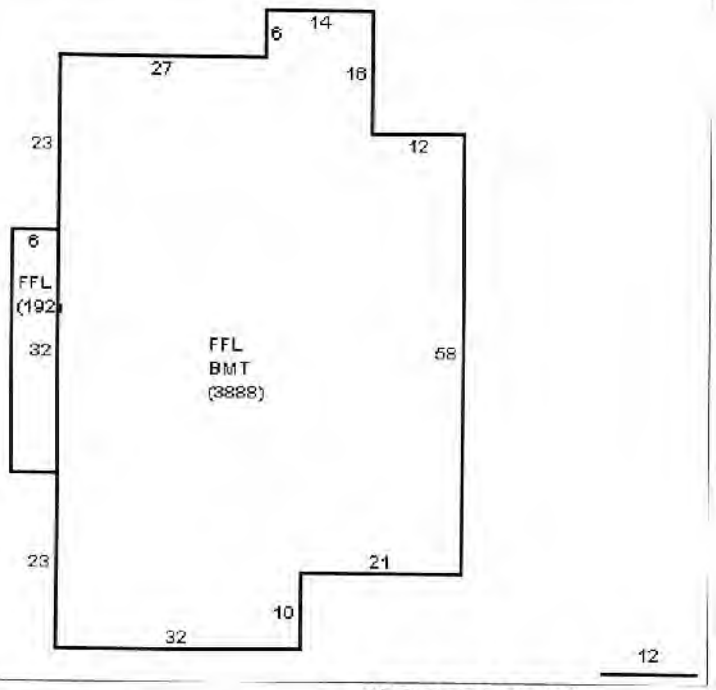
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	4,080	79.470	324,253
BMT	BASEMENT	3,888	19.870	77,249

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:		Before De	79.47		
Special Featur	0	Val/Su Ne	36.85		
Final Total:	293600	Val/Su Sz	71.96		

Net Sketched Area:	7,968			Total:	401,502
Size A	4080	Gross Ar	7968	FinAr	4080

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More N

Total Yard Item

Total Special Featue

Total:

R045	001	0001		18 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1921, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	548,700		0.000		548,700
Total Card	548,700		0.000		548,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 70.26 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:				xmpt		
Flood Haz:				Topo		
D	0	test		Stree	41	
s				Traffi		
t						

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign __/__/__

PRINT

Date	Time
05/04/1	14:07:5

LAST R

Date	Time
08/05/1	11:18:5
apro	
112899	

User Acct / GIS Ref / GIS Ref / Insp Date

User Acct 112899

Entered Lot Size

Total Land:

Land Unit Type:

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1921	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	12	Ratin	Average

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	31.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	31	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.7691421
Const Adj.:	0.9548099
Adj $ / SQ:	73.438
Other Features	36000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	795205
Depreciation:	246514
Depreciated Tot	548691

COMMENTS

LOT # SQ.FT 7,102,414 : 190 TRAPELO ROAD: LAVERS DOMITORY (MORGUE).

RESIDENTIAL GRID

1st Res G	Des	# Unit:	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	4

REMODELING

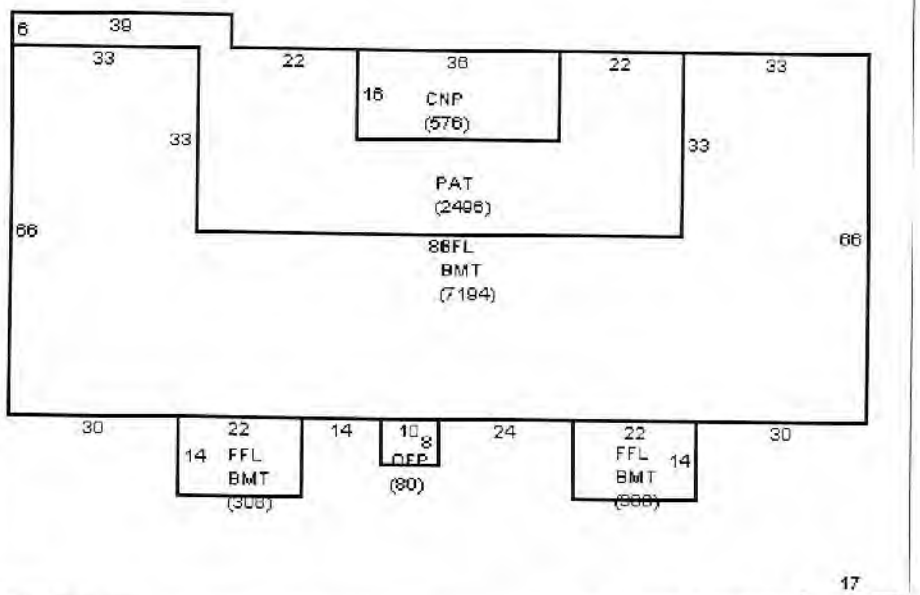
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	7,810	18.360	143,389
FFL	FIRST FLOOR	7,810	73.440	573,554
PAT	PATIO	2,496	4.800	11,982
CNP	CANOPY	576	48.350	27,850
OFP	OPEN PORCH	80	30.380	2,430

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	73.44
Special Featur	0	Val/Su Ne	29.23
Final Total:	548700	Val/Su Sz	70.26

Net Sketched Area:	18,772		Total:	759,205	
Size A	7810	Gross Ar	18772	FinAr	7810

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		19 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) HOSPITAL Building Built about 1953, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 5 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,925,200		0.000		1,925,200
Total Card	1,925,200		0.000		1,925,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 72.62 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/___

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:08:1

LAST R

Date	Time
08/05/1	11:19:1
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H 0.00000 | Total SF/S 0.00 | Parcel LU 903 | MUNICPL | Prime NB D | N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	89 - HOSPITAL		
Sty Ht:	3.5 - 3.5		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1953	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	5	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	40.	%
Functiona			%
Economic			%
Special:			%
Override			%
	Total:	40	%

CALC SUMMARY

Basic $ / SQ:	140.00
Size Adj.:	0.8301773
Const Adj.:	0.9455399
Adj $ / SQ:	109.895
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	3208598
Depreciation:	1283439
Depreciated Tot	1925159

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: THOM (NURSING HOME) RETAINED BY STATE FOR FY2015.

RESIDENTIAL GRID

1st Res G	Des	# Unit
Level	FY LR DR D K FR RR BR FB HB L O	
Othe		
Upp		
Lvl 2		
Lvl 1		
Low		
Total	RMs:	BR	Bath 5	H

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

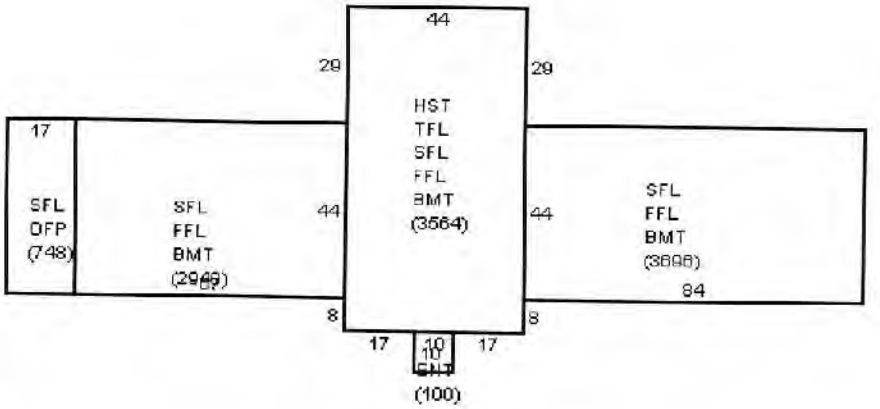
No Uni	RMS	BRS	FL
Totals			

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	109.90
Special Featur	0	Val/Su Ne	51.25
Final Total:	1925200	Val/Su Sz	72.62

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	10,956	109.900	1,204,012
BMT	BASEMENT	10,208	27.470	280,453
FFL	FIRST FLOOR	10,208	109.900	1,121,810
TFL	THIRD FLOOR	3,564	109.900	391,667
HST	HALF STORY	1,782	109.900	195,833
OFP	OPEN PORCH	748	15.300	11,448
ENT	ENTRY	100	33.750	3,375

Net Sketched Area:	37,566			Total:	3,208,598
Size A	26510	Gross Ar	39348	FinAr	26510

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		20 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) WAREHOUSE Building Built about 1960, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	613,100		0.000		613,100
Total Card	613,100		0.000		613,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 27.53 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0			SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct	GIS Ref	GIS Ref	Insp Date
112899			

Patriot Properties Inc.

PRINT

Date	Time
05/04/1	14:08:2

LAST R

Date	Time
08/05/1	11:19:3
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	43 - WAREHOUSE		
Sty Ht:	2 - 2		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1960	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	8	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own	
Name:	

DEPRECIATION

Phys Con	AV - Average	35.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	0.9173582
Const Adj.:	0.9548099
Adj $ / SQ:	35.036
Other Features	14000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	943217
Depreciation:	330126
Depreciated Tot	613091

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: SERVICE BLDG..

RESIDENTIAL GRID

1st Res G	Des									# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H	4					

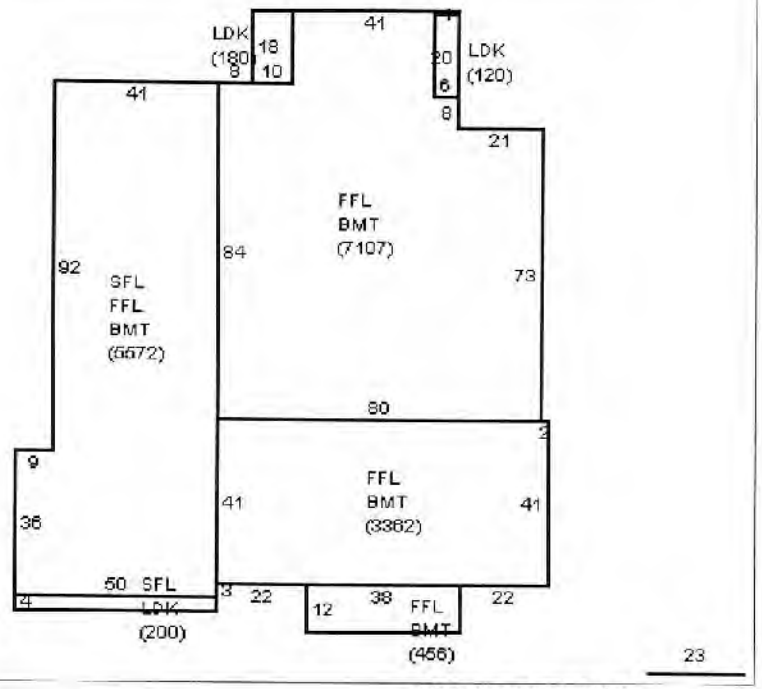
REMODELING

Exterior	
Interior:	
Addition	
Kitchen	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	35.04
Special Featur	0	Val/Su Ne	15.61
Final Total:	613100	Val/Su Sz	27.53

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	16,497	8.760	144,498
FFL	FIRST FLOOR	16,497	35.040	577,991
SFL	SECOND FLOOI	5,772	35.040	202,228
LDK	LOADING DOCK	500	9.000	4,500

Net Sketched Area:	39,266		Total:	929,217	
Size A	22269	Gross Ar	39266	FinAr	22269

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	!112899!

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) GARAGE Building Built about 1940, Having Primarily CONC BLOCK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	59,900		0.000		59,900
Total Card	59,900		0.000		59,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 55.46 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:08:3

LAST R

Date	Time
08/05/1	11:19:4

apro

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	30 - GARAGE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	21 - CONC BLOC		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1940	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own.	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	35.00
Size Adj.:	1.2999999
Const Adj :	0.9269999
Adj $ / SQ:	42.179
Other Features	5000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	85635
Depreciation:	25690
Depreciated Tot	59944

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: MAIN GARAGE
SECURITY OFFS.,

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:	BR	Bath	H 2

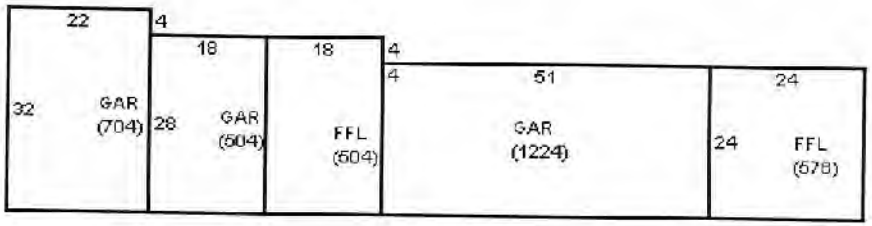
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



15

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S	AvRat	Ind.V	
Juris. Factor:		Before De	42.18
Special Featur	0	Val/Su Ne	17.06
Final Total:	59900	Val/Su Sz	55.46

SUB AREA

Code	Description	Area - SQ	Rate	AV	Undepr Value
GAR	GARAGE	2.432	14.430		35,082
FFL	FIRST FLOOR	1.080	42.180		45,553

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area	3,512			Total:	80,635
Size A	1080	Gross Ar	3512	FinAr	1080

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD. WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1891, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 8 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,075,300		0.000		1,075,300
Total Card	1,075,300		0.000		1,075,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 52.04 | /Parc: 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:08:4

LAST R

Date	Time
08/05/1	11:20:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL			0	SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H 0.00000 | Total SF/S 0.00 | Parcel LU 903 | MUNICPL | Prime NB D N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	58 - SCHOOL		
Sty Ht:	2 - 2		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade: C	- AVERAGE		
Year Blt	1891	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	8	Ratin	Average
A HBth		Ratin	
OthrFix	40	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80 00
Size Adj.:	0.8580720
Const Adj.:	0.9548099
Adj $ / SQ:	65.544
Other Features	45000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1536214
Depreciation:	460864
Depreciated Tot	1075350

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: SCHOOL HOUSE.

RESIDENTIAL GRID

1st Res G	Des	# Unit	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	8

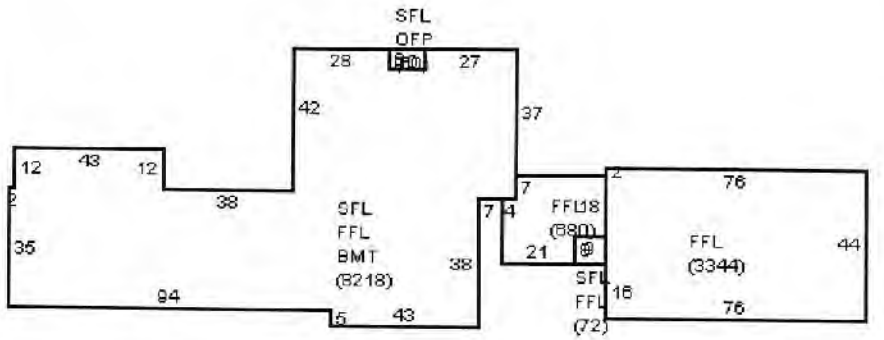
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S		AvRat		Ind.V	

Juris. Factor:		Before De	65.54
Special Featur	0	Val/Su Ne	37.15
Final Total:	1075300	Val/Su Sz	52.04

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	12,314	65.540	807,105
SFL	SECOND FLOOF	8,350	65.540	547,290
BMT	BASEMENT	8,218	16.390	134,659
OFP	OPEN PORCH	60	36.000	2,160

Net Sketched Area:	28,942	Total:	1,491,214
Size A	20664 Gross Ar	28942 FinAr	20664

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

PARCEL ID

R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1980, Having Primarily BRICK Exterior and ASPHALT Roof Cover, with 0 Units, 0 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	561,900		0.000		561,900
Total Card	561,900		0.000		561,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 60.13 | /Parc: 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:08:5

LAST R

Date	Time
08/05/1	11:20:4
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4															

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1980	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix	10	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	21.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	21.5	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.7577911
Const Adj.:	0.9548099
Adj $ / SQ:	72.355
Other Features	22000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	715803
Depreciation:	153898
Depreciated Tot	561906

COMMENTS

LOT # SQ FT 7,102,414 : 190
TRAPELO ROAD: ACTIVITIES CENTER.

RESIDENTIAL GRID

1st Res G	Des	# Unit	
Level	FY LR DR D K FR RR BR FB HB L O		
Othe			
Upp			
Lvl 2			
Lvl 1			
Low			
Total	RMs:	BR	Bath H 2

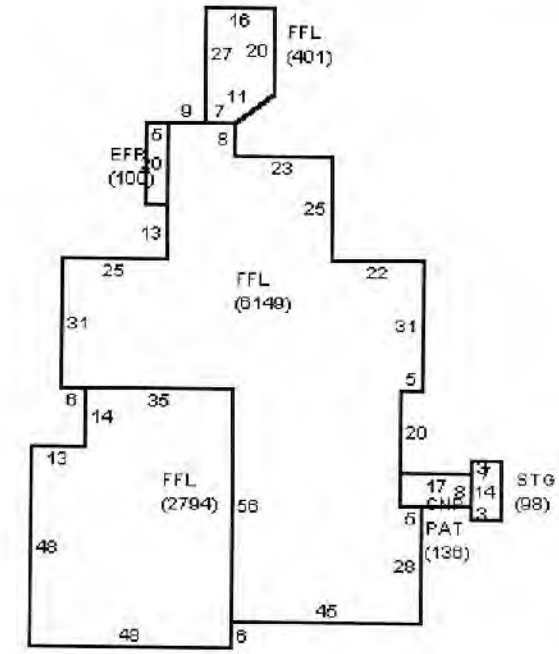
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,344	72.350	676,082
CNP	CANOPY	136	83.460	11,350
PAT	PATIO	136	10.010	1,362
EFP	ENCL PRCH	100	43.200	4,320
STG	SM STORAGE	98	7.040	690

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	72.35
Special Featur	0	Val/Su Ne	57.25
Final Total:	561900	Val/Su Sz	60.13

Net Sketched Area:	9,814			Total:	693,604
Size A	9344	Gross Ar	9814	FinAr	9344

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		24 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1933, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,379,000		0.000		1,379,000
Total Card	1,379,000		0.000		1,379,000
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 69.65 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: VERIFICATION OF VISIT NOT TA __/__/__

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

Patriot Properties Inc.

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:09:0

LAST R

Date	Time
08/05/1	11:21:0
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1933	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	24	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:		30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8606091
Const Adj.:	0.9548099
Adj $ / SQ:	78.063
Other Features	27000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1969976
Depreciation:	590993
Depreciated Tot	1378983

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WALLACE HALL.

RESIDENTIAL GRID

1st Res G	Des		# Unit	
Level	FY LR DR D K FR RR BR FB HB L O			
Othe				
Upp				
Lvl 2				
Lvl 1				
Low				
Total	RMs:	BR	Bath	H 4

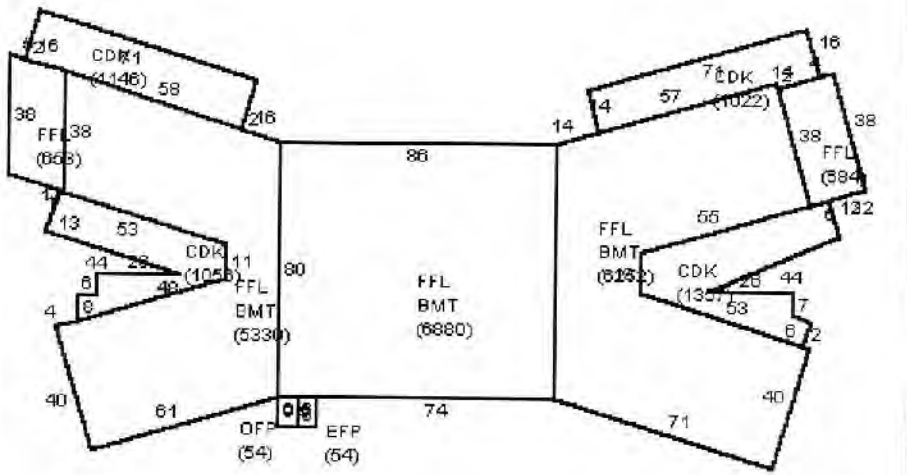
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	19,799	78.060	1,545,574
BMT	BASEMENT	18,462	19.520	360,301
CDK	CONCRETE DEC	4,581	7.000	32,047
EFP	ENCL PRCH	54	57.600	3,110
OFP	OPEN PORCH	54	36.000	1,944

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	78.06
Special Featur	0	Val/Su Ne	32.11
Final Total:	1379000	Val/Su Sz	69.65

Net Sketched Area:	42,950			Total:	1,942,976
Size A	19799	Gross Ar	42950	FinAr	19799

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	!112899!

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552 Type

Own Oc

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1933, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,366,600		0.000		1,366,600
Total Card	1,366,600		0.000		1,366,600
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 69.79 | /Parc: 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:09:1

LAST R

Date	Time
08/05/1	11:21:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H: 0.00000 | Total SF/S: 0.00 | Parcel LU: 903 MUNICPL | Prime NB D: N4

Total: | Spl Cre | Total:

apro

2017

EXTERIOR INFORMATION

Type:	36 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1933	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	24	Ratin	Average

OTHER FEATURES

Kits: 1		Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ.	95.00
Size Adj.:	0.8612776
Const Adj.:	0.9548099
Adj $ / SQ:	78.124
Other Features	27000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1952329
Depreciation:	585699
Depreciated Tot	1366630

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: SEQUIN HALL.

RESIDENTIAL GRID

1st Res G	Des	# Unit	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	4

REMODELING

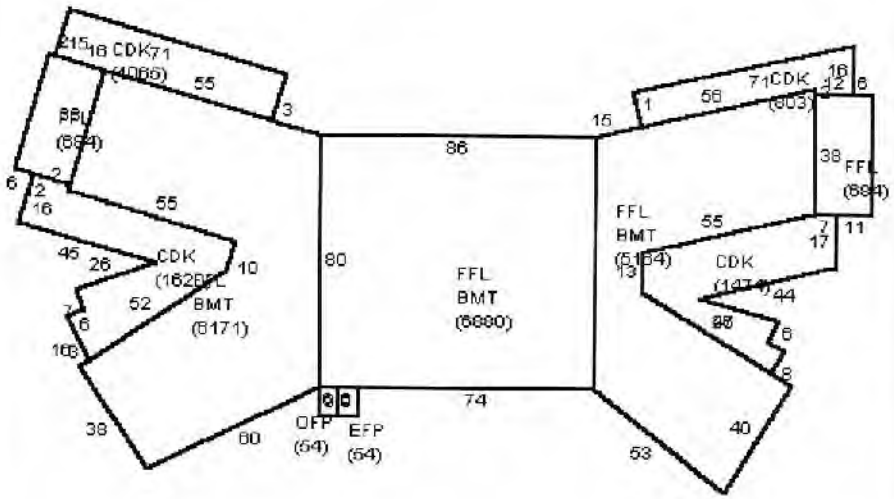
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



29

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	19,583	78.120	1,529,899
BMT	BASEMENT	18,215	19.530	355,757
CDK	CONCRETE DEC	4,962	6.980	34,618
EFP	ENCL PRCH	54	57.600	3,110
OFP	OPEN PORCH	54	36.000	1,944

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	78.12
Special Featur	0	Val/Su Ne	31.88
Final Total:	1366600	Val/Su Sz	69.79

Net Sketched Area:	42,868			Total:	1,925,328
Size A	19583	Gross Ar	42868	FinAr	19583

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N

Total Yard Item

Total Special Featue

Total:

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) CHURCH/SYN Building Built about 1960, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 3 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	566,100		0.000		566,100
Total Card	566,100		0.000		566,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 82.71 | /Parc: 63.3

Legal Description

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:09:2

LAST R

Date	Time
08/05/1	11:21:3
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign

VERIFICATION OF VISIT NOT DA __/__/__

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	46 - CHURCH/SYN		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1960	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	3	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	125.00
Size Adj.:	0.9753360
Const Adj.:	0.9548099
Adj $ / SQ:	116.408
Other Features	7500
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	808783
Depreciation:	242635
Depreciated Tot	566148

COMMENTS

LOT # SQ.FT. 7,102,414 . 190
TRAPELO ROAD: CHAPEL.

RESIDENTIAL GRID

1st Res G	Des									# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														

Total	RMs:		BR	Bath	H 3

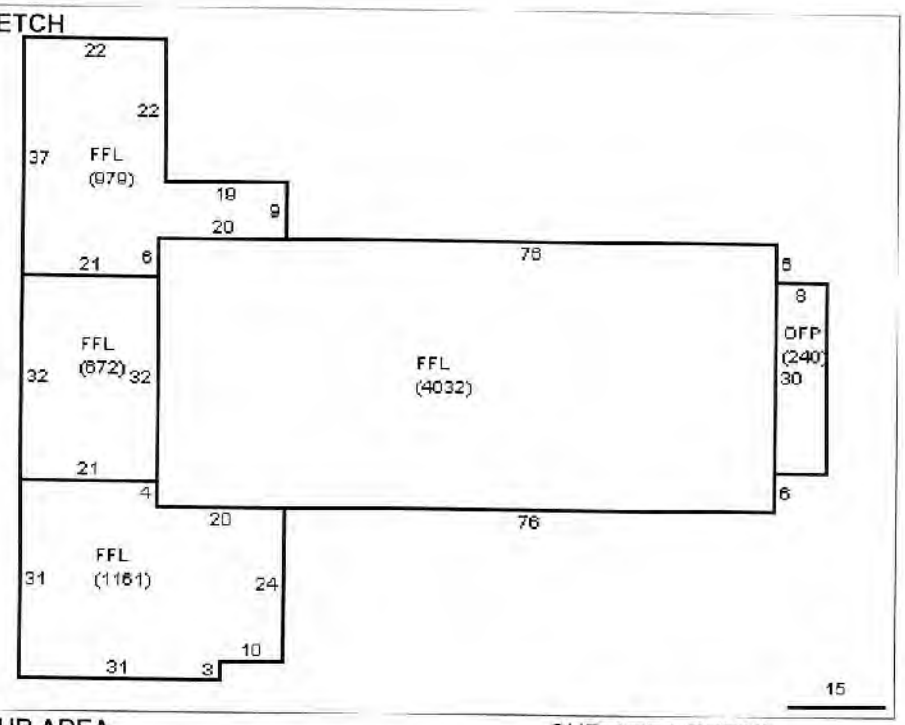
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	6,844	116.410	796,693
OFP	OPEN PORCH	240	19.130	4,590

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	116.41
Special Featur	0	Val/Su Ne	79.91
Final Total:	566100	Val/Su Sz	82.71

Net Sketched Area:	7,084			Total:	801,283
Size A	6844	Gross Ar	7084	FinAr	6844

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		27 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1891, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 6 Baths, 8 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	1,558,000		0.000		1,558,000
Total Card	1,558,000		0.000		1,558,000
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 64.34 | /Parc: 63.3

Legal Description

User Acct: 112899

GIS Ref:

GIS Ref:

Insp Date:

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:09:3

LAST R

Date	Time
08/05/1	11:21:5
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total.

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	03 - GAMBREL		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1891	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	8	Ratin	Average
A HBth		Ratin	
OthrFix	24	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own.	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8495540
Const Adj.:	0.9548099
Adj $ / SQ:	77.060
Other Features	67000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	2225676
Depreciation:	667703
Depreciated Tot	1557973

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WEST BLDG..

RESIDENTIAL GRID

1st Res G	Des									# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath	6		H	8					

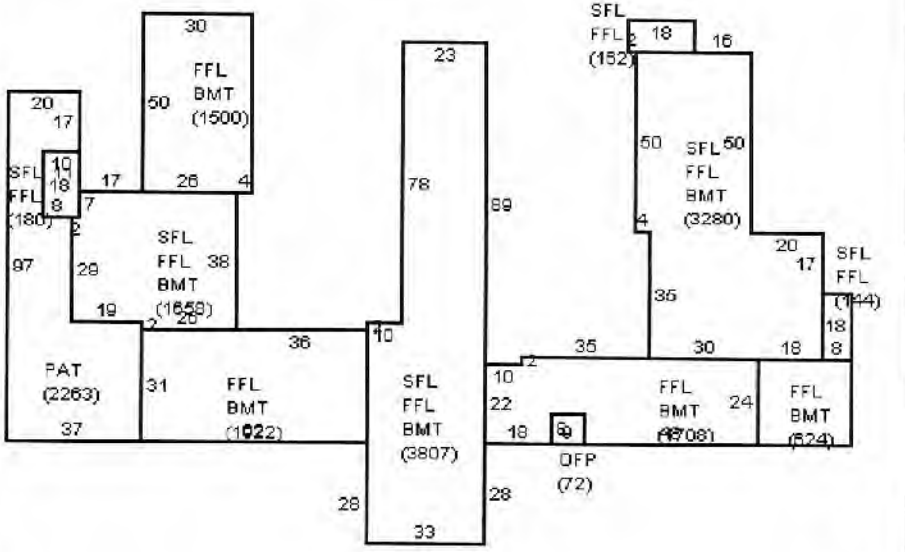
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	14,985	77.060	1,154,751
BMT	BASEMENT	14,499	19.270	279,325
SFL	SECOND FLOOF	9,231	77.060	711,345
PAT	PATIO	2,263	4.830	10,934
OFP	OPEN PORCH	72	32.250	2,322

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:			Before De	77.06	
Special Featur	0		Val/Su Ne	37.95	
Final Total:	1558000		Val/Su Sz	64.34	

Net Sketched Area:	41,050		Total:	2,158,677	
Size A	24216	Gross Ar	41050	FinAr	24216

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		28 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1900, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 8 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
903	395,400		0.000		395,400
Total Card	395,400		0.000		395,400
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 80.46 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
903	MUNICPL		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:09:4

LAST R

Date	Time
08/05/1	11:22:1
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

BATH FEATURES

Full Ba	8	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WEST NURSES.

RESIDENTIAL GRID

1st Res G		Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath	8	H							

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1900	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

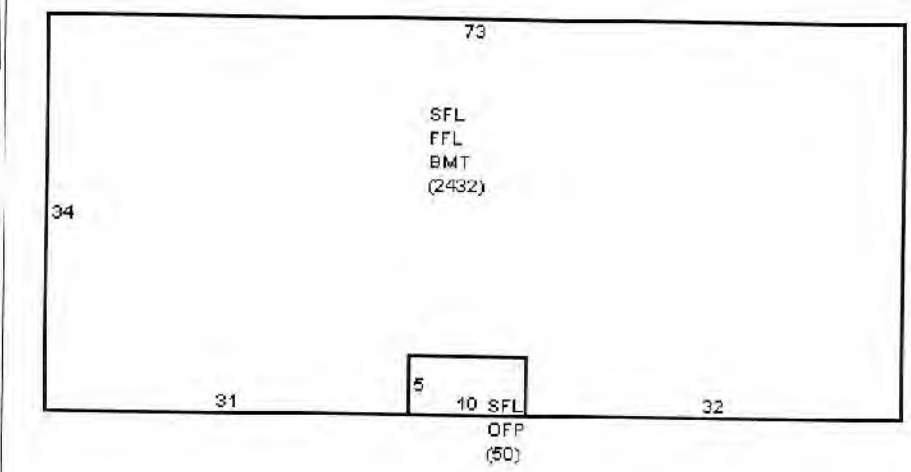
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	03 - HARDWOOD		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	1.0442003
Const Adj.:	0.9548099
Adj $ / SQ:	94.716
Other Features	40000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	564823
Depreciation:	169447
Depreciated Tot	395376

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S		AvRat	Ind.V
Juris. Factor:		Before De	94.72
Special Featur	0	Val/Su Ne	53.46
Final Total:	395400	Val/Su Sz	80.46

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	2,482	94.720	235,086
BMT	BASEMENT	2,432	23.680	57,587
FFL	FIRST FLOOR	2,432	94.720	230,350
OFP	OPEN PORCH	50	36.000	1,800

Net Sketched Area:	7,396			Total:	524,823
Size A	4914	Gross Ar	7396	FinAr	4914

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris Value

IMAGE

AssessPro Patriot Properties, Inc

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		29 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) MULTI-FAMILY Building Built about 1900, Having Primarily WOOD SHING Exterior and ASPHALT Roof Cover, with 1 Units, 3 Baths, 3 HalfBaths, 0 3/4

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	408,400		0.000		408,400
Total Card	408,400		0.000		408,400
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 66.80 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0	0.000	N4																

Sign __/__/__

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

Legal Description

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:10:0

LAST R

Date	Time
05/11/1	10:47:4
apro	

EXTERIOR INFORMATION

Type:	83 - MULTI-FAMILY		
Sty Ht:	3 - 3		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:		%	
Roof Stru	03 - GAMBREL		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1900	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W		%	
Partition:			
Prim Floo	03 - HARDWOOD		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	3	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	3	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	40.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	40	%

CALC SUMMARY

Basic $ / SQ:	120.00
Size Adj.:	0.9308472
Const Adj.:	0.8999999
Adj $ / SQ:	100.532
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	680730
Depreciation:	272292
Depreciated Tot	408438

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: HILLSIDE.

RESIDENTIAL GRID

1st Res G	Des		# Unit										
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath 3	H 3

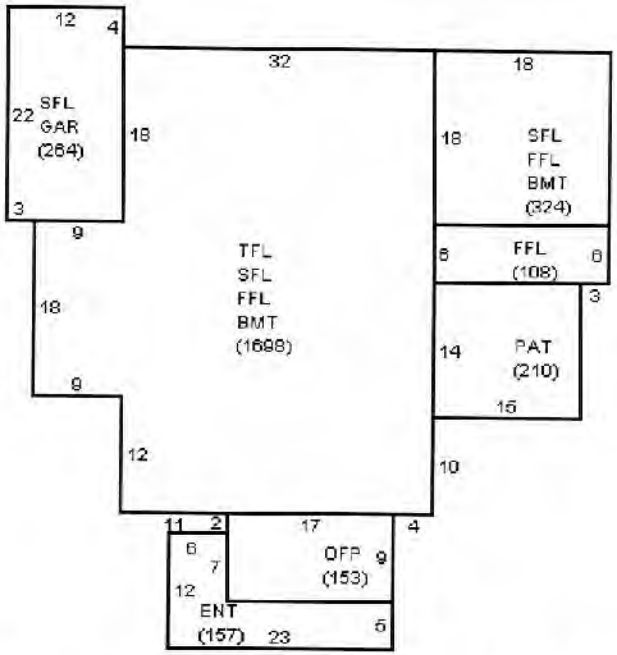
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	100.53
Special Featur	0	Val/Su Ne	45.78
Final Total:	408400	Val/Su Sz	66.80

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	2,286	100.530	229,815
FFL	FIRST FLOOR	2,130	100.530	214,132
BMT	BASEMENT	2,022	25.130	50,819
TFL	THIRD FLOOR	1,698	100.530	170,702
GAR	GARAGE	264	22.020	5,814
PAT	PATIO	210	8.070	1,695
ENT	ENTRY	157	27.620	4,337
OFP	OPEN PORCH	153	22.320	3,416
	Net Sketched Area:	8,920	Total:	680,730

Size A	6114	Gross Ar	8920	FinAr	6114

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue	

Total:

IMAGE

AssessPro Patriot Properties, Inc

R045	001	0001		30 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) COLD STORAGE Building Built about 1921, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	15,000		0.000		15,000
Total Card	15,000		0.000		15,000
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 30.99 | /Parc: 63.3

Legal Description

Entered Lot Size | Total Land: | Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC | PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0			SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/___

PRINT

Date	Time
05/04/1	14:10:1

LAST R

Date	Time
05/11/1	10:48:5
apro	
112899	

USER DEFINED

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	26 - COLD STORA		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1921	Eff Yr Blt	
Alt LUC		Alt %:	
Jurisdict		Fact.	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	1.2500000
Const Adj :	0.9548099
Adj $ / SQ:	47.740
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	23106
Depreciation:	8087
Depreciated Tot	15019

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: POWER SUB STATION.

RESIDENTIAL GRID

1st Res G	Des	# Unit	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	

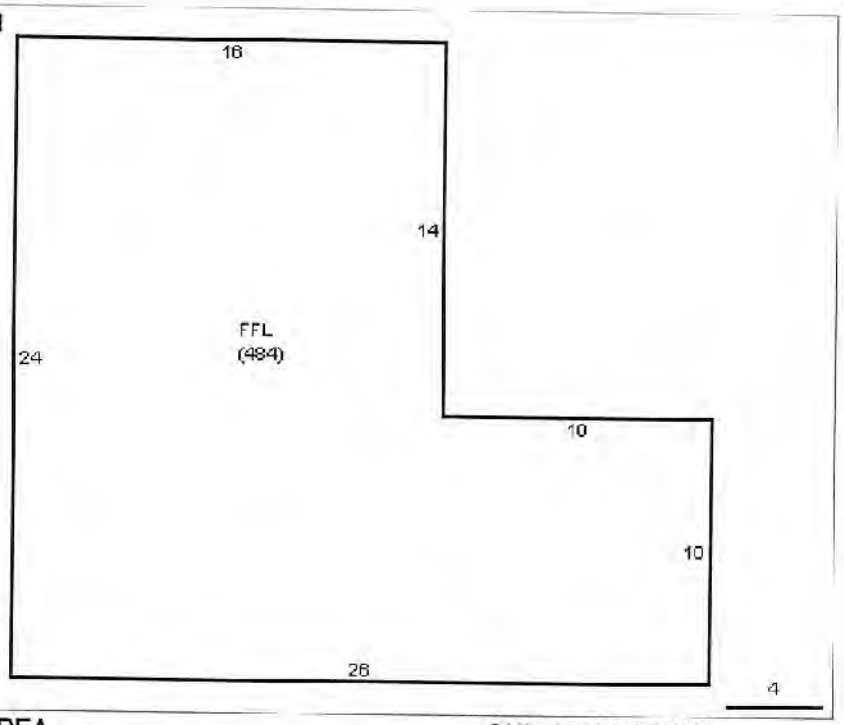
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths.	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	484	47.740	23,106

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat	Ind.V	
Juris. Factor:		Before De	47.74
Special Featur	0	Val/Su Ne	30.99
Final Total:	15000	Val/Su Sz	30.99

Net Sketched Area:	484			Total:	23,106
Size A	484	Gross Ar	484	FinAr	484

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		31 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) APARTMENTS Building Built about 1900, Having Primarily BRICK Exterior and ASPHALT Roof Cover with 1 Units, 10 Baths, 2 HalfBaths, 0 3/4 Baths, 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	516,100		0.000		516,100
Total Card	516,100		0.000		516,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 53.08 | /Parc 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct 112899

GIS Ref

GIS Ref

Insp Date

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:10:2

LAST R

Date	Time
05/11/1	10:49:5
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/___

Total AC/H: 0.00000 | Total SF/S: 0.00 | Parcel LU: 903 MUNICPL | Prime NB D: N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	85 - APARTMENTS		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1900	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	03 - HARDWOOD		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	10	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	40.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	40	%

CALC SUMMARY

Basic $ / SQ:	92.00
Size Adj.:	0.8822791
Const Adj.:	0.9548099
Adj $ / SQ:	77.502
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	860159
Depreciation:	344064
Depreciated Tot	516095

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: SOUTH NURSES.

RESIDENTIAL GRID

1st Res G	Des	# Unit
Level	FY LR DR D K FR RR BR FB HB L O	
Othe		
Upp		
Lvl 2		
Lvl 1		
Low		
Total	RMs: BR	Bath 1 H 2

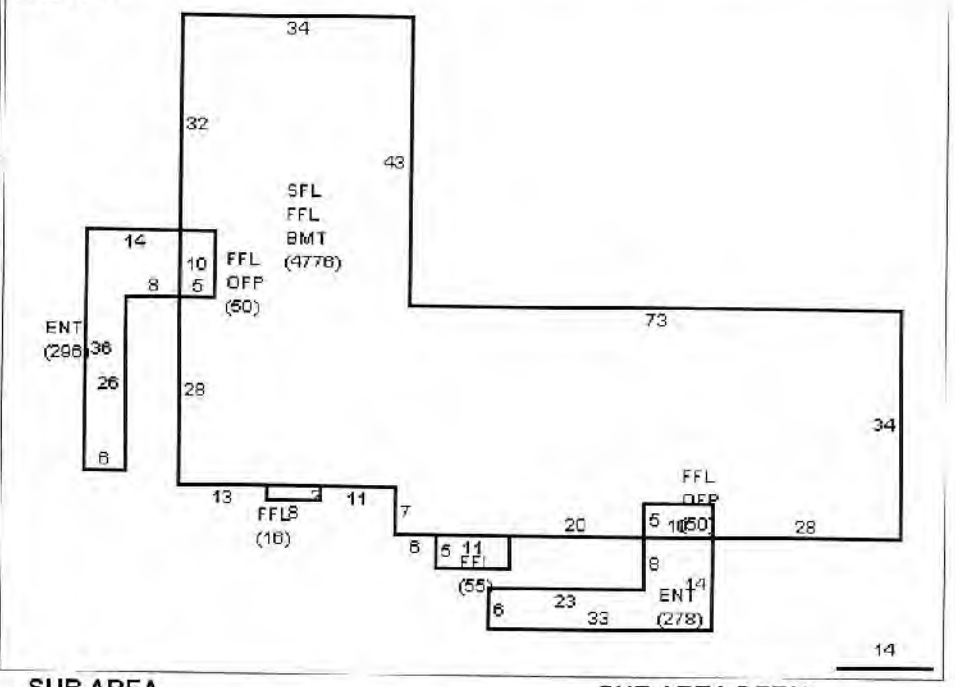
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	4,947	77.500	383,400
BMT	BASEMENT	4,776	19.380	92,537
SFL	SECOND FLOOF	4,776	77.500	370,148
ENT	ENTRY	574	19.810	11,374
OFP	OPEN PORCH	100	27.000	2,700

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	77.50
Special Featur	0	Val/Su Ne	34.01
Final Total	516100	Val/Su Sz	53.08

Net Sketched Area:	15,173		Total:	860,159	
Size A	9723	Gross Ar	15173	FinAr	9723

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	
Total:					

R045	001	0001		32 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) APARTMENTS Building Built about 1904, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 16 Baths, 0 HalfBaths, 0 3/4 Baths, 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	546,300		0.000		546,300
Total Card	546,300		0.000		546,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 51.89 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:10:3

LAST R

Date	Time
05/11/1	10:51:4
apro	
112899	

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	85 - APARTMENTS		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade: C	- AVERAGE		
Year Blt	1904	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	16	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	16	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	40.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	40	%

CALC SUMMARY

Basic $ / SQ:	92.00
Size Adj.:	0.8759806
Const Adj.:	0.9548099
Adj $ / SQ:	76.948
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	910446
Depreciation:	364179
Depreciated Tot	546268

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: NORTH NURSES.

RESIDENTIAL GRID

1st Res G	Des		# Unit
Level	FY LR DR D K FR RR BR FB HB L O		
Othe			
Upp			
Lvl 2			
Lvl 1			
Low			
Total	RMs:	BR	Bath 1 H

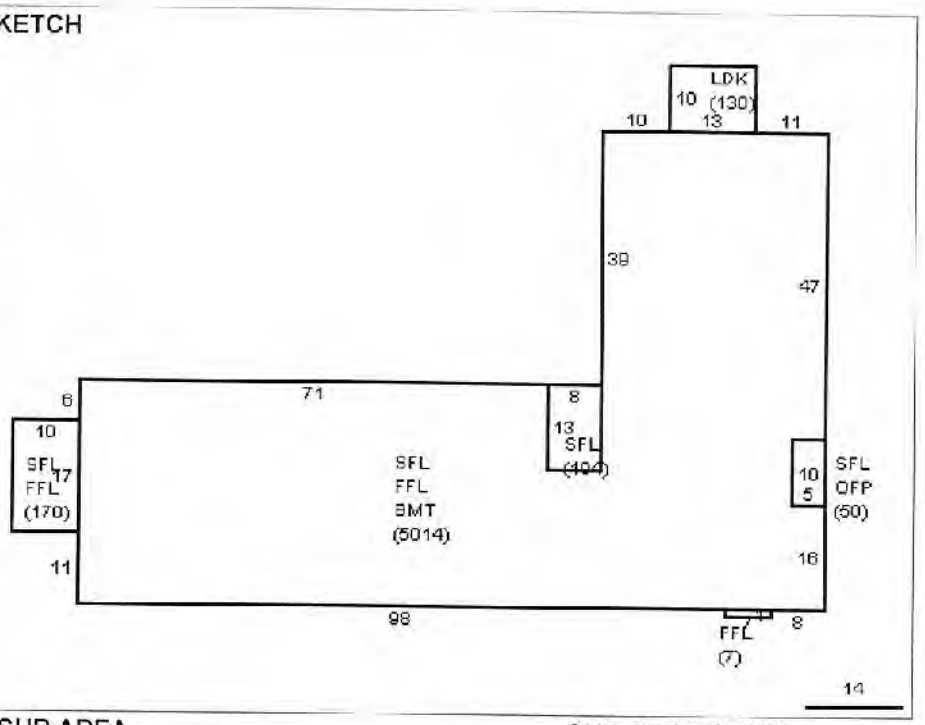
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	5,338	76.950	410,750
FFL	FIRST FLOOR	5,191	76.950	399,439
BMT	BASEMENT	5,014	19.240	96,455
LDK	LOADING DOCK	130	15.400	2,003
OFP	OPEN PORCH	50	36.000	1,800

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	76.95
Special Featur	0	Val/Su Ne	34.75
Final Total:	546300	Val/Su Sz	51.89

Net Sketched Area:	15,723		Total:	910,446	
Size A	10529	Gross Ar	15723	FinAr	10529

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		33 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about , Having Primarily N/A Exterior and N/A Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and 0 Bdrms

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	90,000	300	0.000		90,300
Total Card	90,000	300	0.000		90,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 75.25 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre: | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

Patriot Properties Inc.

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:10:4

LAST R

Date	Time
05/11/1	11:02:1
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

EXTERIOR INFORMATION

Type:	01 - OTHER		
Sty Ht:			
(Liv) Units		Total:	35
Foundatio			
Frame:			
Prime Wa			
Sec Wall:			%
Roof Stru			
Roof Cov			
Color:			
View / De			

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

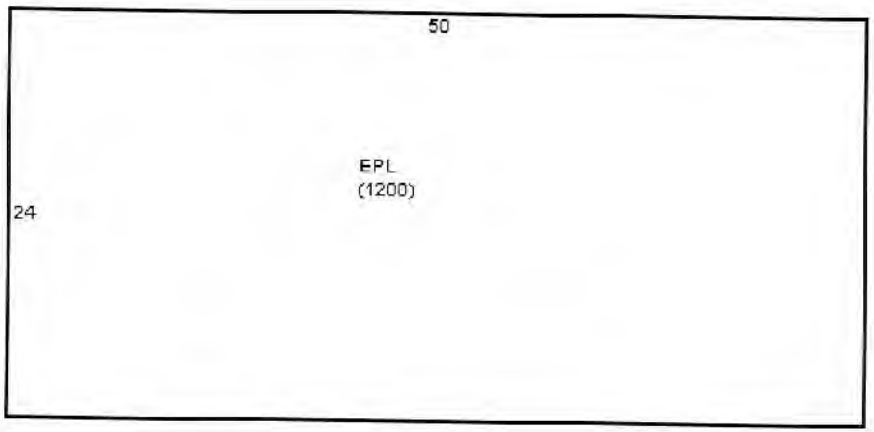
COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: POOL INSIDE
GREENE UNIT.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath		H						

SKETCH



5

GENERAL INFORMATION

Grade:			
Year Blt		Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:			
Insulation:			
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con AV	- Average	0.0 %
Functiona		%
Economic		%
Special:		%
Override:		%
Total:		0 %

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	1.0000000
Const Adj.:	1.0000000
Adj $ / SQ:	100.000
Other Features	0
Grade Factor:	
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	90000
Depreciation:	0
Depreciated Tot	90000

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	100.00
Special Featur	0	Val/Su Ne	75.00
Final Total:	90000	Val/Su Sz	

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
EPL	ENCL POOL	1,200	75.000	90,000

Net Sketched Area:	1,200		Total:	90,000	
Size A		Gross Ar	1200	FinAr	1200

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value
10	POOL I-C		D	Y	1 3x5	A	AV	1960	40.00	T	50	914				300			300

IMAGE

AssessPro Patriot Properties, Inc

More N

Total Yard Item 300

Total Special Featue

Total: 300

R045	001	0001		34 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1906, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	377,600		0.000		377,600
Total Card	377,600		0.000		377,600
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 76.69 | /Parc: 63.3

Legal Description

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:10:5

LAST R

Date	Time
05/11/1	11:02:5
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ____/____/____

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	88 - DORMITORY		
Sty Ht:	2 - 2 story		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1906	Eff Yr Blt	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	8	Ratin	Average

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	1.0437042
Const Adj.:	0.9548099
Adj $ / SQ:	94.671
Other Features	14000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	539398
Depreciation:	161819
Depreciated Tot	377579

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: EAST NURSES.

RESIDENTIAL GRID

1st Res G		Des										# Unit	
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath			H	4				

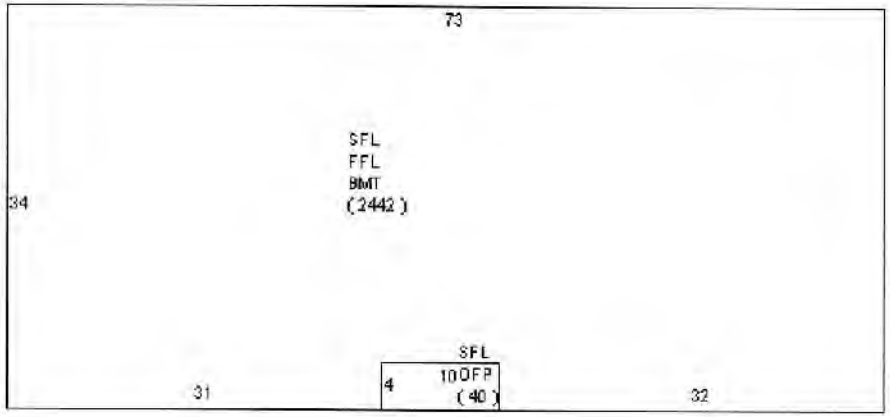
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	2,482	94.670	234,974
BMT	BASEMENT	2,442	23.670	57,797
FFL	FIRST FLOOR	2,442	94.670	231,187
OFP	OPEN PORCH	40	36.000	1,440

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat	Ind.V	
Juris. Factor:		Before De	94.67
Special Featur	0	Val/Su Ne	50.99
Final Total:	377600	Val/Su Sz	76.69

Net Sketched Area:	7,406		Total:		525,398
Size A	4924	Gross Ar	7406	FinAr	4924

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		35 of 66	INDUSTRIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) WAREHOUSE Building Built about 1891, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 2 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	366,900		0.000		366,900
Total Card	366,900		0.000		366,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 31.85 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

PRINT

Date	Time
05/04/1	14:11:0

LAST R

Date	Time
05/11/1	11:04:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year	
LandReas	
BldReason	

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

Sign _____ / ___ / ___

Total AC/H 0.00000	Total SF/S 0.00	Parcel LU 903	MUNICPL	Prime NB D N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	43 - WAREHOUSE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1891	Eff Yr Blt	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	0.9802083
Const Adj.:	0.9548099
Adj $ / SQ:	37.437
Other Features	5000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	564416
Depreciation:	197545
Depreciated Tot	366870

COMMENTS

LOT # SQ.FT. 7,102,414 ; 190
TRAPELO ROAD: STOREHOUSE.

RESIDENTIAL GRID

1st Res G	Des	# Unit	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	2

REMODELING

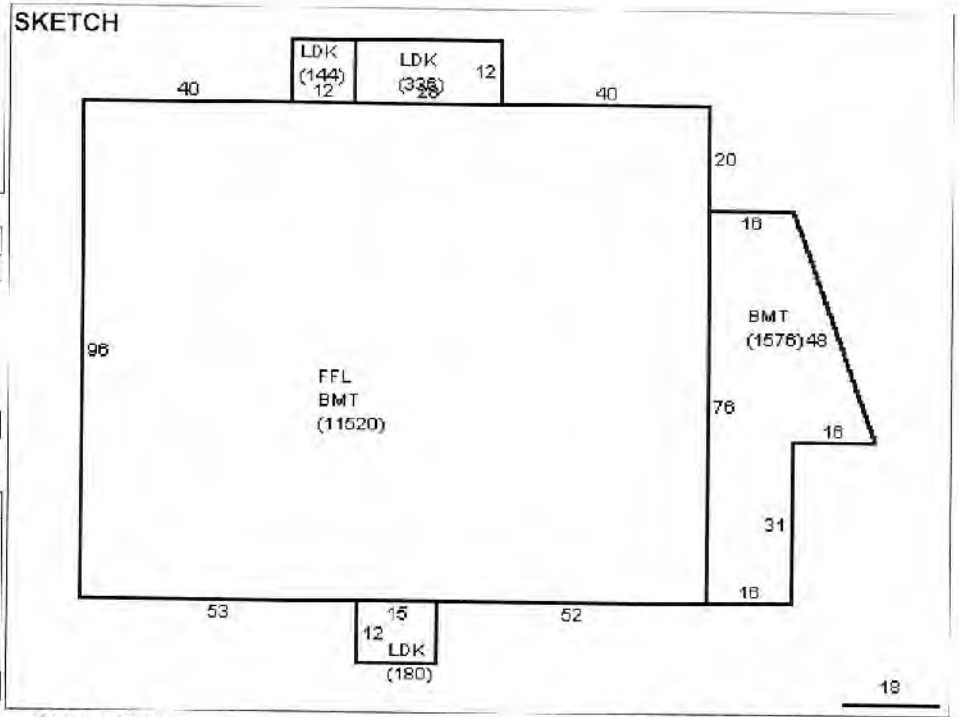
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals	

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	13,096	9.360	122,567
FFL	FIRST FLOOR	11,520	37.440	431,269
LDK	LOADING DOCK	660	8.450	5,580

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	37.44
Special Featur	0	Val/Su Ne	14.52
Final Total:	366900	Val/Su Sz	31.85

Net Sketched Area:	25,276		Total:		559,416
Size A	11520	Gross Ar	25276	FinAr	11520

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

More	N

Total Yard Item	

Total Special Featue	

Total:	

R045 Map | 001 Block | 0001 Lot | Unit

36 of 66 CARD **INDUSTRIAL**

TOTAL ASSESSED: 55,843,400 !112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) WAREHOUSE Building Built about 1948, Having Primarily CONC BLOCK Exterior and ASPHALT Roof Cover, with 0 Units, 0 Baths, 1 HalfBaths, 0 3/4

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	58,500		0.000		58,500
Total Card	58,500		0.000		58,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 30.99 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:11:1

LAST R

Date	Time
05/11/1	11:05:0
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H: 0.00000 | Total SF/S: 0.00 | Parcel LU: 903 | MUNICPL | Prime NB D: N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	43 - WAREHOUSE		
Sty Ht:	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	21 - CONC BLOC		
Sec Wall:		%	
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1948	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W		%	
Partition:			
Prim Floo			
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	1	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	35	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	35	%

CALC SUMMARY

Basic $ / SQ:	40.00
Size Adj.:	1.2500000
Const Adj.:	0.9269999
Adj $ / SQ:	46.350
Other Features	2500
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	90009
Depreciation:	31503
Depreciated Tot	58506

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: ENGINEER STORAGE.

RESIDENTIAL GRID

1st Res G		Des										# Unit	
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H 1

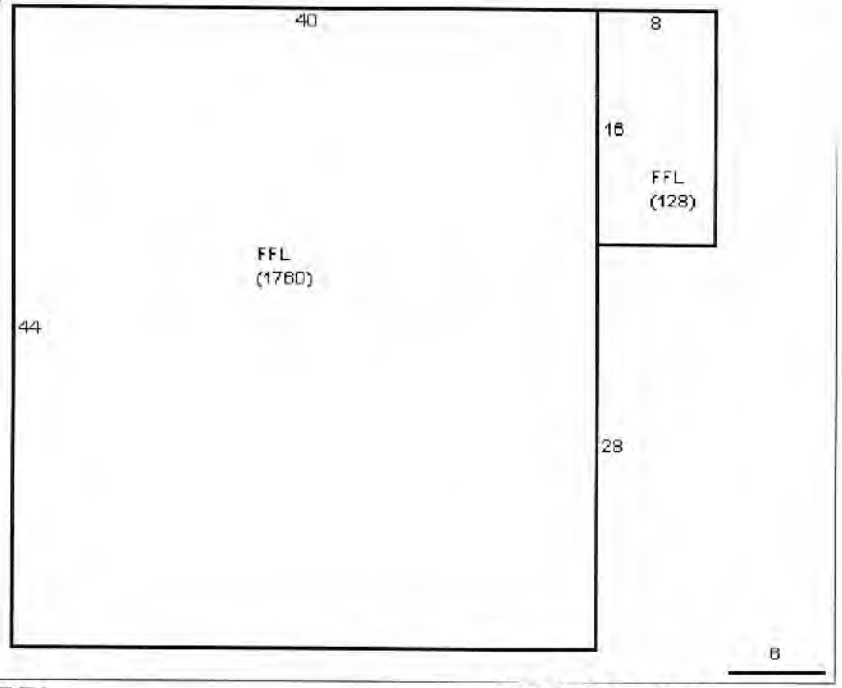
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	1,888	46.350	87,509

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:		Before De	46.35		
Special Featur	0	Val/Su Ne	30.99		
Final Total:	58500	Val/Su Sz	30.99		

Net Sketched Area:	1,888		Total:	87,509	
Size A	1888	Gross Ar	1888	FinAr	1888

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		37 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OTHER Building Built about 1930, Having Primarily CONC BLOCK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 1 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	409,200		0.000		409,200
Total Card	409,200		0.000		409,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 52.33 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: ___/___/___

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:11:2

LAST R

Date	Time
05/11/1	11:06:0
apro	
112899	

Total AC/H 0.00000	Total SF/S 0.00	Parcel LU 903	MUNICPL	Prime NB D N4	Total:	Spl Cre	Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	01	- OTHER
Sty Ht:	1	- 1 story
(Liv) Units		Total: 35
Foundatio	01	- CONCRETE
Frame:	03	- CONCRETE
Prime Wa	21	- CONC BLOC
Sec Wall:		%
Roof Stru	07	- SHED
Roof Cov	04	- TAR + GRAV
Color:		
View / De		

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1930	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL		
Prim Int		
Sec Int W		%
Partition:		
Prim Floo		
Sec Floor		%
Bsmnt Flr		
Bsmnt Ga		
Electric:	03	- TYPICAL
Insulation:	01	- NONE
Int vs Ext:		
Heat Fuel	01	- OIL
Heat Typ	05	- STEAM
# Heat Sy	1	
% Heated	100	% AC:
Solar HW	NO	Central V NO
% Com		% Sprinkl

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	1	Ratin	Average
A HBth		Ratin	
OthrFix	9	Ratin	Average

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	31.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	31	%

CALC SUMMARY

Basic $ / SQ:	100.00
Size Adj.:	0.7690537
Const Adj.:	0.9269999
Adj $ / SQ:	71.291
Other Features	15000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	593101
Depreciation:	183861
Depreciated Tot	409240

COMMENTS

LOT # SQ.FT. 7,102,414 190
TRAPELO ROAD: MAINTENANCE
BLDG..

RESIDENTIAL GRID

1st Res G		Des							# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H 1

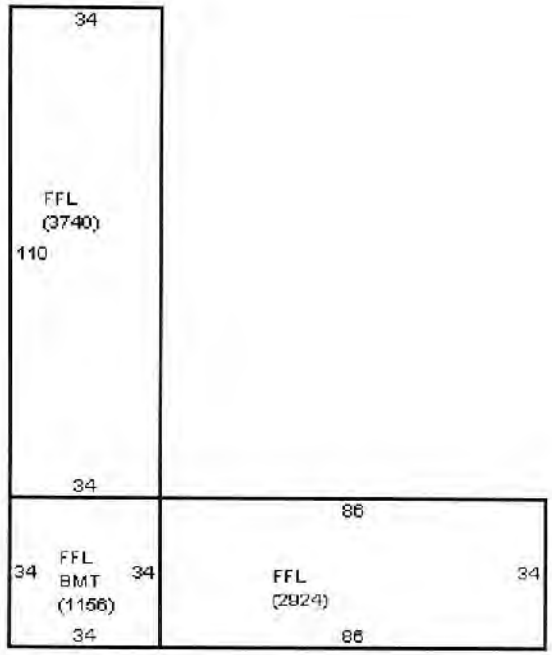
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



21

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	71.29
Special Featur	0	Val/Su Ne	45.59
Final Total:	409200	Val/Su Sz	52.33

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	7,820	71.290	557,498
BMT	BASEMENT	1,156	17.820	20,603

Net Sketched Area:	8,976			Total:	578,101
Size A	7820	Gross Ar	8976	FinAr	7820

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		38 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) HOSPITAL Building Built about 1981, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,087,800		0.000		1,087,800
Total Card	1,087,800		0.000		1,087,800
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card | 84.64 | /Parc | 63.3

Legal Description

User Acct
112899
GIS Ref
GIS Ref
Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:11:3

LAST R

Date	Time
05/11/1	11:08:4
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI			0	SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H: 0.00000 | Total SF/S: 0.00 | Parcel LU: 903 | MUNICPL | Prime NB D: N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	89	- HOSPITAL
Sty Ht:	1	- 1 story
(Liv) Units		Total: 35
Foundatio	01	- CONCRETE
Frame:	03	- CONCRETE
Prime Wa	07	- BRICK
Sec Wall:		%
Roof Stru	04	- FLAT
Roof Cov	04	- TAR + GRAV
Color:		
View / De		

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1981	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL		
Prim Int	01	- DRYWALL
Sec Int W		%
Partition:		
Prim Floo	14	- ASPHALT TIL
Sec Floor		%
Bsmnt Flr		
Bsmnt Ga		
Electric:	03	- TYPICAL
Insulation:	02	- TYPICAL
Int vs Ext:		
Heat Fuel	01	- OIL
Heat Typ	03	- FORCED H/
# Heat Sy	1	
% Heated	100	% AC:
Solar HW	NO	Central V NO
% Com		% Sprinkl

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	10	Ratin	Average

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	34. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	34 %

CALC SUMMARY

Basic $ / SQ:	140.00
Size Adj.:	0.8622471
Const Adj.:	1.0608999
Adj $ / SQ:	128.066
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1648120
Depreciation:	560361
Depreciated Tot	1087759

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: BROOKSIDE.

RESIDENTIAL GRID

1st Res G	Des	# Unit	

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	H	4

REMODELING

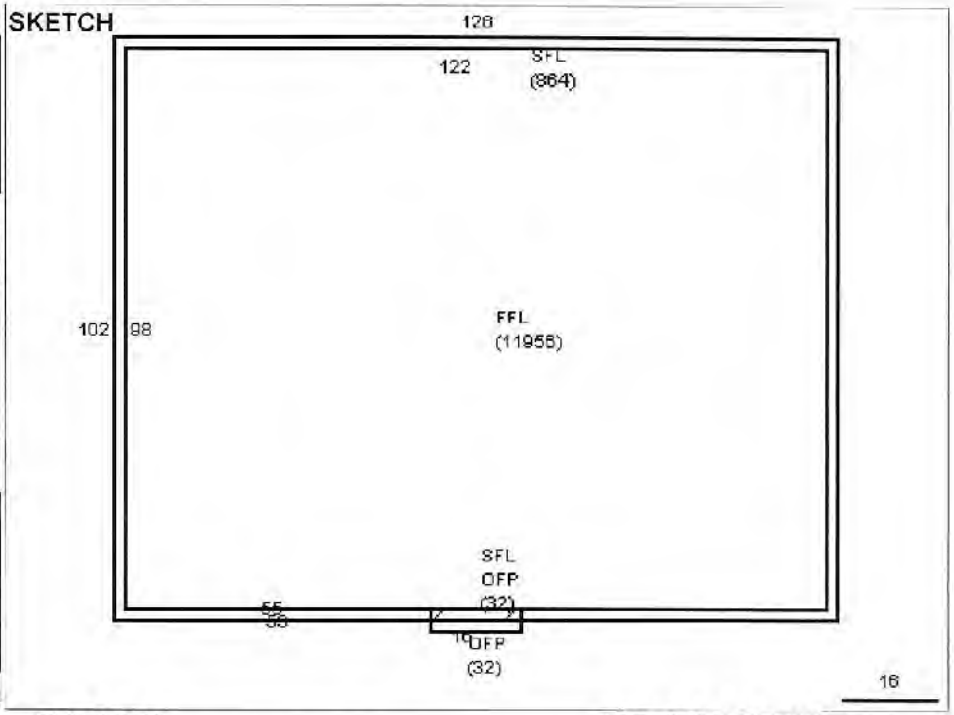
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	11,956	128.070	1,531,158
SFL	SECOND FLOOF	896	128.070	114.747
OFP	OPEN PORCH	64	34.590	2,214

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	128.07
Special Featur	0	Val/Su Ne	84.22
Final Total:	1087800	Val/Su Sz	84.64

Net Sketched Area:	12,916			Total:	1,648,119
Size A	12852	Gross Ar	12916	FinAr	12852

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		39 of 66	APARTMENT	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) HOSPITAL Building Built about 1909, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	2,158,600		0.000		2,158,600
Total Card	2,158,600		0.000		2,158,600
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 74.98 | /Parc: 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct 112899

GIS Ref

GIS Ref

Insp Date

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:11:4

LAST R

Date	Time
05/11/1	11:11:2
apro	

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	89	- HOSPITAL	
Sty Ht:	2	- 2	
(Liv) Units		Total:	35
Foundatio	01	- CONCRETE	
Frame:	03	- CONCRETE	
Prime Wa	07	- BRICK	
Sec Wall:			%
Roof Stru	04	- FLAT	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1909	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W			%
Partition:			
Prim Floo	05	- LINO/VINYL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	31	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix	10	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	40	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	40	%

CALC SUMMARY

Basic $ / SQ:	140.00
Size Adj.:	0.8277693
Const Adj.:	0.9548099
Adj $ / SQ:	110.653
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	3597681
Depreciation:	1439072
Depreciated Tot	2158609

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WITHINGTON
REHABILITATION CENTER.

RESIDENTIAL GRID

1st Res G	Des									# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	H 4

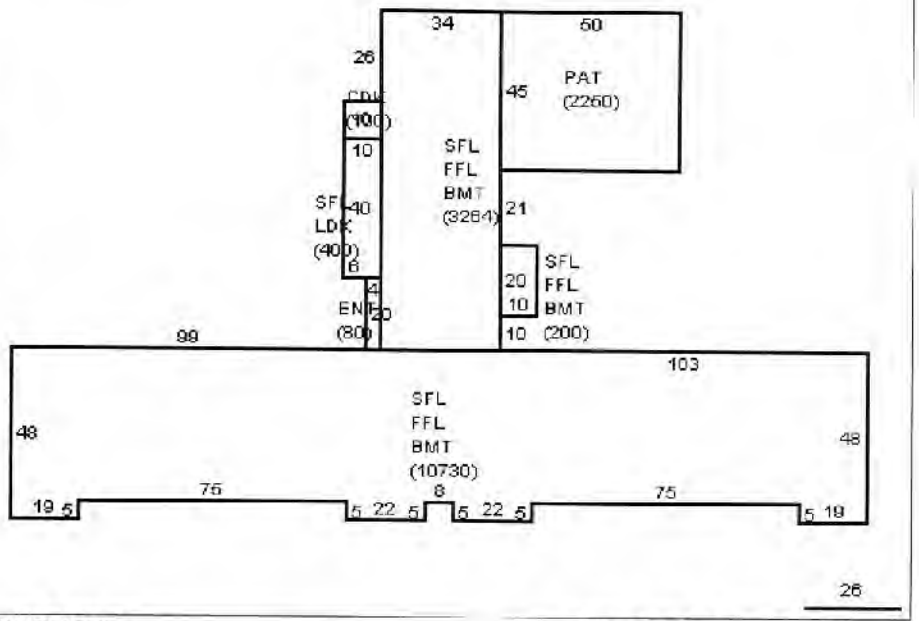
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat		Ind.V

Juris. Factor:		Before De	110.65
Special Featur	0	Val/Su Ne	47.12
Final Total:	2158600	Val/Su Sz	74.98

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	14,594	110.650	1,614,876
BMT	BASEMENT	14,194	27.660	392,654
FFL	FIRST FLOOR	14,194	110.650	1,570,614
PAT	PATIO	2,250	4.830	10,875
LDK	LOADING DOCK	400	9.560	3,825
CDK	CONCRETE DEC	100	18.000	1,800
ENT	ENTRY	80	37.970	3,038

Net Sketched Area:	45,812			Total:	3,597,682
Size A	28788	Gross Ar	45812	FinAr	28788

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID

R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045 | 001 | 0001 | 40 of 66 | COMMERCIAL | TOTAL ASSESSED: 55,843,400

Map | Block | Lot | Unit | CARD | !112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr: Own Oc:
Postal:	02452-5552 Type:

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr:
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1897, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 4 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,043,200		0.000		1,043,200
Total Card	1,043,200		0.000		1,043,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 64.43 | /Parc: 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

User Acct: 112899

GIS Ref:

GIS Ref:

Insp Date:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:11:5

LAST R

Date	Time
05/11/1	11:14:2
apro	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86	- DORMITORY
Sty Ht:	2	- 2
(Liv) Units	1	Total: 35
Foundatio	03	- BRK/STN
Frame:	03	- CONCRETE
Prime Wa	07	- BRICK
Sec Wall:		%
Roof Stru	02	- HIP
Roof Cov	02	- SLATE
Color:		
View / De		

GENERAL INFORMATION

Grade: C	- AVERAGE		
Year Blt	1897	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL		
Prim Int	02	- PLASTER
Sec Int W		%
Partition:		
Prim Floo	14	- ASPHALT TIL
Sec Floor		%
Bsmnt Flr		
Bsmnt Ga		
Electric:	03	- TYPICAL
Insulation:	01	- NONE
Int vs Ext:		
Heat Fuel	01	- OIL
Heat Typ	05	- STEAM
# Heat Sy	1	
% Heated	100	% AC:
Solar HW	NO	Central V NO
% Com		% Sprinkl

BATH FEATURES

Full Ba	4	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix	16	Ratin	Average

OTHER FEATURES

Kits:	2	Ratin Average
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	30 %
Functiona		%
Economic		%
Special:		%
Override:		%
	Total:	30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8741107
Const Adj :	0.9548099
Adj $ / SQ:	79.288
Other Features	43000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1490329
Depreciation:	447099
Depreciated Tot	1043230

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: NORTH BLDG..

RESIDENTIAL GRID

1st Res G	Des		# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR	Bath 4	H 2

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

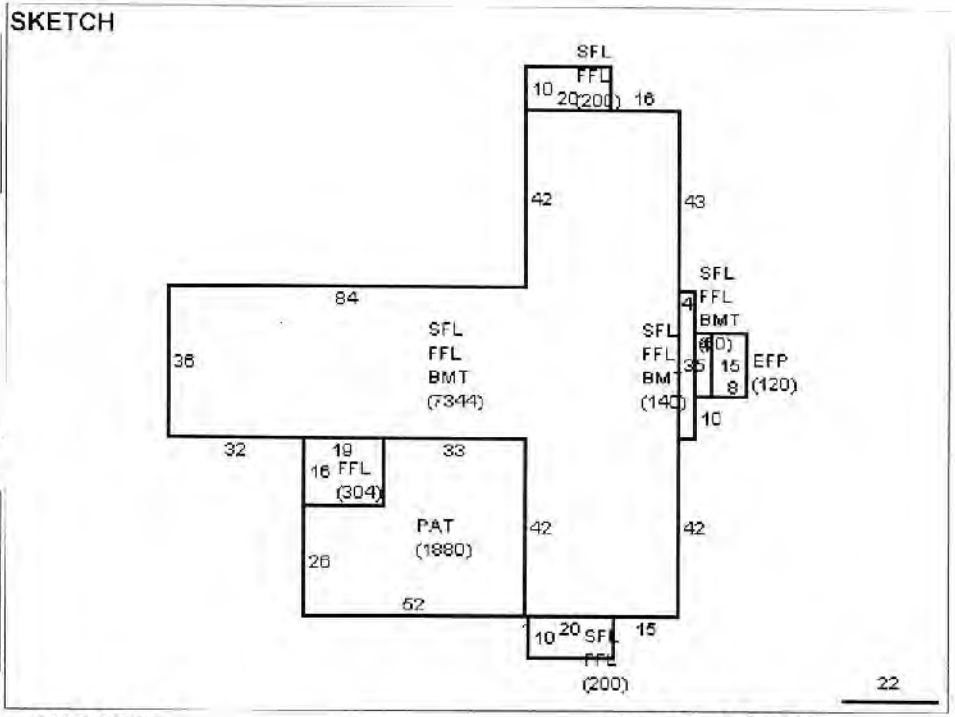
No Uni	RMS	BRS	FL
Totals			

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat		Ind.V
Juris. Factor:		Before De	79.29
Special Featur	0	Val/Su Ne	40.53
Final Total:	1043200	Val/Su Sz	64.43

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	8,248	79.290	653,967
SFL	SECOND FLOOF	7,944	79.290	629,863
BMT	BASEMENT	7,544	19.820	149,537
PAT	PATIO	1,880	4.900	9,210
EFP	ENCL PRCH	120	39.600	4,752

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	25,736		Total:	1,447,329	
Size A	16192	Gross Ar	25736	FinAr	16192

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM		
Owner			
Owner			
Street	610 MAIN ST		
Street			
Twn/Cit	WALTHAM		
St/Prov	MA	Cntr	Own Oc
Postal	02452-5552		Type

PREVIOUS OWNER

Owner			
Owner			
Street			
Twn/Cit			
St/Prov		Cntr	
Postal			

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) GREENHOUSE Building Built about 1930, Having Primarily CONC BLOCK Exterior and TAR + GRAVEL Roof Cover, with 0 Units, 0 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	30,400		0.000		30,400
Total Card	30,400		0.000		30,400
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 28.95 | /Parc 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:12:0

LAST R

Date	Time
08/21/1	10:23:3
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:	Spl Cre	Total:

EXTERIOR INFORMATION

Type:	GRN - GREENHOU		
Sty Ht	1 - 1 story		
(Liv) Units		Total:	35
Foundatio	02 - CONC BLK		
Frame:	01 - WOOD		
Prime Wa	21 - CONC BLOC		
Sec Wall:			%
Roof Stru	03 - GAMBREL		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

BATH FEATURES

Full Ba	Ratin
A Bath:	Ratin
3/4 Bat	Ratin
A 3QBt	Ratin
1/2 Bat	Ratin
A HBth	Ratin
OthrFix	Ratin

OTHER FEATURES

Kits:	Ratin
A Kits:	Ratin
Frpl:	Ratin
WSFlu	Ratin

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1930	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con AV	- Average	30. %
Functiona		%
Economic		%
Special:		%
Override:		%
	Total:	30 %

CALC SUMMARY

Basic $ / SQ:	25.00
Size Adj.:	1.2999999
Const Adj.:	0.8999999
Adj $ / SQ:	29.250
Other Features	0
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	43472
Depreciation:	13042
Depreciated Tot	30430

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: GREEN HOUSE.

RESIDENTIAL GRID

1st Res G	Des		# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:	BR	Bath	H

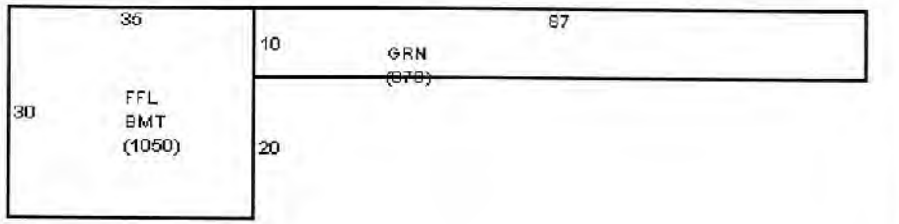
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	1,050	7.310	7,678
FFL	FIRST FLOOR	1,050	29.250	30,713
GRN	GREENHOUSE	870	5.840	5,081

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	29.25
Special Featur	0	Val/Su Ne	10.24
Final Total:	30400	Val/Su Sz	28.95

Net Sketched Area:	2,970			Total:	43,472
Size A	1050	Gross Ar	2970	FinAr	1050

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More N | Total Yard Item | Total Special Featue | Total:

R045	001	0001		COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	!112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1970, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 10 Baths, 4 HalfBaths, 0 3/4 Bat

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,821,700		0.000		1,821,700
Total Card	1,821,700		0.000		1,821,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 70.56 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign: VERIFICATION OR VISIT NOT DA __/__/__

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PRINT

Date	Time
05/04/1	14:12:2

LAST R

Date	Time
05/11/1	11:16:4
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

Patriot Properties Inc.

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

apro

2017

EXTERIOR INFORMATION

Type:	66 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1970	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	10	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	30. %
Functiona		%
Economic		%
Special:		%
Override:		%
	Total:	30 %

CALC SUMMARY

Basic $ / SQ.	95.00
Size Adj.:	0.8464810
Const Adj.:	0.9548099
Adj $ / SQ:	76.782
Other Features	65000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	2602407
Depreciation:	780722
Depreciated Tot	1821685

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: FARRELL HALL.

RESIDENTIAL GRID

1st Res G	Des								# Unit					
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath	1	H	4						

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

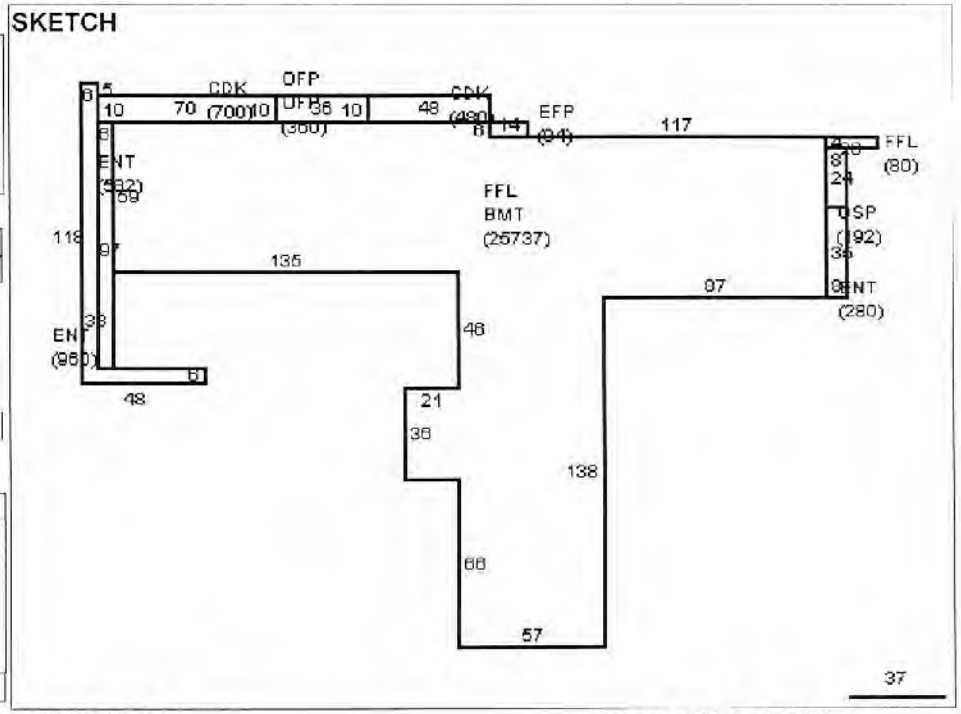
COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V

Juris. Factor:		Before De	76.78
Special Featur	0	Val/Su Ne	32.79
Final Total:	1821700	Val/Su Sz	70.56

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	25,817	76.780	1,982,273
BMT	BASEMENT	25,737	19.200	494,033
ENT	ENTRY	1,822	17.800	32,434
CDK	CONCRETE DEC	1,180	7.700	9,090
OFP	OPEN PORCH	720	15.380	11,070
OSP	OPN SCN PRCH	192	23.610	4,533
EFP	ENCL PRCH	84	47.310	3,974
Net Sketched Area:		55,552	Total:	2,537,407
Size A	25817	Gross Ar	55552	FinAr 25817

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr Own Oc
Postal:	02452-5552 Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1906, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 8 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,315,200		0.000		1,315,200
Total Card	1,315,200		0.000		1,315,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 62.90 | /Parc 63.3

Legal Description

Entered Lot Size
Total Land:
Land Unit Type:

User Acct 112899
GIS Ref
GIS Ref
Insp Date

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PRINT

Date	Time
05/04/1	14:12:5

LAST R

Date	Time
05/11/1	11:19:1
apro	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT	SITE		0	0.	0.000	N4																

Total AC/H 0.00000 | Total SF/S 0.00 | Parcel LU 903 MUNICPL | Prime NB D N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1906	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	8	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	2	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8573942
Const Adj.:	0.9548099
Adj $ / SQ:	77.772
Other Features	60000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1878901
Depreciation:	563670
Depreciated Tot	1315231

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: DOWLING HALL.

RESIDENTIAL GRID

1st Res G	Des							# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR	Bath	8 H 4

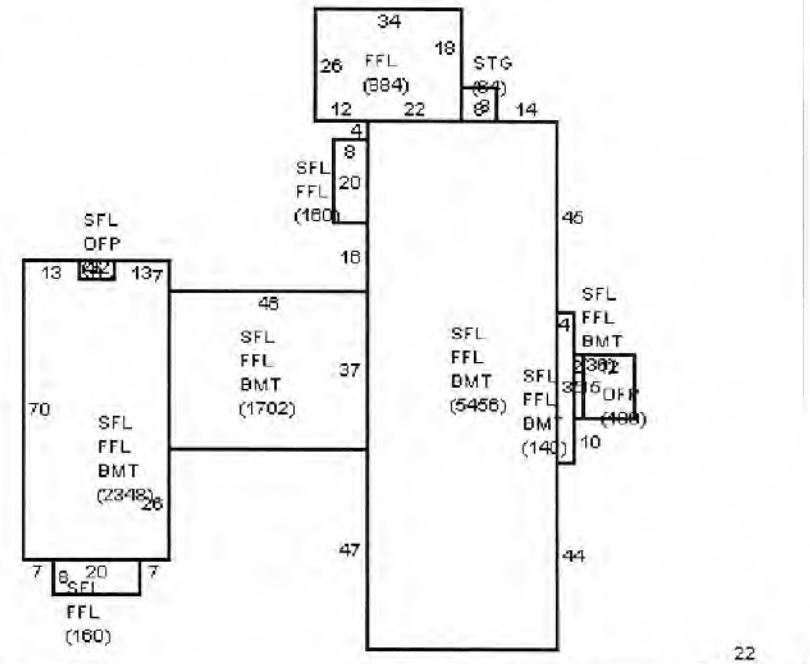
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	10,880	77.770	846,155
SFL	SECOND FLOOF	10,028	77.770	779,894
BMT	BASEMENT	9,676	19.440	188,130
OFP	OPEN PORCH	212	19.870	4,212
STG	SM STORAGE	64	7.980	511

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	77.77
Special Featur	0	Val/Su Ne	42.62
Final Total:	1315200	Val/Su Sz	62.90

Net Sketched Area:	30,860		Total:	1,818,902	
Size A	20908	Gross Ar	30860	FinAr	20908

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		COMMERCIAL CARD	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit		!112899!	

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1902, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,010,500		0.000		1,010,500
Total Card	1,010,500		0.000		1,010,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 70.64 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:13:3

LAST R

Date	Time
05/11/1	11:20:3
apro	

Sign: ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

apro

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1902	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod.			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	03 - HARDWOOD		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation	01 - NONE		
Int vs Ext			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8838926
Const Adj.:	0.9548099
Adj $ / SQ:	80.175
Other Features	10000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1443533
Depreciation:	433060
Depreciated Tot	1010473

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WHEATLEY HALL.

RESIDENTIAL GRID

1st Res G	Des								# Unit					
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														

Total	RMs:	BR	Bath	H	4

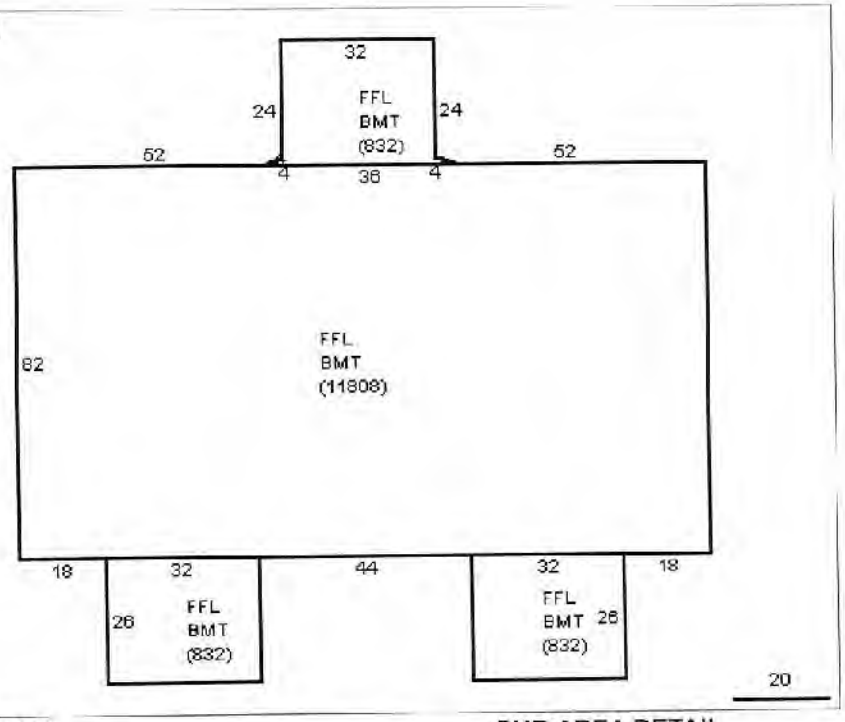
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	14,304	20.040	286,707
FFL	FIRST FLOOR	14,304	80.160	1,146,826

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	80.18
Special Featur	0	Val/Su Ne	35.32
Final Total:	1010500	Val/Su Sz	70.64

Net Sketched Area:	28,608			Total:	1,433,533
Size A	14304	Gross Ar	28608	FinAr	14304

IMAGE

AssessPro Patriot Properties, Inc

PARCEL ID R045 001 0001

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		COMMERCIAL	TOTAL ASSESSED: 55,843,400
Map	Block	Lot	Unit	CARD	!112899!

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1961, Having Primarily BRICK Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 12 Baths, 0 HalfBaths, 0 3/4 Bat

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	2,495,600		0.000		2,495,600
Total Card	2,495,600		0.000		2,495,600
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 53.70 | /Parc 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0			SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

User Acct 112899

GIS Ref

GIS Ref

Insp Date

PRINT

Date	Time
05/04/1	14:14:0

LAST R

Date	Time
05/11/1	11:22:1

apro

Sign ___/___/___

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903 MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	3 - 3		
(Liv) Units:	1	Total:	35
Foundatio:	01 - CONCRETE		
Frame:	02 - STEEL		
Prime Wa:	3 - BRICK		
Sec Wall:			%
Roof Stru:	04 - FLAT		
Roof Cov:	04 - TAR + GRAV		
Color:			
View / De:			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt:	1961	Eff Yr Blt:	
Alt LUC:		Alt %:	
Jurisdict:		Fact:	.
Const Mod:			
Lump Sum Adj:			

INTERIOR INFORMATION

Avg Ht/FL:			
Prim Int:	01 - DRYWALL		
Sec Int W:			%
Partition:			
Prim Floo:	14 - ASPHALT TIL		
Sec Floor:			%
Bsmnt Flr:			
Bsmnt Ga:			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel:	01 - OIL		
Heat Typ:	03 - FORCED H/		
# Heat Sy:	1		
% Heated:	100	% AC:	
Solar HW:	NO	Central V:	NO
% Com:		% Sprinkl:	

BATH FEATURES

Full Ba:	12	Ratin:	Average
A Bath:		Ratin:	
3/4 Bat:		Ratin:	
A 3QBt:		Ratin:	
1/2 Bat:		Ratin:	
A HBth:		Ratin:	
OthrFix:	84	Ratin:	Average

OTHER FEATURES

Kits:	3	Ratin:	Average
A Kits:		Ratin:	
Frpl:		Ratin:	
WSFlu:		Ratin:	

CONDO INFORMATION

Location:	
Total Unit:	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con:	AV - Average	30.	%
Functiona:			%
Economic:			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8258236
Const Adj.:	0.9455399
Adj $ / SQ:	74.181
Other Features:	117000
Grade Factor:	1.00
Neighborhood I:	1.0000000
LUC Factor:	1.00
Adj Total:	3565075
Depreciation:	1069523
Depreciated Tot:	2495553

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: KELLEY HALL.

RESIDENTIAL GRID

1st Res G:		Des:	# Unit:
Level:	FY LR DR D K FR RR BR FB HB L O		
Othe:			
Upp:			
Lvl 2:			
Lvl 1:			
Low:			
Total:	RMs:	BR:	Bath: 1 H:

REMODELING

Exterior:	
Interior:	
Addition:	
Kitchen:	
Baths:	
Plumbin:	
Electric:	
Heating:	
General:	

RES BREAKDOWN

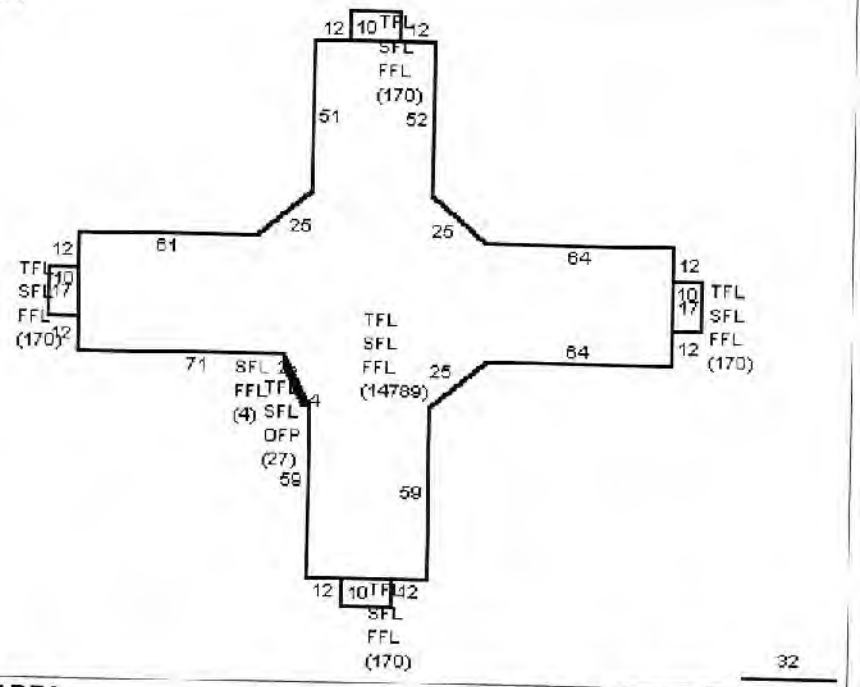
No Uni	RMS	BRS	FL
Totals			

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S:	AvRat:	Ind.V:	
Juris. Factor:		Before De:	74.18
Special Featur:	0	Val/Su Ne:	53.67
Final Total:	2495600	Val/Su Sz:	53.70

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
SFL	SECOND FLOOF	15,500	74.180	1,149,801
TFL	THIRD FLOOR	15,496	74.180	1,149,504
FFL	FIRST FLOOR	15,473	74.180	1,147,798
OFP	OPEN PORCH	27	36.000	972

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	46,496			Total:	3,448,075
Size A:	46469	Gross Ar:	46496	FinAr:	46469

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID: R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More:	N	Total Yard Item:		Total Special Featue:	

Total:

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr: Own Oc:
Postal:	02452-5552 Type:

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr:
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821.497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1933, Having Primarily BRICK Exterior and SLATE Roof Cover with 1 Units, 4 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	708,800		0.000		708,800
Total Card	708,800		0.000		708,800
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 68.39 | /Parc 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size
Total Land:
Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:14:1

LAST R

Date	Time
05/11/1	11:22:5
apro	

TAX DISTRIC

PAT ACCT. 112899

SALES INFORMATION

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:		%	
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1933	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W		%	
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	4	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix	16	Ratin	Average

OTHER FEATURES

Kits:	2	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9157854
Const Adj.:	0.9548099
Adj $ / SQ:	83.068
Other Features	43000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1012626
Depreciation	303788
Depreciated Tot	708838

COMMENTS

LOT # SQ.FT. 7.102,414 : 190
TRAPELO ROAD: CHIPMAN HALL.

RESIDENTIAL GRID

1st Res G	Des									# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														

Total	RMs:		BR	Bath 4	H 2

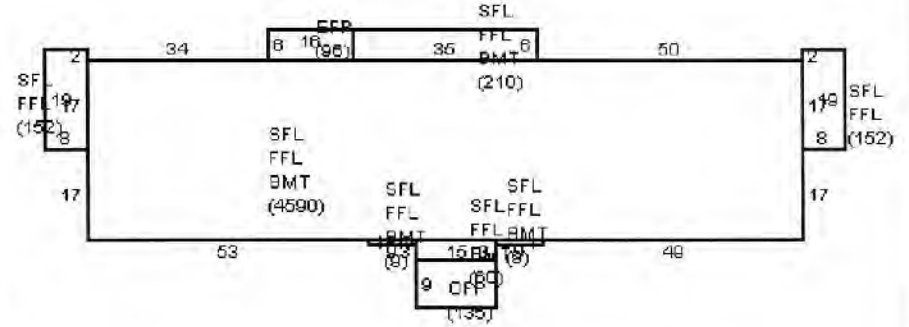
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	5,182	83.070	430,459
SFL	SECOND FLOOF	5,182	83.070	430,459
BMT	BASEMENT	4,878	20.770	101,302
OFP	OPEN PORCH	135	23.500	3,173
EFP	ENCL PRCH	96	44.100	4,234

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	83.07
Special Featur	0	Val/Su Ne	45.81
Final Total:	708800	Val/Su Sz	68.39

Net Sketched Area:	15,473		Total:		969,626
Size A	10364	Gross Ar	15473	FinAr	10364

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		47 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) THEATER Building Built about 1933, Having Primarily BRICK Exterior and SLATE Roof Cover, with 0 Units, 0 Baths, 4 HalfBaths, 0 3/4 Baths, 0 Rooms Total, and

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,135,700		0.000		1,135,700
Total Card	1,135,700		0.000		1,135,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 126.30 | /Parc 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:14:2

LAST R

Date	Time
05/11/1	11:36:0

apro

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist.	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D N4

Total:		Spl Cre		Total:	

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type: 81 - THEATER	
Sty Ht: 1 - 1 story	
(Liv) Units	Total: 35
Foundatio 01 - CONCRETE	
Frame: 03 - CONCRETE	
Prime Wa 07 - BRICK	
Sec Wall:	%
Roof Stru 01 - GABLE	
Roof Cov 02 - SLATE	
Color:	
View / De	

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1933	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	03 - OTHER		
Sec Int W		%	
Partition:			
Prim Floo	18 - TERRAZZO		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	160.00
Size Adj.:	0.9334519
Const Adj.:	0.9548099
Adj $ / SQ:	142.603
Other Features	15000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1622438
Depreciation:	486731
Depreciated Tot	1135706

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: HOWE HALL.

RESIDENTIAL GRID

1st Res G	Des		# Unit
Level	FY LR DR D K FR RR BR FB HB L O		
Othe			
Upp			
Lvl 2			
Lvl 1			
Low			
Total	RMs:	BR	Bath: H 4

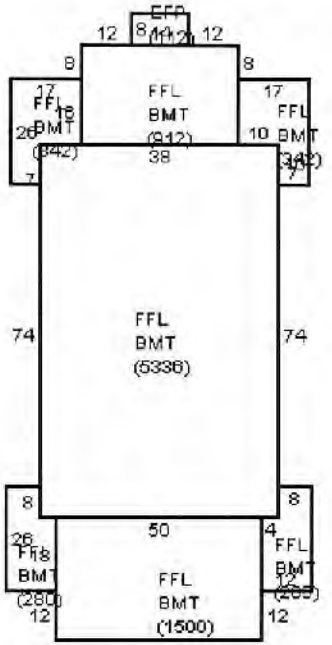
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	8,992	35.650	320,572
FFL	FIRST FLOOR	8,992	142.600	1,282,287
EFP	ENCL PRCH	112	40.890	4,579

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:		Before De	142.60		
Special Featur	0	Val/Su Ne	62.76		
Final Total:	1135700	Val/Su Sz	126.30		

Net Sketched Area:	18,096		Total:	1,607,438	
Size A	8992	Gross Ar	18096	FinAr	8992

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID: R045 001 0001

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		COMMERCIAL CARD	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit		!112899!	

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD. WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1934, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 20 Baths, 6 HalfBaths, 0 3/4 Baths. 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,962,500		0.000		1,962,500
Total Card	1,962,500		0.000		1,962,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 59.51 | /Parc: 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.: 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0	0.000	N4																

ACTIVITY INFORMATION

Date	Result	By

Sign: ___/___/___

PRINT

Date	Time
05/04/1	14:14:3

LAST R

Date	Time
05/11/1	11:26:3
apro	

User Acct / GIS Ref / GIS Ref / Insp Date

User Acct: 112899

Entered Lot Size

Total Land:

Land Unit Type:

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

Name

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

apro

2017

EXTERIOR INFORMATION

Type: 86	- DORMITORY
Sty Ht: 3.5	- 3.5
(Liv) Units: 1	Total: 35
Foundatio 01	- CONCRETE
Frame: 03	- CONCRETE
Prime Wa 07	- BRICK
Sec Wall:	%
Roof Stru 04	- FLAT
Roof Cov 02	- SLATE
Color:	
View / De	

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1934	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W		%	
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	05	- STEAM	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	20	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	6	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	3	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8363878
Const Adj.:	0.9548099
Adj $ / SQ:	75.866
Other Features	130000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	2803544
Depreciation:	841063
Depreciated Tot	1962481

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: TARBELL (RES. HALL).

RESIDENTIAL GRID

1st Res G	Des												# Unit	
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														

Total	RMs:	BR	Bath	2	H	6

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

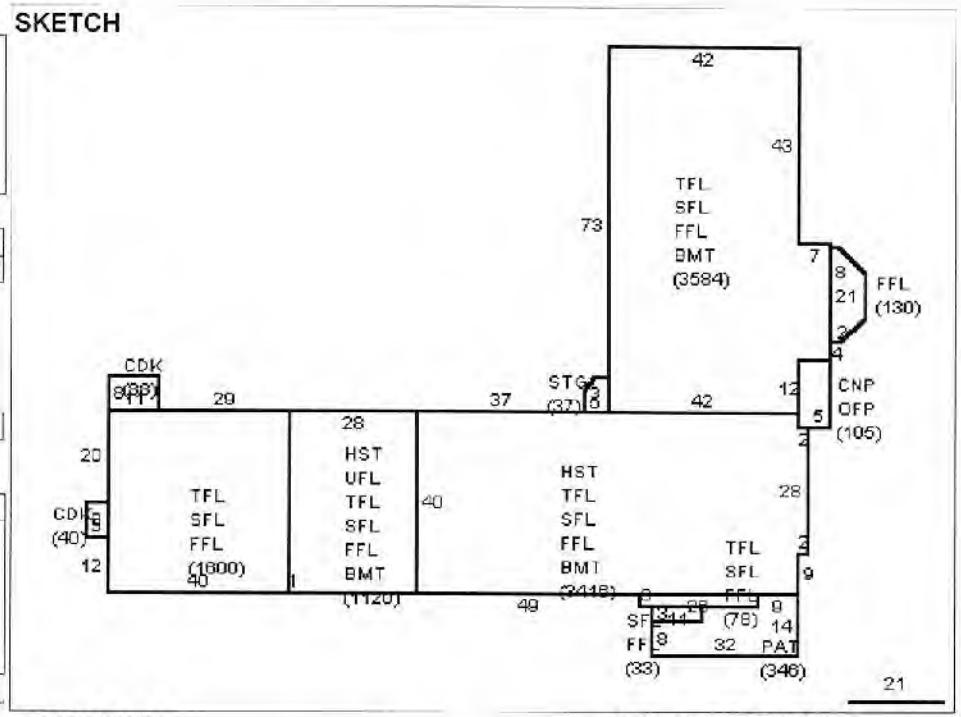
COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat	Ind.V

Juris. Factor:		Before De	75.87
Special Featur	0	Val/Su Ne	46.93
Final Total:	1962500	Val/Su Sz	59.51

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,961	75.870	755,703
SFL	SECOND FLOOF	9,831	75.870	745,840
TFL	THIRD FLOOR	9,798	75.870	743,337
BMT	BASEMENT	8,120	18.970	154,008
HST	HALF STORY	2,268	75.870	172,065
UFL	UPPER FLOOR	1,120	75.870	84,970
PAT	PATIO	346	6.670	2,307
CDK	CONCRETE DEC	128	15.540	1,989
Net Sketched Area:		41,819	Total:	2,673,543
Size A	32978	Gross Ar	44087	FinAr 32978

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue		Total:	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6.821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1906, Having Primarily BRICK Exterior and SLATE Roof Cover, with 1 Units, 12 Baths, 4 HalfBaths, 0 3/4 Baths, 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	882,900		0.000		882,900
Total Card	882,900		0.000		882,900
Total Parcel	54,303,700	300	156.600	1,539,400	55.843,400

Source: Market Adj Co | Total Value per SQ unit /Card 67.72 | /Parc 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:14:4

LAST R

Date	Time
05/11/1	11:27:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year.	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4	Total:	Spl Cre	Total:

EXTERIOR INFORMATION

Type:	85 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	03 - BRK/STN		
Frame:	03 - CONCRETE		
Prime Wa	07 - BRICK		
Sec Wall:			%
Roof Stru	02 - HIP		
Roof Cov	02 - SLATE		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1906	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	12	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	2	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8920386
Const Adj.:	0.9548099
Adj $ / SQ:	80.914
Other Features	80000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1261222
Depreciation:	378366
Depreciated Tot	882855

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: WARREN HALL.

RESIDENTIAL GRID

1st Res G	Des	# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	1	H	4

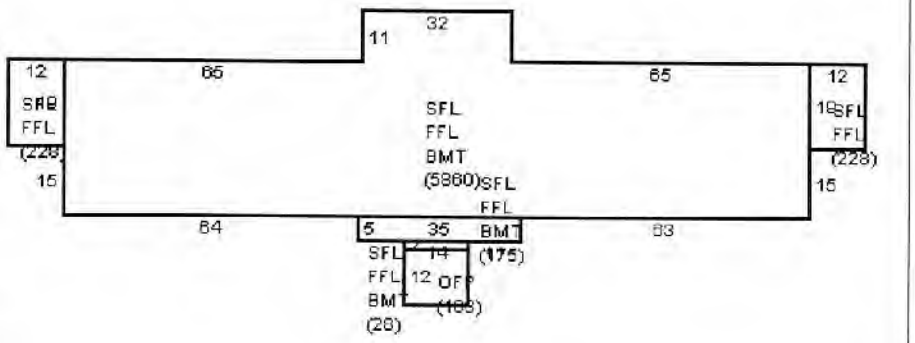
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S		AvRat		Ind.V	

Juris. Factor:		Before De	80.91
Special Featur	0	Val/Su Ne	45.82
Final Total:	882900	Val/Su Sz	67.72

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	6,519	80.910	527,479
SFL	SECOND FLOOF	6,519	80.910	527,479
BMT	BASEMENT	6,063	20.230	122,646
OFP	OPEN PORCH	168	21.540	3,618

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	19,269	Total:	1,181,222
Size A	13038	Gross Ar	19269	FinAr	13038

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID: R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		50 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1906, Having Primarily BRICK Exterior and ASPHALT Roof Cover, with 1 Units, 12 Baths, 4 HalfBaths, 0 3/4 Baths, 0 R

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	760,100		0.000		760,100
Total Card	760,100		0.000		760,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 70.03 | /Parc: 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct
112899
GIS Ref
GIS Ref
Insp Date

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:15:1

LAST R

Date	Time
05/11/1	11:28:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86	- DORMITORY
Sty Ht:	2	- 2
(Liv) Units	1	Total: 35
Foundatio	03	- BRK/STN
Frame:	03	- CONCRETE
Prime Wa	07	- BRICK
Sec Wall:		%
Roof Stru	02	- HIP
Roof Cov	1	- ASPHALT
Color:		
View / De		

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1906	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact: .	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL		
Prim Int	01	- DRYWALL
Sec Int W		%
Partition:		
Prim Floo	14	- ASPHALT TIL
Sec Floor		%
Bsmnt Flr		
Bsmnt Ga		
Electric:	03	- TYPICAL
Insulation:	01	- NONE
Int vs Ext:		
Heat Fuel	01	- OIL
Heat Typ	05	- STEAM
# Heat Sy	1	
% Heated	100	% AC:
Solar HW	NO	Central V NO
% Com		% Sprinkl

BATH FEATURES

Full Ba	12	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	4	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	2	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9105583
Const Adj.:	0.9548099
Adj $ / SQ:	82.594
Other Features	80000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1085825
Depreciation:	325747
Depreciated Tot	760077

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: DOLAN HALL.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath	1	H	4					

REMODELING

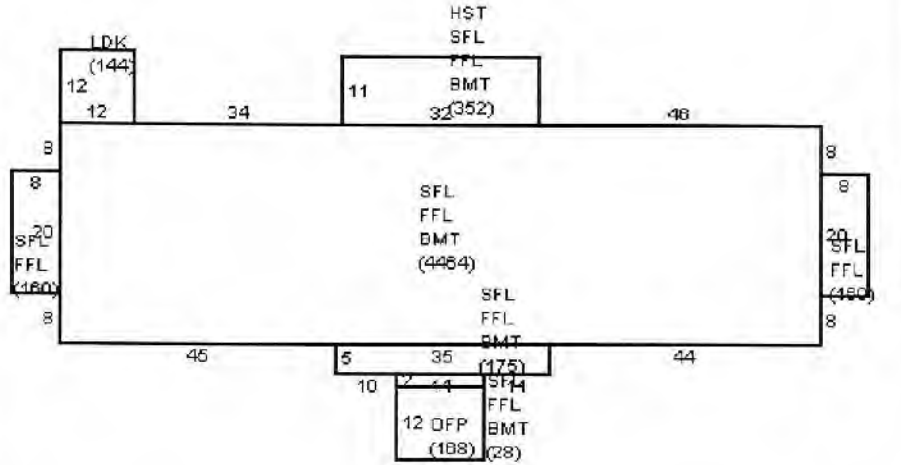
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals	

SKETCH



15

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	5,339	82.590	440,969
SFL	SECOND FLOOF	5,339	82.590	440,969
BMT	BASEMENT	5,019	20.650	103,635
HST	HALF STORY	176	82.590	14,537
OFP	OPEN PORCH	168	21.540	3,618
LDK	LOADING DOCK	144	14.560	2,097

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind V

Juris. Factor:		Before De	82.59
Special Featur	0	Val/Su Ne	46.96
Final Total:	760100	Val/Su Sz	70.03

Net Sketched Area:	16,185			Total:	1,005,825
Size A	10854	Gross Ar	16361	FinAr	10854

IMAGE

AssessPro Patriot Properties, Inc

PARCEL ID R045 001 0001

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	
---	---	---	---	---	---	---	---

R045 Map | 001 Block | 0001 Lot | Unit | 51 of 66 CARD | COMMERCIAL | TOTAL ASSESSED: 55,843,400 !112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD. WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821.497 SQ. FT. of land mainly classified as MUNICPL with a(n) SCHOOL Building Built about 1890, Having Primarily ASBESTOS Exterior and ASPHALT Roof Cover, with 0 Units, 1 Baths, 2 HalfBaths, 0 3/4 Baths, 0 Ro

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMARY

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	171,900		0.000		171,900
Total Card	171,900		0.000		171,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 75.03 | /Parc 63.3

Legal Description

User Acct	112899
GIS Ref	
GIS Ref	
Entered Lot Size	
Total Land:	
Insp Date	
Land Unit Type:	

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:15:2

LAST R

Date	Time
08/21/1	10:36:1
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	53 - SCHOOL		
Sty Ht:	2.5 - 2.5		
(Liv) Units		Total:	35
Foundatio	03 - BRK/STN		
Frame:	01 - WOOD		
Prime Wa	05 - ASBESTOS		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1890	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	05 - STEAM		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	1	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	2	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	1.2999999
Const Adj.:	0.8730000
Adj $ / SQ:	90.792
Other Features	10000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	245541
Depreciation:	73662
Depreciated Tot	171879

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD: CHILD CARE CENTER (FORMER HOUSE)CARDINAL COTTAGE..

RESIDENTIAL GRID

1st Res G	Des		# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:	BR	Bath	1	H	2

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

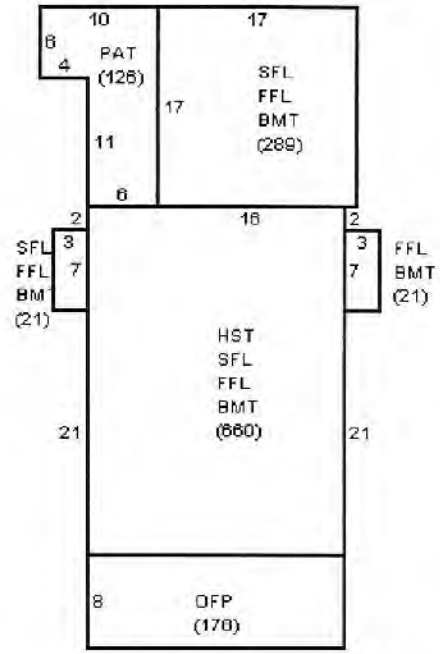
COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	90.79
Special Featur	0	Val/Su Ne	47.96
Final Total:	171900	Val/Su Sz	75.03

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
BMT	BASEMENT	991	22.700	22,484
FFL	FIRST FLOOR	991	90.790	89,975
SFL	SECOND FLOOF	970	90.790	88,088
HST	HALF STORY	330	90.790	29,961
OFP	OPEN PORCH	176	21.170	3,726
PAT	PATIO	126	10.450	1,317

Net Sketched Area:	3,584	Total:	235,541
Size A	2291	Gross Ar	3914 FinAr 2291

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		52 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) OFFICE Building Built about 1925, Having Primarily STUCCO Exterior and ASPHALT Roof Cover, with 0 Units, 0 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	129,100		0.000		129,100
Total Card	129,100		0.000		129,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 78.82 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Sign ___/___/

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:15:3

LAST R

Date	Time
08/21/1	10:25:3
apro	
112899	

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	71 - OFFICE		
Sty Ht:	2 - 2		
(Liv) Units		Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	06 - STUCCO		
Sec Wall:		%	
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1925	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W		%	
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba		Ratin	
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix	5	Ratin	Average

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	80.00
Size Adj.:	1.2999999
Const Adj.:	0.9089999
Adj $ / SQ:	94.536
Other Features	7500
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	184392
Depreciation:	55318
Depreciated Tot	129075

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: OFFICES BALDWIN
COTTAGE 19 FORMER HOUSE.

RESIDENTIAL GRID

1st Res G	Des	# Unit	
Level	FY LR DR D K FR RR BR FB HB L O		
Othe			
Upp			
Lvl 2			
Lvl 1			
Low			
Total	RMs:	BR	Bath H

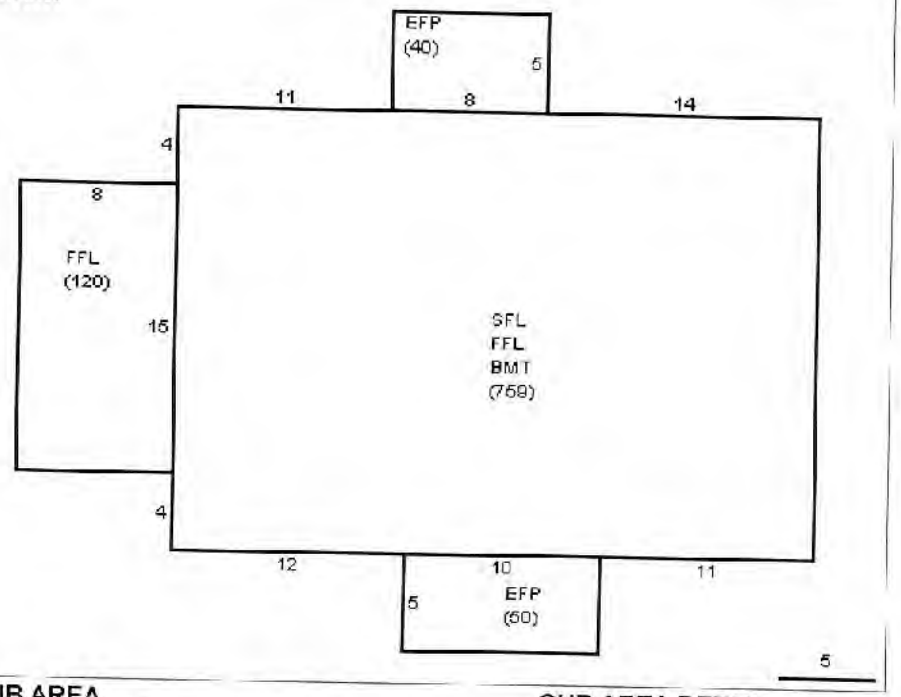
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	879	94.540	83,097
BMT	BASEMENT	759	23.630	17,938
SFL	SECOND FLOOR	759	94.540	71,753
EFP	ENCL PRCH	90	45.600	4,104

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	94.54
Special Featur	0	Val/Su Ne	51.91
Final Total:	129100	Val/Su Sz	78.82

Net Sketched Area:	2,487		Total:	176,892	
Size A	1638	Gross Ar	2487	FinAr	1638

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More N

Total Yard Item

Total Special Featue

Total:

R045	001	0001		53 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1925, Having Primarily STUCCO Exterior and ASPHALT Roof Cover, with 1 Units. 1 Baths, 1 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	155,300		0.000		155,300
Total Card	155,300		0.000		155,300
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 94.81 | /Parc 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:15:4

LAST R

Date	Time
08/21/1	10:26:2
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S 0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro 2017

EXTERIOR INFORMATION

Type:	65 - DORMITORY		
Sty Ht:	2 - 2		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	06 - STUCCO		
Sec Wall:			%
Roof Stru	01 - GABLE		
Roof Cov	1 - ASPHALT		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1925	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact: .	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02 - PLASTER		
Sec Int W			%
Partition:			
Prim Floo	03 - HARDWOOD		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	1	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat	1	Ratin	Average
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit:	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	1.2999999
Const Adj :	0.9089999
Adj $ / SQ:	112.261
Other Features	12500
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	221790
Depreciation:	66537
Depreciated Tot	155253

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: COTTAGE 20
FORMER HOUSE.

RESIDENTIAL GRID

1st Res G	Des		# Unit	
Level	FY LR DR D K FR RR BR FB HB L O			
Othe				
Upp				
Lvl 2				
Lvl 1				
Low				
Total	RMs:	BR	Bath 1	H 1

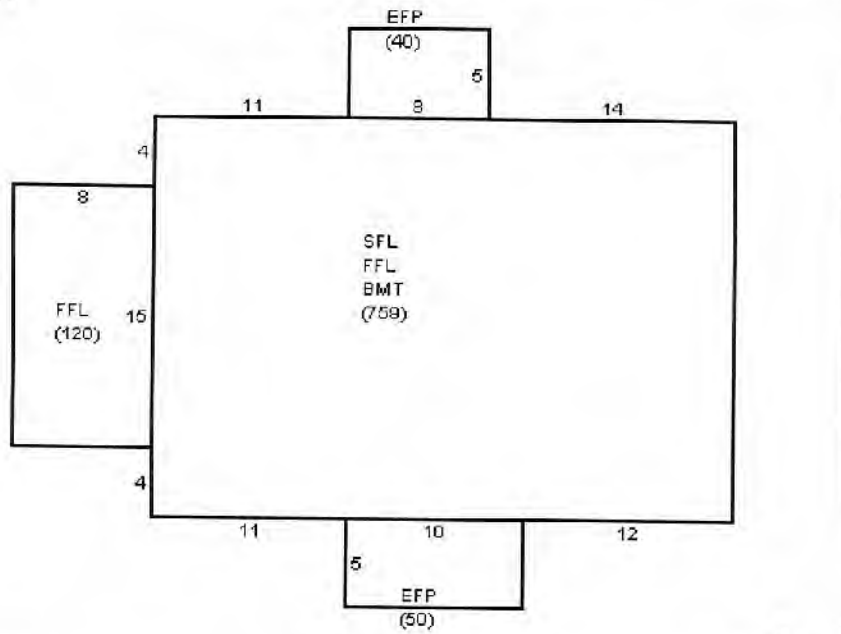
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	879	112.260	98,678
BMT	BASEMENT	759	28.070	21,302
SFL	SECOND FLOOF	759	112.260	85,206
EFP	ENCL PRCH	90	45.600	4,104

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S		AvRat	Ind.V
Juris. Factor:		Before De	112.26
Special Featur	0	Val/Su Ne	62.44
Final Total:	155300	Val/Su Sz	94.81

Net Sketched Area:	2,487			Total:	209,290
Size A	1638	Gross Ar	2487	FinAr	1638

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

IMAGE

AssessPro Patriot Properties, Inc

More	N	Total Yard Item		Total Special Featue	

Total:

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1925, Having Primarily STUCCO Exterior and ASPHALT Roof Cover, with 1 Units, 1 Baths, 0 HalfBaths, 0 3/4 Bath

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	153,500		0.000		153,500
Total Card	153,500		0.000		153,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 93.71 | /Parc 63.3

Legal Description

Entered Lot Size
Total Land:
Land Unit Type:

User Acct: 112899
GIS Ref:
GIS Ref:
Insp Date:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:15:5

LAST R

Date	Time
05/11/1	11:31:5
apro	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				i		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H: 0.00000 | Total SF/S: 0.00 | Parcel LU: 903 | MUNICPL | Prime NB D N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	86	- DORMITORY	
Sty Ht:	2	- 2 story	
(Liv) Units	1	Total:	35
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	06	- STUCCO	
Sec Wall:			%
Roof Stru	01	- GABLE	
Roof Cov	1	- ASPHALT	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1925	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02	- PLASTER	
Sec Int W			%
Partition:			
Prim Floo	03	- HARDWOOD	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	1	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	30. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	30 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	1.2999999
Const Adj.:	0.9089999
Adj $ / SQ:	112.261
Other Features	10000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	219290
Depreciation:	65787
Depreciated Tot	153503

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: COTTAGE 18
FORMER HOUSE.

RESIDENTIAL GRID

1st Res G	Des							# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												
Total	RMs:		BR		Bath	1	H					

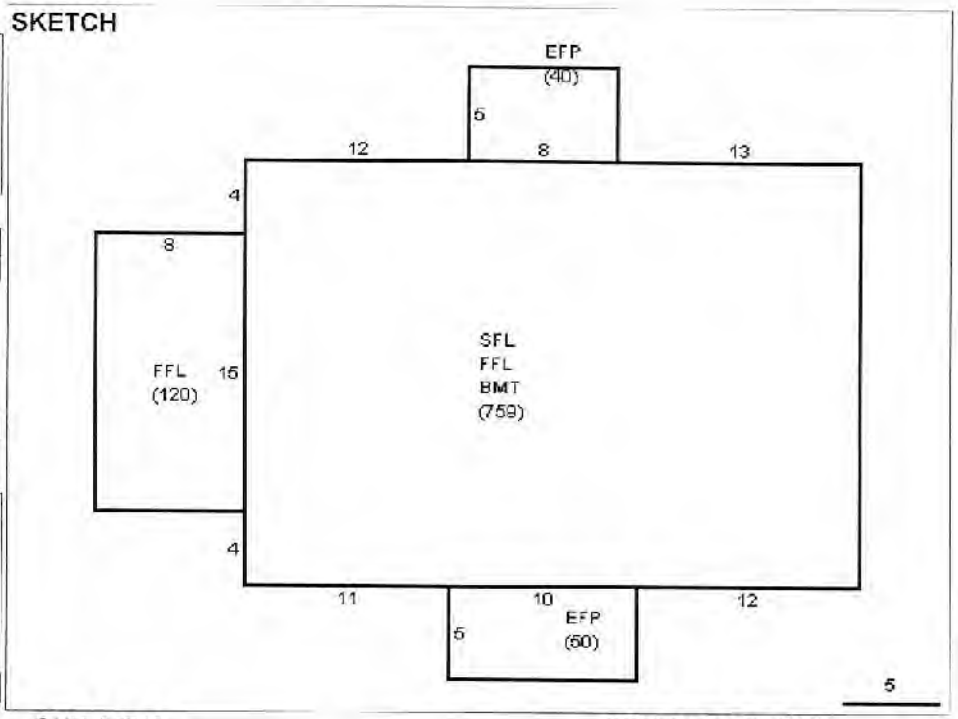
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	879	112.260	98,678
BMT	BASEMENT	759	28.070	21,302
SFL	SECOND FLOOF	759	112.260	85,206
EFP	ENCL PRCH	90	45.600	4,104

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	112.26
Special Featur	0	Val/Su Ne	61.72
Final Total	153500	Val/Su Sz	93.71

Net Sketched Area:	2,487		Total:	209,290	
Size A	1638	Gross Ar	2487	FinAr	1638

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual	Con Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		55 of 66	RESIDENTIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) SPLIT CAPE Building Built about 1925, Having Primarily STUCCO Exterior and ASPHALT Roof Cover, with 1 Units, 1 Baths, 0 HalfBaths, 0 3/4 Baths, 0 Rooms T

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	118,100		0.000		118,100
Total Card	118,100		0.000		118,100
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 72.10 | /Parc: 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:0

LAST R

Date	Time
05/11/1	11:32:3

apro

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4															

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

apro

EXTERIOR INFORMATION

Type:	16	- SPLIT CAPE	
Sty Ht:	2	- 2	
(Liv) Units	1	Total:	35
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	06	- STUCCO	
Sec Wall:			%
Roof Stru	01	- GABLE	
Roof Cov	1	- ASPHALT	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1925	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	02	- PLASTER	
Sec Int W			%
Partition:			
Prim Floo	03	- HARDWOOD	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	1	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	1	Ratin	Average
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	31. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	31 %

CALC SUMMARY

Basic $ / SQ:	83.00
Size Adj.:	1.0296703
Const Adj.:	0.9089999
Adj $ / SQ:	77.686
Other Features	25000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	171094
Depreciation:	53039
Depreciated Tot	118055

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD: COTTAGE 17
FORMER HOUSE.

RESIDENTIAL GRID

1st Res G		Des									# Unit		
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath 1	H

REMODELING

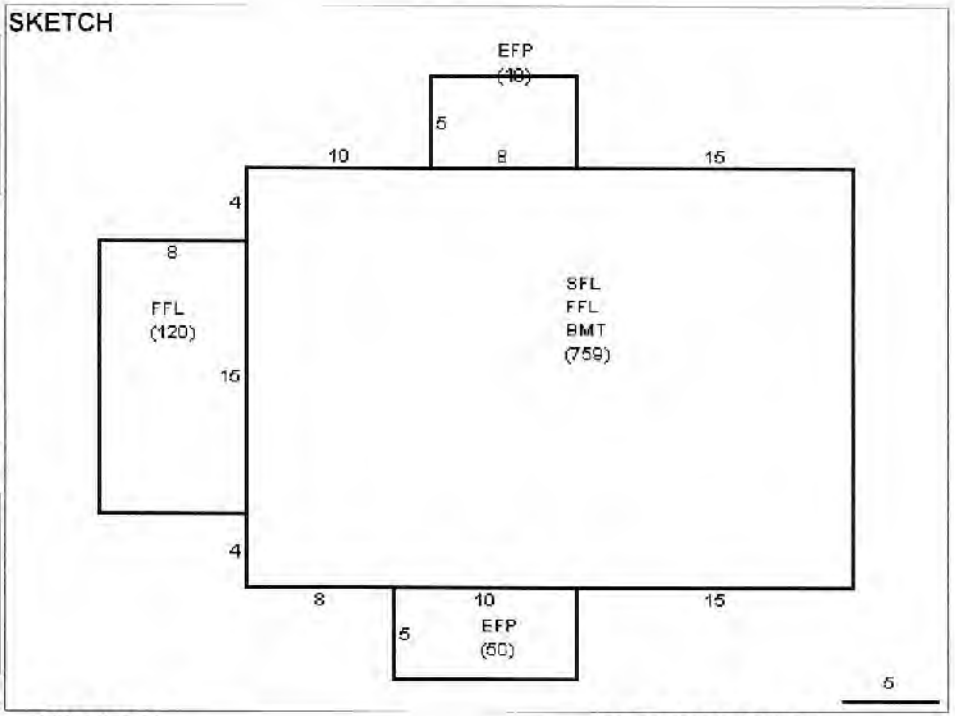
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	879	77.690	68,286
BMT	BASEMENT	759	19.420	14,741
SFL	SECOND FLOOF	759	77.690	58,963
EFP	ENCL PRCH	90	45.600	4,104

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat		Ind.V
Juris. Factor:		Before De	77.69
Special Featur	0	Val/Su Ne	47.49
Final Total:	118100	Val/Su Sz	72.10

Net Sketched Area:	2,487		Total:	146,094	
Size A	1638	Gross Ar	2487	FinAr	1638

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		56 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	577,000		0.000		577,000
Total Card	577,000		0.000		577,000
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.61 | /Parc 63.3

Legal Description

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:0

LAST R

Date	Time
05/11/1	11:34:0
apro	
112899	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	06	- DORMITORY	
Sty Ht:	1	- 1 story	
(Liv) Units	1	Total:	35
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	01	- WOOD SHIN	
Sec Wall:			%
Roof Stru	04	- FLAT	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1976	Eff Yr Blt	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W			%
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:	Ratin	
A Kits:	Ratin	
Frpl:	Ratin	
WSFlu	Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	29. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	29.2 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9218893
Const Adj.:	0.8999999
Adj $ / SQ:	78.822
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	814938
Depreciation:	237962
Depreciated Tot	576976

COMMENTS

LOT # SQ.FT. 7,102,414 ; 190
TRAPELO ROAD: COTTAGE 11.

RESIDENTIAL GRID

1st Res G	Des		# Unit

Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR	Bath 6	H

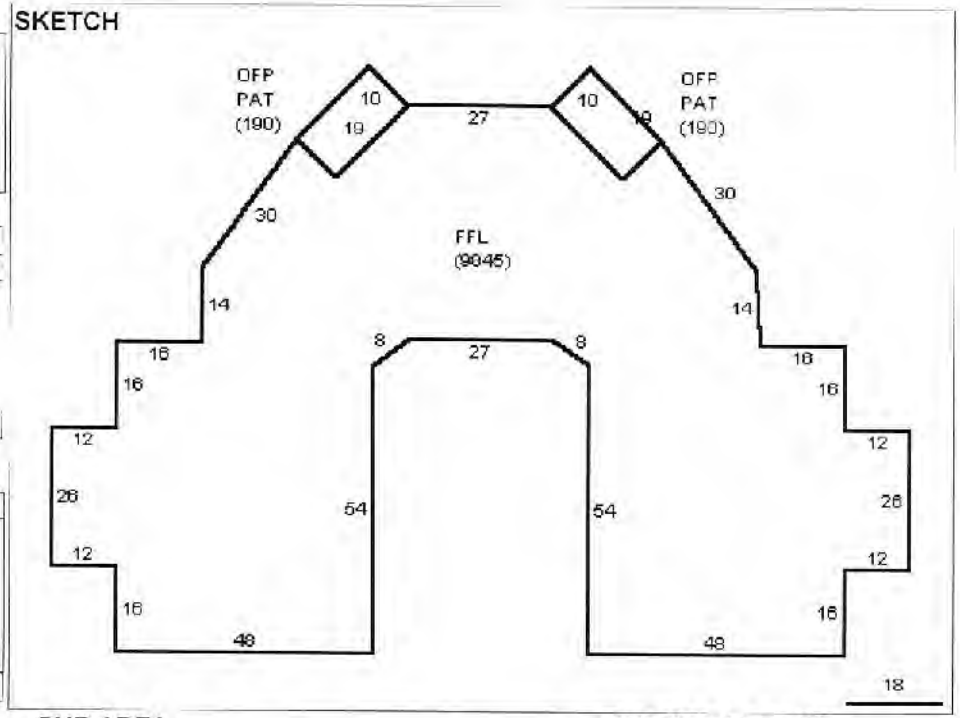
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAvS/S		AvRat	Ind.V

Juris. Factor:		Before De	78.82
Special Featur	0	Val/Su Ne	54.41
Final Total:	577000	Val/Su Sz	58.61

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,845	78.820	775,998
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	380	6.470	2,460

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	10,605			Total:	784,938
Size A	9845	Gross Ar	10605	FinAr	9845

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	

Total:

R045	001	0001		57 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821.497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	635,700		0.000		635,700
Total Card	635,700		0.000		635,700
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 64.77 | /Parc 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:2

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	

PAT ACCT. 112899

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total:		Spl Cre		Total:	

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G	Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath	6	H	

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod.			
Lump Sum Adj			

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

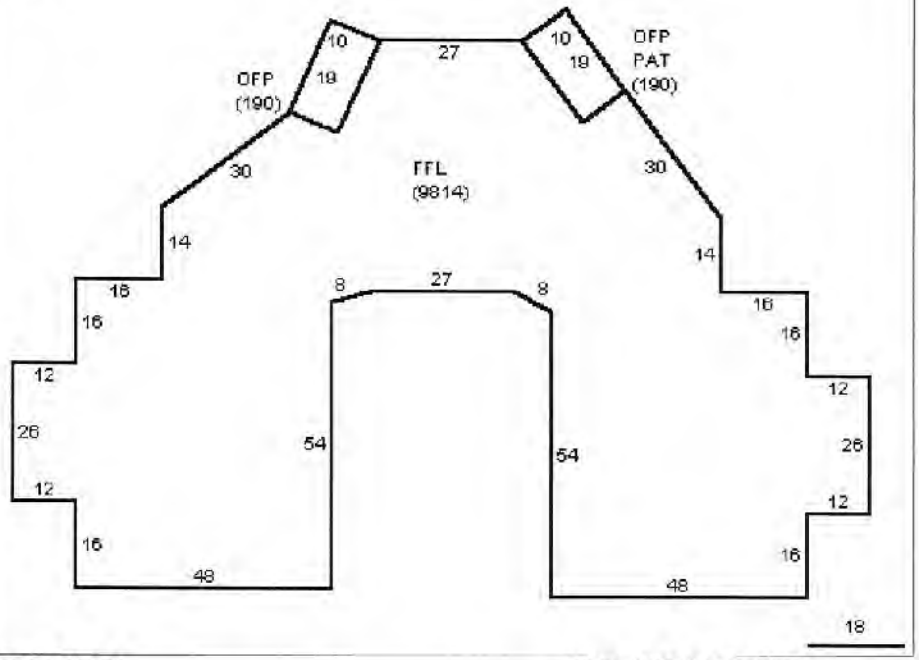
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



INTERIOR INFORMATION

Avg Ht/FL			
Prim Int			
Sec Int W			%
Partition:			
Prim Floo			
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:			
Insulation:			
Int vs Ext:			
Heat Fuel			
Heat Typ			
# Heat Sy			
% Heated		% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

DEPRECIATION

Phys Con	AV - Average	29.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	29.2	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9222742
Const Adj.:	1.0000000
Adj $ / SQ:	87.616
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	897949
Depreciation:	262201
Depreciated Tot	635748

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S	AvRat		Ind.V	
Juris. Factor:		Before De	87.62
Special Featur	0	Val/Su Ne	61.22
Final Total:	635700	Val/Su Sz	64.77

SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,814	87.620	859,864
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	190	8.450	1,605

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	10,384		Total:		867,949
Size A	9814	Gross Ar	10384	FinAr	9814

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		58 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	596,500		0.000		596,500
Total Card	596,500		0.000		596,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.10 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Veriff	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:16:3

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	
112899	

Patriot Properties Inc.

Sign ___/___/

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type: 86	- DORMITORY		
Sty Ht: 1	- 1 story		
(Liv) Units	1	Total: 35	
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	01	- WOOD SHIN	
Sec Wall:			%
Roof Stru	04	- FLAT	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W			%
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con AV	- Average	29. %
Functiona		%
Economic		%
Special:		%
Override:		%
	Total:	29.2 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9168793
Const Adj.:	0.8999999
Adj $ / SQ:	78.393
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	842507
Depreciation:	246012
Depreciated Tot	596495

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath	6	H						

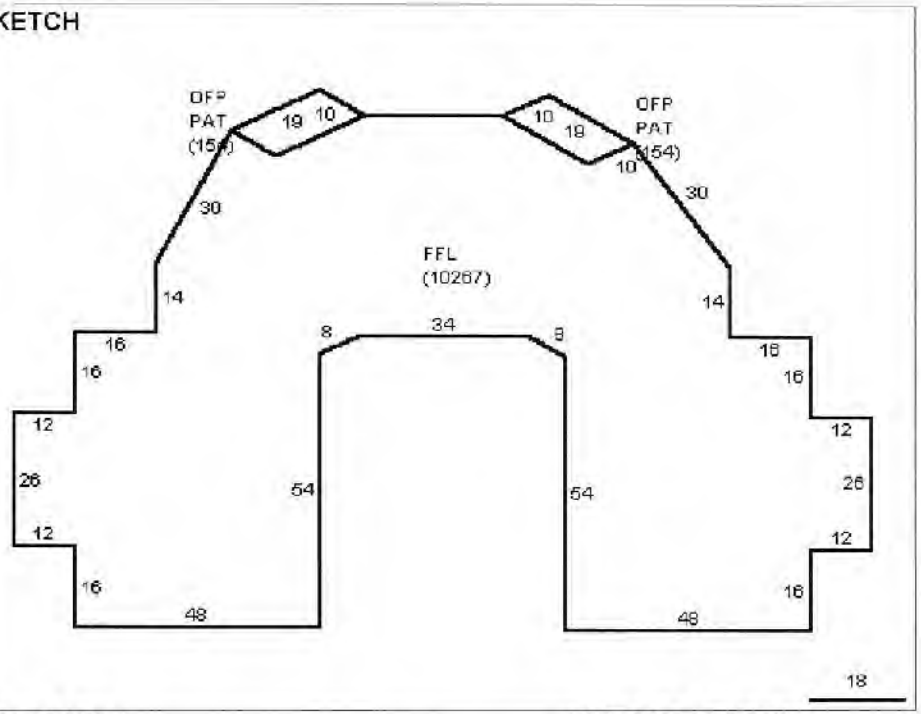
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	10,267	78.390	804,863
OFP	OPEN PORCH	308	17.880	5,508
PAT	PATIO	308	6.940	2,136

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind V
Juris. Factor:		Before De	78.39
Special Featur	0	Val/Su Ne	54.81
Final Total:	596500	Val/Su Sz	58.10

Net Sketched Area:	10,883			Total:	812,507
Size A	10267	Gross Ar	10883	FinAr	10267

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

PARCEL ID R045 001 0001

More N	Total Yard Item		Total Special Featue		Total:

R045	001	0001		59 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	560,900		0.000		560,900
Total Card	560,900		0.000		560,900
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.92 | /Parc 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Entered Lot Size

Total Land:

Land Unit Type:

Insp Date

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:4

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	
112899	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census: Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

EXTERIOR INFORMATION

Type:	88	- DORMITORY	
Sty Ht:	1	- 1 story	
(Liv) Units	1	Total:	35
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	01	- WOOD SHIN	
Sec Wall:			%
Roof Stru	07	- SHED	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W			%
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	29. %
Functiona			%
Economic			%
Special:			%
Override:			%
		Total:	29.2 %

CALC SUMMARY

Basic $ / SQ.	95.00
Size Adj.:	0.9260504
Const Adj.:	0.8999999
Adj $ / SQ.	79.177
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	792276
Depreciation	231345
Depreciated Tot	560931

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G		Des									# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														

Total	RMs:		BR	Bath	6	H	

REMODELING

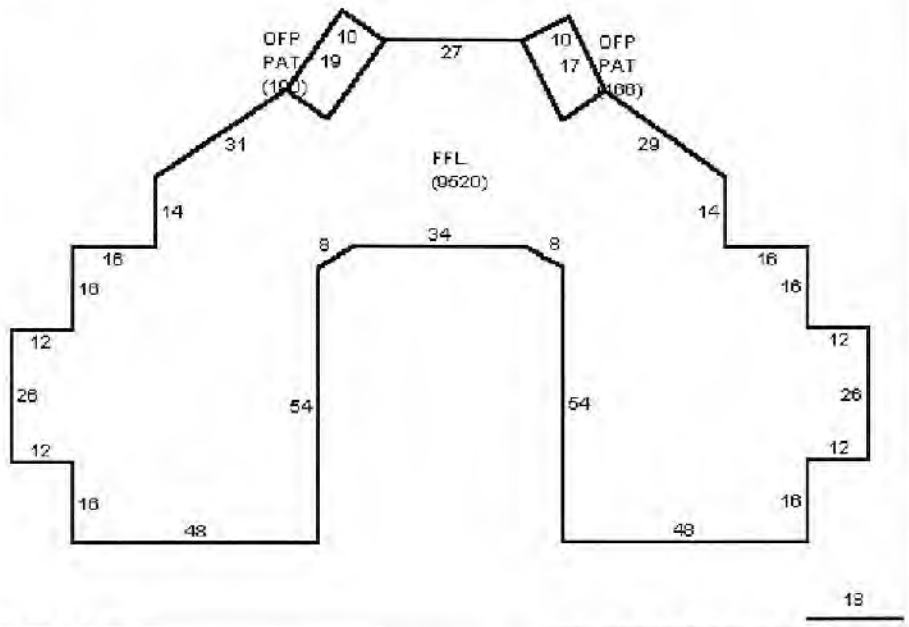
Exterior	
Interior:	
Addition	
Kitchen:	
Baths.	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals		

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,520	79.180	753,768
OFP	OPEN PORCH	356	17.290	6,156
PAT	PATIO	356	6.610	2,352

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	79.18
Special Featur	0	Val/Su Ne	54.82
Final Total:	560900	Val/Su Sz	58.92

Net Sketched Area:	10,232		Total:	762,276	
Size A	9520	Gross Ar	10232	FinAr	9520

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		60 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	604,200		0.000		604,200
Total Card	604,200		0.000		604,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 57.98 | /Parc 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct: 112899

GIS Ref:

GIS Ref:

Insp Date:

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:4

LAST R

Date	Time
02/10/1	14:23:3

bvazquez

PAT ACCT. 112899

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL	Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903 MUNICPL	Prime NB D	N4	Total:	Spl Cre	Total:

EXTERIOR INFORMATION

Type:	96 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	29.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	29.2	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9151631
Const Adj :	0.8999999
Adj $ / SQ:	78.246
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	853422
Depreciation	249199
Depreciated Tot	604223

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G		Des								# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp Lvl 2													
Lvl 1													
Low													
Total	RMs:		BR		Bath	6	H						

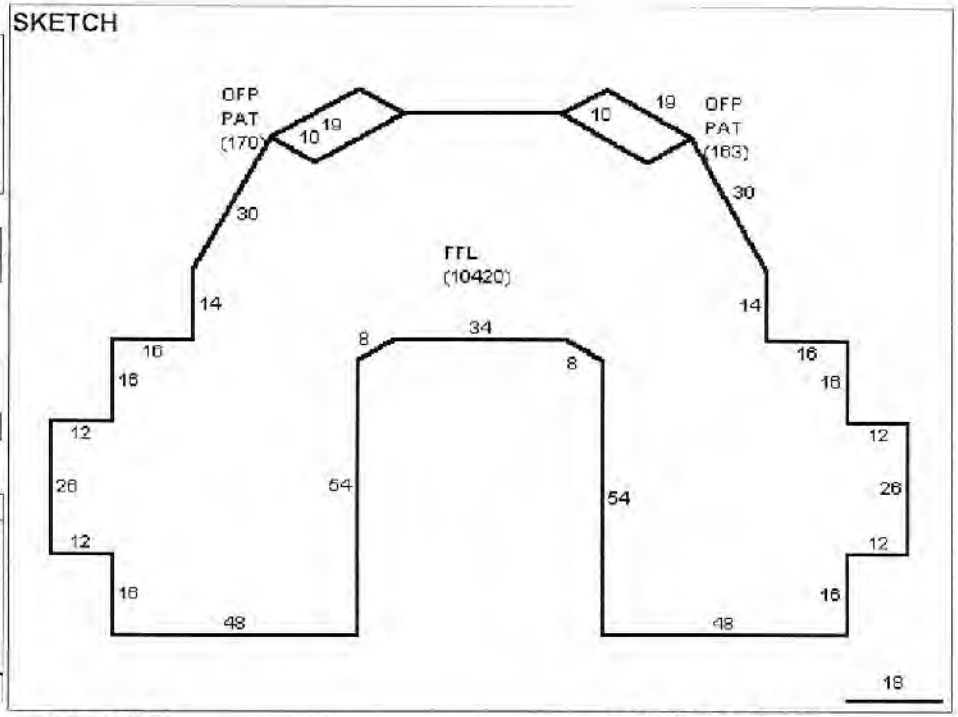
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths.	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	10,420	78.250	815,328
OFP	OPEN PORCH	333	17.550	5,846
PAT	PATIO	333	6.750	2,246

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	78.25
Special Featur	0	Val/Su Ne	54.50
Final Total:	604200	Val/Su Sz	57.98

Net Sketched Area:	11,086			Total:	823,422
Size A	10420	Gross Ar	11086	FinAr	10420

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		61 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD			!112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6.821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	568,500		0.000		568,500
Total Card	568,500		0.000		568,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.79 | /Parc 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct 112899

GIS Ref

GIS Ref

Insp Date

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:16:5

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				i		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI			0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU 903	MUNICPL	Prime NB D	N4

Total:		Spl Cre		Total:	

EXTERIOR INFORMATION

Type:	86	- DORMITORY	
Sty Ht:	1	- 1 story	
(Liv) Units	1	Total:	35
Foundatio	01	- CONCRETE	
Frame:	01	- WOOD	
Prime Wa	01	- WOOD SHIN	
Sec Wall:			%
Roof Stru	04	- FLAT	
Roof Cov	04	- TAR + GRAV	
Color:			
View / De			

GENERAL INFORMATION

Grade:	C	- AVERAGE	
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01	- DRYWALL	
Sec Int W			%
Partition:			
Prim Floo	14	- ASPHALT TIL	
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	31	- TYPICAL	
Insulation:	01	- NONE	
Int vs Ext:			
Heat Fuel	01	- OIL	
Heat Typ	03	- FORCED H/	
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	29. %
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:		29.2 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9240951
Const Adj.:	0.8999999
Adj $ / SQ:	79.010
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	802968
Depreciation:	234467
Depreciated Tot	568501

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G		Des								# Unit		
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR	Bath 6	H

REMODELING

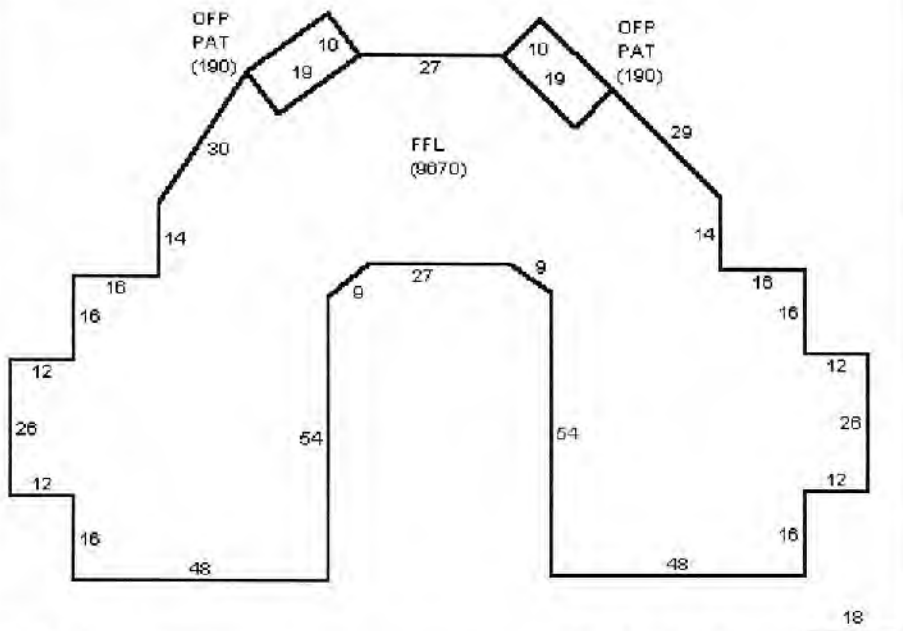
Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL

Totals

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,670	79.010	764,028
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	380	6.470	2,460

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	79.01
Special Featur	0	Val/Su Ne	54.51
Final Total:	568500	Val/Su Sz	58.79

Net Sketched Area:	10,430		Total:		772,968
Size A	9670	Gross Ar	10430	FinAr	9670

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/ Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

R045 | 001 | 0001 | | 62 of 66 | COMMERCIAL | TOTAL ASSESSED: 55,843,400
Map | Block | Lot | Unit | CARD | !112899!

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	573,200		0.000		573,200
Total Card	573,200		0.000		573,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.68 | /Parc 63.3

Legal Description

User Acct 112899

GIS Ref

GIS Ref

Entered Lot Size

Total Land:

Land Unit Type:

Insp Date

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:17:0

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:		Spl Cre	Total:	

Disclaimer. This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

apro

2017

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:		%	
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade: C	- AVERAGE		
Year Blt 1976		Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W		%	
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor		%	
Bsmnt Flr			
Bsmnt Ga			
Electric:	31 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	29.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	29.2	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9228375
Const Adj.:	0.8999999
Adj $ / SQ:	78.903
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	809614
Depreciation:	236407
Depreciated Tot	573206

COMMENTS

LOT # SQ.FT. 7,102 414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G	Des		# Unit	
Level	FY LR DR D K FR RR BR FB HB L O			
Othe				
Upp				
Lvl 2				
Lvl 1				
Low				
Total	RMs:	BR	Bath 6	H

REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

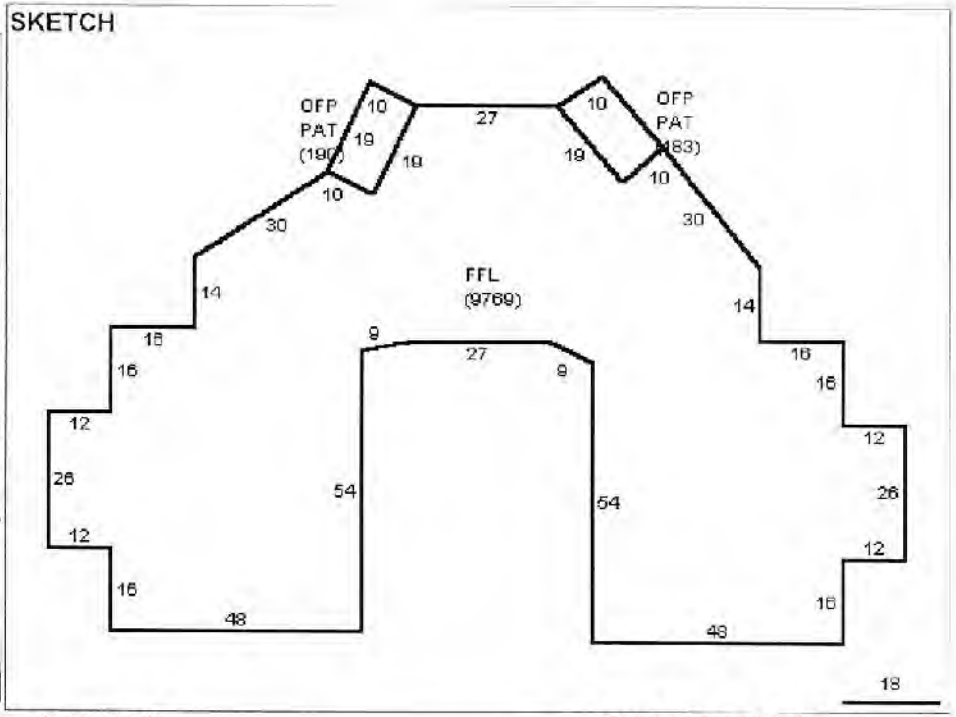
No Uni	RMS	BRS	FL
Totals			

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	78.90
Special Featur	0	Val/Su Ne	54.51
Final Total:	573200	Val/Su Sz	58.68

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,769	78.900	770,800
OFP	OPEN PORCH	373	17.120	6,386
PAT	PATIO	373	6.510	2,429

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

Net Sketched Area:	10,515		Total:	779,615	
Size A	9769	Gross Ar	10515	FinAr	9769

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB	F	Appr Value	JCo	JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	

R045	001	0001		63 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal:	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1972, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	568,500		0.000		568,500
Total Card	568,500		0.000		568,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 57.98 | /Parc: 63.3

Legal Description

Entered Lot Size	
Total Land:	
Land Unit Type:	

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	

Patriot Properties Inc.

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:17:1

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	
112899	

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC:

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign: VERIFICATION OF VISIT NOT DA __/__/__

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4

Total: | Spl Cre | Total:

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed. Database: AssessPro

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1972	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	30.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	30	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj :	0.9223865
Const Adj.:	0.8999999
Adj $ / SQ:	78.864
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	812202
Depreciation:	243661
Depreciated Tot	568541

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G	Des	# Unit
Level	FY LR DR D K FR RR BR FB HB L O	
Othe		
Upp		
Lvl 2		
Lvl 1		
Low		
Total	RMs:	BR Bath 6 H

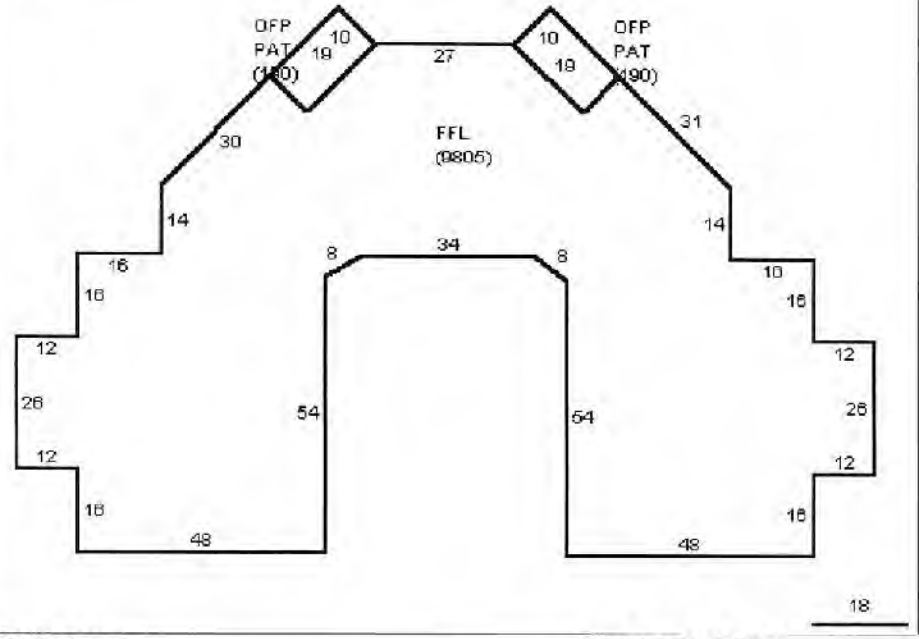
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,805	78.860	773,262
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	380	6.470	2,460

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	
Juris. Factor:		Before De	78.86		
Special Featur	0	Val/Su Ne	53.81		
Final Total:	568500	Val/Su Sz	57.98		

Net Sketched Area:	10,565		Total:	782,202	
Size A	9805	Gross Ar	10565	FinAr	9805

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue		Total:	
---	---	---	---	---	---	---	---

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA
Cntr	
Own Oc	
Postal	02452-5552
Type	

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	
Cntr	
Postal	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	1,102,200		0.000		1,102,200
Total Card	1,102,200		0.000		1,102,200
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card: 53.54 | /Parc: 63.3

Legal Description

Entered Lot Size

Total Land:

Land Unit Type:

User Acct: 112899

GIS Ref

GIS Ref

Insp Date

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

PRINT

Date	Time
05/04/1	14:17:2

LAST R

Date	Time
02/10/1	14:23:3

bvazquez

112899

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist:	
Reval Dis	
Year:	
LandReas	
BldReason	

SALES INFORMATION

TAX DISTRIC

PAT ACCT.

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

Sign ___/___/___

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:		Spl Cre	Total:	

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units:	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	07 - SHED		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	.
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV	- Average	29. %
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:		29.2 %

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.8582863
Const Adj.:	0.8999999
Adj $ / SQ:	73.383
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	1556812
Depreciation:	454589
Depreciated Tot	1102223

COMMENTS

LOT # SQ.FT. 7,102,414 : 190 TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G	Des									# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O	
Othe													
Upp													
Lvl 2													
Lvl 1													
Low													

Total	RMs:		BR	Bath 6	H

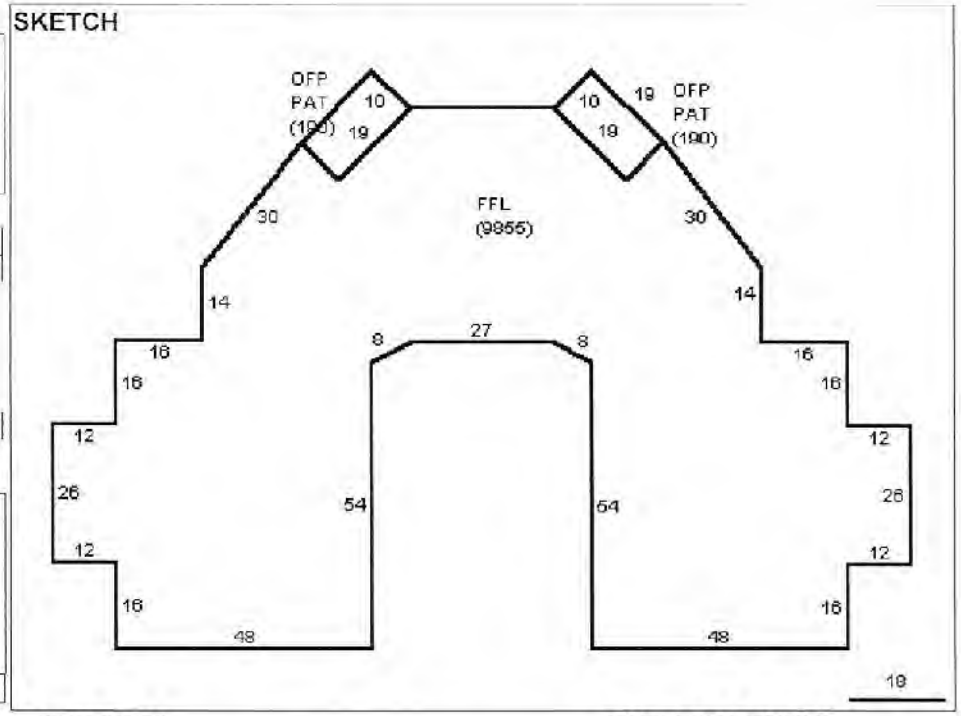
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	20,588	73.380	1,510,819
OFP	OPEN PORCH	760	15.460	11,747
PAT	PATIO	760	5.590	4,246

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat		Ind.V	

Juris. Factor:		Before De	73.38
Special Featur	0	Val/Su Ne	49.86
Final Total:	1102200	Val/Su Sz	53.54

Net Sketched Area:	22,108		Total:	1,526,812	
Size A	20588	Gross Ar	21529	FinAr	20588

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID: R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		65 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #:

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover, with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	571,000		0.000		571,000
Total Card	571,000		0.000		571,000
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.73 | /Parc 63.3

PREVIOUS ASSESSMENT

Parcel ID: R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / PriceUnits	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0		SQ. FT.	SITE		0	0.	0.000	N4																

Legal Description

User Acct

112899

GIS Ref

GIS Ref

Insp Date

Entered Lot Size

Total Land:

Land Unit Type:

Patriot Properties Inc.

USER DEFINED

Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:17:3

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	

Sign

__/__/__

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:		Spl Cre		Total:	

EXTERIOR INFORMATION

Type:	86 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin
A Kits:		Ratin
Frpl:		Ratin
WSFlu		Ratin

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	29.	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	29.2	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9234314
Const Adj.:	0.8999999
Adj $ / SQ:	78.953
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	806525
Depreciation:	235505
Depreciated Tot	571020

COMMENTS

LOT # SQ.FT. 7,102,414 : 190
TRAPELO ROAD

RESIDENTIAL GRID

1st Res G		Des								# Unit				
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O		
Othe														
Upp														
Lvl 2														
Lvl 1														
Low														
Total	RMs:		BR		Bath	6		H						

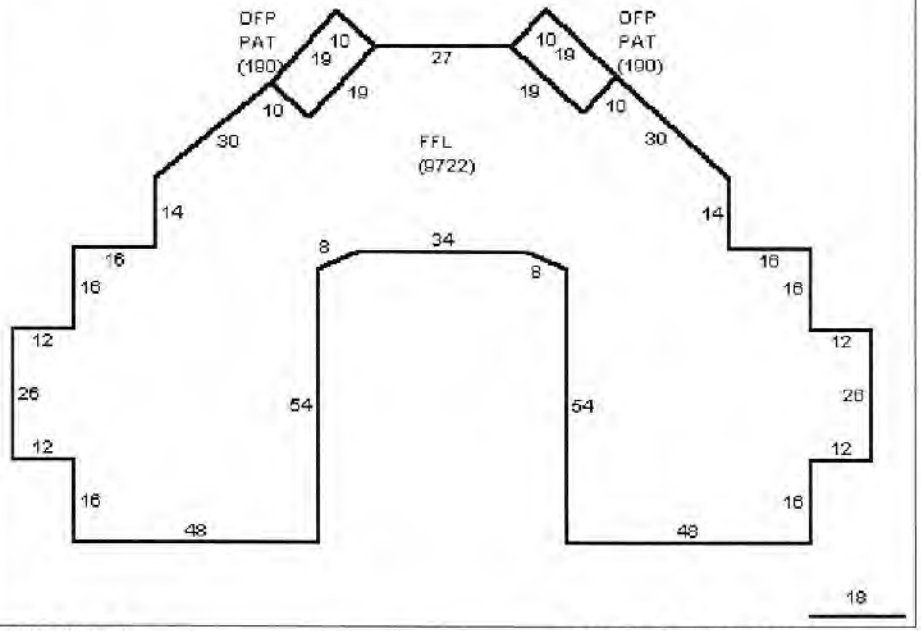
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,722	78.950	767,585
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	380	6.470	2,460

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	78.95
Special Featur	0	Val/Su Ne	54.47
Final Total:	571000	Val/Su Sz	58.73

Net Sketched Area:	10,482		Total:	776.525	
Size A	9722	Gross Ar	10482	FinAr	9722

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

PARCEL ID R045 001 0001

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo JFac	Juris. Value

More	N	Total Yard Item		Total Special Featue	Total:

R045	001	0001		66 of 66	COMMERCIAL	TOTAL ASSESSED:	55,843,400
Map	Block	Lot	Unit	CARD		!112899!	

City of Waltham

Patriot Properties Inc.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
190		TRAPELO RD, WALTHAM

OWNERSHIP

Unit #.

Owner	CITY OF WALTHAM
Owner	
Owner	
Street	610 MAIN ST
Street	
Twn/Cit	WALTHAM
St/Prov	MA Cntr
Postal:	02452-5552

Own Oc

Type

PREVIOUS OWNER

Owner	
Owner	
Street	
Twn/Cit	
St/Prov	Cntr
Postal:	

NARRATIVE DESCRIPTION

This Parcel contains 6,821,497 SQ. FT. of land mainly classified as MUNICPL with a(n) DORMITORY Building Built about 1976, Having Primarily WOOD SHING Exterior and TAR + GRAVEL Roof Cover. with 1 Units, 6 Baths, 0 HalfB

OTHER ASSESSMENTS

Code	Descrip/No	Amount	Com. Int

IN PROCESS APPRAISAL SUMMAR

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
914	572,500		0.000		572,500
Total Card	572,500		0.000		572,500
Total Parcel	54,303,700	300	156.600	1,539,400	55,843,400

Source: Market Adj Co | Total Value per SQ unit /Card 58.70 | /Parc 63.3

Legal Description

PREVIOUS ASSESSMENT

Parcel ID R045 001 0001

Tax Yr	Use	Cat	Bldg Value	Yrd Item	Land Size	Land Value	Total Value	Asses'd Valu	Notes	Date

SALES INFORMATION

TAX DISTRIC

PAT ACCT. 112899

Grantor	Legal Ref	Typ	Date	Sale Code	Sale Price	V	Tst	Verif	Assoc PCL Value	Notes

BUILDING PERMITS

Date	Number	Descrip	Amount	C/O	Last Visit	Fed Cod	F. Descrip	Comment

ACTIVITY INFORMATION

Date	Result	By	Name

PROPERTY FACTORS

Ite	Code	Descip	%	Item	Cod	Descrip
Z				U		
o				t		
n				l		
Census:						
Flood Haz:				xmpt		
D	0	test		Topo		
s				Stree	41	
t				Traffi		

LAND SECTION (First 7 lines only)

Use Code	Description	LUC Fact	No of Units	Depth / Price	Units	Unit Type	Land Type	LT Facto	Base Value	Unit Price	Adj	Neigh	Neigh Influ	eigh	Infl 1	%	Infl 2	%	Infl 3	%	Appraised Value	Alt Class	%	Spec Land	J Code	Fact	Use Value	Notes
914	STATE DOI		0			SQ. FT.	SITE		0	0.	0.000	N4																

USER DEFINED

User Acct	112899
GIS Ref	
GIS Ref	
Insp Date	
Entered Lot Size	
Total Land:	
Land Unit Type:	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
Prior Id #	
ASR Map	
Fact Dist	
Reval Dis	
Year:	
LandReas	
BldReason	

PRINT

Date	Time
05/04/1	14:17:4

LAST R

Date	Time
02/10/1	14:23:3
bvazquez	

Sign ___/___/

Total AC/H	0.00000	Total SF/S	0.00	Parcel LU	903	MUNICPL	Prime NB D	N4	Total:		Spl Cre	Total:	

EXTERIOR INFORMATION

Type:	65 - DORMITORY		
Sty Ht:	1 - 1 story		
(Liv) Units	1	Total:	35
Foundatio	01 - CONCRETE		
Frame:	01 - WOOD		
Prime Wa	01 - WOOD SHIN		
Sec Wall:			%
Roof Stru	04 - FLAT		
Roof Cov	04 - TAR + GRAV		
Color:			
View / De			

GENERAL INFORMATION

Grade:	C - AVERAGE		
Year Blt	1976	Eff Yr Blt:	
Alt LUC		Alt %:	
Jurisdict		Fact:	
Const Mod:			
Lump Sum Adj			

INTERIOR INFORMATION

Avg Ht/FL			
Prim Int	01 - DRYWALL		
Sec Int W			%
Partition:			
Prim Floo	14 - ASPHALT TIL		
Sec Floor			%
Bsmnt Flr			
Bsmnt Ga			
Electric:	03 - TYPICAL		
Insulation:	01 - NONE		
Int vs Ext:			
Heat Fuel	01 - OIL		
Heat Typ	03 - FORCED H/		
# Heat Sy	1		
% Heated	100	% AC:	
Solar HW	NO	Central V	NO
% Com		% Sprinkl	

BATH FEATURES

Full Ba	6	Ratin	Average
A Bath:		Ratin	
3/4 Bat		Ratin	
A 3QBt		Ratin	
1/2 Bat		Ratin	
A HBth		Ratin	
OthrFix		Ratin	

OTHER FEATURES

Kits:		Ratin	
A Kits:		Ratin	
Frpl:		Ratin	
WSFlu		Ratin	

CONDO INFORMATION

Location:	
Total Unit	
Floor:	
% Own:	
Name:	

DEPRECIATION

Phys Con	AV - Average	29	%
Functiona			%
Economic			%
Special:			%
Override:			%
	Total:	29.2	%

CALC SUMMARY

Basic $ / SQ:	95.00
Size Adj.:	0.9230390
Const Adj.:	0.8999999
Adj $ / SQ:	78.920
Other Features	30000
Grade Factor:	1.00
Neighborhood I	1.0000000
LUC Factor:	1.00
Adj Total:	808645
Depreciation:	236124
Depreciated Tot	572521

COMMENTS

LOT # SQ FT. 7,102,414 : 190
TRAPELO ROAD.

RESIDENTIAL GRID

1st Res G		Des							# Unit			
Level	FY	LR	DR	D	K	FR	RR	BR	FB	HB	L	O
Othe												
Upp												
Lvl 2												
Lvl 1												
Low												

Total	RMs:		BR	Bath	6	H	

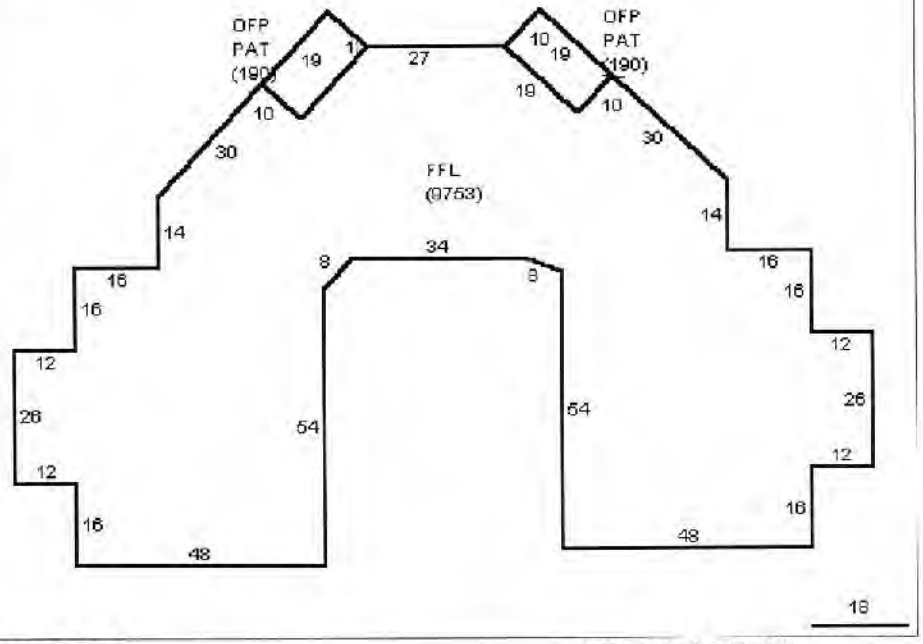
REMODELING

Exterior	
Interior:	
Addition	
Kitchen:	
Baths:	
Plumbin	
Electric:	
Heating	
General	

RES BREAKDOWN

No Uni	RMS	BRS	FL
Totals			

SKETCH



SUB AREA

Code	Description	Area - SQ	Rate - AV	Undepr Value
FFL	FIRST FLOOR	9,753	78.920	769,705
OFP	OPEN PORCH	380	17.050	6,480
PAT	PATIO	380	6.470	2,460

SUB AREA DETAIL

Sub Area	% Usbl	Descrip	% Type	Qu	# Ten

COMPARABLE SALES

Rate	Parcel ID	Typ	Date	Sale Price

WtAv$/S		AvRat	Ind.V
Juris. Factor:		Before De	78.92
Special Featur	0	Val/Su Ne	54.46
Final Total:	572500	Val/Su Sz	58.70

Net Sketched Area:	10,513			Total:	778,645
Size A	9753	Gross Ar	10513	FinAr	9753

IMAGE

AssessPro Patriot Properties, Inc

SPEC FEATURES/YARD ITEMS

Code	Description	A	Y/	Qty	Size/Dim	Qual Con	Year	Unit Price	D/	Dep	LUC	Fact	NB F	Appr Value	JCo	JFac	Juris. Value

PARCEL ID R045 001 0001

More	N	Total Yard Item		Total Special Featue		Total:	

APPENDIX B

Photographs

PHOTO #1 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Western Side of Building #12	
PHOTO #2 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #12	

PHOTO #3 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #12	
PHOTO #4 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #12	

PHOTO #5 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #12		
PHOTO #6 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Transformer to the North of Building #12		

PHOTO #7 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Western Side of Building #15	
PHOTO #8 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Concrete Enclosure Labeled "Waste Oil" at the Northwestern Corner of Building #15	

PHOTO #9 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Floor of Concrete Enclosure Labeled "Waste Oil" at the Northwestern Corner of Building #15		
PHOTO #10 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers in Building #15		

PHOTO #11 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Floor Drain in Building #15	
PHOTO #12 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #16	

PHOTO #13 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #16	
PHOTO #14 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #16	
PHOTO #15 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #16	

PHOTO #16 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Basement Interior of Building #16	
PHOTO #17 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers in Building #16	
PHOTO #18 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers in Building #16	

PHOTO #19 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers in Building #16		
PHOTO #20 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Spray Paint Cans in Building #16		

PHOTO #21 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern & Western Side of Building #17	
PHOTO #22 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Southern Side of Building #17	
PHOTO #23 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Southern Side of Building #17 – AST Vent & Fill Pipes	

PHOTO #24 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #18	
PHOTO #25 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Eastern Side of Building #18 – AST Vent & Fill Pipes	

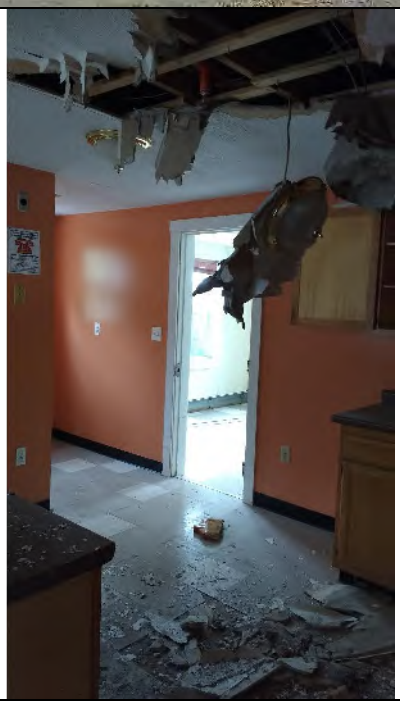
PHOTO #26 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #19	
PHOTO #27 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #19	
PHOTO #28 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #19	

PHOTO #29 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #19	
PHOTO #30 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #20	

PHOTO #31 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #20	
PHOTO #32 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #21	
PHOTO #33 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #21	

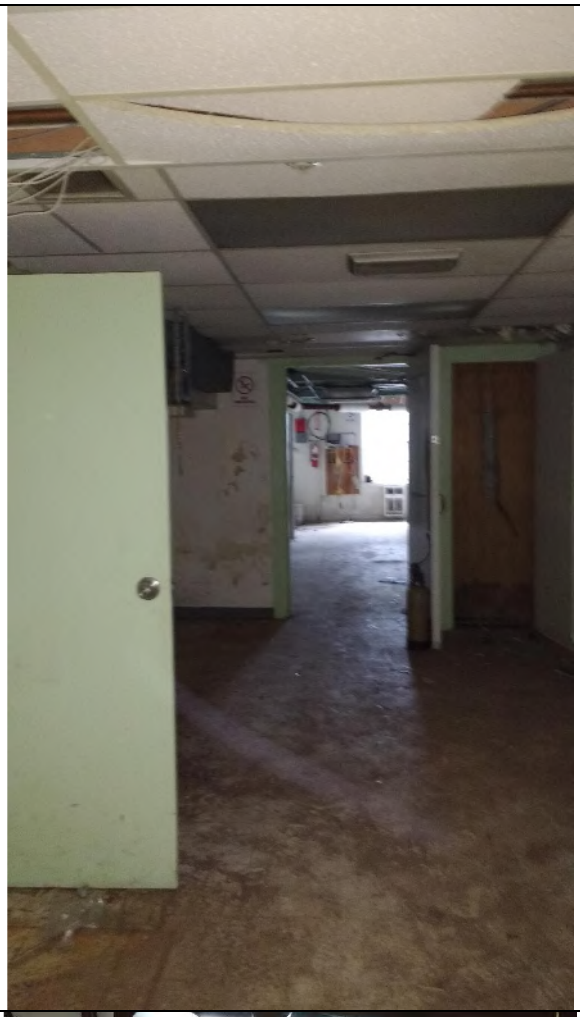
PHOTO #34 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Basement Interior of Building #21		
PHOTO #35 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #21		

PHOTO #36 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #21	
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PHOTO #38 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #22	

PHOTO #39 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #22	
PHOTO #40 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #22	
PHOTO #41 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #23	

PHOTO #42 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Western Side of Building #23	
PHOTO #43 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Eastern Side of Building #24	
PHOTO #44 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers & Floor Staining in Building #24	

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PHOTO #46 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #26	

PHOTO #47 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Southern Side of Building #26	
PHOTO #48 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Stream West of Building #26	

PHOTO #49 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Stream West of Building #26	
PHOTO #50 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: LPG Tanks West of Building #26	
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PHOTO #55 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Interior of Building #32	

PHOTO #56 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Interior of Building #32	
PHOTO #57 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Interior of Building #32	

PHOTO #58 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #33	
PHOTO #59 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Western Side of Building #33	
PHOTO #60 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern & Western Sides of Building #34	

PHOTO #61 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Pole Mounted Transformers South of Building #34	
PHOTO #62 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #35	
PHOTO #63 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Southern Side of Building #35	

PHOTO #64 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: First Floor Interior of Building #35	
PHOTO #65 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: First Floor Interior of Building #35	

PHOTO #66 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: First Floor Interior of Building #35	
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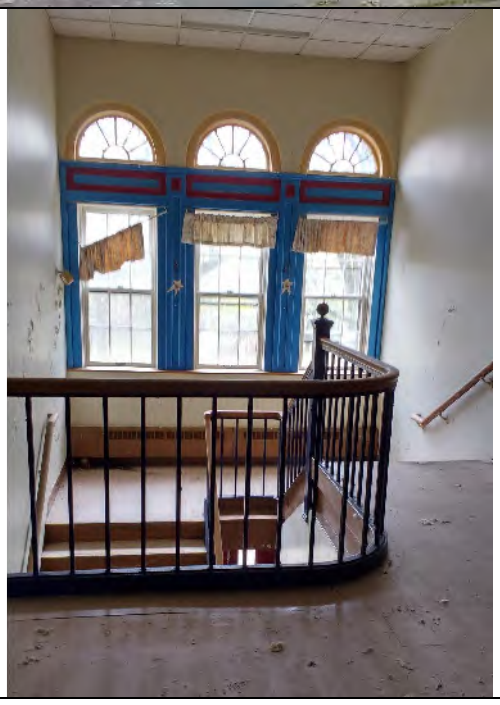
PHOTO #68 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Pad Mounted Transformer East of Building #35	
PHOTO #69 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Western Side of Building #36	
PHOTO #70 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Second Floor Interior of Building #36	

PHOTO #71 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Interior of Building #36	
PHOTO #72 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Western Side of Building #37	

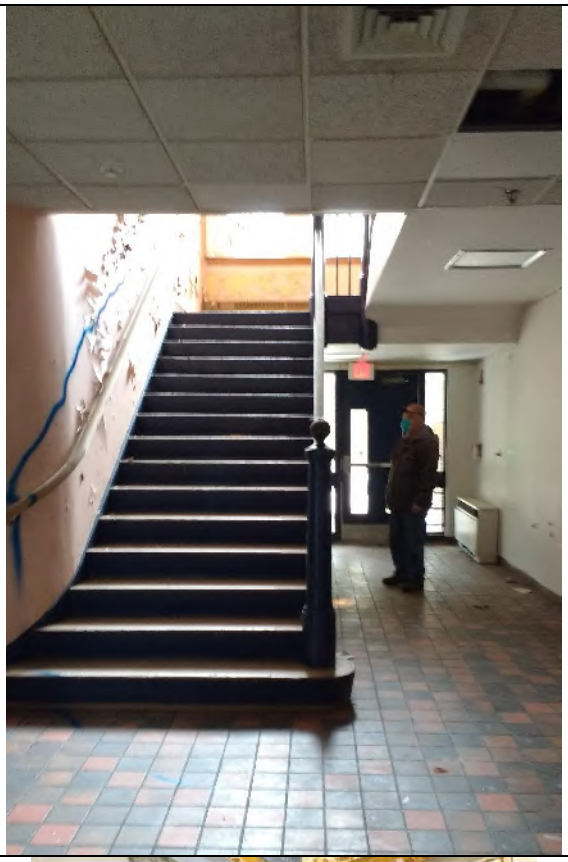
PHOTO #73 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: First Floor Interior of Building #37	
PHOTO #74 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Interior of Building #37	

PHOTO #75 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Basement Interior of Building #37	
PHOTO #76 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Basement Interior of Building #37	

PHOTO #77 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Pad Mounted Transformer South of Building #37	
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PHOTO #79 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Southern Side of Building #46		
PHOTO #80 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #46		

PHOTO #81 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #46	
PHOTO #82 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Pad Mounted Transformer Northwest of Building #46	

PHOTO #83 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Western Side of Building #49	
PHOTO #84 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Northern Side of Building #49	
PHOTO #85 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #55	

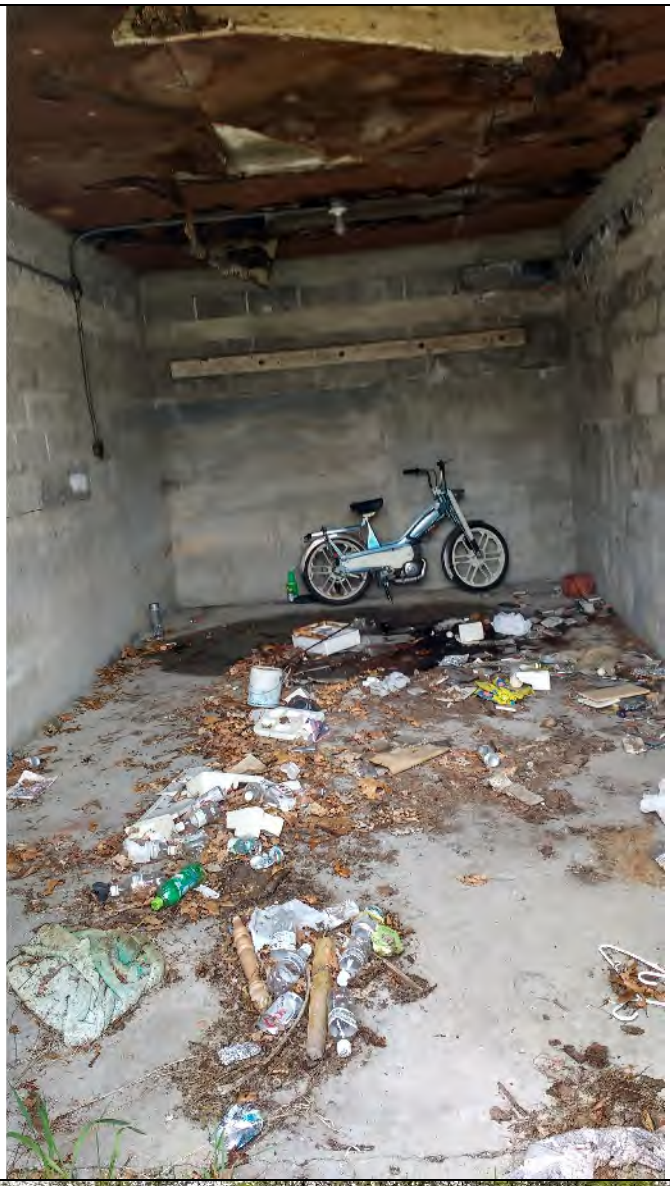
PHOTO #86 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #56	
PHOTO #87 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northwestern & Southwestern Sides of Building #57	

PHOTO #88 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Interior of Building #57	
PHOTO #89 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Southern Side of Building #120	

PHOTO #90 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #120	
PHOTO #91 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: First Floor Interior of Building #120	
PHOTO #92 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #121	

PHOTO #93 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Western & Southern Sides of Building #121	
PHOTO #94 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Sign Stating "Contains PCBs" on Building #121	

PHOTO #95 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Crushed Empty Drum South of Building #121	
PHOTO #96 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Western Side of Transformer Pad at Building #122	
PHOTO #97 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Southern & Eastern Sides of Transformer Pad at Building #122	

PHOTO #98 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: View of Exterior Eastern Side of Building #123	
PHOTO #99 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: First Floor Interior of Building #123	

PHOTO #100 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Empty Containers East of Building #123	
PHOTO #101 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Eastern Side of Building #124	

PHOTO #102 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: View of Exterior Northern Side of Building #124	
PHOTO #103 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Propane Tank South of Building #124	
PHOTO #104 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Empty Drum Northeast of Building #124	

PHOTO #105 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Piles of Brick & Ashphalt East of Building #124	
PHOTO #106 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Grounds Dept. Garage South of Building #124	
PHOTO #107 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Barn West of Building #124	

PHOTO #108 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Former Butcher Shop North of Building #124	
PHOTO #109 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Partially Filled Drum North of Butcher Shop North of Building #124	

PHOTO #110 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Burried Drums & Tank in Foundation North of Former Butcher Shop North of Building #124	
PHOTO #111 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Burried Tank in Foundation North of Former Butcher Shop North of Building #124	
PHOTO #112 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/4/16 DETAILS: Mobile Home South of Building #123	

PHOTO #113 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Steamhouse & Concrete Pipe Subway South of Building #121	
PHOTO #114 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Concrete Pipe Subway West of Building #120	
PHOTO #115 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Debris Discarded in Wooded Areas Throughout Site	

PHOTO #116 FACILITY: South Portion of Former Fernald Developmental Center 200 Trapelo Rd. Waltham, MA INSPECTOR: Lauren Konetzny DATE: 5/6/16 DETAILS: Debris Discarded in Wooded Areas Throughout Site	

APPENDIX C

Environmental Database Report Executive Summary

South Section-Former Fernald Development Center
200 Trapelo Road
Waltham, MA 02452

Inquiry Number: 4607751.2s
May 02, 2016

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

200 TRAPELO ROAD
WALTHAM, MA 02452

COORDINATES

Latitude (North):	42.3876420 - 42° 23' 15.51''
Longitude (West):	71.2082010 - 71° 12' 29.52''
Universal Tranverse Mercator:	Zone 19
UTM X (Meters):	318226.9
UTM Y (Meters):	4694965.0
Elevation:	108 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5646205 LEXINGTON, MA
Version Date:	2012
South Map:	5646211 NEWTON, MA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120710, 20120713
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
200 TRAPELO ROAD
WALTHAM, MA 02452

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	WITHIN COMPLEX ON CH	200 TRAPELO RD	RGA HWS		TP
A2		200 TRAPELO RD	ERNS		TP
A3	REAR GATE OFF WAVERL	200 TRAPELO RD	RGA HWS		TP
A4	THOM BUILDING	FERNALD CENER 200 TR	SHWS, RELEASE		TP
A5	POWER PLANT NEAR WAV	200 TRAPELO RD	RGA LUST		TP
A6	MALONE PARK BLDG NO	200 TRAPELO RD	RGA LUST		TP
A7	MALONE PARK BLDG NO	200 TRAPELO RD	RGA LUST		TP
A8		200 TRAPELO RD	ERNS		TP
A9	SHRIVER CTR	200 TRAPELO ROAD	RCRA-SQG, US AIRS, FINDS, ECHO		TP
A10	COMMONWEALTH OF MA.	FERNALD CENTER, 200	PCB TRANSFORMER		TP
A11	FERNALD STATE SCHOOL	200 TRAPELO RD	RGA HWS		TP
A12	COMMONWEALTH OF MA.	FERNALD CENTER, 200	PCB TRANSFORMER		TP
A13	POWERPLANT	200 TRAPELO RD	RGA HWS		TP
A14	FERNALD STATE SCHOOL	200 TRAPELO RD	RGA LUST		TP
A15	POWERPLANT	200 TRAPELO RD	RGA LUST		TP
A16		FERNALD SCHOOL, 200	DOT OPS		TP
A17	FERNALD SCHOOL	200 TRAPELO RD	RGA HWS		TP
A18		200 TRAPELO RD	LEAD		TP
A19	EUNICE KENNEDY SHRIV	200 TRAPELO ROAD	MLTS		TP
A20	FERNALD STATE SCHOOL	200 TRAPELO RD	SHWS, LUST, INST CONTROL, SPILLS, RELEASE, AIRS,...		TP
A21	WALTER E FERNALD DEV	200 TRAPELO RD	UST, Financial Assurance		TP
B22	SHELL PRODUCT DIST P	313 WAVERLEY OAKS RD	SHWS, LUST, LAST, INST CONTROL, RELEASE	Lower	39, 0.007, SE
B23	DUFFY ASSOCIATES	313 WAVERLY OAKS RD	UST, RCRA NonGen / NLR, Financial Assurance	Lower	39, 0.007, SE
B24	PEIRCE BROTHERS OIL	329 WAVERLEY OAKS RD	RCRA NonGen / NLR, FINDS, ECHO	Lower	40, 0.008, SE
B25	GAS STATION	277 WAVERLEY OAKS RD	SHWS, RELEASE	Lower	40, 0.008, SSE
C26	BEAVER VISITEC INTER	411 WAVERLEY OAKS RD	RCRA-SQG	Lower	545, 0.103, East
C27	NO LOCATION AID	411 WAVERLY OAKS ROA	SHWS, RELEASE, HW GEN, LEAD	Lower	545, 0.103, East
C28	BEAVER VISITEC INTER	411 WAVERLEY OAKS RD	SHWS, LAST, BROWNFIELDS, RELEASE, ENF, HW GEN	Lower	545, 0.103, East
C29	DUFFY BROS CONSTRUCT	411 WAVERLEY OAKS RD	RCRA-CESQG, FINDS, ECHO	Lower	545, 0.103, East
C30	DUFFY BROS CONSTRUCT	411 WAVERLEY OAKS RD	SEMS	Lower	545, 0.103, East
C31	COMPUTER DESIGN & AP	411 WAVERLEY OAKS RD	RCRA NonGen / NLR	Lower	545, 0.103, East
D32	MOTIVA ENTERPRISES L	225 WAVERLY OAKS RD	RCRA NonGen / NLR	Lower	696, 0.132, SSW
D33	SHELL SERVICE STATIO	225 WAVERLY OAKS	RCRA-CESQG	Lower	696, 0.132, SSW
D34	SHELL #73	225 WAVERLY OAKS RD	SHWS, LUST, UST, RELEASE, Financial Assurance, HW...	Lower	696, 0.132, SSW
35	OFF RTE 60	54 SHAWMUT ST	LUST, RELEASE	Higher	754, 0.143, ENE
36	UNIVERSITY OF MASSAC	225-227 BEAVER ST	SHWS, RELEASE	Lower	841, 0.159, SW
E37	XEROX REPRODUCTION C	135 BEAVER ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	862, 0.163, South
E38	INTERLEUKIN GENETICS	135 BEAVER ST	HW GEN	Lower	862, 0.163, South
E39	GEORGE MORE FACILITY	110 BEAVER ST	SHWS, INST CONTROL, RELEASE	Lower	908, 0.172, South

MAPPED SITES SUMMARY

Target Property Address:
200 TRAPELO ROAD
WALTHAM, MA 02452

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
E40	AZKO NOBEL COATINGS	117 BEAVER ST	SHWS, RELEASE, HW GEN	Lower	920, 0.174, South
E41	ANGIO MEDICAL	100 BEAVER STREET	RCRA-CESQG, FINDS, ECHO	Lower	927, 0.176, South
E42	DESCARTES THERAPEUTI	100 BEAVER ST	HW GEN	Lower	927, 0.176, South
E43	MOORE GEORGE W INC	100 BEAVER ST	RCRA NonGen / NLR	Lower	927, 0.176, South
E44	X CHEM INC	100 BEAVER ST	HW GEN	Lower	927, 0.176, South
E45	X BODY	100 BEAVER ST	HW GEN	Lower	927, 0.176, South
E46	GENOME THERAPEUTIC C	100 BEAVER ST	RCRA NonGen / NLR	Lower	927, 0.176, South
E47	ANGIO MEDICAL CORP	100 BEAVER ST @ SHRI	RCRA NonGen / NLR	Lower	927, 0.176, South
E48	KALA PHARMACEUTICALS	100 BEAVER ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	927, 0.176, South
E49	ADNEXUS, A BRISTOL-M	100 BEAVER STREET	HW GEN, TIER 2	Lower	927, 0.176, South
E50	PROTEIN FOREST INC	100 BEAVER ST	RCRA NonGen / NLR	Lower	927, 0.176, South
E51	AVILA THERAPEUTICS I	100 BEAVER ST	RCRA NonGen / NLR	Lower	927, 0.176, South
E52	LEXICON INC	100 BEAVER ST	RCRA NonGen / NLR	Lower	927, 0.176, South
E53	EPITOME BIOSYSTEMS I	100 BEAVER ST	HW GEN	Lower	927, 0.176, South
E54	BRISTOL MYERS SQUIBB	100 BEAVER ST	RCRA-SQG	Lower	927, 0.176, South
F55	ELECTRO PAINTERS INC	97 BEAVER ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	952, 0.180, South
G56	CERAMEM CORPORATION	12 CLEMATIS AVE	HW GEN	Lower	999, 0.189, SSE
G57	CERAMEM CORPORATION	12 CLEMATIS AVE	RCRA-CESQG	Lower	999, 0.189, SSE
G58	CITIUS PRINTING & GR	20 CLEMATIS AVE	HW GEN	Lower	1001, 0.190, SSE
F59	THORNTON ASSOCIATES	87 BEAVER ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	1003, 0.190, SSE
G60	KANS ENGINEERING & M	83 BREAVER ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	1013, 0.192, SSE
G61	RIVER AUTO	10 CLEMATIS AVE	LUST, RELEASE, HW GEN	Lower	1021, 0.193, SSE
H62	LIGHT METAL PLATERS	70 TO 74 CLEMATIS AV	SHWS, RELEASE	Lower	1051, 0.199, SSE
H63	CLEMATIS MACHINE	42 CLEMATIS AVE	HW GEN	Lower	1075, 0.204, SSE
64	GIRL SCOUTS OF EASTE	265 BEAVER ST	HW GEN	Lower	1108, 0.210, SW
I65	LIGHT METAL PLATERS	70 CLEMATIS AVENUE	RCRA-SQG, RAATS, US AIRS, FINDS, ECHO	Lower	1146, 0.217, SE
I66	GREEN JACKET INC	62 CLEMATIS AVE	HW GEN	Lower	1146, 0.217, SE
I67	LIGHT METAL PLATERS	70 CLEMATIS AVE	HW GEN, TIER 2	Lower	1176, 0.223, SE
I68	INDUSTRIAL PROPERTY	70-74 CLEMATIS AVE	SHWS, LAST, RELEASE	Lower	1176, 0.223, SE
I69	CERAMICS GRINDING CO	74 CLEMATIS AVE	RCRA NonGen / NLR, FINDS, ECHO	Lower	1192, 0.226, SE
J70	LIGHT METAL PLATERS	96 CLEMATIS AVE	RCRA NonGen / NLR	Lower	1274, 0.241, SE
J71	MANHOLE HALFWAT DOWN	102 CLEMATIS AVE	SHWS, LAST, RELEASE	Lower	1294, 0.245, SE
72	POLE #31	264 BEAL ST	SHWS, RELEASE	Lower	1644, 0.311, SSE
73	MASSACHUSETTS MEDICA	108 CLEMATIS AVE	SHWS, RELEASE, HW GEN	Lower	1675, 0.317, ESE
74	UMASS AMHERST AGRICU	240 BEAVER ST	SHWS, LUST, SPILLS, RELEASE, HW GEN	Lower	1790, 0.339, WSW
75	FITZGERALD SCHOOL	BEAL RD	LUST, RELEASE	Lower	1837, 0.348, South
76	WALTHAM PUBLIC SCHOO	258 TRAPELO RD	SHWS, LUST, RELEASE, ENF, HW GEN	Higher	1985, 0.376, North
77	BENTLEY COLLEGE	400 BEAVER ST	LUST, RELEASE	Lower	2313, 0.438, WSW
78	FMR HEATING PLANT SO	333 FOREST ST	SHWS, INST CONTROL, RELEASE, ENF, HW GEN	Higher	2518, 0.477, NW

MAPPED SITES SUMMARY

Target Property Address:
200 TRAPELO ROAD
WALTHAM, MA 02452

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
K79	SYCAMORE AUTO SERVIC	257 SYCAMORE ST	LUST, RELEASE	Lower	2543, 0.482, ESE
K80	1072 BELMONT STREET	1072 BELMONT STREET	US BROWNFIELDS, FINDS, ECHO	Lower	2555, 0.484, ESE
K81	NO LOCATION AID	1060 BELMONT ST	SHWS, LUST, RELEASE	Lower	2614, 0.495, ESE
82	BETWEEN BLDG 148 AND	175 FOREST ST	SHWS, RELEASE, HW GEN	Higher	2737, 0.518, WNW
83	NSTAR UTILITY POLE #	NEAR 21 DWIGHT ST	SHWS, RELEASE	Lower	2786, 0.528, ESE
L84	MURPHY FEDERAL CENTE	424 TRAPELO RD	SHWS, LUST, RELEASE, SPILLS	Higher	2866, 0.543, NNW
L85	NO LOCATION AID	426 TRAPELO RD	SHWS, RELEASE	Higher	2879, 0.545, NNW
86	INTERSECTION	WARREN ST AND CHAFFE	SHWS, RELEASE	Lower	3301, 0.625, South
87	NO LOCATION AID	563 TRAPELO RD	SHWS, LUST, RELEASE, HW GEN	Lower	3349, 0.634, East
88	METROPOLITAN STATE C	475 TRAPELO RD	SHWS, LUST, INST CONTROL, RELEASE, SPILLS, ENF	Higher	3380, 0.640, North
89	DANA ATHLETIC CTR OF	500 BEAVER ST	SHWS, INST CONTROL, RELEASE	Lower	3380, 0.640, WSW
90	MCLEAN HOSPITAL	115 MILL ST	SHWS, SWF/LF, LUST, RELEASE, SPILLS, HW GEN, LEAD	Higher	3384, 0.641, NE
91	FORMER MOBIL STN 117	27 LEXINGTON ST	SHWS, RELEASE, SPILLS	Lower	3649, 0.691, East
92	GASOLINE STATION FMR	127-131 LINDEN ST	SHWS, RELEASE	Lower	3660, 0.693, SW
93	STAR MARKET	TRAPELO RD	SHWS, RELEASE	Lower	3753, 0.711, East
94	BELMONT	145 BROOKSIDE AVE	SHWS, RELEASE, LEAD	Higher	3768, 0.714, NNE
M95	FORMER DRY CLEANER	14 WARREN ST	SHWS, RELEASE, ENF	Lower	3770, 0.714, South
M96	JIMMY KS DRYCLEANERS	10 WARREN ST	SHWS, RELEASE, RCRA NonGen / NLR, FINDS, ECHO	Lower	3800, 0.720, South
M97	SHELL #72	65 MAIN ST	SHWS, LUST, UST, RELEASE, ENF, Financial Assurance	Lower	3920, 0.742, South
98	WALGREENS 3251	15-21 MAIN ST	SHWS, INST CONTROL, RELEASE, ENF, HW GEN	Lower	4127, 0.782, South
99	AT INTERSECTION OF L	MAIN ST	SHWS, RELEASE	Lower	4151, 0.786, South
100	ORCHARD ST	917 BELMONT ST	SHWS, RELEASE	Lower	4237, 0.802, ESE
N101	PETER FULLER DODGE I	1000 PLEASANT ST	SHWS, UST, INST CONTROL, RELEASE, Financial...	Lower	4249, 0.805, East
102	WHITE STREET GARAGE	43 WHITE ST	SHWS, UST, RELEASE, Financial Assurance, LEAD	Lower	4261, 0.807, East
103	ASTON MARTIN OF NEW	85 LINDEN ST	SHWS, RELEASE, HW GEN	Lower	4291, 0.813, SW
N104	WAVERLY LANDSCAPE	1010 PLEASANT ST	SHWS, LUST, RELEASE, HW GEN	Lower	4384, 0.830, East
O105	AA AUTO CLINIC	600 MAIN ST	SHWS, LUST, UST, RELEASE, ENF, Financial Assurance	Lower	4720, 0.894, SSE
O106	NSTAR UTILITY POLE #	NEAR 600 MAIN ST	SHWS, RELEASE	Lower	4720, 0.894, SSE
107	RESIDENCE	73 ELLISON PARK	SHWS, RELEASE	Lower	4844, 0.917, WSW
108	PROPERTY	249 LEXINGTON ST	SHWS, RELEASE, SPILLS	Higher	4877, 0.924, SE
109	WALTHAM HIGH SCHOOL	617 LEXINGTON ST	SHWS, LUST, RELEASE, FTTS, HIST FTTS, HW GEN, ECHO	Higher	5221, 0.989, WNW
110	GROVE ST @ GORE ST	GROVE ST @ GORE ST	SHWS, RELEASE	Lower	5230, 0.991, SSW
111	NO LOCATION AID	BCH AND MAPLE	SHWS, RELEASE	Lower	5252, 0.995, East

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
WITHIN COMPLEX ON CH 200 TRAPELO RD WALTHAM, MA	RGA HWS Facility ID: 3-0010367	N/A
200 TRAPELO RD 200 TRAPELO RD WALTHAM, MA 02154	ERNS EDR ID:: 485409	N/A
REAR GATE OFF WAVERL 200 TRAPELO RD WALTHAM, MA	RGA HWS Facility ID: 3-0011878	N/A
THOM BUILDING FERNALD CENER 200 TR WALTHAM, MA 02454	SHWS Release Tracking Number / Current Status: 3-0021380 / RAO RELEASE Release Tracking Number / Current Status: 3-0021380 / RAO	N/A
POWER PLANT NEAR WAV 200 TRAPELO RD WALTHAM, MA	RGA LUST Facility ID: 3-0013467	N/A
MALONE PARK BLDG NO 200 TRAPELO RD WALTHAM, MA	RGA LUST Facility ID: 3-0021892	N/A
MALONE PARK BLDG NO 200 TRAPELO RD WALTHAM, MA	RGA LUST Facility ID: 3-0021893	N/A
200 TRAPELO RD 200 TRAPELO RD WALTHAM, MA	ERNS EDR ID:: 480306	N/A
SHRIVER CTR 200 TRAPELO ROAD WALTHAM, MA 02452	RCRA-SQG EPA ID:: MAD073798720 US AIRS	MAD073798720

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	EPA plant ID:: 110003715560 FINDS Registry ID:: 110003715560 ECHO	
COMMONWEALTH OF MA. FERNALD CENTER, 200 WALTHAM, MA 02154	PCB TRANSFORMER	N/A
FERNALD STATE SCHOOL 200 TRAPELO RD WALTHAM, MA	RGA HWS Facility ID: 3-0010725 Facility ID: 3-0010367	N/A
COMMONWEALTH OF MA. FERNALD CENTER, 200 WALTHAM, MA 02154	PCB TRANSFORMER	N/A
POWERPLANT 200 TRAPELO RD WALTHAM, MA	RGA HWS Facility ID: 3-0015442	N/A
FERNALD STATE SCHOOL 200 TRAPELO RD WALTHAM, MA	RGA LUST Facility ID: 3-0010725	N/A
POWERPLANT 200 TRAPELO RD WALTHAM, MA	RGA LUST Facility ID: 3-0015149	N/A
FERNALD SCHOOL, 200 FERNALD SCHOOL, 200 WALTHAM, MA 02154	DOT OPS	N/A
FERNALD SCHOOL 200 TRAPELO RD WALTHAM, MA	RGA HWS Facility ID: 3-0015121	N/A
200 TRAPELO RD 200 TRAPELO RD WALTHAM, MA 02452	LEAD Inspector License Number: 1196	N/A
EUNICE KENNEDY SHRIV 200 TRAPELO ROAD WALTHAM, MA 02254	MLTS	N/A

EXECUTIVE SUMMARY

License Number:: 20-18423-01

FERNALD STATE SCHOOL
200 TRAPELO RD
WALTHAM, MA 02154

SHWS N/A
Release Tracking Number / Current Status: 3-0015442 / RAO
Release Tracking Number / Current Status: 3-0015121 / RAO
Release Tracking Number / Current Status: 3-0010367 / RAO
Release Tracking Number / Current Status: 3-0011878 / RAO

LUST
Release Tracking Number / Current Status: 3-0010725 / RAO
Release Tracking Number / Current Status: 3-0013467 / RAO
Release Tracking Number / Current Status: 3-0015149 / RAO
Release Tracking Number / Current Status: 3-0021892 / RAO
Release Tracking Number / Current Status: 3-0021893 / RAO

INST CONTROL
Release Tracking Number: 3-0013467

SPILLS
Facility Id: 0000
Case Closed: YES
Spill ID: N80-5148
Spill ID: N86-0944
Spill ID: N92-0350
Spill ID: N92-0797

RELEASE
Release Tracking Number / Current Status: 3-0010367 / RAO
Release Tracking Number / Current Status: 3-0010725 / RAO
Release Tracking Number / Current Status: 3-0011878 / RAO
Release Tracking Number / Current Status: 3-0013467 / RAO
Release Tracking Number / Current Status: 3-0015121 / RAO
**Additional key fields are available in the Map Findings section*

AIRS
Facility Status: APPROV
Date Closed: 06/02/2009
Date Closed: 04/22/2004

HW GEN
State Generator Status: SQG-MA
State Generator Status: VQG-MA
EPA Id: MV7818943600
EPA Id: MAD073798720

LEAD
Inspector License Number: 2006

WALTER E FERNALD DEV
200 TRAPELO RD
WALTHAM, MA 02452

UST N/A
Tank Status: Tank Removed
Facility Id: 11192

Financial Assurance
Facility Id: 11192

EXECUTIVE SUMMARY

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Facility Database/Transfer Stations

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
AST ---- Aboveground Storage Tank Database
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
US CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS ---- Liens Information Listing
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS 90 ---- SPILLS 90 data from FirstSearch
SPILLS 80 ---- SPILLS 80 data from FirstSearch

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

COAL ASH DOE ---------- Steam-Electric Plant Operation Data
COAL ASH EPA ---------- Coal Combustion Residues Surface Impoundments List
RADINFO ---------- Radiation Information Database
HIST FTTS ---------- FIFRA/TSCA Tracking System Administrative Case Listing
CONSENT ---------- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---------- Indian Reservations
FUSRAP ---------- Formerly Utilized Sites Remedial Action Program
UMTRA ---------- Uranium Mill Tailings Sites
LEAD SMELTERS ---------- Lead Smelter Sites
US MINES ---------- Mines Master Index File
DRYCLEANERS ---------- Regulated Drycleaning Facilities
ENF ---------- Enforcement Action Cases
GWDP ---------- Ground Water Discharge Permits
MERCURY ---------- Mercury Product Recyling Drop-Off Locations Listing
NPDES ---------- NPDES Permit Listing
TIER 2 ---------- Tier 2 Information Listing
TSD ---------- TSD Facility
FUELS PROGRAM ---------- EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---------- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---------- EDR Exclusive Historic Gas Stations
EDR Hist Cleaner ---------- EDR Exclusive Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

SEMS: SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the SEMS list, as provided by EDR, and dated 03/07/2016 has revealed that there is 1 SEMS

site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUFFY BROS CONSTRUCT	411 WAVERLEY OAKS RD	E 0 - 1/8 (0.103 mi.)	C30	139

Federal RCRA generators list

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/09/2015 has revealed that there are 3 RCRA-SQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BEAVER VISITEC INTER	411 WAVERLEY OAKS RD	E 0 - 1/8 (0.103 mi.)	C26	102
BRISTOL MYERS SQUIBB	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E54	195
LIGHT METAL PLATERS	***70 CLEMATIS AVENUE***	***SE 1/8 - 1/4 (0.217 mi.)***	***I65***	***212***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 12/09/2015 has revealed that there are 4 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUFFY BROS CONSTRUCT	***411 WAVERLEY OAKS RD***	***E 0 - 1/8 (0.103 mi.)***	***C29***	***136***
SHELL SERVICE STATIO	225 WAVERLY OAKS	SSW 1/8 - 1/4 (0.132 mi.)	D33	144
ANGIO MEDICAL	***100 BEAVER STREET***	***S 1/8 - 1/4 (0.176 mi.)***	***E41***	***174***
CERAMEM CORPORATION	12 CLEMATIS AVE	SSE 1/8 - 1/4 (0.189 mi.)	G57	203

State- and tribal - equivalent CERCLIS

SHWS: Contains information on releases of oil and hazardous materials that have been reported to DEP.

A review of the SHWS list, as provided by EDR, and dated 01/08/2016 has revealed that there are 47 SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WALTHAM PUBLIC SCHOO	***258 TRAPELO RD***	***N 1/4 - 1/2 (0.376 mi.)***	***76***	***261***
Release Tracking Number / Current Status: 3-0029265 / RAO				
FMR HEATING PLANT SO	***333 FOREST ST***	***NW 1/4 - 1/2 (0.477 mi.)***	***78***	***267***

Release Tracking Number / Current Status: 3-0022303 / RAO

BETWEEN BLDG 148 AND	***175 FOREST ST***	***WNW 1/2 - 1 (0.518 mi.)***	***82***	***279***

Release Tracking Number / Current Status: 3-0022285 / RAO
Release Tracking Number / Current Status: 3-0022284 / RAO
Release Tracking Number / Current Status: 3-0004230 / DEPNDS

MURPHY FEDERAL CENTE	***424 TRAPELO RD***	***NNW 1/2 - 1 (0.543 mi.)***	***L84***	***284***

Release Tracking Number / Current Status: 3-0018887 / RAO
Release Tracking Number / Current Status: 3-0017581 / RAO

NO LOCATION AID	***426 TRAPELO RD***	***NNW 1/2 - 1 (0.545 mi.)***	***L85***	***292***

Release Tracking Number / Current Status: 3-0015749 / RAO

METROPOLITAN STATE C	***475 TRAPELO RD***	***N 1/2 - 1 (0.640 mi.)***	***88***	***298***

Release Tracking Number / Current Status: 3-0023296 / RAO
Release Tracking Number / Current Status: 3-0018280 / RAO

MCLEAN HOSPITAL	***115 MILL ST***	***NE 1/2 - 1 (0.641 mi.)***	***90***	***310***

Release Tracking Number / Current Status: 3-0017520 / RAO
Release Tracking Number / Current Status: 3-0020406 / RAO
Release Tracking Number / Current Status: 3-0023234 / RAO

BELMONT	***145 BROOKSIDE AVE***	***NNE 1/2 - 1 (0.714 mi.)***	***94***	***326***

Release Tracking Number / Current Status: 3-0001628 / RAO

PROPERTY	***249 LEXINGTON ST***	***SE 1/2 - 1 (0.924 mi.)***	***108***	***396***

Release Tracking Number / Current Status: 3-0004323 / RAO

WALTHAM HIGH SCHOOL	***617 LEXINGTON ST***	***WNW 1/2 - 1 (0.989 mi.)***	***109***	***397***

Release Tracking Number / Current Status: 3-0011491 / RAO

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL PRODUCT DIST P	***313 WAVERLEY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B22***	***69***

Release Tracking Number / Current Status: 3-0003078 / RAO
Release Tracking Number / Current Status: 3-0018952 / RAONR
Release Tracking Number / Current Status: 3-0020538 / RAONR

GAS STATION	***277 WAVERLEY OAKS RD***	***SSE 0 - 1/8 (0.008 mi.)***	***B25***	***101***

Release Tracking Number / Current Status: 3-0013458 / RAO

NO LOCATION AID	***411 WAVERLY OAKS ROA***	***E 0 - 1/8 (0.103 mi.)***	***C27***	***107***

Release Tracking Number / Current Status: 3-0025816 / RAONR
Release Tracking Number / Current Status: 3-0031506 / PSNC

BEAVER VISITEC INTER	***411 WAVERLEY OAKS RD***	***E 0 - 1/8 (0.103 mi.)***	***C28***	***112***

Release Tracking Number / Current Status: 3-0000454 / RAO
Release Tracking Number / Current Status: 3-0010717 / RAO

SHELL #73	***225 WAVERLY OAKS RD***	***SSW 1/8 - 1/4 (0.132 mi.)***	***D34***	***145***

Release Tracking Number / Current Status: 3-0027761 / RAO

UNIVERSITY OF MASSAC	***225-227 BEAVER ST***	***SW 1/8 - 1/4 (0.159 mi.)***	***36***	***159***

Release Tracking Number / Current Status: 3-0028049 / RAO

GEORGE MORE FACILITY	***110 BEAVER ST***	***S 1/8 - 1/4 (0.172 mi.)***	***E39***	***164***

Release Tracking Number / Current Status: 3-0018647 / RAO
Release Tracking Number / Current Status: 3-0017435 / RAONR
Release Tracking Number / Current Status: 3-0002923 / RAO
Release Tracking Number / Current Status: 3-0017779 / RAO

AZKO NOBEL COATINGS	***117 BEAVER ST***	***S 1/8 - 1/4 (0.174 mi.)***	***E40***	***173***

Release Tracking Number / Current Status: 3-0002692 / RAO

LIGHT METAL PLATERS	***70 TO 74 CLEMATIS AV***	***SSE 1/8 - 1/4 (0.199 mi.)***	***H62***	***210***

Release Tracking Number / Current Status: 3-0016864 / RAONR				
INDUSTRIAL PROPERTY	***70-74 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.223 mi.)***	***I68***	***231***
Release Tracking Number / Current Status: 3-0000501 / RAO				
MANHOLE HALFWAT DOWN	***102 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.245 mi.)***	***J71***	***245***
Release Tracking Number / Current Status: 3-0013361 / RAO				
POLE #31	***264 BEAL ST***	***SSE 1/4 - 1/2 (0.311 mi.)***	***72***	***249***
Release Tracking Number / Current Status: 3-0011166 / RAO				
MASSACHUSETTS MEDICA	***108 CLEMATIS AVE***	***ESE 1/4 - 1/2 (0.317 mi.)***	***73***	***251***
Release Tracking Number / Current Status: 3-0032643 / PSNC				
UMASS AMHERST AGRICU	***240 BEAVER ST***	***WSW 1/4 - 1/2 (0.339 mi.)***	***74***	***252***
Release Tracking Number / Current Status: 3-0028050 / RAO				
Release Tracking Number / Current Status: 3-0028048 / RAO				
NO LOCATION AID	***1060 BELMONT ST***	***ESE 1/4 - 1/2 (0.495 mi.)***	***K81***	***275***
Release Tracking Number / Current Status: 3-0029029 / RAO				
NSTAR UTILITY POLE #	***NEAR 21 DWIGHT ST***	***ESE 1/2 - 1 (0.528 mi.)***	***83***	***282***
Release Tracking Number / Current Status: 3-0025095 / RAO				
INTERSECTION	***WARREN ST AND CHAFFE***	***S 1/2 - 1 (0.625 mi.)***	***86***	***294***
Release Tracking Number / Current Status: 3-0022872 / RAO				
NO LOCATION AID	***563 TRAPELO RD***	***E 1/2 - 1 (0.634 mi.)***	***87***	***295***
Release Tracking Number / Current Status: 3-0022478 / RAO				
DANA ATHLETIC CTR OF	***500 BEAVER ST***	***WSW 1/2 - 1 (0.640 mi.)***	***89***	***306***
Release Tracking Number / Current Status: 3-0024981 / RAO				
FORMER MOBIL STN 117	***27 LEXINGTON ST***	***E 1/2 - 1 (0.691 mi.)***	***91***	***321***
Release Tracking Number / Current Status: 3-0025391 / RAO				
GASOLINE STATION FMR	***127-131 LINDEN ST***	***SW 1/2 - 1 (0.693 mi.)***	***92***	***323***
Release Tracking Number / Current Status: 3-0000942 / DEPNFA				
STAR MARKET	***TRAPELO RD***	***E 1/2 - 1 (0.711 mi.)***	***93***	***324***
Release Tracking Number / Current Status: 3-0003417 / RAO				
FORMER DRY CLEANER	***14 WARREN ST***	***S 1/2 - 1 (0.714 mi.)***	***M95***	***327***
Release Tracking Number / Current Status: 3-0029191 / RAO				
JIMMY KS DRYCLEANERS	***10 WARREN ST***	***S 1/2 - 1 (0.720 mi.)***	***M96***	***330***
Release Tracking Number / Current Status: 3-0003582 / RAO				
SHELL #72	***65 MAIN ST***	***S 1/2 - 1 (0.742 mi.)***	***M97***	***333***
Release Tracking Number / Current Status: 3-0028724 / DPS				
Release Tracking Number / Current Status: 3-0030040 / RAONR				
Release Tracking Number / Current Status: 3-0027973 / TMPS				
Release Tracking Number / Current Status: 3-0030176 / RAO				
WALGREENS 3251	***15-21 MAIN ST***	***S 1/2 - 1 (0.782 mi.)***	***98***	***349***
Release Tracking Number / Current Status: 3-0015699 / RAO				
AT INTERSECTION OF L	***MAIN ST***	***S 1/2 - 1 (0.786 mi.)***	***99***	***353***
Release Tracking Number / Current Status: 3-0023097 / RAO				
ORCHARD ST	***917 BELMONT ST***	***ESE 1/2 - 1 (0.802 mi.)***	***100***	***355***
Release Tracking Number / Current Status: 3-0018880 / RAO				
PETER FULLER DODGE I	***1000 PLEASANT ST***	***E 1/2 - 1 (0.805 mi.)***	***N101***	***356***
Release Tracking Number / Current Status: 3-0030513 / RAO				
WHITE STREET GARAGE	***43 WHITE ST***	***E 1/2 - 1 (0.807 mi.)***	***102***	***361***
Release Tracking Number / Current Status: 3-0026011 / RAO				
ASTON MARTIN OF NEW	***85 LINDEN ST***	***SW 1/2 - 1 (0.813 mi.)***	***103***	***364***

Release Tracking Number / Current Status: 3-0019801 / RAO

WAVERLY LANDSCAPE	***1010 PLEASANT ST***	***E 1/2 - 1 (0.830 mi.)***	***N104***	***365***

Release Tracking Number / Current Status: 3-0019570 / RAO
Release Tracking Number / Current Status: 3-0014403 / RAO
Release Tracking Number / Current Status: 3-0002296 / RAO

AA AUTO CLINIC	***600 MAIN ST***	***SSE 1/2 - 1 (0.894 mi.)***	***O105***	***374***

Release Tracking Number / Current Status: 3-0029267 / TIERII
Release Tracking Number / Current Status: 3-0032012 / RAO

NSTAR UTILITY POLE #	***NEAR 600 MAIN ST***	***SSE 1/2 - 1 (0.894 mi.)***	***O106***	***389***

Release Tracking Number / Current Status: 3-0024606 / RAO

RESIDENCE	***73 ELLISON PARK***	***WSW 1/2 - 1 (0.917 mi.)***	***107***	***390***

Release Tracking Number / Current Status: 3-0021082 / RAO

GROVE ST @ GORE ST	***GROVE ST @ GORE ST***	***SSW 1/2 - 1 (0.991 mi.)***	***110***	***403***

Release Tracking Number / Current Status: 3-0033188 / UNCLSS

NO LOCATION AID	***BCH AND MAPLE***	***E 1/2 - 1 (0.995 mi.)***	***111***	***404***

Release Tracking Number / Current Status: 3-0018823 / RAO

State and tribal leaking storage tank lists

LAST: The Leaking Aboveground Storage Tanks database

A review of the LAST list, as provided by EDR, and dated 01/08/2016 has revealed that there are 4 LAST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL PRODUCT DIST P	***313 WAVERLEY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B22***	***69***

Release Tracking Number / Current Status: 3-0003078 / RAO

BEAVER VISITEC INTER	***411 WAVERLEY OAKS RD***	***E 0 - 1/8 (0.103 mi.)***	***C28***	***112***

Release Tracking Number / Current Status: 3-0000454 / RAO

INDUSTRIAL PROPERTY	***70-74 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.223 mi.)***	***I68***	***231***

Release Tracking Number / Current Status: 3-0000501 / RAO

MANHOLE HALFWAT DOWN	***102 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.245 mi.)***	***J71***	***245***

Release Tracking Number / Current Status: 3-0013361 / RAO

LUST: Sites within the Releases Database that have a UST listed as its source.

A review of the LUST list, as provided by EDR, and dated 01/08/2016 has revealed that there are 10 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OFF RTE 60	***54 SHAWMUT ST***	***ENE 1/8 - 1/4 (0.143 mi.)***	***35***	***157***

Release Tracking Number / Current Status: 3-0011729 / RAO

WALTHAM PUBLIC SCHOO	***258 TRAPELO RD***	***N 1/4 - 1/2 (0.376 mi.)***	***76***	***261***

Release Tracking Number / Current Status: 3-0029265 / RAO

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL PRODUCT DIST P	***313 WAVERLEY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B22***	***69***

Release Tracking Number / Current Status: 3-0003078 / RAO

SHELL #73	***225 WAVERLY OAKS RD***	***SSW 1/8 - 1/4 (0.132 mi.)***	***D34***	***145***

Release Tracking Number / Current Status: 3-0027761 / RAO
Release Tracking Number / Current Status: 3-0029921 / RAONR

RIVER AUTO	***10 CLEMATIS AVE***	***SSE 1/8 - 1/4 (0.193 mi.)***	***G61***	***208***

Release Tracking Number / Current Status: 3-0010289 / RAO

UMASS AMHERST AGRICU	***240 BEAVER ST***	***WSW 1/4 - 1/2 (0.339 mi.)***	***74***	***252***

Release Tracking Number / Current Status: 3-0015883 / RAO

FITZGERALD SCHOOL	***BEAL RD***	***S 1/4 - 1/2 (0.348 mi.)***	***75***	***259***

Release Tracking Number / Current Status: 3-0019560 / RAO

BENTLEY COLLEGE	***400 BEAVER ST***	***WSW 1/4 - 1/2 (0.438 mi.)***	***77***	***265***

Release Tracking Number / Current Status: 3-0020750 / RAO

SYCAMORE AUTO SERVIC	***257 SYCAMORE ST***	***ESE 1/4 - 1/2 (0.482 mi.)***	***K79***	***271***

Release Tracking Number / Current Status: 3-0003507 / RAO

NO LOCATION AID	***1060 BELMONT ST***	***ESE 1/4 - 1/2 (0.495 mi.)***	***K81***	***275***

Release Tracking Number / Current Status: 3-0029073 / RAO

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's Summary Listing of all the Tanks Registered in the State of Massachusetts.

A review of the UST list, as provided by EDR, and dated 01/29/2016 has revealed that there are 2 UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUFFY ASSOCIATES	***313 WAVERLY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B23***	***91***

Tank Status: Tank Removed
Facility Id: 11240

SHELL #73	***225 WAVERLY OAKS RD***	***SSW 1/8 - 1/4 (0.132 mi.)***	***D34***	***145***

Tank Status: Tank Removed
Tank Status: In Use
Facility Id: 11216

State and tribal institutional control / engineering control registries

INST CONTROL: Activity and Use Limitations establish limits and conditions on the future use of contaminated property, and therefore allow cleanups to be tailored to these uses.

A review of the INST CONTROL list, as provided by EDR, and dated 01/08/2016 has revealed that there are 3 INST CONTROL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FMR HEATING PLANT SO	***333 FOREST ST***	***NW 1/4 - 1/2 (0.477 mi.)***	***78***	***267***

Release Tracking Number: 3-0022303

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL PRODUCT DIST P	***313 WAVERLEY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B22***	***69***

Release Tracking Number: 3-0003078

GEORGE MORE FACILITY	***110 BEAVER ST***	***S 1/8 - 1/4 (0.172 mi.)***	***E39***	***164***

Release Tracking Number: 3-0017779
Release Tracking Number: 3-0018647
Release Tracking Number: 3-0002923

State and tribal Brownfields sites

BROWNFIELDS: Under Massachusetts law, M.G.L. c. 21E is the statute that governs the cleanup of releases of oil and/or hazardous material to the environment. The Brownfields Act of 1998 amended M.G.L. c. 21E by establishing significant liability relief and financial incentives to spur the redevelopment of brownfields, while ensuring that the Commonwealth's environmental standards are met. Most brownfields are redeveloped with the benefit of liability protections that operate automatically under M.G.L. c. 21E.

A review of the BROWNFIELDS list, as provided by EDR, and dated 12/31/2015 has revealed that there is 1 BROWNFIELDS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BEAVER VISITEC INTER	***411 WAVERLEY OAKS RD***	***E 0 - 1/8 (0.103 mi.)***	***C28***	***112***

MCP Status: RAO
RTN: 3-0000454

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 12/22/2015 has revealed that there is 1 US BROWNFIELDS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
1072 BELMONT STREET	***1072 BELMONT STREET***	***ESE 1/4 - 1/2 (0.484 mi.)***	***K80***	***272***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/09/2015 has revealed that

there are 17 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
DUFFY ASSOCIATES	***313 WAVERLY OAKS RD***	***SE 0 - 1/8 (0.007 mi.)***	***B23***	***91***
PEIRCE BROTHERS OIL	***329 WAVERLEY OAKS RD***	***SE 0 - 1/8 (0.008 mi.)***	***B24***	***99***
COMPUTER DESIGN & AP	411 WAVERLEY OAKS RD	E 0 - 1/8 (0.103 mi.)	C31	141
MOTIVA ENTERPRISES L	225 WAVERLY OAKS RD	SSW 1/8 - 1/4 (0.132 mi.)	D32	142
XEROX REPRODUCTION C	***135 BEAVER ST***	***S 1/8 - 1/4 (0.163 mi.)***	***E37***	***161***
MOORE GEORGE W INC	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E43	178
GENOME THERAPEUTIC C	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E46	180
ANGIO MEDICAL CORP	100 BEAVER ST @ SHRI	S 1/8 - 1/4 (0.176 mi.)	E47	182
KALA PHARMACEUTICALS	***100 BEAVER ST***	***S 1/8 - 1/4 (0.176 mi.)***	***E48***	***184***
PROTEIN FOREST INC	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E50	190
AVILA THERAPEUTICS I	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E51	191
LEXICON INC	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E52	193
ELECTRO PAINTERS INC	***97 BEAVER ST***	***S 1/8 - 1/4 (0.180 mi.)***	***F55***	***201***
THORNTON ASSOCIATES	***87 BEAVER ST***	***SSE 1/8 - 1/4 (0.190 mi.)***	***F59***	***205***
KANS ENGINEERING & M	***83 BREAVER ST***	***SSE 1/8 - 1/4 (0.192 mi.)***	***G60***	***207***
CERAMICS GRINDING CO	***74 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.226 mi.)***	***I69***	***240***
LIGHT METAL PLATERS	96 CLEMATIS AVE	SE 1/8 - 1/4 (0.241 mi.)	J70	242

HW GEN: Permanent generator identification numbers for all Massachusetts generators of hazardous waste and waste oil that have registered with or notified MassDEP of their hazardous waste activities.

A review of the HW GEN list, as provided by EDR, and dated 03/28/2016 has revealed that there are 17 HW GEN sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NO LOCATION AID	***411 WAVERLY OAKS ROA***	***E 0 - 1/8 (0.103 mi.)***	***C27***	***107***
State Generator Status: VQG-MA				
EPA Id: MV6178919400				
EPA Id: MV7814190232				
BEAVER VISITEC INTER	***411 WAVERLEY OAKS RD***	***E 0 - 1/8 (0.103 mi.)***	***C28***	***112***
State Generator Status: LQG-MA				
EPA Id: MAD047058243				
EPA Id: MAD019685577				
EPA Id: MV7817888777				
SHELL #73	***225 WAVERLY OAKS RD***	***SSW 1/8 - 1/4 (0.132 mi.)***	***D34***	***145***
State Generator Status: VQG-MA				
EPA Id: MAC300011046				
INTERLEUKIN GENETICS	135 BEAVER ST	S 1/8 - 1/4 (0.163 mi.)	E38	164
EPA Id: MV7813980700				
AZKO NOBEL COATINGS	***117 BEAVER ST***	***S 1/8 - 1/4 (0.174 mi.)***	***E40***	***173***
State Generator Status: VQG-MA				
EPA Id: MV7816472400				
EPA Id: MAC300101565				
DESCARTES THERAPEUTI	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E42	177
EPA Id: MV7814194000				
X CHEM INC	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E44	179
State Generator Status: VQG-MA				
State Generator Status: SQG-MA				

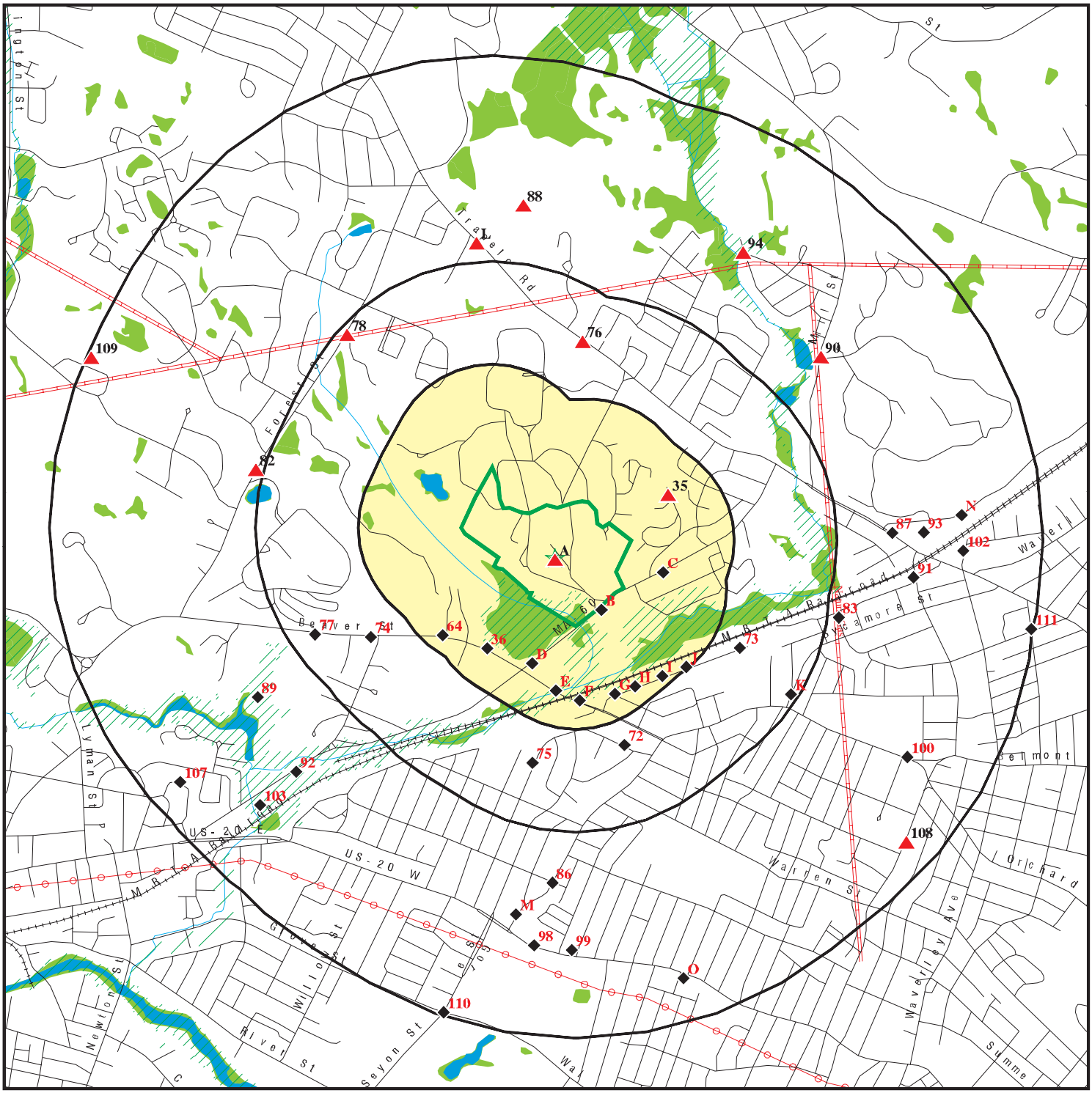
EPA Id: MAD985269836 EPA Id: MAC300012341 EPA Id: MAC300100252				
X BODY State Generator Status: VQG-MA EPA Id: MV7814196990	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E45	179
ADNEXUS, A BRISTOL-M State Generator Status: VQG-MA EPA Id: MV7813142900 EPA Id: MV7819965252	***100 BEAVER STREET***	***S 1/8 - 1/4 (0.176 mi.)***	***E49***	***187***
EPITOME BIOSYSTEMS I State Generator Status: VQG-MA EPA Id: MV7814781418	100 BEAVER ST	S 1/8 - 1/4 (0.176 mi.)	E53	195
CERAMEM CORPORATION EPA Id: MAR000511709	12 CLEMATIS AVE	SSE 1/8 - 1/4 (0.189 mi.)	G56	202
CITIUS PRINTING & GR EPA Id: MV7815475550	20 CLEMATIS AVE	SSE 1/8 - 1/4 (0.190 mi.)	G58	205
RIVER AUTO State Generator Status: SQG-MA EPA Id: MV7818932777	***10 CLEMATIS AVE***	***SSE 1/8 - 1/4 (0.193 mi.)***	***G61***	***208***
CLEMATIS MACHINE EPA Id: MV7818940777	42 CLEMATIS AVE	SSE 1/8 - 1/4 (0.204 mi.)	H63	212
GIRL SCOUTS OF EASTE EPA Id: MV6174388536	265 BEAVER ST	SW 1/8 - 1/4 (0.210 mi.)	64	212
GREEN JACKET INC State Generator Status: SQG-MA EPA Id: MV7818948807	62 CLEMATIS AVE	SE 1/8 - 1/4 (0.217 mi.)	I66	221
LIGHT METAL PLATERS State Generator Status: SQG-MA EPA Id: MAD001013515	***70 CLEMATIS AVE***	***SE 1/8 - 1/4 (0.223 mi.)***	***I67***	***221***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

Site Name	Database(s)
CUSHING VILLAGE	SHWS, RELEASE
BRIGHTON ST. INTERSECTION	SHWS, RELEASE
SUBSURFACE PTC	SHWS, RELEASE
OUTFALL #12	SHWS, RELEASE
PARCEL # 807 1B 1	SHWS, RELEASE
NO LOCATION AID	SHWS, INST CONTROL, RELEASE
PARCEL # 807 1B 1	SHWS, INST CONTROL, RELEASE

OVERVIEW MAP - 4607751.2S

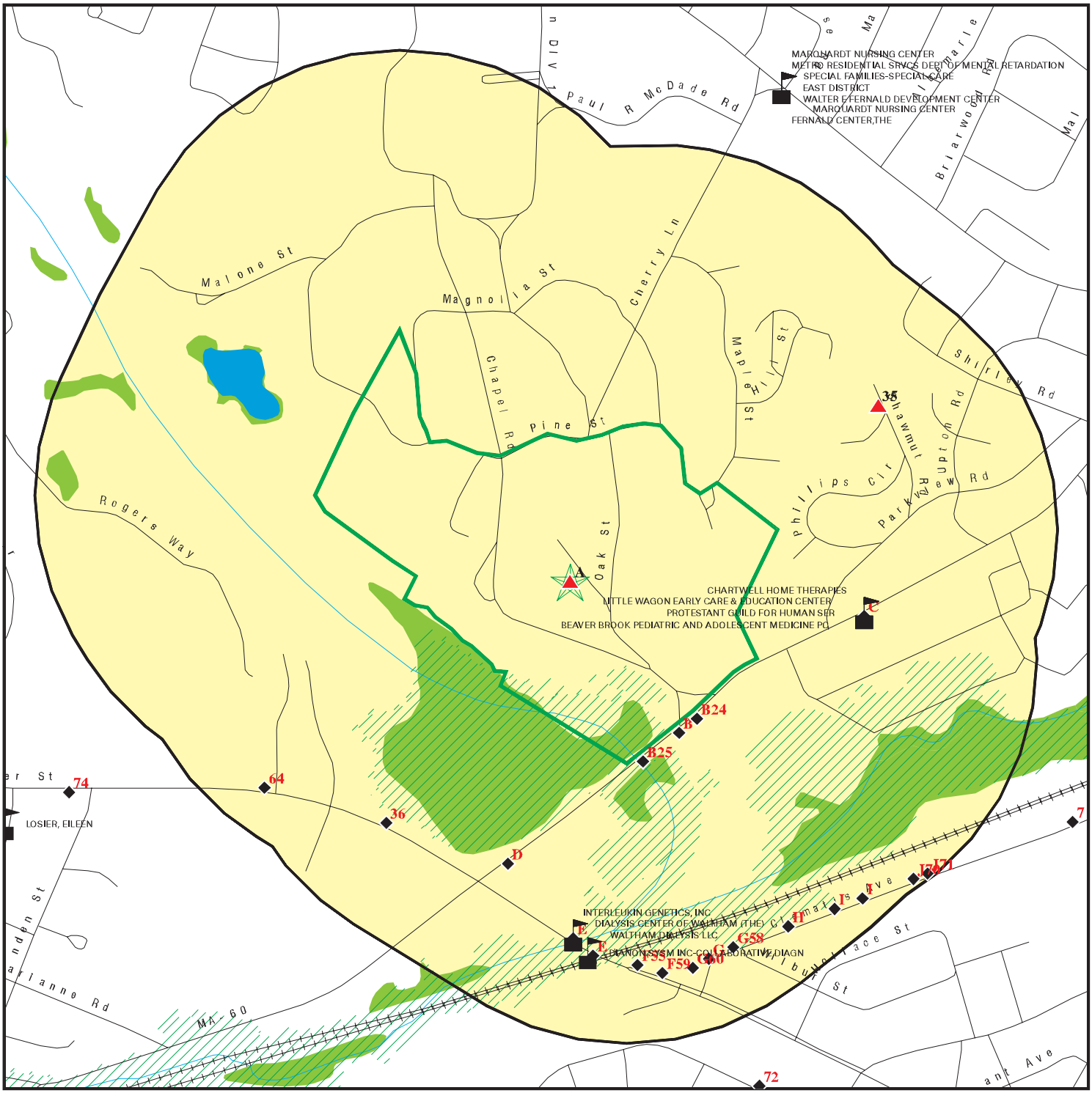


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	South Section-Former Fernald Development Center	CLIENT:	CDW Consultants Inc.
ADDRESS:	200 Trapelo Road Waltham MA 02452	CONTACT:	Lauren Konetzny
LAT/LONG:	42.387642 / 71.208201	INQUIRY #:	4607751.2s
		DATE:	May 02, 2016 5:35 pm

DETAIL MAP - 4607751.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Critical Environmental Concern

0 1/16 1/8 1/4 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	South Section-Former Fernald Development Center	CLIENT:	CDW Consultants Inc.
ADDRESS:	200 Trapelo Road Waltham MA 02452	CONTACT:	Lauren Konetzny
LAT/LONG:	42.387642 / 71.208201	INQUIRY #:	4607751.2s
		DATE:	May 02, 2016 5:35 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		1	0	0	NR	NR	1
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250	1	1	2	NR	NR	NR	4
RCRA-CESQG	0.250		1	3	NR	NR	NR	4
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP	2	NR	NR	NR	NR	NR	2
State- and tribal - equivalent CERCLIS								
SHWS	1.000	2	4	7	6	30	NR	49
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LAST	0.500		2	2	0	NR	NR	4
LUST	0.500	1	1	3	6	NR	NR	11
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250	1	1	1	NR	NR	NR	3
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
INST CONTROL	0.500	1	1	1	1	NR	NR	4
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		1	0	0	NR	NR	1
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	1	NR	NR	1
Local Lists of Landfill / Solid Waste Disposal Sites								
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP	1	NR	NR	NR	NR	NR	1
RELEASE	TP	2	NR	NR	NR	NR	NR	2
SPILLS 90	TP		NR	NR	NR	NR	NR	0
SPILLS 80	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		3	14	NR	NR	NR	17
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP	1	NR	NR	NR	NR	NR	1
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP	2	NR	NR	NR	NR	NR	2
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP	1	NR	NR	NR	NR	NR	1
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP	1	NR	NR	NR	NR	NR	1
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP	1	NR	NR	NR	NR	NR	1
AIRS	TP	1	NR	NR	NR	NR	NR	1
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP	1	NR	NR	NR	NR	NR	1
GWDP	TP		NR	NR	NR	NR	NR	0
HW GEN	0.250	1	2	15	NR	NR	NR	18
LEAD	TP	2	NR	NR	NR	NR	NR	2
MERCURY	0.500		0	0	0	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
TIER 2	TP		NR	NR	NR	NR	NR	0
TSD	0.500		0	0	0	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ECHO	TP	1	NR	NR	NR	NR	NR	1

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS	TP	5	NR	NR	NR	NR	NR	5

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LUST	TP	5	NR	NR	NR	NR	NR	5
- Totals --		33	18	48	14	30	0	143

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

APPENDIX D

Select Pages of March 2005 SPPC Plan

TABLE 1 - TOTAL PETROLEUM PRODUCT BULK STORAGE

Tank Location	Tank No.	Cap. (gal.)	Content	Type	Material	Corrosion Protection	Secondary Contain.	Installed
Shriver Center	1U	750	Diesel	UST	Steel	No	No	1970
Farrell Hall	2U	1,000	Diesel	UST	Steel	No	No	1980
Greene Unit	3U	548	Diesel	UST	Fiberglass	No	No	1981
Withington*	8U	500	Gasoline	UST	Steel	No	No	1955
ICF 21	4U	500	No. 2	UST	Steel	No	No	1984
ICF 22	5U	500	No. 2	UST	Steel	No	No	1984
ICF 23	6U	500	No. 2	UST	Steel	No	No	1984
ICF 24	7U	500	No. 2	UST	Steel	No	No	1984
Power Plant	9U	22,000	No. 6	UST	Steel	No	No	Pre-1959
Power Plant	10U	24,000	No. 6	UST	Steel	No	No	Pre-1959
Power Plant	11U	27,000	No. 6	UST	Steel	No	No	Pre-1959
Power Plant*	12U	NI	Diesel	UST	Steel	No	No	Pre-1978
Power Plant*	13U	NI	Gasoline	UST	Steel	No	No	Pre-1978
Farm & Grounds	14U	4,000	Gasoline	UST	Steel	No	No	Pre-1978
Farm & Grounds	15U	4,000	Gasoline	UST	Steel	No	No	Pre-1978
Site 7	16U	10,000	No. 2	UST	Fiberglass	No	No	1984
Site 5	17U	10,000	No. 2	UST	Fiberglass	No	No	1984
Thom	18U	1,500	Diesel	UST	Steel-Resin	No	No	1985
Howe Hall	19U	NI	Diesel	UST	NI	No	No	1981
Activity Center	20U	4,000	No. 2	UST	Fiberglass	No	No	1981
Power Plant*	1A	275	Empty	AST	Steel	No	No	1975

TABLE 1 - TOTAL PETROLEUM PRODUCT BULK STORAGE								
Farm & Grounds	2A	275	Diesel	AST	Steel	No	No	1975
Farm & Grounds	3A	50	Diesel	AST	Steel	No	No	1975
Day Care	4A	275	No. 2	AST	Steel	No	No	1975
Volunteer Center	5A	550	No. 2	AST	Steel	No	No	1975
Wallace - Generator	6A	100	Diesel	AST	Steel	No	No	1984
Sequin - Generator	7A	100	Diesel	AST	Steel	No	No	1984
Cottage 11 - Generator	8A	85	Diesel	AST	Steel	No	No	1995
Pearlman Center	9A	5,000	Diesel	AST	Steel	No	Yes	1992
Winn - Generator	10A	30	Diesel	AST	Steel	No	No	1980
Cottage 17	11A	275	No. 2	AST	Steel	No	No	1975
Cottage 18	12A	275	No. 2	AST	Steel	No	No	1975
Garage	13A	2-275	Used Motor Oil	AST	Steel	No	Yes	1980
Greene	14A	80	Diesel	AST	Steel	No	No	1981
Howe Hall	15A	50	Diesel	AST	Steel	No	No	1981
Thom	16A	80	Diesel	AST	Steel	No	No	1985

Notes:
1. Tank location and number corresponds to those on the attached Site Plan (Figure 2).
2. UST: Underground storage tank.
3. AST: Aboveground storage tank.
4. NI: No information exists.

USTs No. 1, 2, and 3 provide fuel for emergency generators. USTs No. 4, 5, 6, and 7 provide heating fuel for residential buildings. UST No. 8 is an out of service gasoline tank. USTs No. 9, 10, and 11 provide fuel at the power plant to operate the boilers which produce steam for heat. USTs No. 12 and 13 are out of service diesel and gasoline tanks, respectively. USTs No. 14 and 15 provide gasoline for facility vehicles. USTs 16 and 17 provide heating fuel for Sites 5 and 7. USTs No. 18 and 19 provide fuel for emergency generators. UST No. 20 provides heating fuel for the activity center. AST No. 1 is out of service. ASTs No. 2 and 3 provide diesel fuel for farm and grounds equipment. ASTs No. 4 and 5 provide heating fuel for the Day Care and Volunteer Centers. ASTs No. 6, 7, and 8, provide diesel fuel for day-tank generators. AST No. 9 provides diesel fuel for the Pearlman Center emergency generator. AST No. 10 provides diesel fuel for a portable generator. ASTs No. 11 and 12 provide heating fuel for Cottages 17 and 18. AST No. 13 provides storage for waste oil at the Garage. ASTs No. 14, 15, and 16 provide diesel fuel for day-tank generators.

TABLE 2 - TOTAL PETROLEUM PRODUCT BULK STORAGE
FDC TRANSFORMERS

Transformer Location	Transformer No.	Cap. (gal.)	Content	Type	Material	Corrosion Protection	Secondary Contain.	Installed
Farm & Grounds	T1	15	Oil	Pole	Steel	Painted	No	NI
Chapel	T2	25	Oil	Pole	Steel	Painted	No	NI
Maintenance	T3	35	Oil	Pole	Steel	Painted	No	NI
Belmont	T4-T6	70	Oil	Pole	Steel	Painted	No	NI
Cottage 18	T7	25	Oil	Pole	Steel	Painted	No	NI
Tarbell	T8	219	Oil	Pad	Steel	Painted	No	NI
Sequin	T9	229	Oil	Pad	Steel	Painted	No	NI
Dolan	T10	219	Oil	Pad	Steel	Painted	No	NI
Farrell Hall	T11	229	Oil	Pad	Steel	Painted	No	NI
Greene	T12	401	Oil	Pad	Steel	Painted	No	NI
Site 5	T13	350	Oil	Pad	Steel	Painted	No	NI
Training/ Activity Center	T14	219	Oil	Pad	Steel	Painted	No	NI
Brookside	T15	300	Oil	Pad	Steel	Painted	No	NI
North Building	T16	0	Oil	Pad	Steel	Painted	No	NI
Withington	T17	370	Oil	Pad	Steel	Painted	No	NI

TABLE 2 - TOTAL PETROLEUM PRODUCT BULK STORAGE FDC TRANSFORMERS								
Manual	T18	300	Oil	Pad	Steel	Painted	No	NI
School House	T19	400	Oil	Pad	Steel	Painted	No	NI
South Nurse	T20	213	Oil	Pad	Steel	Painted	No	NI
Wallace	T21	213	Oil	Pad	Steel	Painted	No	NI
Farm & Grounds	T22-T23**	800	Oil	Pad	Steel	Painted	No	NI
Power Plant	T24-T26	30	Oil	Pad	Steel	Painted	No	NI
Building 14*	T27-T35	136	Oil	Pad	Steel	Painted	No	NI
Shriver*	T36-T47	13	Oil	Wall	Steel	Painted	No	NI
Kelly Hall*	T48-T50	3	Oil	Wall	Steel	Painted	No	NI
Waverly Hall*	T51-T53	3	Oil	Wall	Steel	Painted	No	NI
Farm & Grounds	T54-T56	3	Oil	Pad	Steel	Painted	No	NI
Main Transformer Pad	T57	1,090	Oil	NI	Steel	Painted	No	NI
Building 55	T58-T61	220[1]	Oil	Pad	Steel	Painted	No	NI
Building 14	T62-T64	NA	Oil	Pad	Steel	Painted	No	NI
Power Plant	T65-T67	NA	Oil	Pad	Steel	Painted	No	NI
Malone	T68	200	Oil	Pad	Steel	Painted	No	NI
Cottages 3-13	T69-T73	1,540	Oil	Pad	Steel	Painted	No	NI
Woodside	T74	NA	Oil	Pad	Steel	Painted	No	NI
Site 7	T75	NA	Oil	Pad	Steel	Painted	No	NI
East Dowling	T76	151	Oil	Pad	Steel	Painted	No	NI
Howe Hall	T77	NA	Oil	Pad	Steel	Painted	No	NI
New Service Bldg. (Pearlman)	T78	260	Oil	Pad	Steel	Painted	No	NI
Cerc*	T79-T81	NA	Oil	Wall	Steel	Painted	No	NI
Kelly**	T82-T86	855	Oil	NI	Steel	Painted	No	NI

Notes:

NA	=	Not Available.
NI	=	No Information.
*	=	Electrical switches containing approximately 1 gallon of oil are not shown on the site plan.
**	=	Out of service.
1	=	Volume of T58 is 220-gallons; volume of T59-61 not available.
Pad	=	Pad-mounted.
Pole	=	Pole-mounted.
Wall	=	Wall-mounted.

There are 86 electrical transformers and/or electrical switches located at the facility. The locations of the transformers are shown on Figure 2. Electrical switches contain approximately one gallon of oil and are located in Building 14, the Shriver building, Waverly, CERC, and Kelly Hall. Please note that electrical switches have not been identified on Figure 2; however, they are typically wall-mounted units located in the basements of the buildings.

Listed below are spill scenarios which have the greatest potential for a significant release or spill of product. Possible spill scenarios include leaking ASTs or USTs and spillage during fuel delivery, loading or unloading.

TABLE 3 - POTENTIAL SPILLS

Potential Spill Source	Type of Failure	Quantity (gal)	Direction of Flow	Secondary Containment
Power Plant USTs	Leak/rupture	27,000	Southwest approx. 10' to Clematis Brook via groundwater	No
Fuel Delivery Tank	Tank overfill/ rupture	Maximum Delivery Truck volume = 8,000	Southwest approx. 10' to Clematis Brook via overland flow	No
Site 5/Site 7	Leak/rupture	10,000	West approx. 200' to unnamed stream via groundwater	No
Fuel Delivery Tank	Tank overfill/ rupture	Maximum Delivery Truck Volume = 8,000	Potential discharge to Clematis Brook via storm drain system	No
Pearlman Building Fuel Delivery Tank	Tank overfill/ rupture	Maximum Delivery Truck Volume = 8,000	Potential discharge to Clematis Brook via storm drain system	No

Notes:

1. UST: Underground Storage Tank.
2. AST: Aboveground Storage Tank.
3. Number of tanks, total volume.

2.3 Containment or Diversionary Structures

Pearlman Building - The Pearlman building contains a 5,000-gallon diesel AST (AST #9). Secondary containment for the AST consists of a concrete block structure surrounding the AST. The floor of the containment area is concrete. The containment capacity is approximately 100 percent.

Garage - Two 275-gallon waste oil ASTs (AST #13) and one 55-gallon drum containing waste oil are situated on a concrete pad within a concrete block secondary containment structure. The secondary containment appears capable of retaining greater than 100 percent of the volume of each AST and drum.

Volunteer Center and Day Care - 275-gallon fuel oil ASTs #4 and #5 are located within the concrete basements of the Volunteer Center and Day Care Center, respectively. In the event of a rupture, petroleum product would appear to be contained within the buildings' respective basements.

None of the other USTs or ASTs are provided with secondary containment or diversionary structures. Potential spills from refueling activities would be directed to the on-site catch basin system, bituminous asphalt or to gravel and grassy areas. Fuel entering the storm water drainage system would be directed to Clematis Brook at the southwestern boundary of the site.

Transformers - There are approximately 86 electrical transformers and/or electrical switches located on the Site. Electrical transformers located within Building #14 and the Power Plant are situated on concrete pads and enclosed by the masonry walls of the building; however, what appeared to be floor drains were observed in each building. The point of discharge of these floor drains is unknown. The remainder of the transformers and switches have no secondary containment or associated diversionary structures as they are either mounted on a telephone pole, a concrete pad or a building wall.

3.0 Operating Information

3.1 Facility Drainage

Stormwater Drainage Control - Stormwater runoff from paved areas of the Site is generally directed to catch basins which discharge to Clematis Brook and ultimately to Beaver Brook. Clematis Brook is located approximately 200 feet southwest of the Site at its closest point. According to Mr. Maurice O'Connell the Plant Superintendent the discharge point of several catch basins observed during the Site inspection were either unknown or discharge directly to the subsurface soils.

3.2 Bulk Storage Tanks

Other Storage of Oil - Oil and hazardous materials used for the boiler system and equipment maintenance are stored on the concrete floor of the Power Plant Building. Materials observed during a Site visit on May 23, 1996 were:

(9) 55-gallon drums of sludge cutter
(4) 55-gallon drums of steam condensate treatment
(2) 55-gallon drums of #2 oil
(7) 55-gallon drums of caustic soda
(2) 55-gallon drums of turbine oil

Materials observed at the garage included the following:

(1) 16-gallon drum of grease
(1) 16-gallon drum of parts cleaner
(5) 1-gallon containers of battery acid
Several cases of motor oil and antifreeze

3.3 Transformers

Of the 84 electrical transformers and switches on the Site Transformers 3, 4, 5, 6, 7, 53, 57-64, and 67 contain PCBs at concentrations of 50 parts per million (ppm) or greater.

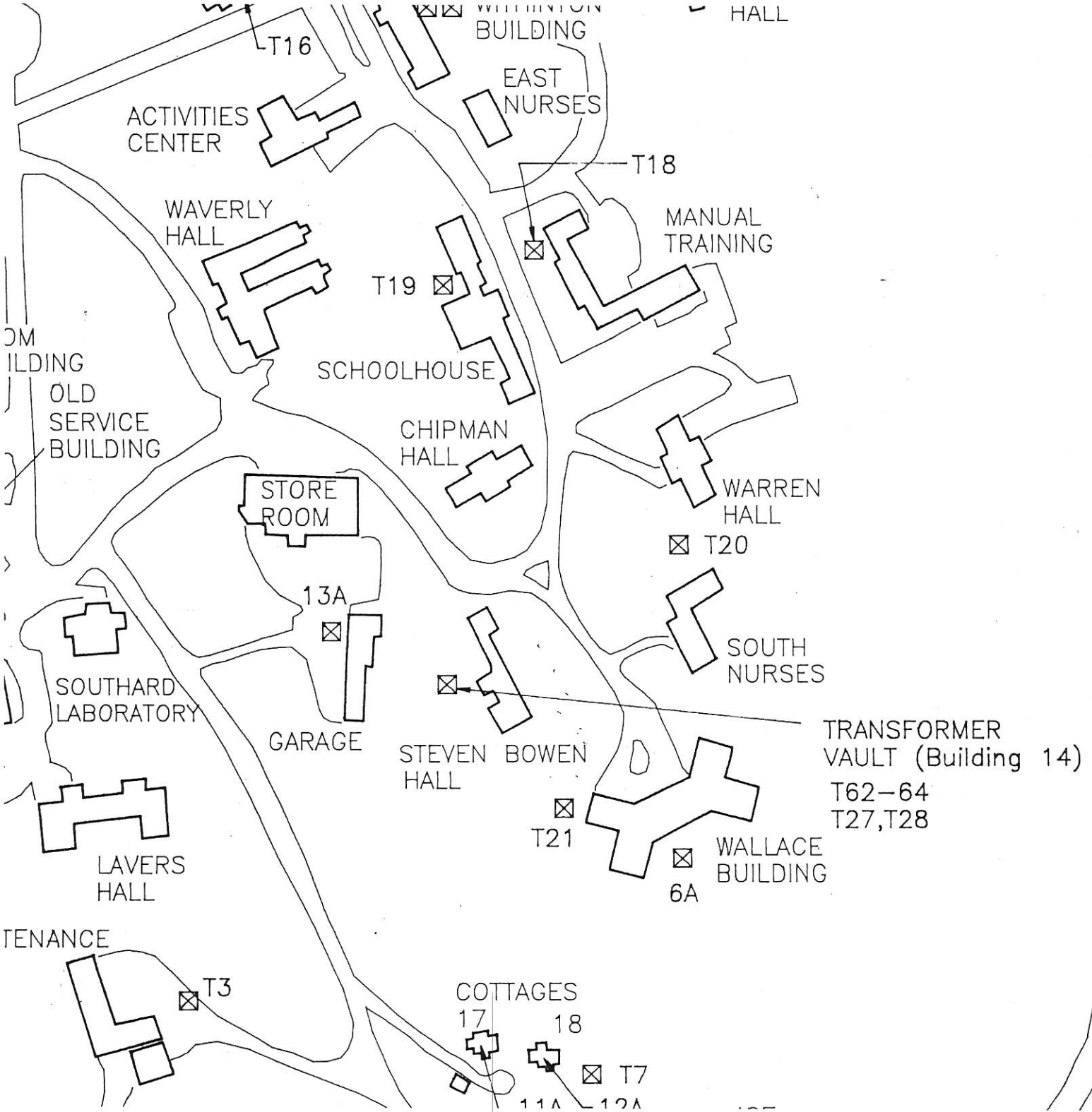
3.4 Facility Transfer Operations, Pumping and In-Plant Processes

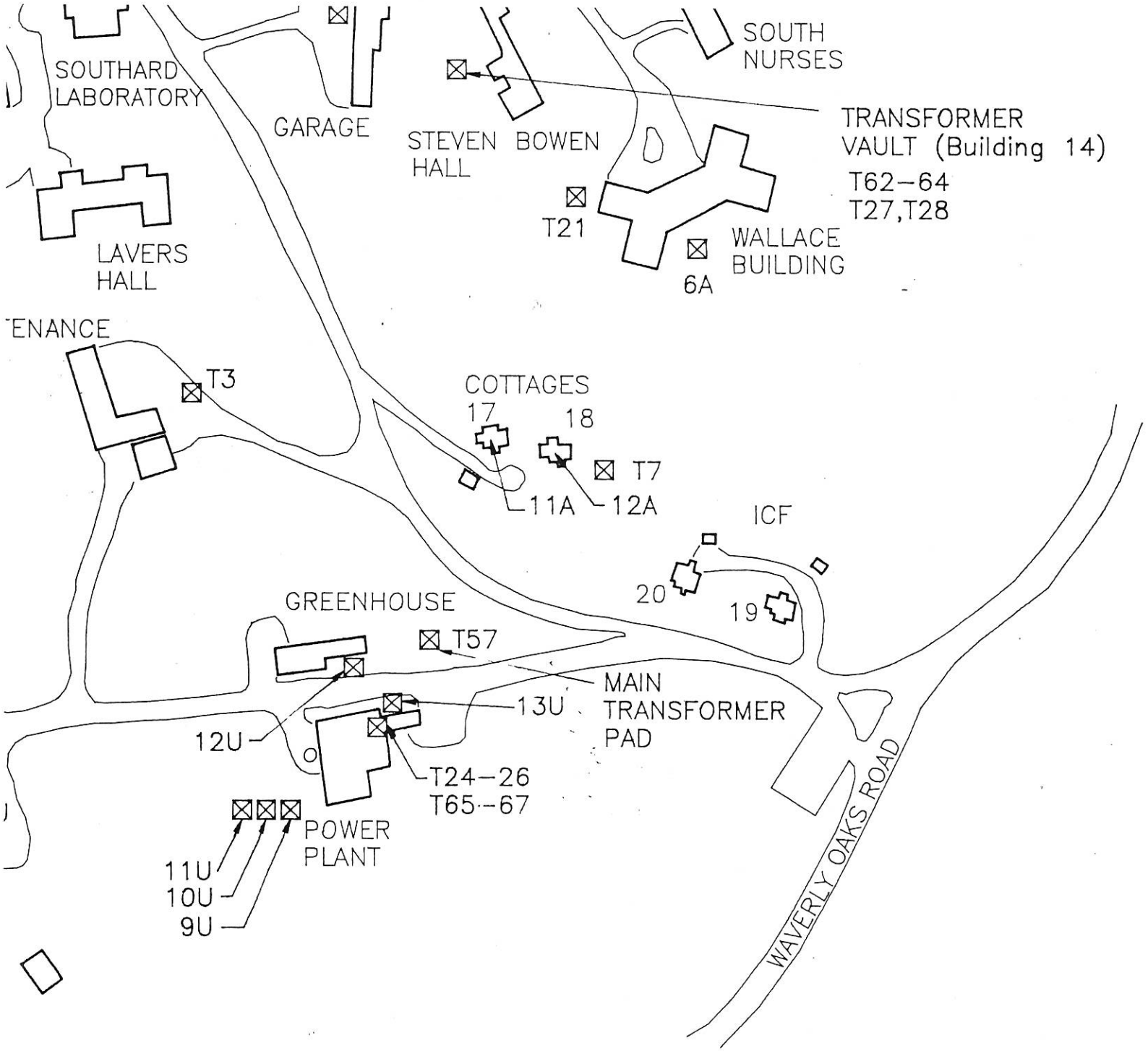
Buried Pipelines - Buried pipeline locations and materials can not be determined due to the ages of the tanks and/or the lack of available information. Fuel feed lines are buried and are exposed within the buildings' basements.

Pipeline Terminal Connections - Pipeline connections for USTs and ASTs are capped when not in use.

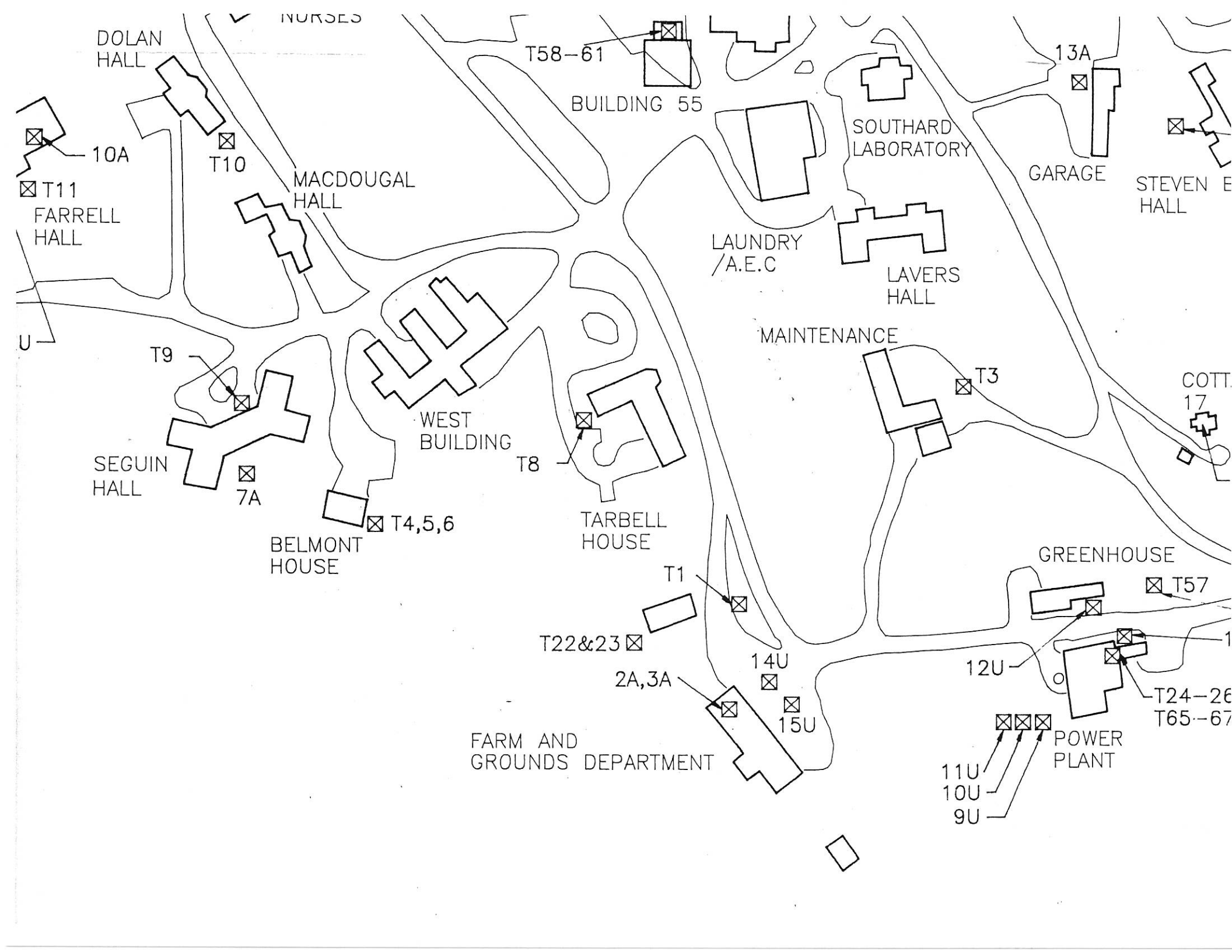
Pipe Supports - Aboveground vent and fill pipes appeared to be sufficiently supported.

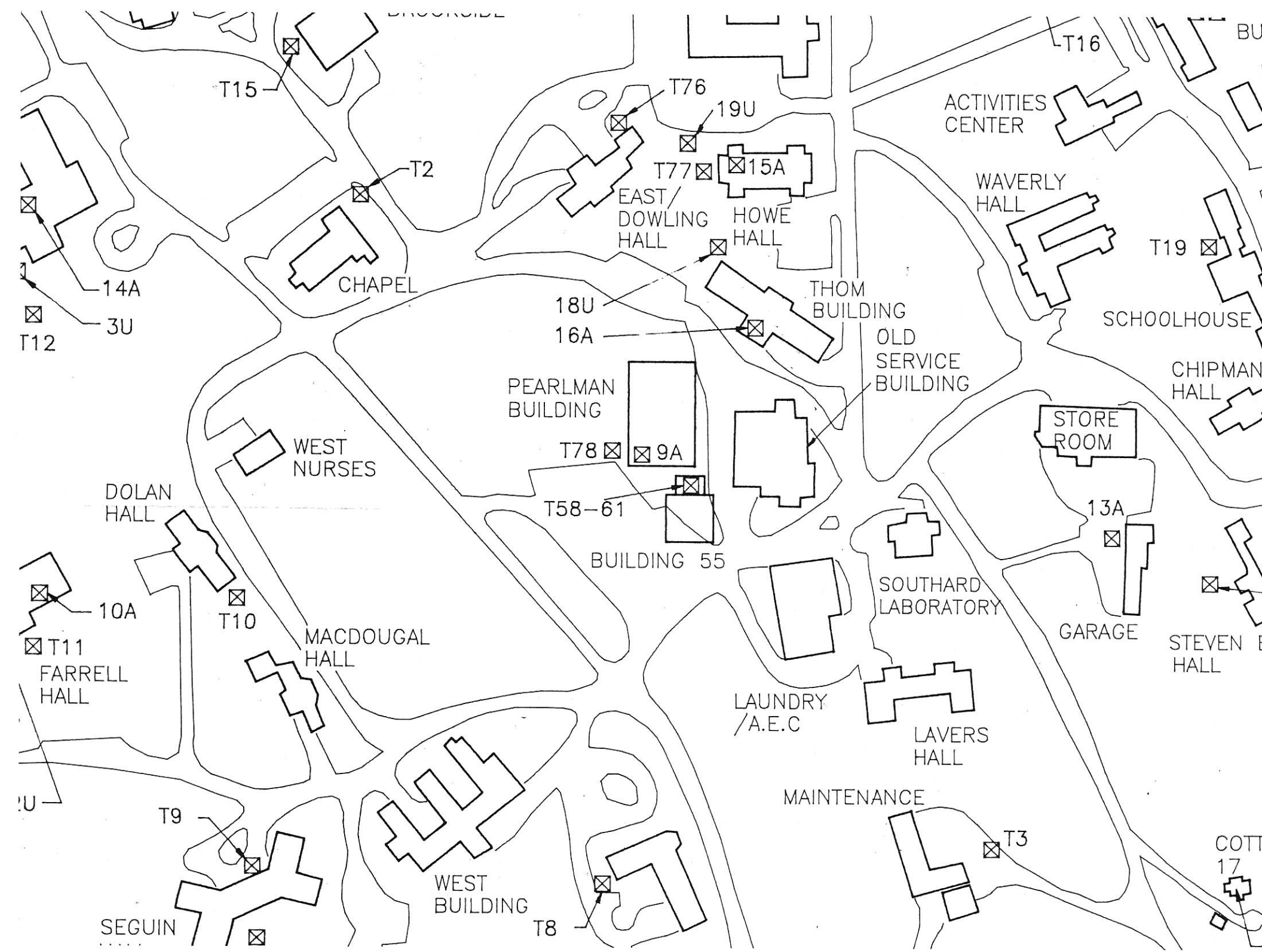
Aboveground Pipeline Inspection - All exterior piping shall be inspected by facility personnel on a periodic basis at least monthly. Scheduled maintenance inspections shall be conducted in accordance with Section 3.6.


T16
BUILDING
HALL
EAST
NURSES
ACTIVITIES
CENTER
T18
WAVERLY
HALL
MANUAL
TRAINING
T19
SCHOOLHOUSE
OLD
SERVICE
BUILDING
CHIPMAN
HALL
STORE
ROOM
WARREN
HALL
T20
13A
SOUTH
NURSES
SOUTHARD
LABORATORY
GARAGE
STEVEN BOWEN
HALL
TRANSFORMER
VAULT (Building 14)
T62–64
T27,T28
T21
WALLACE
BUILDING
6A
LAVERS
HALL
T3
COTTAGES
17
18
T7



Date	Ch'k'd
Designed by:	
Drawn by:	
Checked by:	
Approved by:	


DOLAN HALL
T58–61
BUILDING 55
13A
SOUTHARD LABORATORY
GARAGE
STEVEN E HALL
10A
T10
T11
FARRELL HALL
MACDOUGAL HALL
LAUNDRY /A.E.C
LAVERS HALL
MAINTENANCE
T3
T9
WEST BUILDING
T8
SEGUIN HALL
7A
T4,5,6
BELMONT HOUSE
TARBELL HOUSE
GREENHOUSE
T57
T1
T22&23
14U
12U
2A,3A
15U
T24–26
T65–67
FARM AND GROUNDS DEPARTMENT
POWER PLANT
11U
10U
9U


T15
T76
19U
T16
ACTIVITIES CENTER
T2
T77
15A
EAST/ DOWLING HALL
HOWE HALL
WAVERLY HALL
T19
14A
3U
T12
CHAPEL
18U
16A
THOM BUILDING
OLD SERVICE BUILDING
SCHOOLHOUSE
CHIPMAN HALL
PEARLMAN BUILDING
T78
9A
STORE ROOM
WEST NURSES
DOLAN HALL
T58–61
13A
BUILDING 55
SOUTHARD LABORATORY
10A
T10
T11
FARRELL HALL
MACDOUGAL HALL
GARAGE
STEVEN HALL
LAUNDRY /A.E.C
LAVERS HALL
MAINTENANCE
T9
T3
WEST BUILDING
T8
SEGUIN

APPENDIX E

EDR Certified Sanborn Maps Report

South Section-Former Fernald Development Center
200 Trapelo Road
Waltham, MA 02452

Inquiry Number: 4607751.3
May 06, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

05/06/16

Site Name:

South Section-Former Fernald
200 Trapelo Road
Waltham, MA 02452
EDR Inquiry # 4607751.3

Client Name:

CDW Consultants Inc.
40 Speen Street
Framingham, MA 01701
Contact: Lauren Konetzny

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Certified Sanborn Results:

Certification # 8E4F-4C82-B011

PO # 1713

Project SMMA Waltham High School

Maps Provided:

1972
1950
1918
1911
1903
1897

Sanborn® Library search results

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The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

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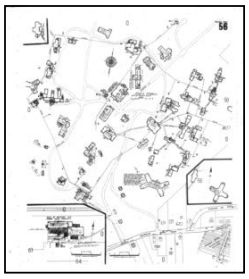
Sanborn Sheet Key

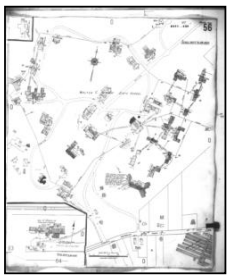
This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1972 Source Sheets



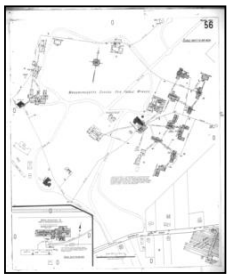
Volume 1, Sheet 56
1972

1950 Source Sheets



Volume 1, Sheet 56
1950

1918 Source Sheets



Volume 1, Sheet 56
1918

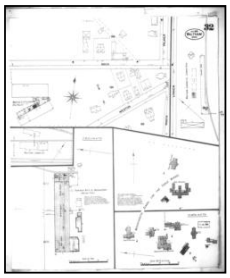
1911 Source Sheets

Volume 1, Sheet 40
1911

Sanborn Sheet Key

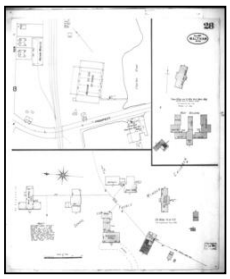
This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1903 Source Sheets



Volume 1, Sheet 32
1903

1897 Source Sheets



Volume 1, Sheet 28
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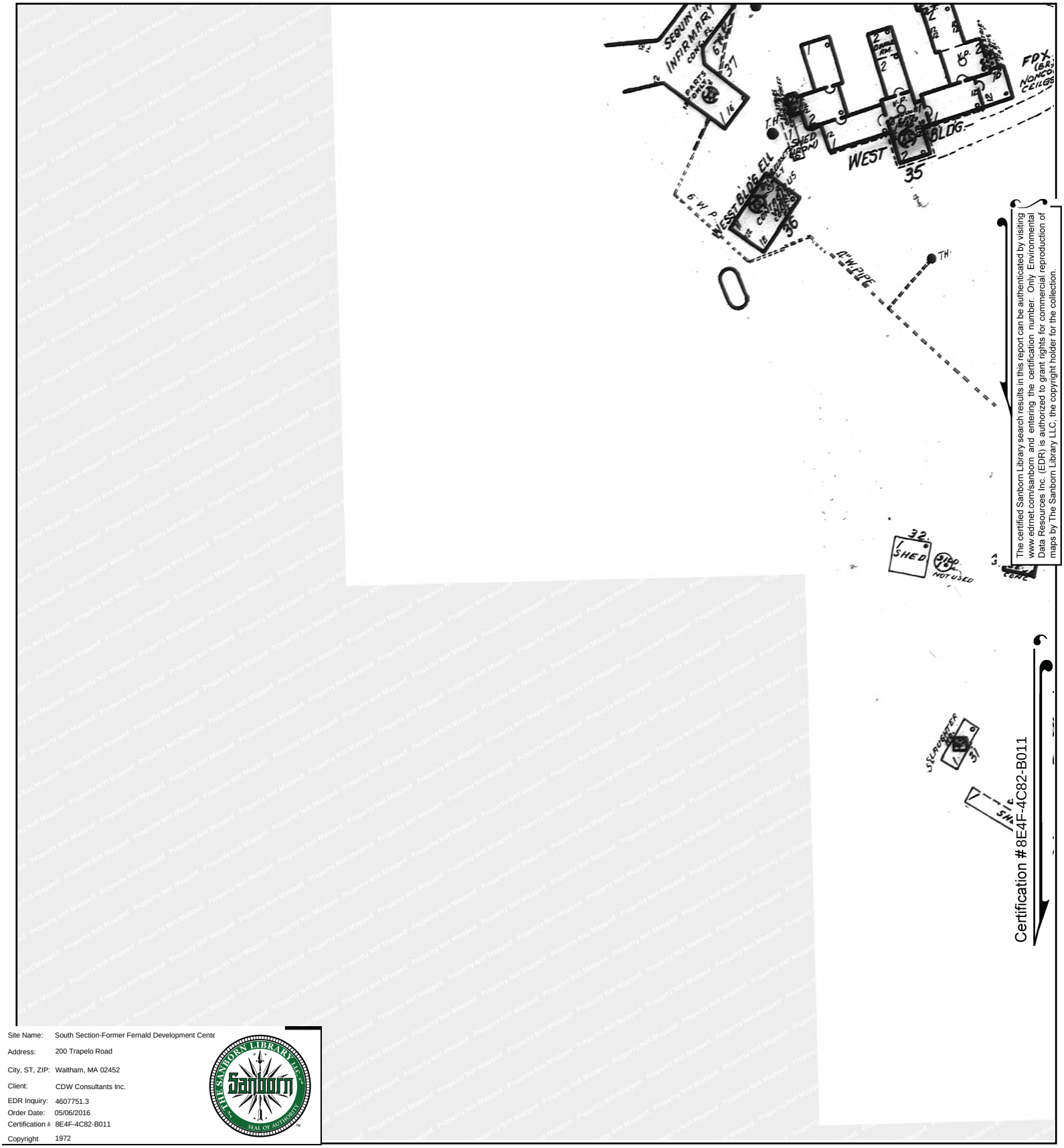

Certification #8E4F-4C82-B011

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1972

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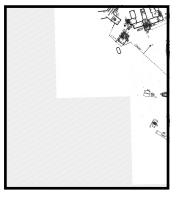

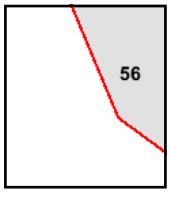

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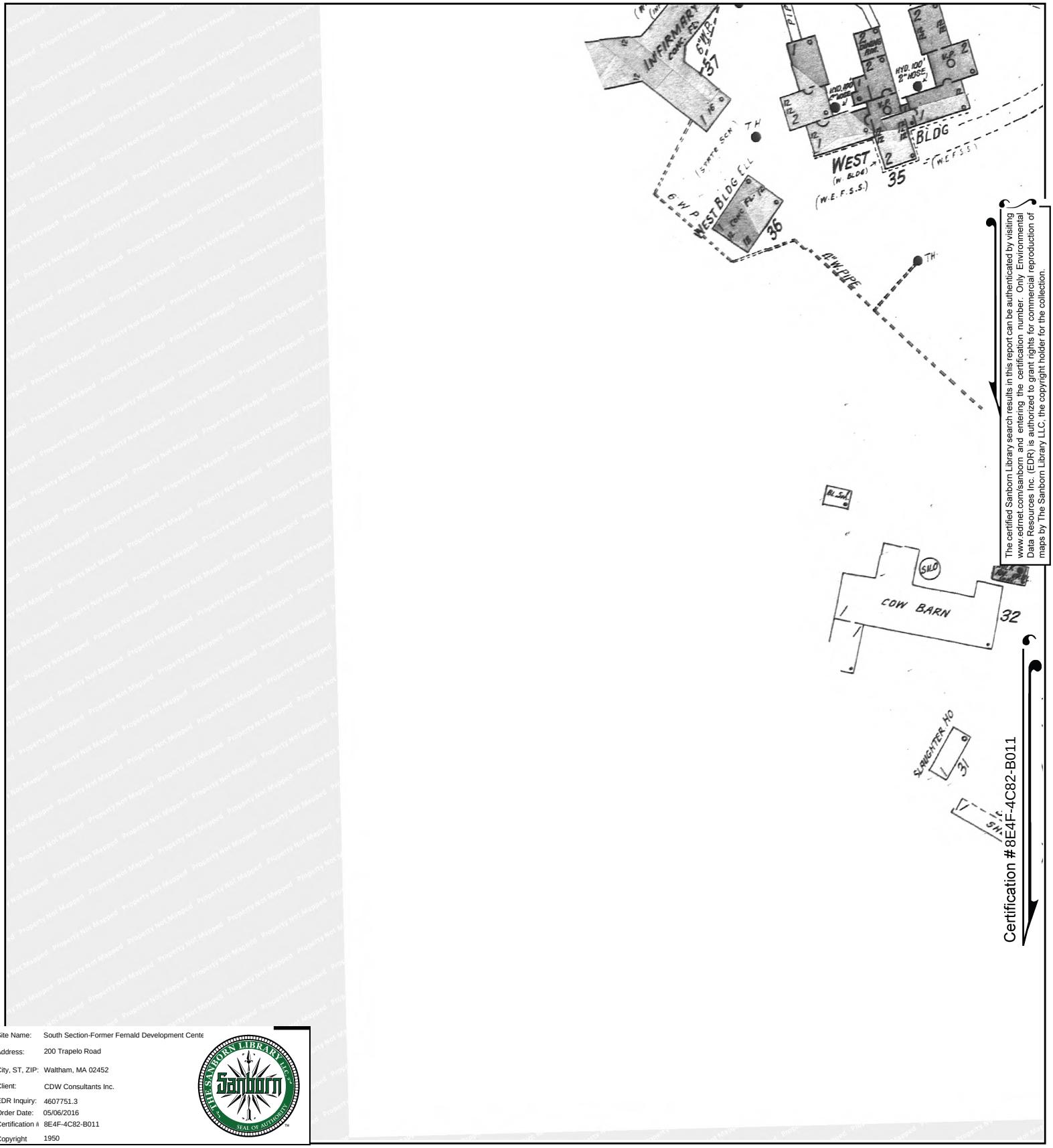

Certification #8E4F-4C82-B011

Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
Order Date: 05/06/2016
Certification #: 8E4F-4C82-B011
Copyright: 1950

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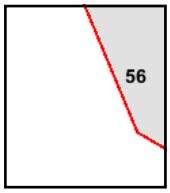

Volume 1, Sheet 56

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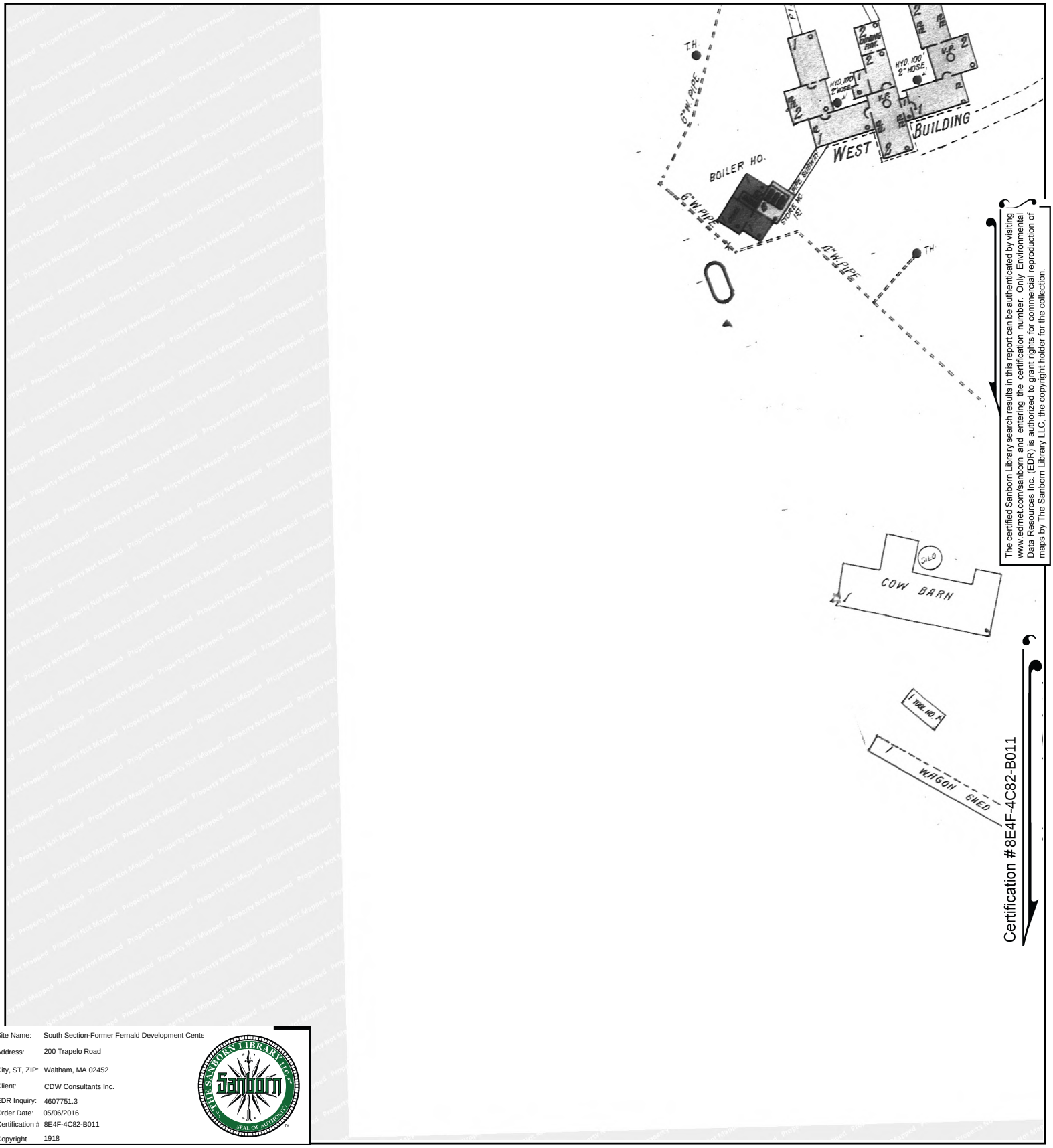

Certification #8E4F-4C82-B011

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
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Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1918

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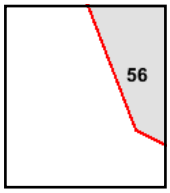

Volume 1, Sheet 56

0 Feet 150 300 600

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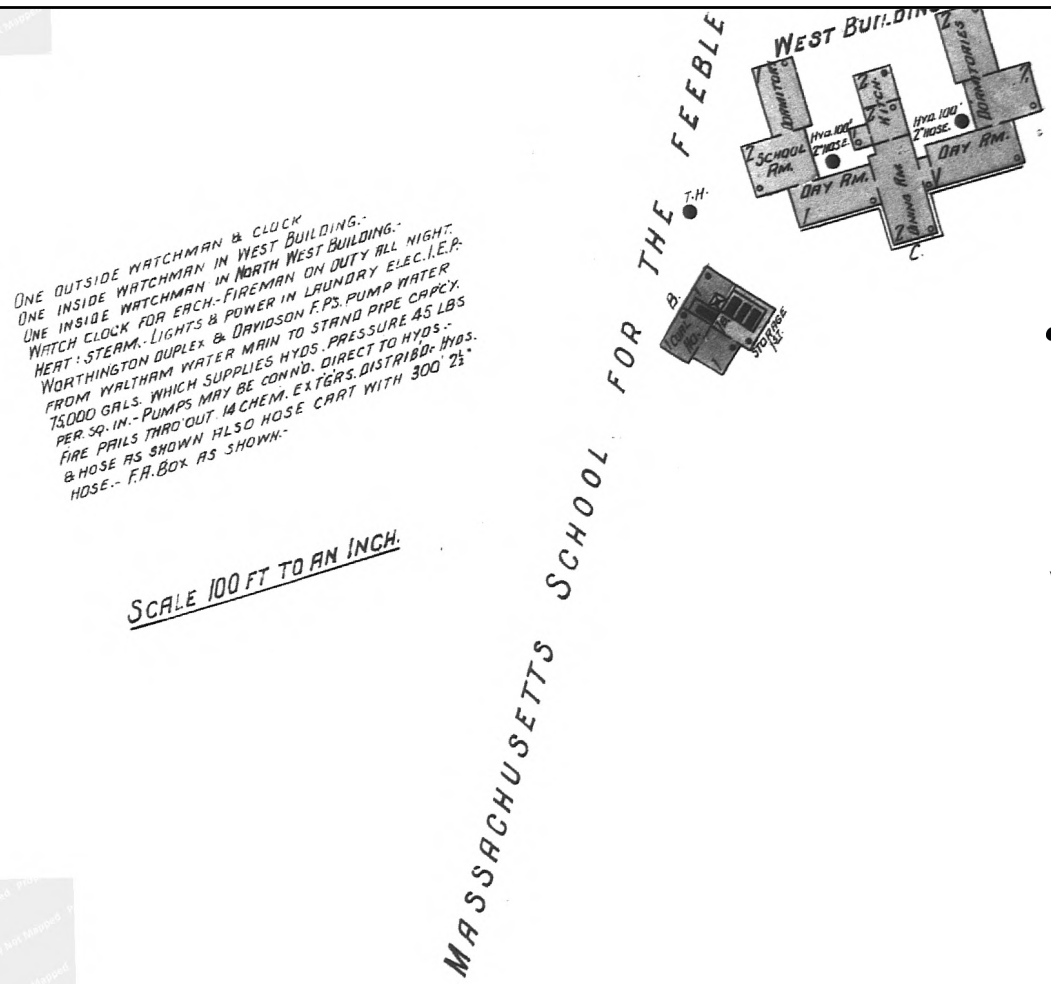

Certification #8E4F-4C82-B011

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
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Copyright	1911

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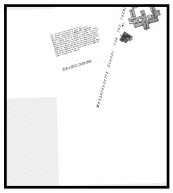

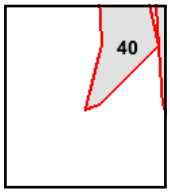

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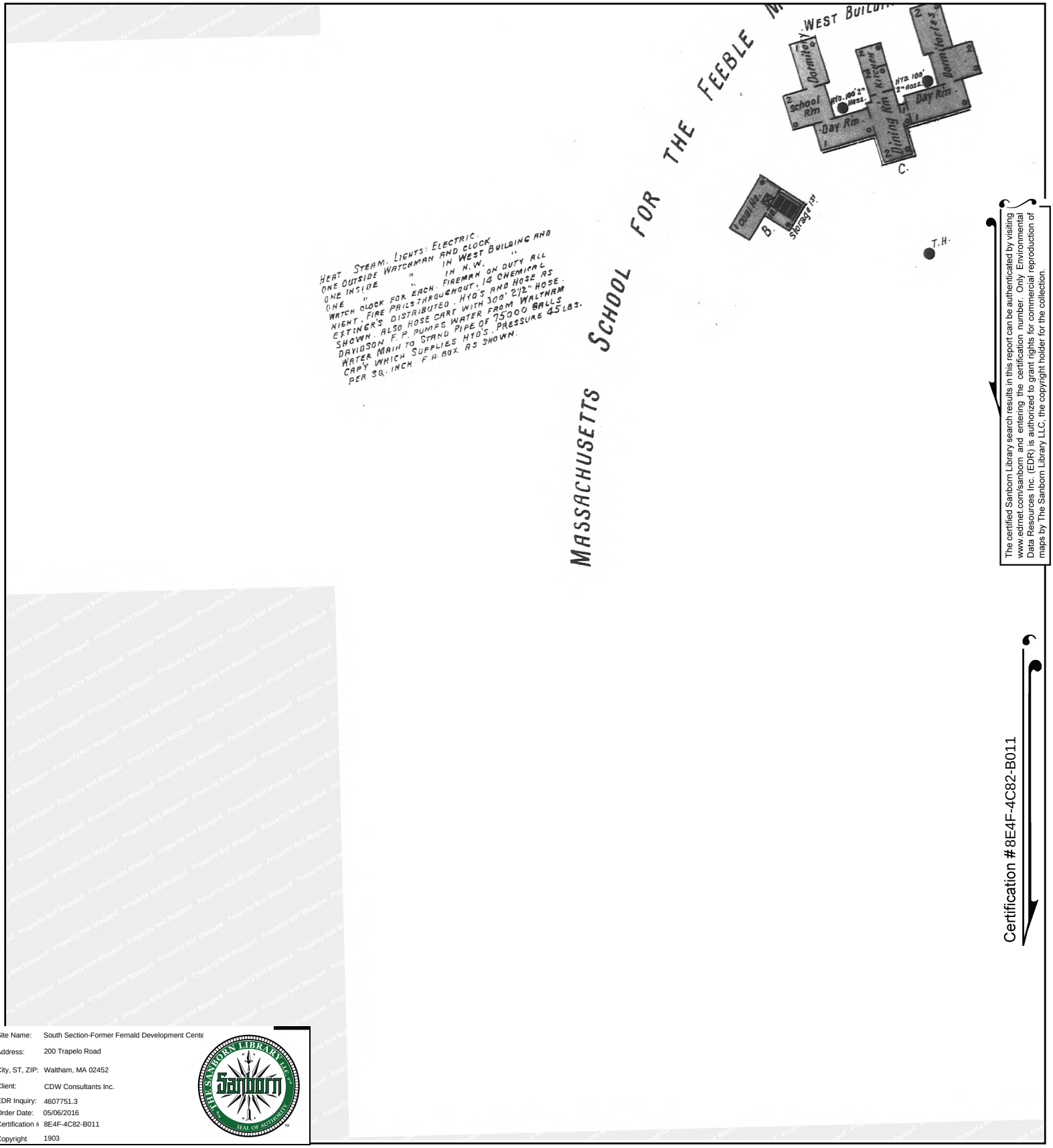

Certification #8E4F-4C82-B011

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1903

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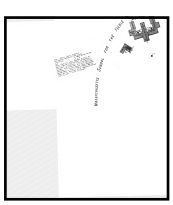

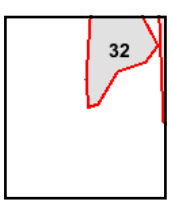

Volume 1, Sheet 32

0 Feet 150 300 600

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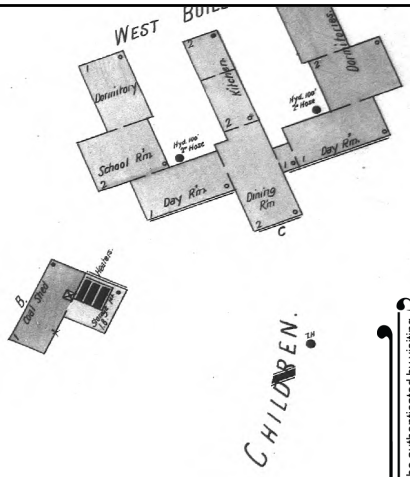

Certification #8E4F-4C82-B011

Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
Order Date: 05/06/2016
Certification #: 8E4F-4C82-B011
Copyright: 1897

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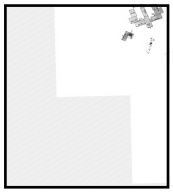

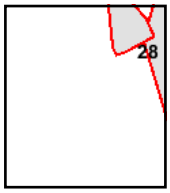

Volume 1, Sheet 28

0 Feet 150 300 600

N

South Section-Former Fernald Development Center
200 Trapelo Road
Waltham, MA 02452

Inquiry Number: 4607751.3
May 06, 2016

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Shelton, CT 06484
Toll Free: 800.352.0050
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Certified Sanborn® Map Report

05/06/16

Site Name:

South Section-Former Fernald
200 Trapelo Road
Waltham, MA 02452
EDR Inquiry # 4607751.3

Client Name:

CDW Consultants Inc.
40 Speen Street
Framingham, MA 01701
Contact: Lauren Konetzny

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Certified Sanborn Results:

Certification # 8E4F-4C82-B011

PO # 1713

Project SMMA Waltham High School

Maps Provided:

1972
1950
1918
1911
1903
1897

Sanborn® Library search results

Certification #: 8E4F-4C82-B011

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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Sanborn Sheet Key

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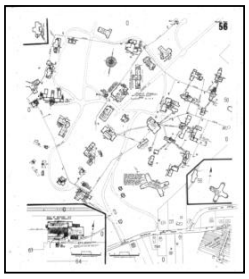
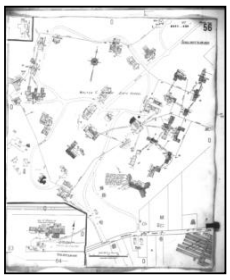
1972 Source Sheets



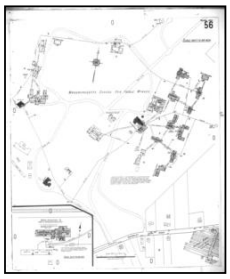
Volume 1, Sheet 56
1972

1950 Source Sheets



Volume 1, Sheet 56
1950

1918 Source Sheets



Volume 1, Sheet 56
1918

1911 Source Sheets

Volume 1, Sheet 40
1911

Sanborn Sheet Key

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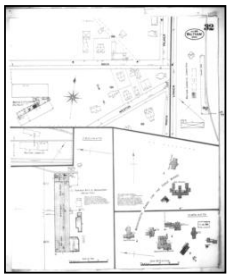
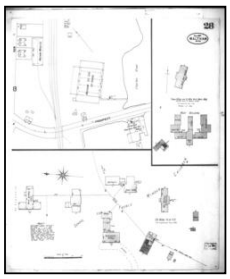
1903 Source Sheets

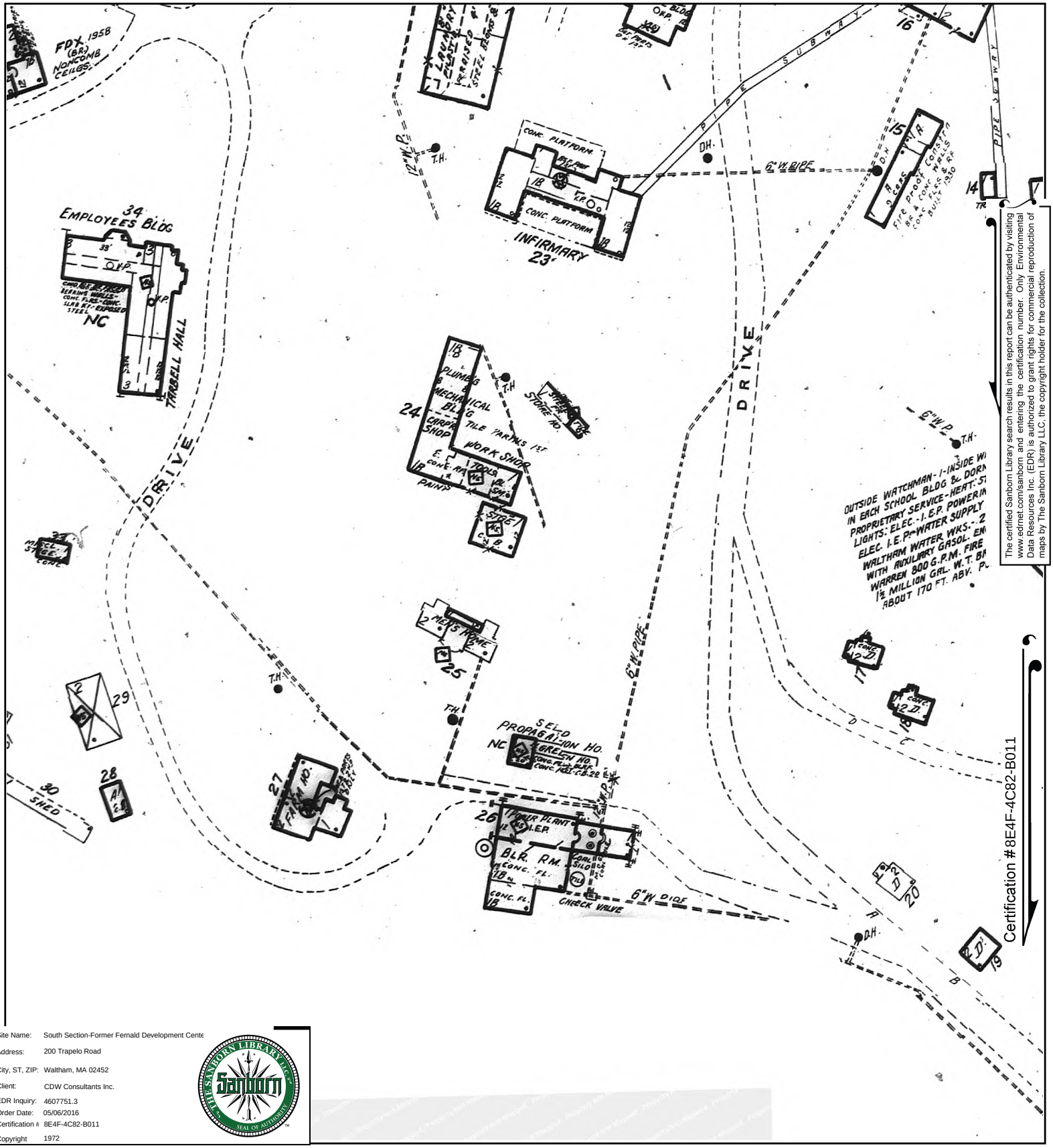


Volume 1, Sheet 32
1903

1897 Source Sheets



Volume 1, Sheet 28
1897



Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
Order Date: 05/06/2016
Certification #: 8E4F-4C82-B011
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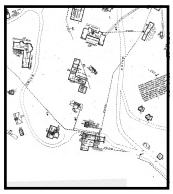

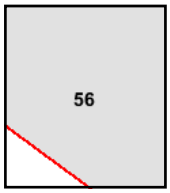

Volume 1, Sheet 56

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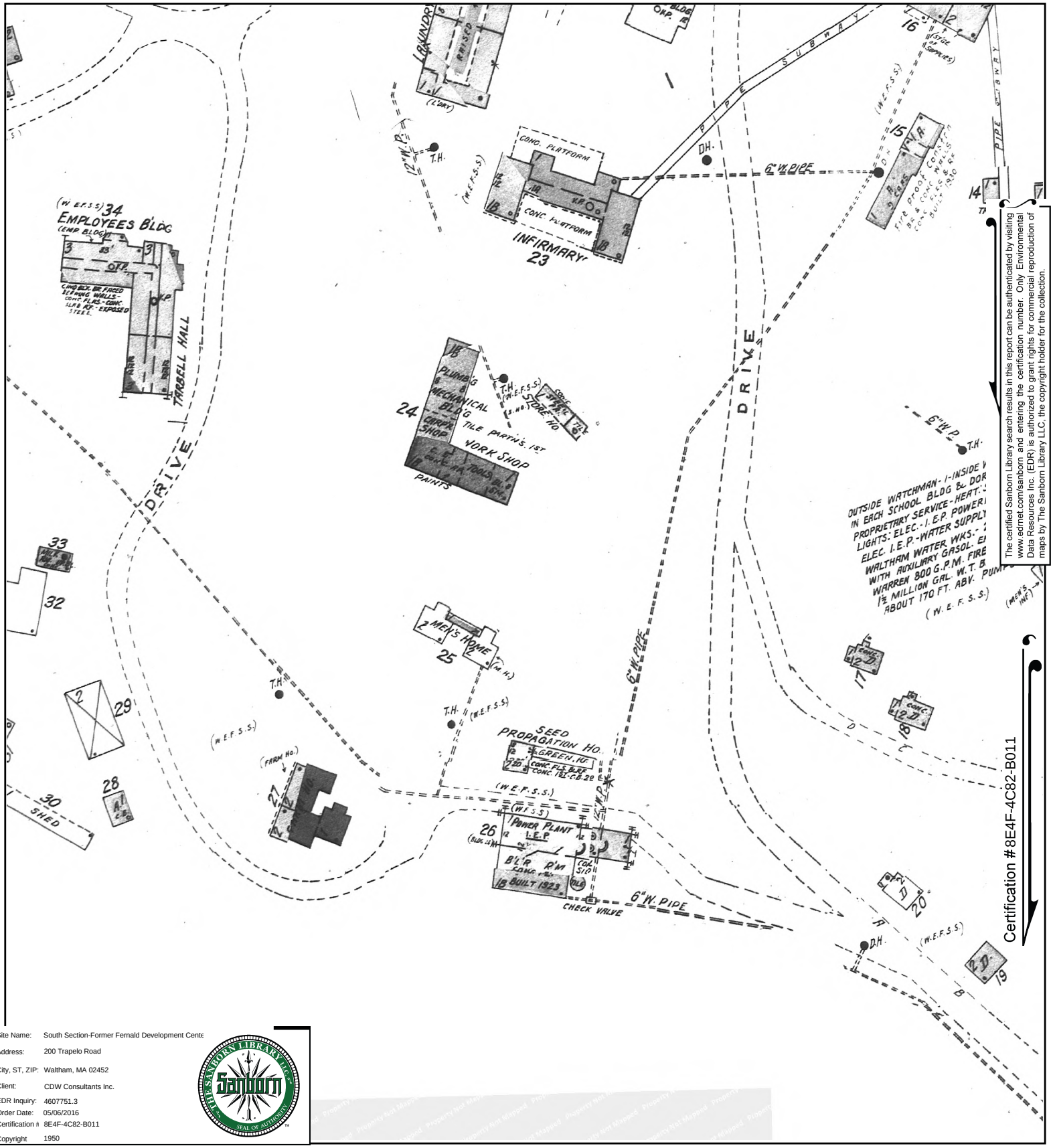

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1950

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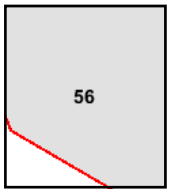

Volume 1, Sheet 56

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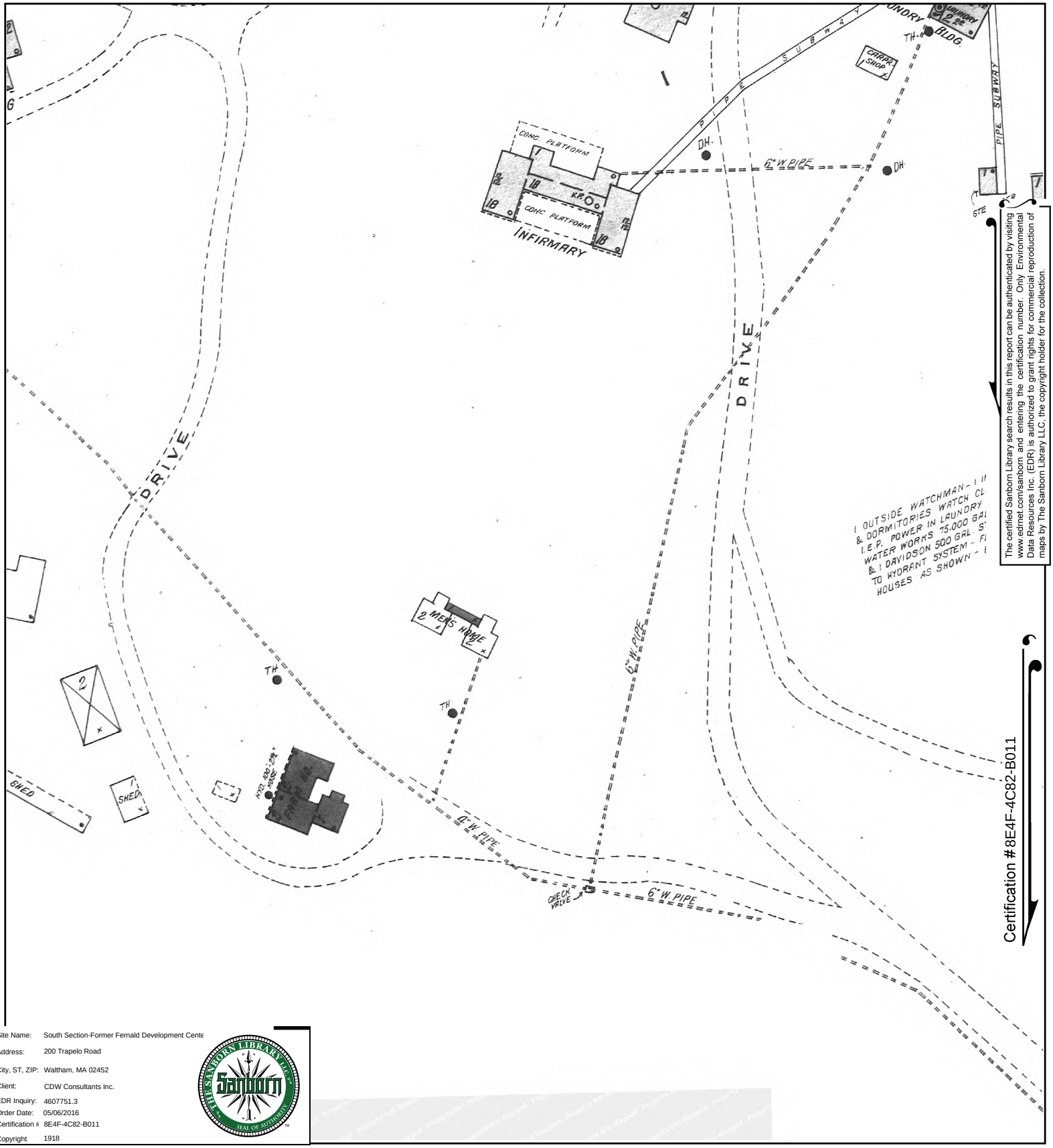

Certification #8E4F-4C82-B011

Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
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Copyright: 1918

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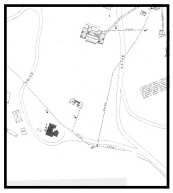
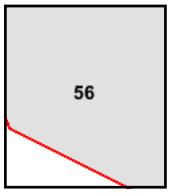
Volume 1, Sheet 56





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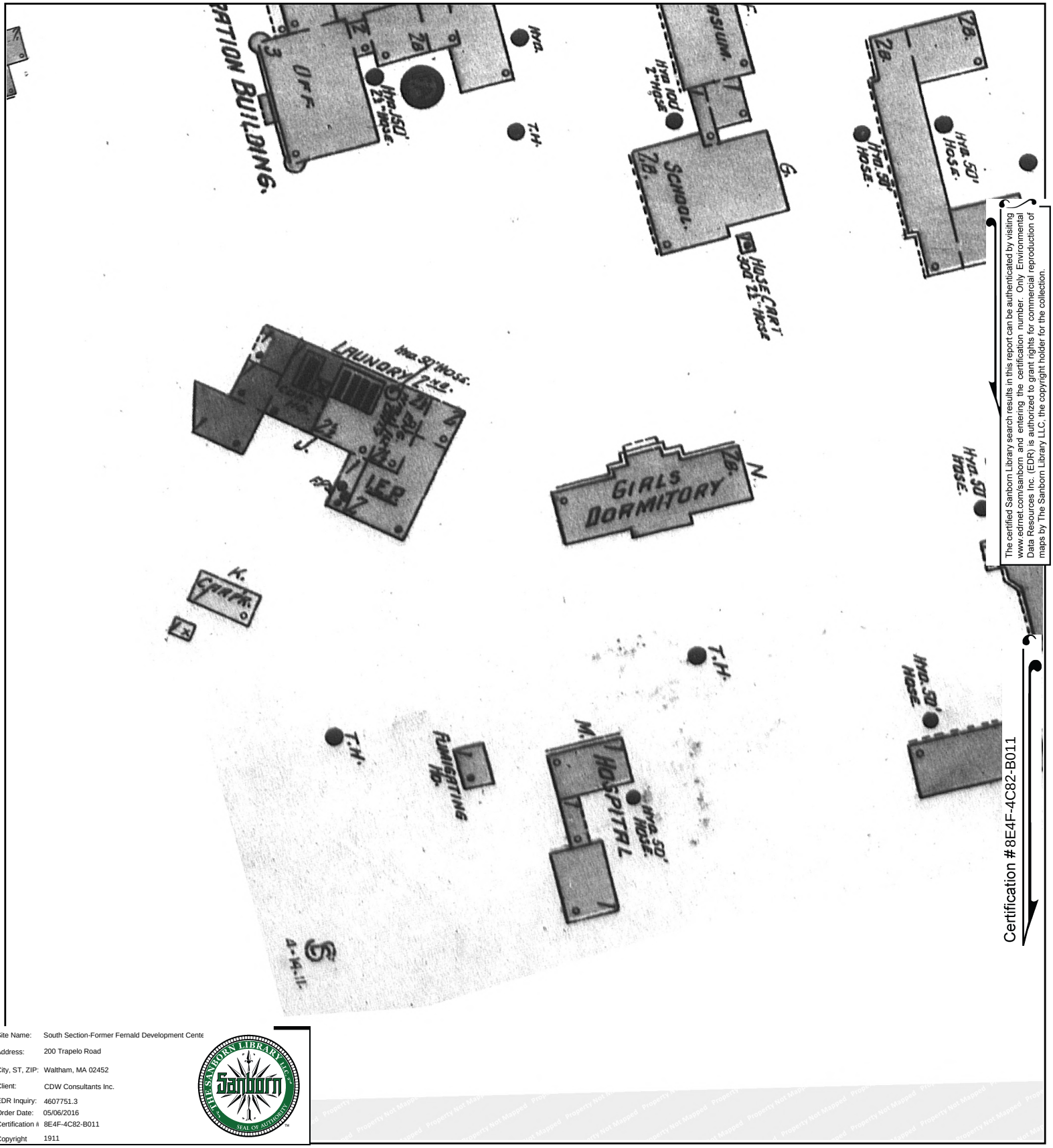

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Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
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Certification #: 8E4F-4C82-B011
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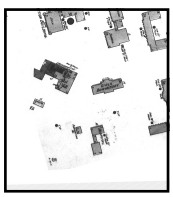

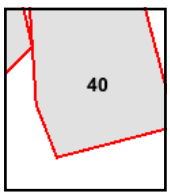

Volume 1, Sheet 40

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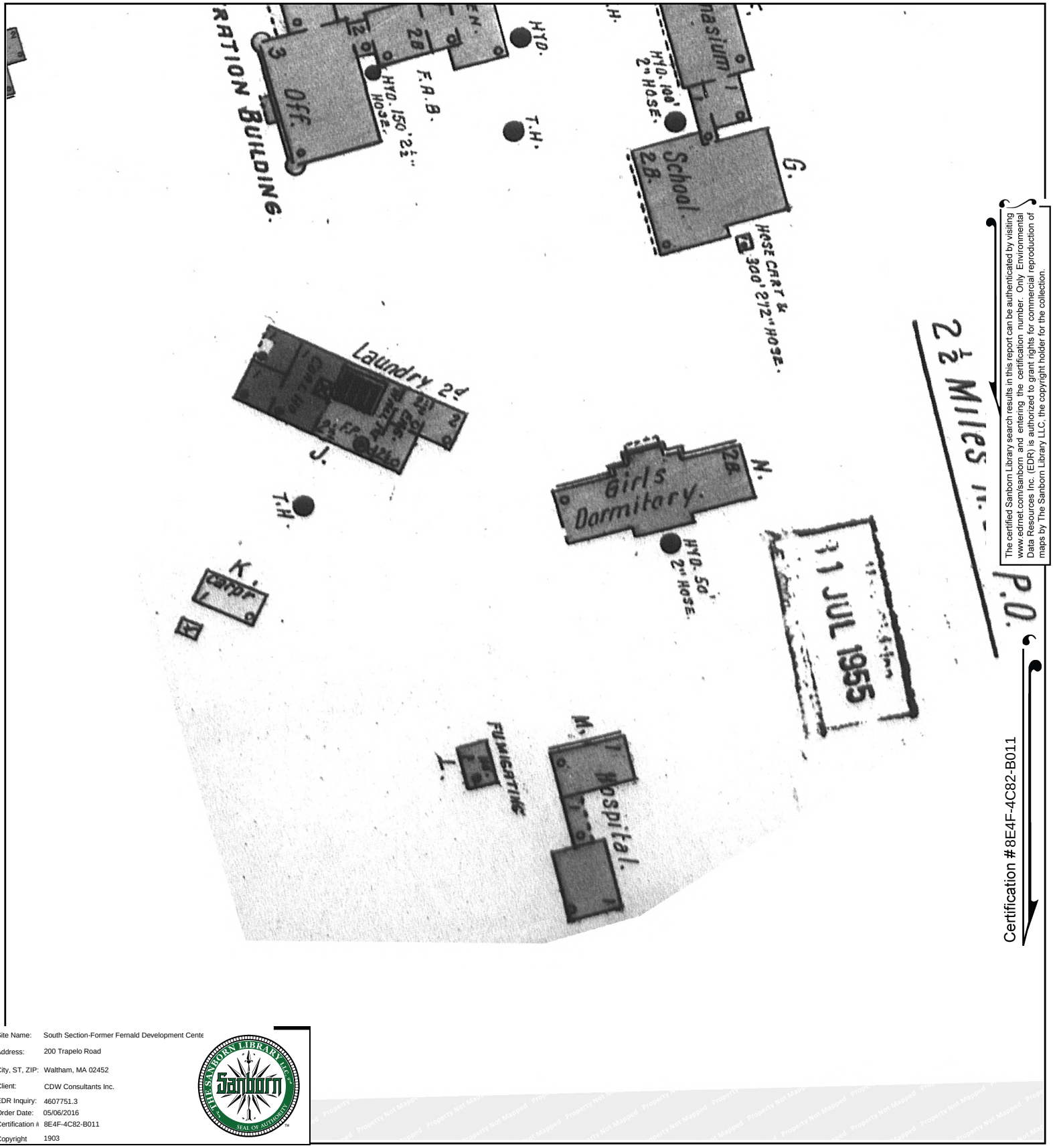

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Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
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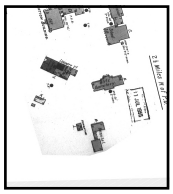

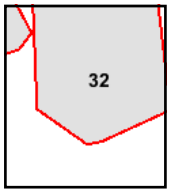

Volume 1, Sheet 32

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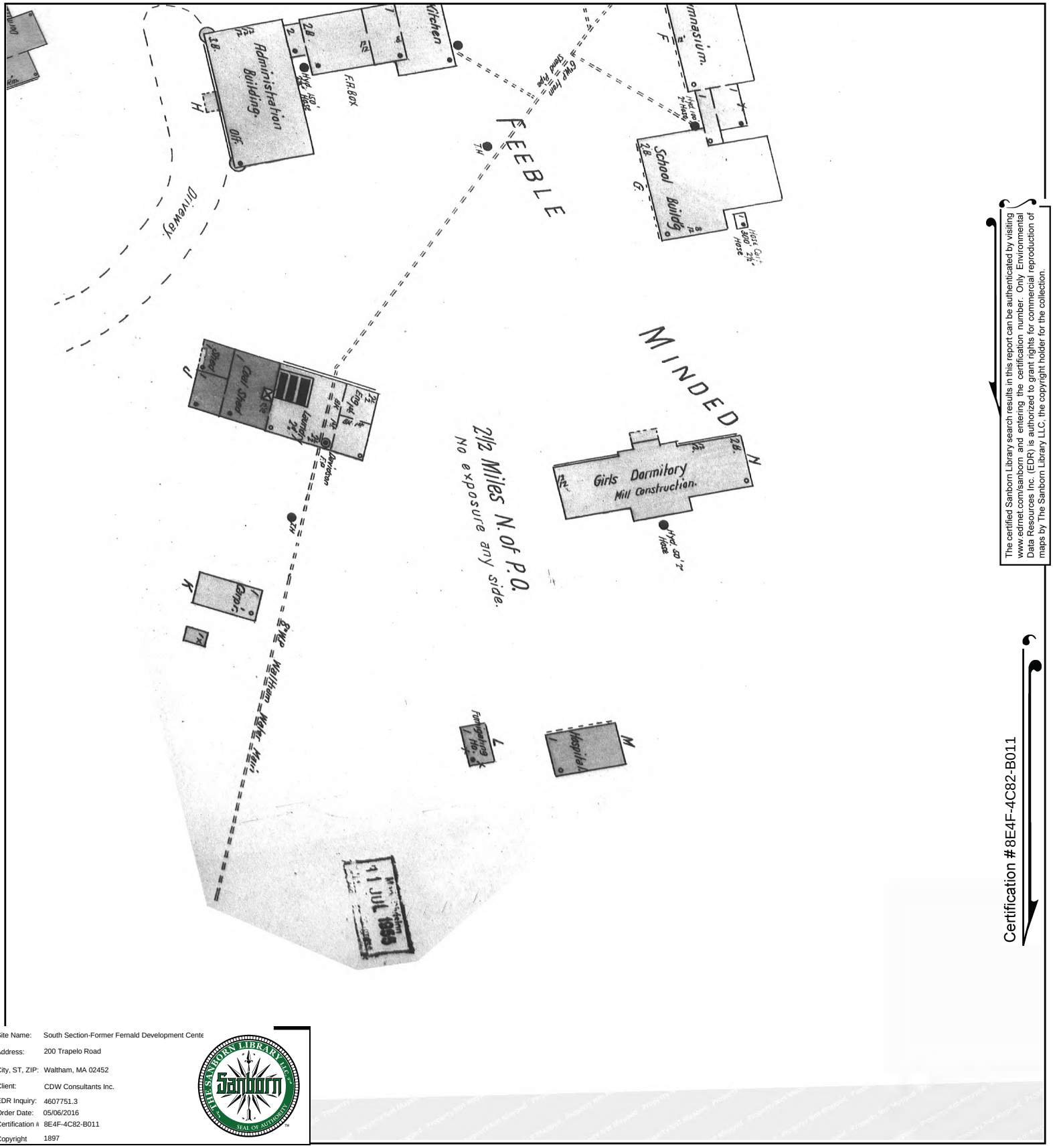

Certification #8E4F-4C82-B011

Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
Order Date: 05/06/2016
Certification #: 8E4F-4C82-B011
Copyright: 1897

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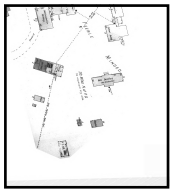

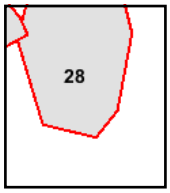

Volume 1, Sheet 28

0 Feet 150 300 600

N

South Section-Former Fernald Development Center
200 Trapelo Road
Waltham, MA 02452

Inquiry Number: 4607751.3
May 06, 2016

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Shelton, CT 06484
Toll Free: 800.352.0050
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Certified Sanborn® Map Report

05/06/16

Site Name:

South Section-Former Fernald
200 Trapelo Road
Waltham, MA 02452
EDR Inquiry # 4607751.3

Client Name:

CDW Consultants Inc.
40 Speen Street
Framingham, MA 01701
Contact: Lauren Konetzny

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Certified Sanborn Results:

Certification # 8E4F-4C82-B011

PO # 1713

Project SMMA Waltham High School

Maps Provided:

1972
1950
1918
1911
1903

Sanborn® Library search results

Certification #: 8E4F-4C82-B011

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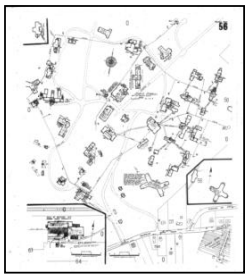
Sanborn Sheet Key

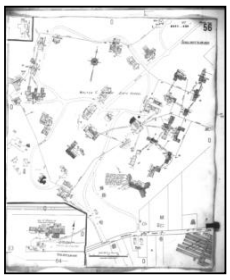
This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1972 Source Sheets



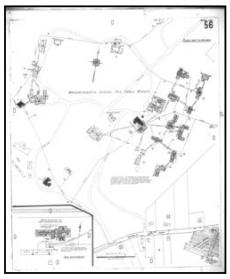
Volume 1, Sheet 56
1972

1950 Source Sheets



Volume 1, Sheet 56
1950

1918 Source Sheets



Volume 1, Sheet 56
1918

1911 Source Sheets

Volume 1, Sheet 40
1911

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

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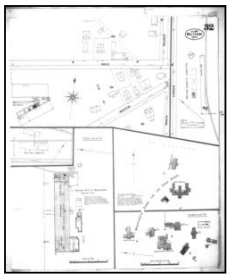
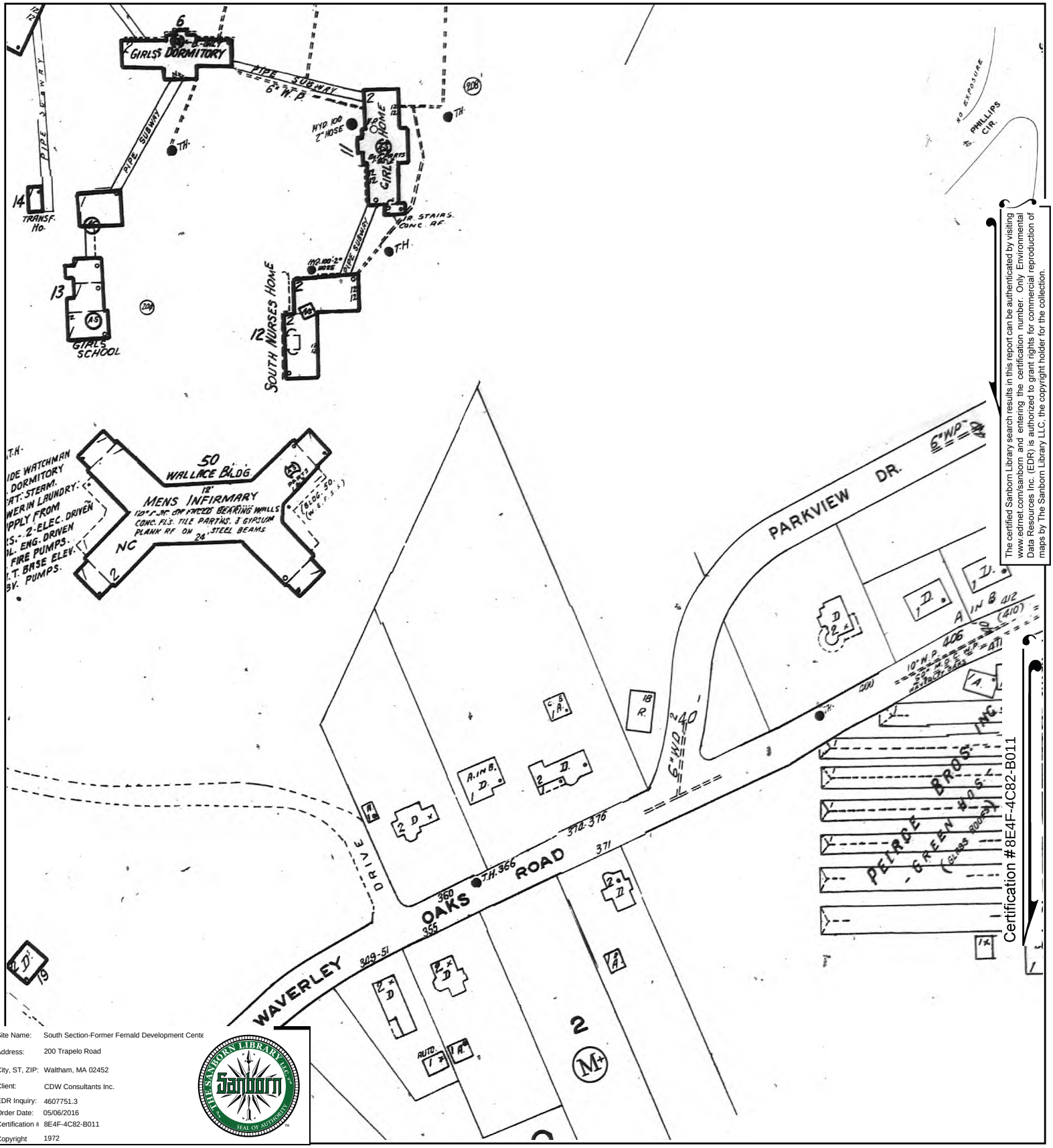


Volume 1, Sheet 32
1903



Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1972

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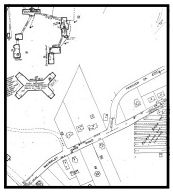
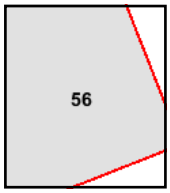
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600





Volume 1, Sheet 56

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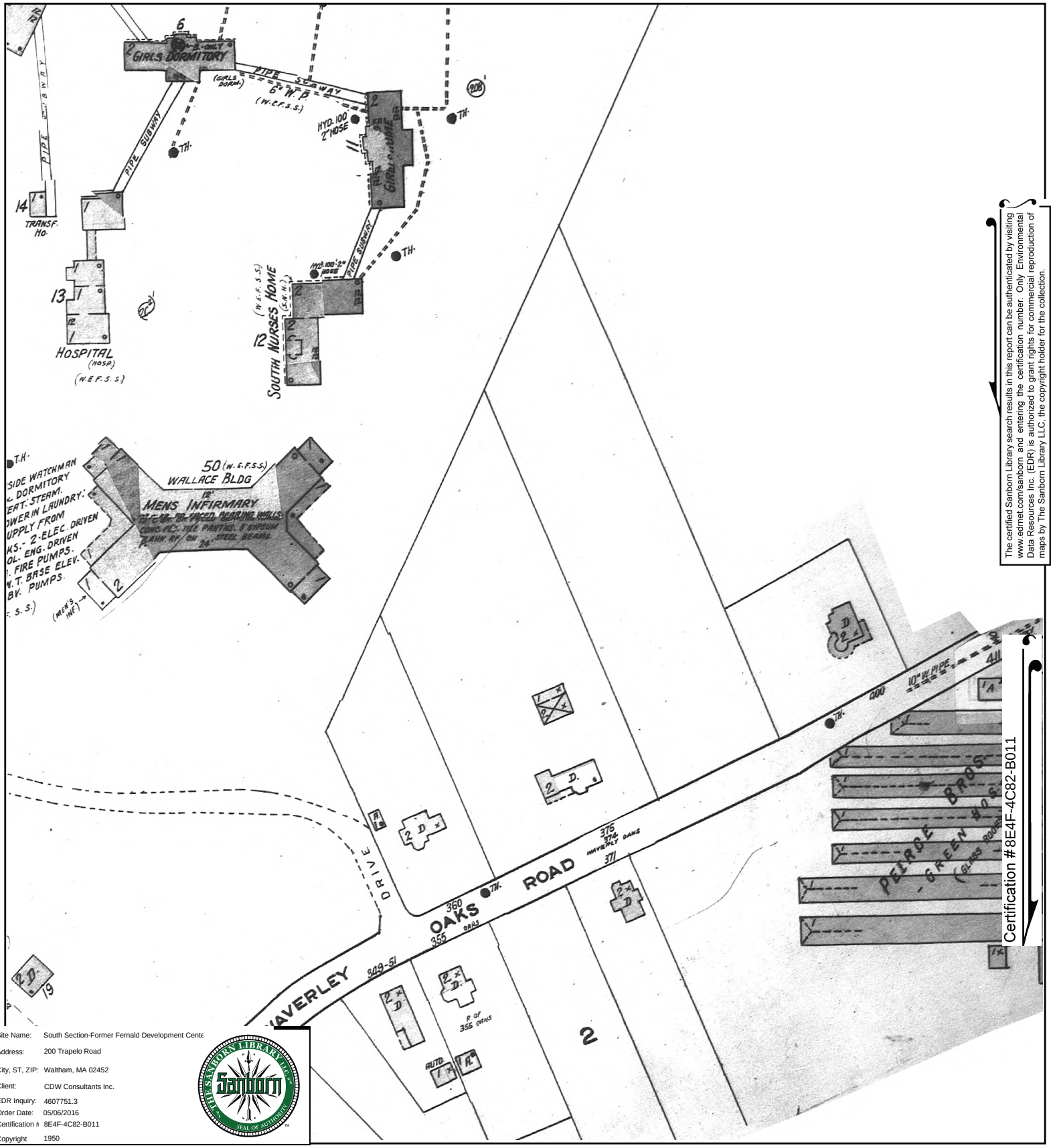

Certification #8E4F-4C82-B011

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Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1950

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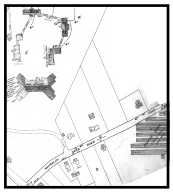

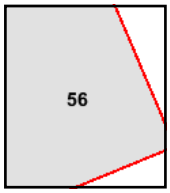

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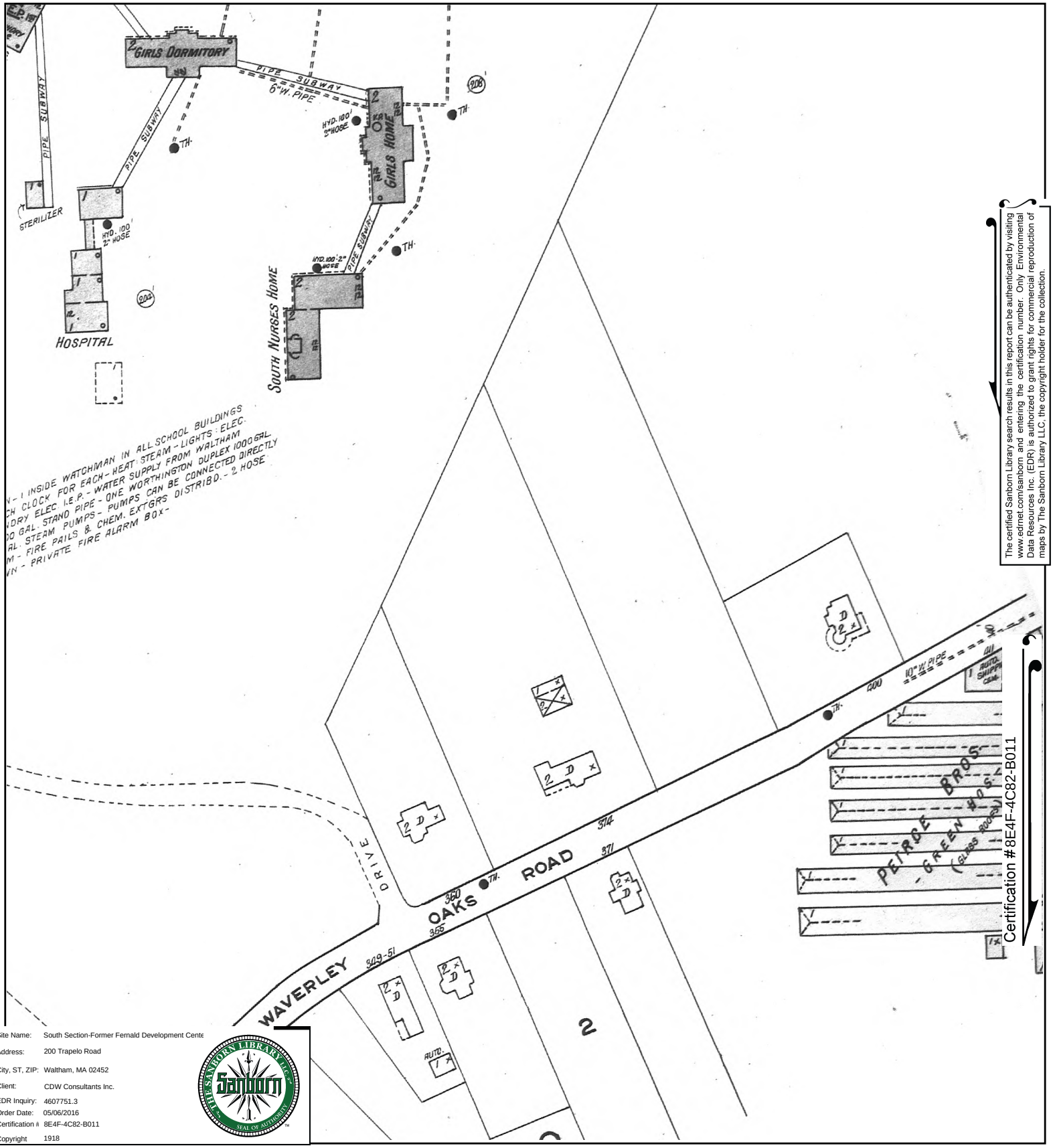

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Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
Client:	CDW Consultants Inc.
EDR Inquiry:	4607751.3
Order Date:	05/06/2016
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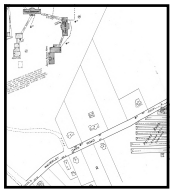

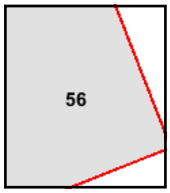

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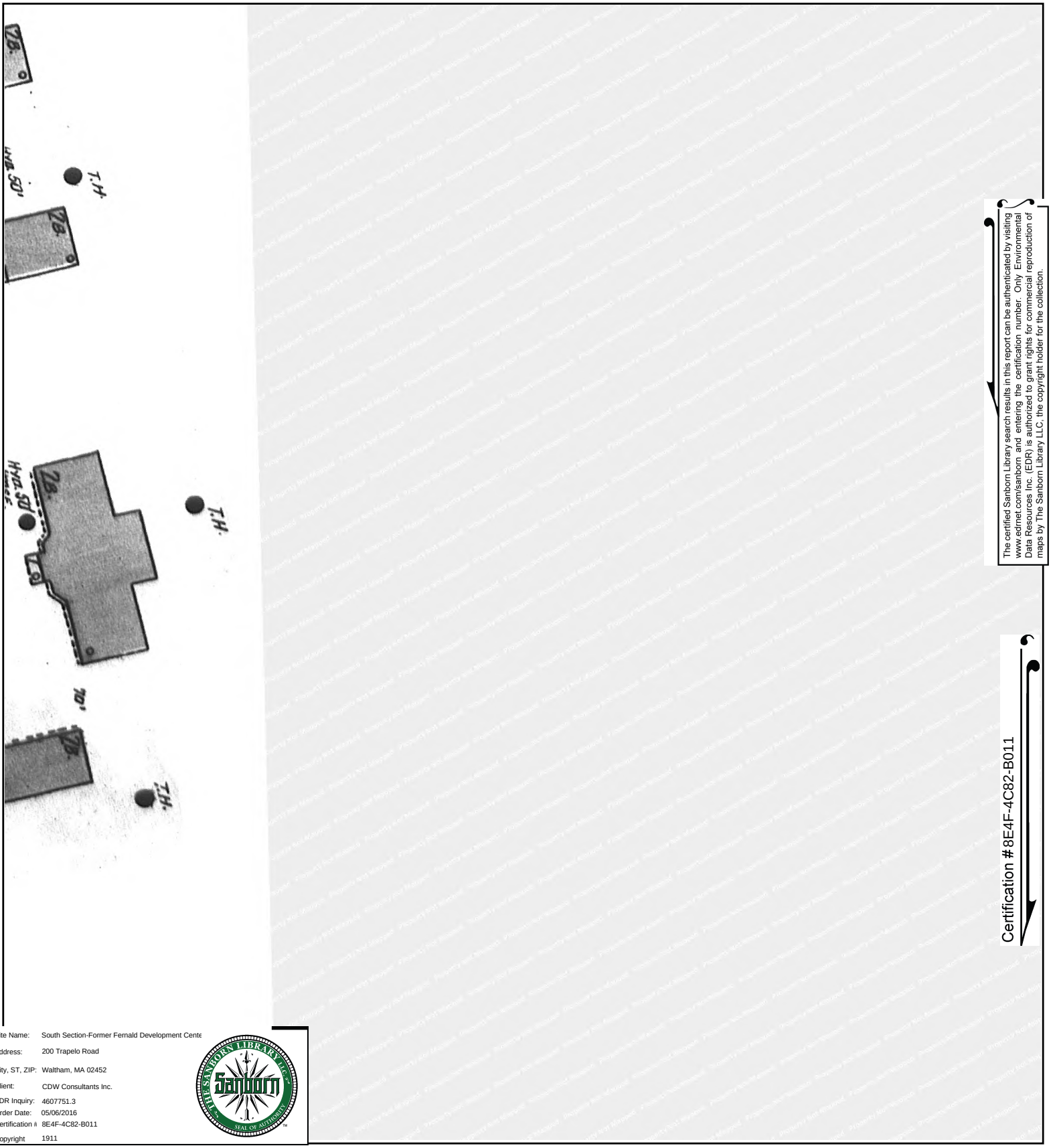

Certification #8E4F-4C82-B011

Site Name: South Section-Former Fernald Development Cente
Address: 200 Trapelo Road
City, ST, ZIP: Waltham, MA 02452
Client: CDW Consultants Inc.
EDR Inquiry: 4607751.3
Order Date: 05/06/2016
Certification #: 8E4F-4C82-B011
Copyright: 1911

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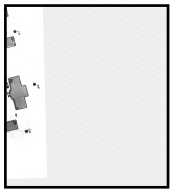

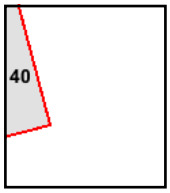

Volume 1, Sheet 40

0 Feet 150 300 600

N

1 Miles N. of P.O.

Certification #8E4F-4C82-B011

Site Name:	South Section-Former Fernald Development Cente
Address:	200 Trapelo Road
City, ST, ZIP:	Waltham, MA 02452
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EDR Inquiry:	4607751.3
Order Date:	05/06/2016
Certification #	8E4F-4C82-B011
Copyright	1903

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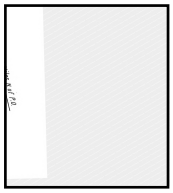

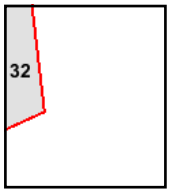

Volume 1, Sheet 32

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APPENDIX F

EDR Aerial Photo Decade Package Report

South Section-Former Fernald Development Center
200 Trapelo Road
Waltham, MA 02452

Inquiry Number: 4607751.5
May 03, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

05/03/16

Site Name:

South Section-Former Fernald
200 Trapelo Road
Waltham, MA 02452
EDR Inquiry # 4607751.5

Client Name:

CDW Consultants Inc.
40 Speen Street
Framingham, MA 01701
Contact: Lauren Konetzny

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
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2008	1"=500'	Flight Year: 2008	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1995	1"=500'	Acquisition Date: March, 29 1995	USGS/DOQQ
1986	1"=500'	Flight Date: March, 30 1986	USGS
1980	1"=500'	Flight Date: October, 10 1980	USGS
1978	1"=500'	Flight Date: April, 23 1978	USGS
1970	1"=500'	Flight Date: October, 29 1970	USGS
1969	1"=500'	Flight Date: April, 09 1969	USGS
1960	1"=500'	Flight Date: May, 05 1960	USGS
1957	1"=500'	Flight Date: April, 22 1957	USGS
1955	1"=500'	Flight Date: December, 01 1955	USGS
1938	1"=500'	Flight Date: December, 15 1938	USGS

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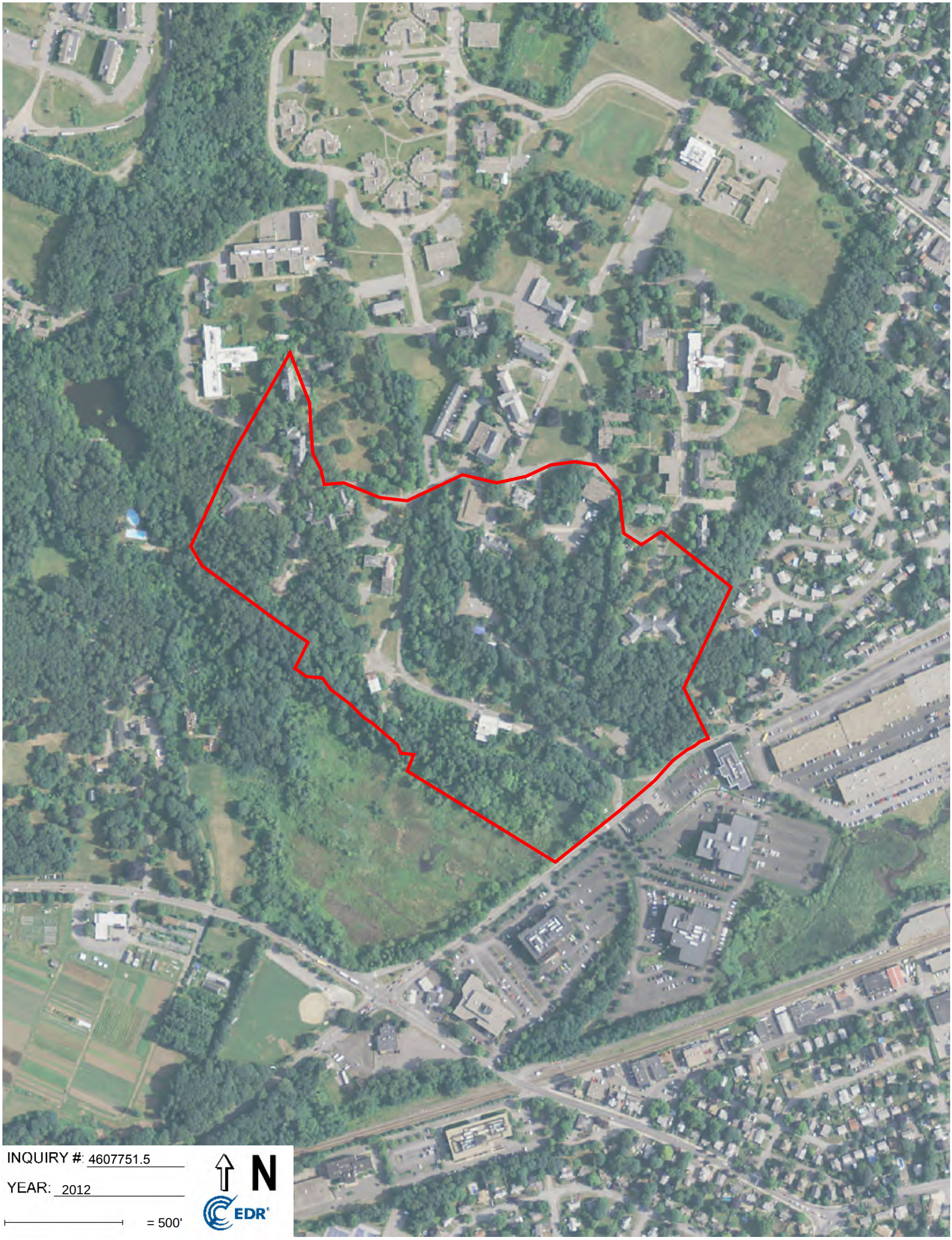
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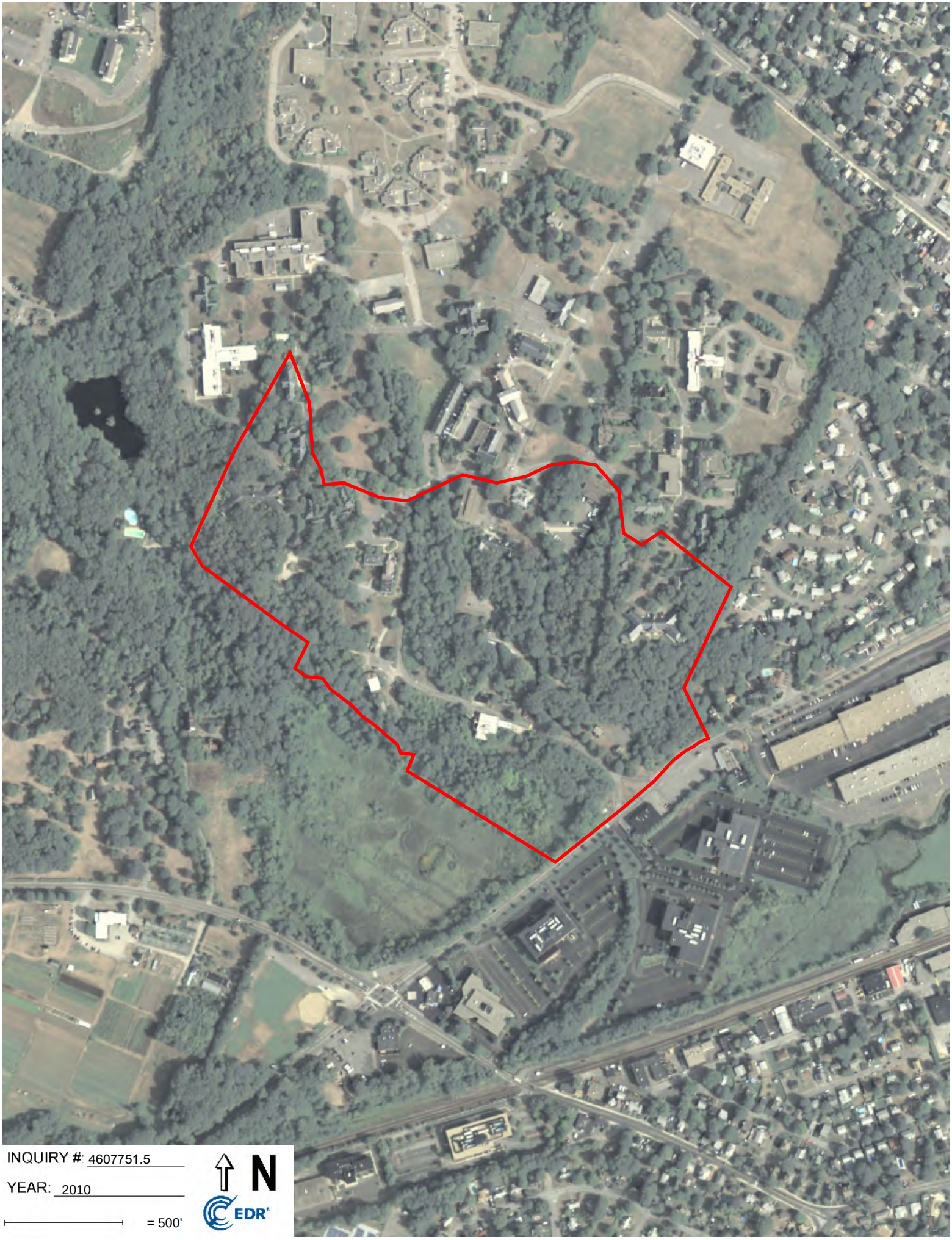
EDR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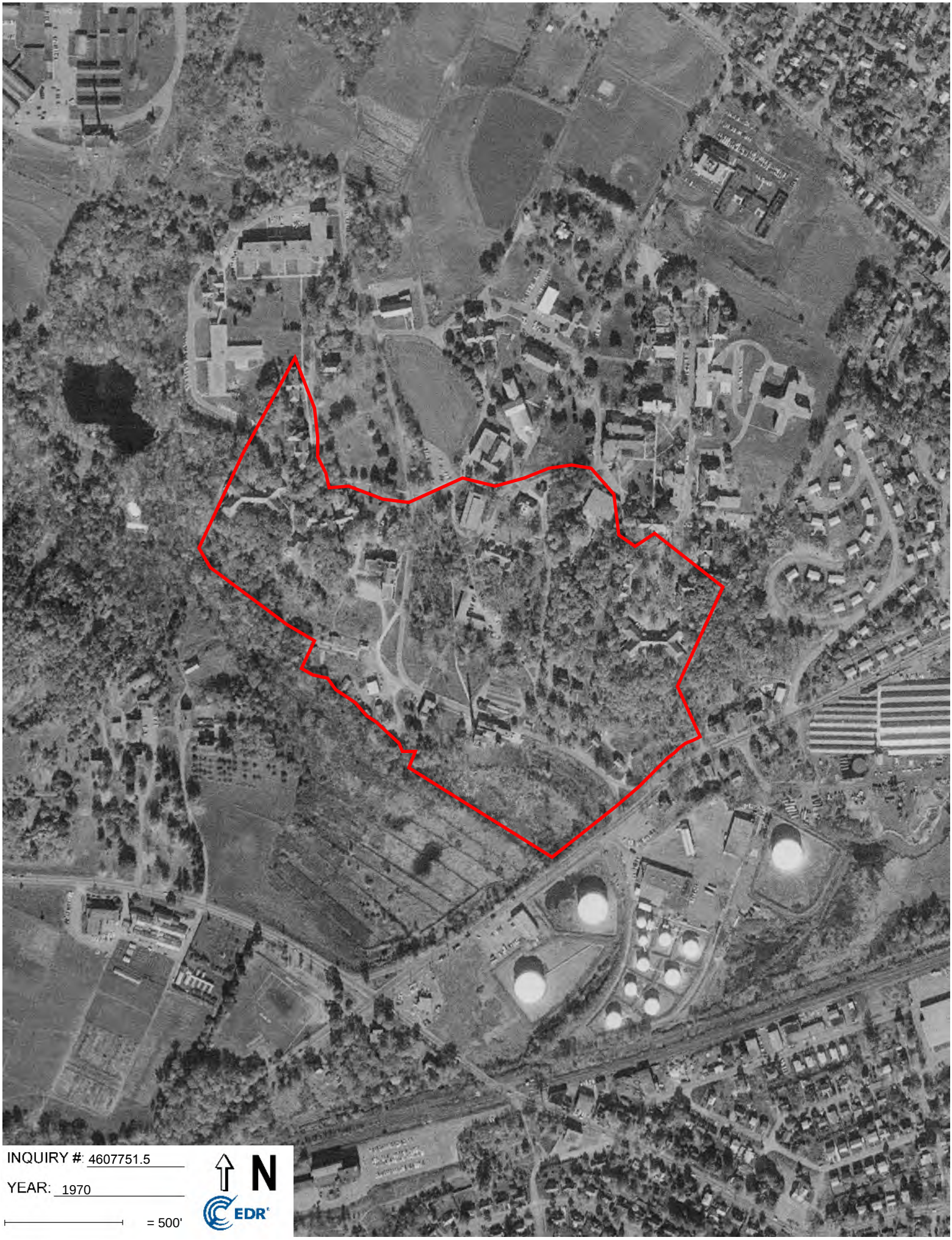
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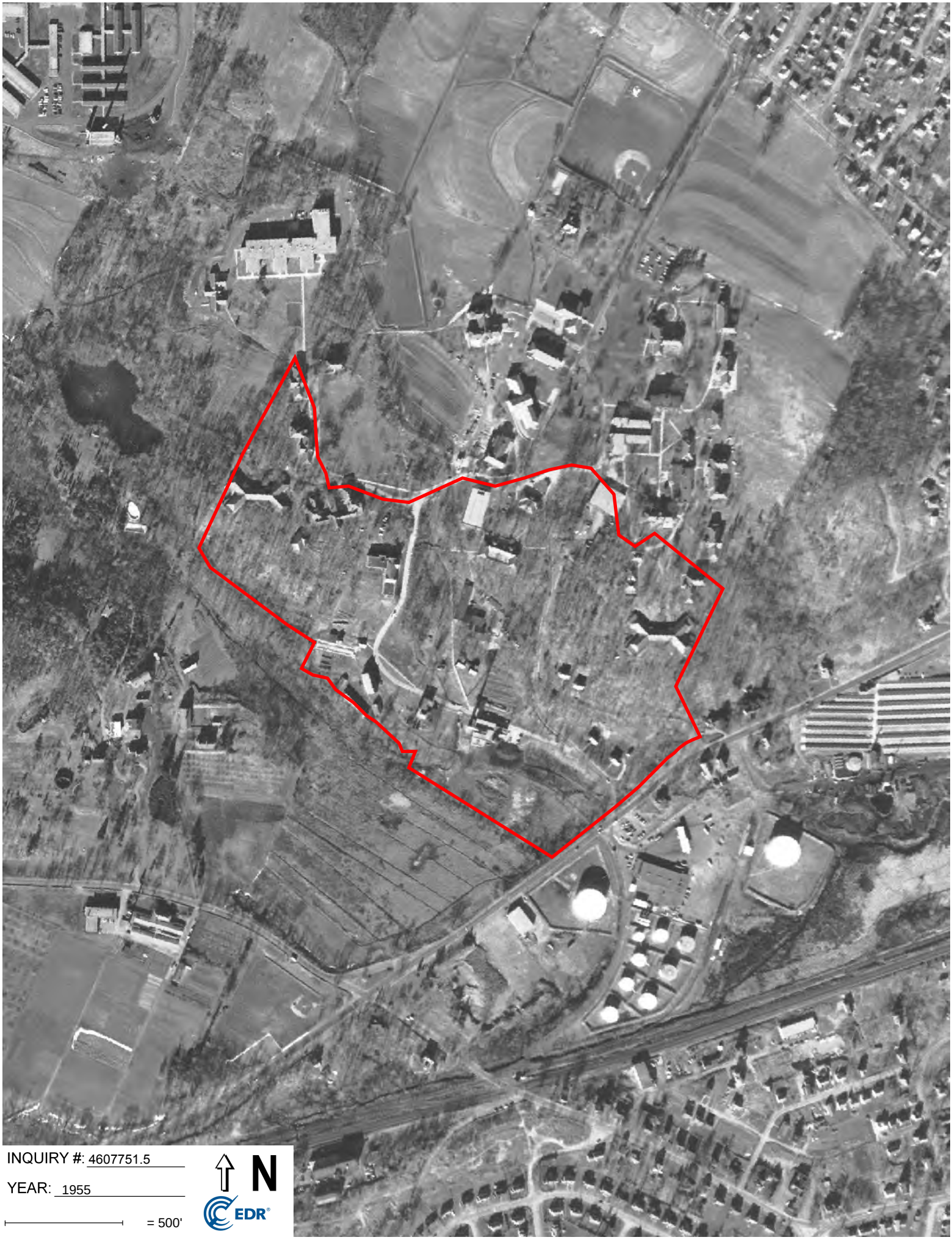

INQUIRY #: 4607751.5

YEAR: 1955

= 500'

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EDR


INQUIRY #: 4607751.5
YEAR: 1938
= 500'
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EDR

CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

PHASE I ENVIRONMENTAL SITE ASSESSMENT
(ASTM E 1527-13)

South Portion of Former Fernald Developmental Center
200 Trapelo Road
Waltham, Massachusetts

May 20, 2016

Prepared for:

Symmes Maini and McKee
1000 Massachusetts Avenue
Cambridge, Massachusetts

CDW Project #1713.00

40 Speen Street Suite 301, Framingham, MA 01701 508-875-2657 FAX 508-875-6617
www.cdwconsultants.com

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FIGURES

TABLES

APPENDICES

I EXECUTIVE SUMMARY

CDW Consultants, Inc. (CDW) conducted an environmental assessment of the south portion of the former Fernald Developmental Center (FDC) located at 200 Trapelo Road in Waltham, Massachusetts (the "Site"; Figure 1). The Site includes approximately 50 acres of land including roadways, buildings, and undeveloped and landscaped areas as shown on the attached Figure 2. The Site contains 34 buildings as well as numerous small steamhead houses which were utilized by the Former FDC.

The FDC opened at the Waltham location in 1889 as the Massachusetts School for the Feeble-Minded and the buildings within the Site boundaries were constructed between 1890 and 1973. The Site is a portion of a 156.6-acre parcel which was purchased from the Commonwealth of Massachusetts by the City of Waltham on December 23, 2014, and is shown on Assessors' Map R045, Block 001, Lot 0001, included in Appendix A.

On May 4, 2016 and May 6, 2016, CDW personnel performed a Site reconnaissance to conduct a general visual inspection of the Site, observe the interior of the Site buildings (when accessible), and document existing and observable uses of the Site and adjacent properties. Larger on-site buildings were typically of brick construction with three stories or fewer, with full or partial basements; these buildings included residences, a power plant, storage buildings, a laboratory/research building, and a laundry/therapeutic equipment manufacturing building. Maintenance/support buildings generally consisted of one story concrete block structures including a maintenance garage, parking garages, a greenhouse, workshops, storage sheds, and electrical distribution buildings. Four smaller two-story cottages with a basement, with stucco or wood shingles, are also located on the Site. Observed areas along roadways were typically wooded with debris such as appliances, furniture, and tires scattered throughout the woods. Many of the wooded areas of the Site contained steep slopes.

Approximately one-half of the buildings could not be entered due to structural concerns, vermin infestations, high voltage, asbestos concerns, and/or lack of proper safety clearance. In the buildings which were inspected, interior conditions were usually poor with significant damage due to vandalism, weather, burst pipes, and lack of maintenance. Ceiling panels were often broken resulting in ceiling and insulation debris covering floors. Paint was frequently peeling or chipping off of interior walls and windows, and floor tiles and lighting fixtures were commonly broken. Mold was observed on walls, ceilings, and floors. Floor drains were often observed in the bathrooms, kitchens, and basements of the buildings. The majority of the furnishings had been removed from the buildings.

The investigation conducted by CDW personnel included a review of available federal, state, and local environmental agency records, to identify the presence or likely presence of Recognized Environmental Conditions (RECs), Historical Recognized Environmental Condition (HRECs) and Controlled Recognized Environmental Condition (CRECs). The Site investigation was conducted in accordance with the ASTM International (ASTM) Standard Practice for Environmental Site

Assessments: Phase I Environmental Site Assessment Process (ASTM E1527-13) and the Massachusetts General Laws (MGL) Part I, Title II, Chapter 21E: Massachusetts Oil and Hazardous Material Release Prevention and Response Act

This assessment identified evidence of Recognized Environmental Conditions (RECs), Historical Recognized Environmental Conditions (HRECs), and Controlled Recognized Environmental Conditions (CRECs) in connection with the Site. The RECs include possible contamination from the following sources:

- the past use of Building #15 for vehicle maintenance;
- the past use of Building #16 as a laundry facility;
- the past presence of a fumigating house to the west of Building #49;
- the past use of Building #22 as a laundry and manufacturing facility;
- the past use of large quantities of paint in Building #24;
- the past use of Building #24 as a welding, carpentry, paint, and electrical shop;
- the past use of Building #34 and Building #26 as a power plant;
- the past use of Building #28 as a storage shed for Building #24;
- the past use of Building #120 as a greenhouse;
- the past use of Building #123 as a plumbing shop;
- the past use of Building #124 and surrounding structures for the storage of grounds maintenance equipment and supplies including the purported storage of petroleum products, acids, and batteries at Building #124;
- the past presence of a blacksmith shop northwest of Building #124;
- the purported past use of radioactive isotopes in medical experiments conducted at the former FDC;
- the past use and storage of # 6 fuel oil in USTs (40,000 gallons to 76,000 gallon cumulative storage capacity, with approximately 1,700,000 gallons/year being consumed in the mid-1990s) from 1954 to 2015;
- PCB containing equipment located within Building #26;
- storage of various petroleum products, acids, and batteries, within building #124;
- debris such as appliances, furniture, and tires scattered throughout the woods;
- a diesel fuel and a gasoline UST of unknown volume installed prior to 1978 at Building #26;
- two 4,000-gallon gasoline USTs installed prior to 1978 at Building #124 (removed in May 1997);
- an empty 27- gallon AST installed in 1975 at Building #26;
- a 275-gallon and a 50-gallon diesel fuel ASTs installed in 1975 at Building #124;
- a 100-gallon diesel fuel AST installed in 1984 at Building #35;
- a 100-gallon diesel fuel AST installed in 1984 at Building #46;
- a 275-gallon #2 fuel oil AST installed in 1975 at Building #17;
- a 275-gallon #2 fuel oil AST installed in 1975 at Building #18;
- two 275-gallon waste oil ASTs installed in 1980 at Building #15;
- past storage of waste oil within a 55-gallon drum at Building #15;
- a 15-gallon pole mounted transformer documented at Building #124;

- a 35-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #24;
- three pole mounted transformers with a capacity of 70-gallons containing PCBs at concentrations of 50 ppm or greater documented at Building #34;
- a 25-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #18;
- a 219-gallon pad mounted transformer documented at Building #32;
- a 229-gallon pad mounted transformer documented at Building #35;
- a 219-gallon pad mounted transformer documented at Building #37;
- a 213-gallon pad mounted transformer documented at Building #12;
- a 213-gallon pad mounted transformer documented at Building #46;
- two pad mounted transformers with a capacity of 800-gallons documented at Building #124;
- three pad mounted transformers with a capacity of 30-gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, documented at Building #26;
- nine pad mounted transformers with a capacity of 30 gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, documented at Building #121 and the presence of a "contains PCBs" sign on the door of Building #121 on May 6, 2016;
- a 1,090-gallon transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #22;
- nine 55-gallon drums of sludge clutter, four 55-gallon drums of steam condensate treatment, two 55-gallon drums of #2 oil, seven 55-gallon drums of caustic soda, and two 55-gallon drums of turbine oil were stored on the concrete floor of Building #26 on May 23, 1996;
- one 16-gallon drum of grease, one 16-gallon drum of parts cleaner, one 1-gallon container of battery acid, and several cases of motor oil and antifreeze were observed at Building #15 on May 23, 1996;
- several empty containers of oil and antifreeze observed in Building #15 on May 4, 2016;
- at least eight 55-gallon drums observed at exterior locations throughout the Site on May 4, 2016 and May 6, 2016;
- a rusting steel tank estimated to be at least 500-gallons observed beneath debris within the former cow barn foundation north of Building #124 on May 6, 2016;
- several empty containers of lube oil, transmission fluid, bleach, lime away, wax striper, and spray paint observed in Building #16 on May 4, 2016;
- unknown/undocumented floor drain discharges from any of the numerous floor drains located at the Site, particularly those located within Building #15, #22, #24, and #26;
- numerous past releases of #6 fuel oil to the area west of Building #26 as reported by Mr. Maurice O'Connell, a former Plant Superintendent at the FDC, in 1997, including a release of approximately 100 gallons of #6 fuel oil to the surface around 1967;
- a November 1980 release of approximately 200 gallons of #6 fuel oil to the ground and brook west of Building #26; and

- a December 1993 release of approximately 300 gallons of # 6 fuel oil to the ground and brook west of building #26 for which documentation of closure was not on file at the MassDEP Searchable Site List.

The HRECs include:

- a release of oil "behind" Building #26 in June 1992 in which a buried drum and oil debris were discovered and cleaned up resulting in No Further Action designation by MassDEP;
- a release of gasoline to the soil and groundwater from one of the 4,000 gallon USTs located to the east of Building #124 identified in March 1994 which was closed out with a Class A-2 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining);
- a release of approximately 30 gallons of #6 fuel oil to the paved area and stream west of Building #26 in November 1997 which was closed out with a Class A-1 RAO Statement (a Permanent Solution remediated to background conditions);
- a release of gasoline to the soil north of Building #26 from a 1,000 gallon UST discovered in May 1997 which was closed out with a Class B-1 RAO Statement (a Permanent Solution where a condition of No Significant Risk was achieved without remediation and where residual contamination remains); and
- a release of approximately 100 gallons of #6 fuel oil to the soil and stream bed west of Building #26 in August 1997 which was closed out with a Class A-2 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining.

CDW has review each of these past releases in regards to changes in the regulatory criteria since their closure and has determined that they do not represent a REC at this time.

The CRECs include:

- a release of #6 fuel oil to the stream west of Building #26, and the soil and groundwater in the vicinity of Building #26 identified in February 1996 which was closed out with a Class A-3 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining and future use of the area is restricted via an AUL).

CDW identify the following activities at neighboring properties that would indicate a significant potential for RECs, based on the information contained in the databases reviewed:

- the historic use of 313 Waverly Oak Road, located approximately 0.007 miles southeast of the Site as the former Shell Oil Bulk Storage Facility which stored a variety of petroleum products including kerosene, #2 fuel oil, aviation fuel, lube oil, leaded gasoline, and unleaded gasoline between approximately 1939 and 1992.

An asbestos survey was beyond the scope of this assessment. Due to the dates of construction, asbestos containing building materials (ACBMs) may be located on the property.

II SITE DESCRIPTION

CDW Consultants, Inc. (CDW) conducted an investigation of the south portion of the former Fernald Developmental Center (FDC) located at 200 Trapelo Road in Waltham, Massachusetts (the "Site"; Figure 1). The Site is defined as the land and improvements within property boundaries, including roadways, buildings, and undeveloped and landscaped areas as shown on the attached Figure 2. The approximately 50 acre Site currently contains 34 buildings as well as numerous small steamhead houses which were utilized by the Former FDC.

The FDC opened at the Waltham location in 1889 as the Massachusetts School for the Feeble-Minded and the buildings within the Site boundaries were constructed between 1890 and 1973. The Site is a portion of a 156.6-acre parcel which was purchased from the Commonwealth of Massachusetts by the City of Waltham on December 23, 2014, and is shown on Assessors' Map R045, Block 001, Lot 0001, included in Appendix A.

The Site buildings were previously connected to municipal water and sewer, but according to Mr. Paul Bermingham, Director of Campus Safety for the former FDC, the water lines for all on-site buildings have been cut and capped except for Building #124 (see Figure 2) which is still in use. Two residential cottages were heated with natural gas, two cottages were heated with #2 fuel oil, and the Grounds Department building is heated with propane. The remaining buildings on Site were previously heated by a steam generated at the on-site power plant using #6 fuel oil supplied by underground storage tanks (USTs). The power plant was shut down in April 2014. A list of the on-site buildings, their construction type, their gross square footage (GSF), their age, their heating type, their past use, and any observations of indications of possible oil/chemical storage or floor drains is included as Table 1. The Site is bound by Waverly Oaks Road and residential properties to the east, wetlands to the south, portions of the Former FDC to the north, and portions of the former FDC and the Girl Scout Museum and Cedar Hill Day Camp to the west.

The Site is located on the Boston North United States Geological Survey (USGS) 1985 Quadrangle Map at the following approximate location and elevation:

Universal Transverse Mercator (UTM) Zone 19 Coordinates	
4694965.0	UTM Y (Meters)
318226.9	UTM X (Meters)
Latitude/Longitude	
42.3876420	Latitude (North)
71.2082010	Longitude (West)
Elevation	
45 - 205	Feet above sea level

III USER-PROVIDED INFORMATION

Mr. Paul Bermingham, Director of Campus Safety for the former FDC, was interviewed on May 4, 2016 and May 6, 2016 regarding the Site and accompanied CDW on the Site walk. He provided the following information:

- Mr. Paul Bermingham has been working at the FDC since 1979.
- Previous ESAs have been conducted for the Massachusetts Division of Capital Asset Management and Maintenance (DCAMM). These were not available for review.
- Within the last 20 years, DCAMM removed polychlorinated biphenyl (PCB) containing transformers and USTs of which they were aware.
- There are no private drinking water wells or irrigation wells located at the Site.
- The City of Waltham purchased the property on which the Site is located in 2014.
- The steam tunnels from the power plant are filled with friable asbestos and are accessible through several of the building and steamhead houses located on-site.
- To his knowledge, the Site has always been on the municipal sewer system.
- The Site previously was supplied with water from the Massachusetts Water Resource Authority (MWRA) which was pumped into a water tower located across Trapelo Road.
- Water service to all on-site buildings has been cut and capped except for Building #124 (see Figure 2) which is still in use.
- The Site has been utilized as the Massachusetts School for the Feeble-Minded/FDC since the late 1880s.
- Some vehicle maintenance including brakes, oil changes, and exhaust work were conducted within Building #15, but no vehicle fueling was conducted at Building #15.
- Material stored by the FDC in Building #16 primarily consisted of food, clothing, and furniture.
- The power plant (Building #26) was closed in April 2014; after the shutdown of the plant, the cooling steam pipes within the plant began to burst.
- Two approximately 20,000 gallon # 6 fuel oil USTs used to fuel the power plant, which were installed approximately 15 years ago, were removed in the summer or fall of 2015.
- Thousands of gallons of paint were used in Building #24.
- Mr. Bermingham thought there used to be a UST to the east of Building #26.
- PCB containing equipment is still located within Building #26.
- Storage within building #124 includes gasoline in <5 gal containers, 55 gal drums of diesel, petroleum greases, acids, lead acid batteries, NiCad batteries, and highway salt/sand.
- One gasoline and one diesel fuel UST were removed approximately 15 years ago northeast of Building#124; the gasoline tank leaked but was “mitigated.”
- A cow barn which was located north of Building #124 burned prior to 1979.
- Building #34 was the original coal fired power plant for the facility.

IV SITE RECONNAISSANCE

On May 4, 2016 and May 6, 2016, CDW's inspector Lauren Konetzny performed an inspection of the Site. Due to the large size of the Site, the inspection consisted of driving along the roads and walking in areas surrounding, and where possible through, the buildings. CDW was accompanied by Mr. Paul Bermingham, Director of Campus Safety for the former FDC. The weather conditions were mild (40°F – 60°F) and overcast at the time of the site inspection. Access was provided to approximately half of the Site buildings. Select photographs taken during the Site Reconnaissance are included as Appendix B.

1.0 General Exterior Observations

The Site is improved with 34 buildings as well as numerous small steamhead houses. Larger on-site buildings were typically of brick construction with three stories or fewer and full or partial basements; these buildings included residences, a power plant, storage buildings, a laboratory/research building, and a laundry/therapeutic equipment manufacturing building. Maintenance/support buildings generally consisted of one story concrete block structures including a maintenance garage, parking garages, a greenhouse, workshops, storage sheds, and electrical distribution buildings. Four smaller two-story cottages with a basement with stucco or wood shingles are also located on the Site. Areas along roadways were typically wooded with general debris such as appliances, furniture, and tires scattered throughout the woods. Many of the wooded areas of the Site contained steep slopes. A list of the on-site buildings, their construction type, their gross square footage (GSF), their age, their heating type, their past use, and any observations of indications of possible oil/chemical storage or floor drains is included as Table 1.

2.0 General Interior Observations of Building

Approximately half of the building could not be entered due to structural concerns, vermin infestations, high voltage, asbestos concerns, or lack of safe access. In those buildings which were inspected, interior conditions were usually poor with significant damage due to vandalism, weather, burst pipes, and lack of maintenance. Ceiling panels were often broken resulting in ceiling and insulation debris covering floors. Paint was frequently peeling or chipping off of interior walls and windows, and floor tiles and lighting fixtures were commonly broken. Mold was observed on walls, ceilings, and floors. Floor drains were often observed in the bathrooms, kitchens, and basements of the buildings. The majority of the furnishings had been removed from the buildings. A list of the on-site buildings, their construction type, their gross square footage (GSF), their age, their heating type, their past use, and any observations of indications of possible oil/chemical storage or floor drains is included as Table 1.

3.0 Observations by Focus Area

Underground Storage Tanks (UST's)/Aboveground Storage Tanks (AST's)

No evidence of existing USTs at the Site was observed during the Site walk. One approximately 1,000-gallon propane AST was observed to the south of Building #124. A rusting steel tank estimated to be at least 500 gallons was also observed beneath debris within the former cow barn foundation north of Building #124. Vent and fill pipes leading into the basements of Building #17 and Building #18, indicate that ASTs were once and may still be located within these building. A visual inspection to determine whether the ASTs are still present could not be conducted by CDW due to structural issues with these buildings. A concrete block walled area located at the northwestern corner of Building #15 had the words "Hazardous Waste Oil Toxic" painted above it and is likely the former location of waste oil tanks associated with the maintenance work previously conducted at the garage. CDW did not observe any other indications of prior USTs or ASTs at the Site.

Drums or Containers

The following drums and containers potentially containing oil or hazardous materials were observed by CDW during the Site Reconnaissance:

- several empty <5 gal containers of oil/antifreeze in Building #15;
- an empty 55 gal drum to east of Building #15;
- an empty 55 gal drum to south of Building #15;
- 2 small propane tanks south of Building #15;
- several empty 5 gal or less containers of lube oil, transmission fluid, bleach, lime away, wax striper, and spray paint in Building #16;
- 1 argon gas cylinder and small quantities of laundry detergent in Building #22;
- a small propane tank for grill outside Building #23;
- several empty <5 gal containers of motor oil, paint thinner, and brush cleaner in Building #24;
- 2 LPG tanks west of building #26;
- ~13 canisters of gas (legible cans labeled oxygen & acetylene), empty 5 gal containers of "dyed low sulfur kerosene", 5 gal unlabeled container, and 2 < 5 gal gas containers in Building #28;
- A discarded empty 55 gal drum, paint cans & 2 empty 5 gal containers (one labeled "dyed low sulfur kerosene") east of building #28;
- ~5 gal container identified as "corrosive" in the basement of Building #32, label illegible;
- <2 gal of dishwashing detergents in Building #46;
- small quantities of paint in Building #56;
- a crushed empty 55 gal drum south of Building #121;
- several <5 gal containers of household cleaners and paint in Building #123;
- 2 empty 5 gal containers discarded to east of Building #123;
- an empty 55 gal drum northeast of Building #124;
- a partially filled unlabeled 55 gal drum north of building #124; and

- at least 2 55 gal drums buried in debris within former cow barn foundation north of building #124.

Intermodal Shipping Containers
There was one intermodal shipping container observed at the Site; it was located to the east of Building #124, but the contents were not inspected by CDW.

Indications of Polychlorinated Biphenyls (PCBs)
The following indications of possible PCB use were observed by CDW during the Site Reconnaissance:

- a pole mounted transformer south of Building #19;
- 3 pole mounted transformers south of Building #34; and
- a sign on door of Building #121stating "contains PCBs".

Pits, Ponds & Lagoons
No evidence of pits, ponds and/or lagoons was noted on the Site.

Odors
Other than odors emanating from a decomposing animal carcass in Building #35, no significant odors were noted on the Site.

Stained Soil or Pavement
No evidence of significantly stained soil or pavement was noted on the Site. Some staining was observed on the ground within the concrete block enclosure labeled waste oil at the northwestern corner of Building #15. Some staining was also observed on the floor of Building #24. No additional areas of significant staining were noted by CDW during the Site Reconnaissance; however, interior areas were frequently covered by ceiling tiles and other debris, and exterior areas were primarily covered with leaf debris, limiting the visibility of the majority of the outdoor ground surfaces at the Site.

Pools of Liquid
No unidentified pools of liquid were noted on the Site.

Stressed Vegetation
No evidence of stressed vegetation anticipated to be caused by contamination was noted at the Site; however, the Site Reconnaissance was conducted in early May and much of the vegetation appeared brown and wilted due to the season.

Solid Waste Disposal
Debris such as appliances, furniture, and tires were scattered throughout the wooded areas of the Site and along the roadways.

Medical/biological wastes/X-ray or other radioactive activities
No medical/biological wastes or x-ray or other radioactive activities were observed at the Site.

Septic Systems
No septic systems are in use on the Site. Water service to all on-site buildings has been cut and capped except for Building #124 which is still in use. This building is also currently serviced by the City of Waltham sewer system.

Storm/Waste Water
Wastewater generated at the Site building #124 is limited to sinks and toilets and is disposed of via the municipal sewer system. Stormwater drainage may be directed to the on-site catch basins.

Wells
No evidence of drinking water wells, dry wells or monitoring wells or irrigation wells was noted on the Site.

4.0 Records Review

Relevant, readily available and practically reviewable documents, records, and other information were obtained and reviewed as part of this Phase I ESA. This chapter provides a list of sources of information and supporting documents.

Federal Source Records and Information:
- Environmental Data Resources (EDR), Inc. federal environmental record databases search report prepared for CDW
- U.S. Geological Survey (USGS), Topographic Map of Boston North, Massachusetts, 7.5-minute series quadrangle

Commonwealth of Massachusetts Source Records and Information:
- EDR, Inc. state environmental record databases search report prepared for CDW
- Records maintained by the Massachusetts Department of Environmental Protection; online database accessed at http://mass.gov/edep

Local (County and Municipal) Records and Information:
- City of Waltham Assessor parcel information and ownership history
- City of Waltham Fire Prevention Division
- City of Waltham Health Department
- Historical aerial photographs of the subject property and vicinity obtained from EDR, Inc.
- Historical Sanborn Fire Insurance maps of the subject property and vicinity researched by EDR Inc.

4.1 Standard Environmental Record Sources

CDW engaged EDR, Inc. to scan both federal and state environmental record databases and provide a summary of facilities that are identified on any of the lists searched. The federal databases searched, and specified search radii, are as follows:

List	Standard Search Radius (Miles)
Federal National Priority List (NPL)	1.0
Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List	0.5
CERCLIS No Further Remedial Action Planned (NFRAP) List	0.5
Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS)	1.0
RCRA Non-CORRACTS	0.5
RCRA Generators	0.25
Emergency Response Notification System (ERNS)	Property Only
State-Equivalent CERCLIS	1.0
State Landfill and/or Solid Waste Disposal Site List	0.5
State Leaking Underground Storage Tank (LUST) List	0.5
State Leaking Above Ground Storage Tank (LAST) List	0.5
State Registered UST List	0.25
State Registered AST List	0.25
State Institutional Control Registry	0.5
State & Tribal Brownfields Sites	0.5

4.1.1 U.S. EPA CERCLIS List

The Comprehensive Environmental Response, Compensation and Liability Information System ("CERCLIS") is a list of potentially hazardous waste sites that have been reported to the EPA. Sites identified on the CERCLIS list are either on the National Priorities List ("NPL") or are proposed to be on the list. Before being added to the NPL, sites are assessed and categorized accordingly. The Site is not identified on the CERCLIS list. One CERCLA site is located within ½ mile of the Site. The table below summarizes the CERLA-listed properties.

CERCLIS ID	EPA ID	Site Name	Address	Distance (mi)
1000231138	MAD980916316	Duffy Bros Construction Inc.	411 Waverly Oaks Rd.	0.103 e

4.1.2 U.S. EPA National Priority List (NPL)

The EPA NPL identifies sites among the known releases and waste sites identified in the CERCLIS list. The sites are added to the NPL and prioritized based on the Hazard Ranking System ("HRS") for further investigation by the EPA. The NPL is part of the Federal Superfund program. The Site is not included on the NPL, and there are no NPL sites within 1 mile of the Site.

4.1.3 U.S. EPA CERCLIS NFRAP Site List

The EPA CERCLIS No Further Remedial Action Planned ("NFRAP") Site List includes sites that have been investigated and determined to pose no significant risk. This determination means that no further action is required under CERCLA. An NFRAP status means that a site is not a potential NPL site. The status does not mean that the site is not associated with a hazard. The Site is not included on the NFRAP list, and there are no NFRAP sites within ½ mile of the subject Site.

4.1.4 U.S. EPA RCRA CORRACTS Facilities List

The Corrective Action Sites ("CORRACTS") is a list of hazardous waste sites with Resource Conservation and Recovery Act ("RCRA") Corrective Action Activity. The CORRACTS list does not contain the subject Site and there are no sites within 1 mile of the subject Site on the CORRACTS list.

4.1.5 U.S.EPA RCRA non-CORRACTS TSD Facilities List

The RCRA list of Treatment, Storage and Disposal Facilities ("TSDF") identifies sites that generate, store, transport, treat or dispose of hazardous waste, according to RCRA designation of waste. The TSDF sites treat, dispose or transport hazardous waste. The non-CORRACTS TSDF list does not include the subject Site or any other non-CORRACT TSDF sites within ½ mile of the subject Site.

4.1.6 U.S. EPA RCRA Generators List

RCRA generators are sites that generate, store, transport, treat or dispose of hazardous waste. There are three categories of RCRA generators; large quantity generator ("LQGs"), small quantity generator ("SQGs"), and conditionally exempt small quantity generators ("CESQGs"). To be registered as a LQG, over 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste must be generated per month. There are no LQG within ¼ mile of the Site.

To be listed as a SQG, less than 1,000 kg and more than 100 kg of hazardous waste must be generated. The site must also generate 100 kg or less hazardous waste in any calendar month. There can never be more than more than 6,000 kg on-site at any time. There are four SQGs listed within ¼ mile of the Site, including one listing identified as the Site. However, the building which is listed as a SQG within the Target Property is actually located on the portion of the property outside the Site boundaries. The table below summarizes the SQGs listed.

EPA ID	Site Name	Address	Distance
MAD073798720	Shriver Center	200 Trapelo Rd.	Target Property*
MAD047058243	Beaver Visitec International Inc.	411 Waverly Oaks Rd.	0.103 e
MAC300012341	Bristol Myers Squibb	100 Beaver St.	0.176 s
MAD001013515	Light Metal Platers Inc.	70 Clematis Ave.	0.217 se

*located outside of the Site boundaries

The CESQGs generate less than 1 kg of acutely hazardous waste and less than 100 kg of hazardous waste per month. There are four CESQGs listed within a ¼ mile of the Site and are summarized in the following table.

EPA ID	Site Name	Address	Distance (mi)
MAD019685577	Duffy Bros Construction Inc.	411 Waverly Oaks Rd.	0.103 e
MAC300011046	Shell Service Station	225 Waverly Oaks Rd.	0.132 ssw
MAD985269836	Angio Medical	100 Beaver St.	0.176 s
MAR000511709	Ceramem Corporation	12 Clematis Ave.	0.189 sse

Non-Generators do not presently generate hazardous waste. The Site is not listed as a non-generator. There are 17 sites listed as non-generators within ¼ mile of the Site. The table below summarizes non-generator information.

EPA ID	Site Name	Address	Distance (mi)
MAD000769646	Duffy Associates	313 Waverly Oaks Rd.	0.007 se
MAD062187455	Pierce Brothers Oil Service Inc	329 Waverly Oaks Rd.	0.008se
MAD980732812	Computer Design & Applications Inc	411 Waverly Oaks Rd.	0.103 e
MAC300003464	Motiva Enterprises LLC	225 Waverly Oaks Rd.	0.132 ssw
MAD981208226	Xerox Reproduction Center	135 Beaver St.	0.163 s
MAD001020635	Moore George W. Inc	100 Beaver St.	0.176 s
MAR000010462	Genone Therapeutic Corp	100 Beaver St.	0.176 s
MAD982545105	Angio Medical Corp	100 Beaver St. @ Shriver Center	0.176 s
MAC300006871	Kala Pharmaceuticals Inc	100 Beaver St.	0.176 s
MAC300008232	Protein Forest Inc	100 Beaver St.	0.176 s
MAC300011400	Avila Therapeutics Inc	100 Beaver St.	0.176 s
MAD982192536	Lexicon Inc	100 Beaver St.	0.176 s

EPA ID	Site Name	Address	Distance (mi)
MAD981213002	Electro Painters Inc	97 Beaver St.	0.180 s
MAD001040138	Thornton Associates Inc	87 Beaver St.	0.190 sse
MAD981886476	Kans Engineering & Model Shop	83 Beaver St.	0.192 sse
MAD001006741	Ceramics Grinding Co Inc	74 Clematis Ave.	0.226 se
MAD985290303	Light Metal Platers Inc	96 Clematis Ave.	0.241 se

4.1.7 U.S. EPA ERNS List

The Emergency Response Notification System (ERNS) is a database used to store information on notification of oil discharges and hazardous substances releases. ERNS primarily contains initial accounts of releases, made during or immediately after a release occurs when the exact details of the release are often unknown. The data are usually not updated and there may be multiple reports for a single incident. The Site is included twice on the ERNS list as summarized in the following table.

EPA ID	Site Name	Address	Distance
96485409		200 Trapelo Rd	Target Property
96480306		200 Trapelo Rd	Target Property

4.1.8 Massachusetts Site Transition List (SHWS)

The State and Tribal Equivalent CERCLIS list of SHWS includes information regarding releases of hazardous materials and oil that have been reported to the Massachusetts Department of Environmental Protection (MassDEP). Each reportable release is assigned a unique Release Tracking Number (RTN). A review of the SHWS list indicates that there are 49 SHWS sites within 1 mile of the subject Site. The Site is on the SHWS list twice; however, the Thom Building which is listed as a SHWS within the Target Property is actually located on the portion of the property outside the Site boundaries. The following table summarizes the information obtained from the SHWS list for the sites located within ¼ miles of the Site; please see page 11 of the EDR Report Executive Summary which is attached as Appendix C for a full list of SHWS sites within 1 mile of the subject Site.

RTN	Release Address	Site Name/ Location Aid	Distance (mi)	Compliance Status	Chemical Type
3-21380	Fernald Center 200 Trapello Rd	Thom Building	Target Property*	RAO	#2 Fuel Oil
3-15442	200 Trapelo Rd	Fernald State School	Target Property	RAO	#6 Fuel Oil
3-3078	313 Waverly Oaks Rd	Shell Product Dist Plant Fmr	0.007 se	RAO	Not listed
3-13458	277 Waverly Oaks Rd	Gas Station	0.008 sse	RAO	Gasoline
3-25816	411 Waverly Oaks Rd		0.103 e	RAONR	Waste Oil
3-454	411 Waverly Oaks Rd	Beaver Visitec International Inc	0.103 e	RAO	Not listed
3-27761	225 Waverly Oaks Rd	Shell #73	0.132 ssw	RAO	Oil & Hazardous Material
3-28049	225-227 Beaver St	University of Massachusetts	0.159 sw	RAO	Cadmium, Chromium, & Lead
3-18647	110 Beaver St	George More Facility Fmr	0.172 s	RAO	PCBs
3-2692	117 Beaver St	Azko Nobel Coatings	0.174 s	RAO	Not Listed
3-16864	70 to 74 Clematis Ave	Light Metal Platers	0.199 sse	RAONR	Oil & Hazardous Material
3-501	70-74 Clematis Ave	Industrial Property	0.223 se	RAO	Not Listed
3-13361	102 Clematis Ave	Manhole Halfwat Down Driveway	0.245 se	RAO	Oil

*located outside of the Site boundaries

DEFINITIONS:

- DEPNFA: MassDEP has determined that no further action is necessary.
- DPS (Downgradient Property Status): A site where a DPS Submittal to MassDEP has stated that contamination on the property is coming from an upgradient property.
- LSPNFA – An LSP has determined that no further action is necessary.

- PSNC: Permanent Solution with no conditions.
- RAO (Response Action Outcome): A site/release where an RAO Statement was submitted to achieve regulatory closure. An RAO Statement asserts that response actions were sufficient to achieve a level of no significant risk or at least ensure that all substantial hazards were eliminated.
- RAONR: Response Action Outcome Not Required
- Tier 1D: Indicates a release where the responsible party does not provide a required submittal to MassDEP by a specific date/deadline.
- Tier II: Indicates that none of the Tier 1 Inclusionary Criteria have been met.
- UNCLSS: Unclassified
- URAM: A Release Tracking Number has been assigned to a release where a Utility-abatement Measure is being or was performed.

4.1.9 Solid Waste Facility/Landfill Site

The Solid Waste Facility/Landfill Sites ("SWF/LS") lists are an inventory of disposal facilities or landfills for solid waste and are listed by state. These sites may be active or inactive, depending on the State within which it is located. The Massachusetts SWF/LS list from MassDEP indicates that there are no facilities within ½ mile of the Site. The Site is not a SWF/LS site.

4.1.10 Massachusetts Leaking Underground Storage Tanks (LUST)

The Massachusetts Leaking Underground Storage Tanks ("LUST") list documents releases that have USTs identified as the source of the contamination. The LUST list is derived from the SHWS database of releases reported to MassDEP. The MassDEP LUST list indicates there are 11 LUST sites within ½ mile of the Site. The Site is listed as a LUST site. The following table summarizes the information obtained from the LUST list for the sites located within ½ mile of the Site.

RTN	Release Address	Site Name/ Location Aid	Distance (mi)	Compliance Status	Chemical Type
3-15442	200 Trapelo Rd	Fernald State School	Target Property	RAO	#6 Fuel Oil
3-3078	313 Waverly Oaks Rd	Shell Product Dist Plant Fmr	0.007 se	RAO	Not listed
3-27761	225 Waverly Oaks Rd	Shell #73	0.132 ssw	RAO	Oil & Hazardous Material
3-11729	54 Shawmut St	Off Route 60	0.143 ene	RAO	#2 Fuel Oil
3-10289	10 Clematis Ave	River Auto	0.193 sse	RAO	Gasoline

RTN	Release Address	Site Name/ Location Aid	Distance (mi)	Compliance Status	Chemical Type
3-28050	240 Beaver St	UMass Amherst Agricultural Center	0.339 wsw	RAO	Cadmium, Chromium, Lead, & Arsenic
3-19560	Beal Rd	Fitzgerald School	0.348 s	RAO	#2 Fuel Oil
3-29265	258 Trapelo Rd	Waltham Public Schools	0.376 n	RAO	#2 Fuel Oil
3-20750	400 Beaver St	Bentley College	0.438 wsw	RAO	#2 Fuel Oil
3-3507	257 Sycamore St Watertown, MA	Sycamore Auto Services	0.482 ese	RAO	Not Listed
3-29029	1060 Belmont St Watertown, MA		0.495 ese	RAO	Oil & Hazardous Material

4.1.11 Massachusetts Leaking Aboveground Storage Tanks (LAST)

The Massachusetts Leaking Aboveground Storage Tanks ("LAST") list documents releases that have ASTs identified as the source of the contamination. The LAST list is derived from the SHWS database of releases reported to MassDEP. The MassDEP LAST list indicates there are 4 LAST sites within ½ mile of the Site. The Site is not listed as a LAST site. The table below summarizes the listed LAST sites.

RTN	Release Address	Site Name/ Location Aid	Distance (mi)	Compliance Status	Chemical Type
3-3078	313 Waverly Oaks Rd	Shell Product Dist Plant Fmr	0.007 se	RAO	Not listed
3-454	411 Waverly Oaks Rd	Beaver Visitec International Inc	0.103 e	RAO	Not listed
3-501	70-74 Clematis Ave	Industrial Property	0.223 se	RAO	Not Listed
3-13361	102 Clematis Ave	Manhole Halfway Down Driveway	0.245 se	RAO	Oil

4.1.12 Massachusetts Underground Storage Tank Registry

The Massachusetts Underground Storage Tank Registry is a database of all registered USTs. Each facility with a registered UST is given a facility identification number. This database is maintained by MassDEP and is regulated under Subtitle I of RCRA. The Massachusetts UST Registry identified 3 sites with registered USTs within ¼ mile of the Site, including the Target Property. The corresponding information is summarized in the table below.

Facility ID	Facility Address	Facility Description	Distance (mi)	# Tanks In Use	# Tanks Removed
11192	200 Trapelo Rd	Walter E Fernald Developmental Ctr	Target Property	0	10
11240	313 Waverly Oaks Rd	Duffy Associates	0.007 se	0	9
11216	225 Waverly Oaks Rd	Shell #73	0.132 ssw	3	3

The 10 USTs listed at the Target Property are summarized in the following table. The status of all of the listed USTs at the Target Property are described as removed. Some or all of these USTs may have been located outside the Site boundaries.

Tank ID	Tank Status	Status Date	Date Installed	Capacity (gallons)	Contents
1	Removed	5/22/97	9/10/76	4,000	Gasoline
2	Removed	5/22/97	9/11/79	4,000	Gasoline
3	Removed	10/28/98	1/1/70	750	Diesel
4	Removed	12/28/01	1/1/81	550	Diesel
5	Removed	12/28/01	1/1/85	1,500	Diesel
6	Removed	12/28/01	1/1/81	1,000	Diesel
7	Removed	9/16/97		1,000	Diesel
8	Removed	6/30/97		500	Gasoline
9	Removed	5/20/97		1,000	Diesel
10	Removed	5/29/97		1,000	Gasoline

4.1.13 Massachusetts Aboveground Storage Tank Registry

The Massachusetts Aboveground Storage Tank Registry is a database of all registered ASTs. Each facility with a registered AST is given a facility identification number. MassDEP maintains this database. The MassDEP AST Registry did not identify any registered ASTs on the Site or within ¼ mile of the Site.

4.1.14 Massachusetts Institutional Control Registry

The Massachusetts Institutional Control Registry is a database containing documentation of controls on sites under the MassDEP Waste Site Cleanup Program. The controls are Activity and Use Limitations (AULs) that condition the future use of the site. The AULs are put in place after considering the current and potential future use of the site, guiding remediation and cleanup efforts. An AUL is not attached to a site that is determined to have unrestricted future use. The database indicates that the Site does have an AUL, and there are 3 other AULs within ½ mile of the Site. The following table summarizes the information obtained for the AUL sites located within ½ mile of the Site.

RTN	Release Address	Site Name/ Location Aid	Distance (mi)	Compliance Status	Chemical Type
3-15442	200 Trapelo Rd	Fernald State School	Target Property	RAO	#6 Fuel Oil
3-22303	333 Forest St	Fmr Heating Plant South of	0.477 nw	RAO	Asbestos & Arsenic
3-3078	313 Waverly Oaks Rd	Shell Product Dist Plant Fmr	0.007 se	RAO	Not listed
3-18647	110 Beaver St	George More Facility Fmr	0.172 s	RAO	PCBs

4.1.15 State and Tribal Brownfields Sites

The Brownfields Act of 1998 amended the Massachusetts General Law, Chapter 21E to establish liability relief and financial incentives to entice redevelopment of brownfields sites across the Commonwealth. A Brownfield Site, as defined by the EPA, is "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands" (United States EPA Brownfields Program). The Site is not listed as a Brownfield. There is one site within ½ mile of the Site that is listed as a Brownfield. The table below summarizes the Brownfield site information.

RTN	Facility Address	Facility Description	Distance	MCP Status	Chemical Type
3-454	411 Waverly Oaks Rd	Beaver Visitec International Inc	0.103 e	RAO	Not listed

4.1.16 Other Databases

Dry Cleaners

The United States ("US") Historical Cleaners database of business directories contains potential dry cleaner sites. Within this database are dry cleaners, laundry facilities, laundromats, and other cleaners, known as High Risk Historical Records ("HRHR"), due to the environmental concerns of using tetrachloroethene (also known as perchloroethylene) in the dry cleaning process. The EDR Report indicates there are no US Historical Cleaners site within ¼ mile of the Site.

Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant (MGP) Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. These plants represent HRHR, due to the environmental concerns of using whale oil, rosin, coal, and oil in the production of gas and the byproducts which this process produces including coal tar, sludges, and oil. The EDR Report indicates there are no MGP sites within one mile of the Site.

Historic Filling & Service Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. These facilities represent HRHRs, due to the environmental concerns of storage of large volumes of petroleum products. The EDR Report indicates there are no historic filling/service station sites within 1/8 mile of the Site.

4.2 Additional Environmental Record Sources

CDW contacted the following local agencies for information regarding any hazardous materials response incidents, chemical storage or releases, or notices of environmental violations at Site.

4.2.1 City of Waltham Fire Department

On May 19, 2016, CDW obtained a file summary from the Waltham Fire Department documenting the information related to the use and storage of oil and/or hazardous material for the combined 190-200 Trapelo Road property. The summary does not specify the locations of documented tanks, so information provided by the Waltham Fire Department does not necessarily pertain to the use and storage of oil and/or hazardous material within the Site boundaries. The following potentially pertinent information was contained within the file summary:

- A 1,000-gallon AST was installed at 200 Trapelo Road in November 2010.
- A 1,000-gallon AST was installed at 200 Trapelo Road in August 2004.
- Four 330-gallon ASTs were installed at 200 Trapelo Road in June 2002.
- A 275-gallon AST was installed at 200 Trapelo Road in October 2001.
- Six 500-gallon and one 1,000-gallon ASTs were installed at 200 Trapelo Road in January 1998.
- Two 275-gallon ASTs were installed at 200 Trapelo Road in April 1998.

- A 275-gallon AST was removed from 200 Trapelo Road in June 2010.
- Two 275-gallon ASTs were removed from 200 Trapelo Road in April 2015.
- A 275-gallon AST was removed from 200 Trapelo Road in February 2016.
- A 750-gallon UST was installed at 200 Trapelo Road in 1970.
- A 1,000-gallon UST was installed at 200 Trapelo Road in November 1973.
- A 4,000-gallon UST was installed at 200 Trapelo Road in 1976.
- A 4,000-gallon UST was installed at 200 Trapelo Road in 1979.
- A 500-gallon and a 548-gallon USTs were installed at 200 Trapelo Road in 1981.
- A 10,000-gallon UST was installed at 200 Trapelo Road at the workshop.
- A 4,000-gallon UST was installed at 200 Trapelo Road in November 1982.
- A 500-gallon UST was installed at 200 Trapelo Road in August 1983.
- A 1,500-gallon UST and four 500-gallon USTs were installed at 200 Trapelo Road in 1985.
- Two 20,000-gallon USTs were installed at 200 Trapelo Road in November 1996.
- A 1,000-gallon UST was removed from 200 Trapelo Road in July 1980.
- A 22,000-gallon UST, a 25,000-gallon UST, and a 29,000-gallon UST were removed from 200 Trapelo Road in October 1996; oil was observed in the ground and MassDEP was notified.
- Three 1,000-gallon USTs and a 500-gallon UST were removed from 200 Trapelo Road in May 1997. All four tanks were notes as "OK" or "clean appearance."
- Two 4,000-gallon USTs were removed from 200 Trapelo Road in May 1997; a Licensed Site Professional (LSP) Rep was on site.
- A 750-gallon UST was removed from 200 Trapelo Road in October 1998; the tank and hole were reported "OK."
- A 1,500-gallon UST, a 1,000-gallon UST, and a 500-gallon UST were removed from 200 Trapelo Road in December 2001; the tank and site were reported to "appear OK."
- Four 500-gallon USTs were removed from 200 Trapelo Road in June 2002. Three of the tanks and holes were noted to "appear clean;" one "had oil on exterior bottom of tank" and MassDEP was notified.
- Two 20,000-gallon USTs were removed from 200 Trapelo Road in July 2014; no damage to the tanks was observed, no leaks were observed, and soil tests were completed.
- A temporary 500-gallon tank which were installed in a trailer (for 7 months) at 200 Trapelo Road for temporary heat were inspected on 11/19/10.
- Two 500-gallon ASTs were installed and inspected on 5/02/14 at 200 Trapelo Road.
- Two 500-gallon, one 2,000-gallon, and one 5,000-gallon AST were installed and inspected at 200 Trapelo Road on 3/09/15.
- George Wilkinson Co. at 200 Trapelo Rd had a Flammable Storage permit which expired 11/08/2011.

The following RTNs and Notices of Noncompliance (NONs) were listed by the Waltham Fire Department in the file summary for 190-200 Trapelo Road: RTN 3-10367, RTN 3-15121, RTN 3-15149, RTN 3-10725, RTN 3-13467, RTN 3-21380, RTN 3-21892, RTN 3-21893, NON-NE 95-9029-2-E 7/5/95, NON-NE 95-9030-2E 6/20/95, and NON-NE 98-7011 5/18/98.

4.2.2 City of Waltham Board of Health

On May 4, 2015, CDW personnel visited the City of Waltham Health Department to review pertinent environmental records for the former FDC. The following information was reviewed from the file:

- A June 27, 2003 letter indicating that RTN 3-21892 had been assigned for a release of #2 fuel oil from a former 500 gallon UST at Malone Park Building No. 21. The letter indicated that MassDEP was notified of the release on June 27, 2002 and that an RAO was filed for the release on June 27, 2003. Malone Park Building No. 21 is not located within the Site boundaries.
- A July 2, 2003 letter indicating that RTN 3-21893 had been assigned for a petroleum release at Malone Park Building No. 23. The letter indicated that a Phase I Completion Statement and Tier Classification submittal, classifying the release as Tier II, was filed for the release on June 27, 2003. Malone Park Building No. 23 is not located within the Site boundaries.
- A March 19, 2008 letter indicating that RTN 3-13467 had been assigned for a release of #6 fuel oil from three USTs formerly located at the power plant. The letter indicated that MassDEP was notified of the release on February 20, 1996 and that an RAO with an AUL was filed for the release on March 19, 2008.
- A June 3, 2011 Notice of Responsibility (NOR) from MassDEP to the Mass Department of Developmental Services for RTN 3-30088, located at the South Fernald Power Plant.
- A June 14, 2011 Release Notification Form (RNF) for a 120-day reportable condition at the South Fernald Power Plant for lead, arsenic, barium, and several polycyclic aromatic hydrocarbons (PAHs).
- According to the form, knowledge of the Release was obtained by the Potentially Responsible Party (PRP) on June 1, 2011. A temporary oil burner and 500 gal tank were installed in a trailer (for 7 months) at 200 Trapelo Road for temporary heat, inspected by Dep. Richar dson 11/19/10. 2 -500 gal aboveground tanks and oil burners were installed and inspected 5/02/14 (Lt. Ferranti). 2-500 gal, 1-2,000 gal, 1-5,000gal aboveground tanks were installed and inspected (Dep Richardson) with 2-oil burners, on 3/09/15.

4.2.3 City of Waltham Building Department

On May 4, 2016, CDW personnel visited the City of Waltham Building Department to review records related to the release and storage of oil and hazardous materials at the FDC located at 190 and/or 200 Trapelo Road. The Building Department personnel indicated that there were no environmental records on file.

4.2.4 City of Waltham City Clerk

On May 6, 2016, CDW personnel visited the City of Waltham City Clerk to review records related to the release and storage of oil and hazardous materials at the FDC located at 190 and/or 200 Trapelo Road. City Clerk personnel indicated that there were no environmental records on file for the FDC located at 190 and/or 200 Trapelo Road. According to City Clerk personnel, records at the City Clerk's Office go back to 2002.

4.3 Massachusetts Department of Environmental Protection

Historical releases at the FDC identified through a review of the EDR Radius Map Report, the MassDEP Searchable Site List (May 2016), and the City of Waltham Board of Health Files are summarized below based on reports obtained from the MassDEP Searchable Site List.

RTN 3-10367

RTN 3-10367 was assigned to a release of approximately 300 gallons of #6 fuel oil from the spill box to the ground surface after routine filling of the USTs located to the west of power plant (Building #26) on December 29, 1993. Fuel oil flowed over the nearby retaining wall into the brook west of the power plant resulting in free phase floating oil and stained debris in several standing pools as far as 300 feet downgradient/south of the power plant. Sorbent booms and a containment barrier were placed in the brook to prevent further migration of the oil. Approximately 150 gallons of separate phase oil was removed from the brook using a vacuum truck, and petroleum contaminated debris was removed from the brook. The MassDEP Searchable Site Website indicates that a Class C-1 RAO Statement documenting that a condition of No Substantial Hazard and a Temporary Solution had been achieved for the RTN 3-10367 was submitted to MassDEP on June 28, 2002, but this report was not available for review on the Searchable Site Website. A June 25, 2002 Phase III – Remedial Action Plan/Class C RAO for RTN 3-31467 states that RTN 3-10367 "is addressed by this Phase II Comprehensive Site Assessment."

RTN 3-10725

RTN 3-10725 was assigned on March 22, 1994 when MassDEP was notified of a threat of release due to failed UST tank tightness tests for two 4,000-gallon gasoline tanks located to the east of the "farm & grounds building" (Building #124). The tanks were subsequently removed and approximately 120 cubic yards of impacted soil was disposed of off-site. Based on the results of post-remedial soil and groundwater sampling, a Class A-2 RAO Statement submitted to MassDEP on June 21, 2000. The Statement indicated that a condition of No Significant Risk and a Permanent Solution had been achieved for the RTN 3-10725 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved.

RTN 3-11878

RTN 3-11878 was assigned to a release of approximately 30 gallons of #6 fuel oil during filling of one of the three USTs on November 21, 1997. This release occurred to the paved area west of the power plant (Building #26) and the adjacent stream. Absorbent booms were initially placed on the ground and across the stream at several locations to contain the oil and absorbent materials were utilized to capture the oil from the pavement and along the brook. Impacted sediment was also removed from the brook. A Class A-1 RAO Statement was submitted to MassDEP on January 23, 1995 indicating that RTN 3-11878 had been remediated to background conditions.

RTN 3-13467

RTN 3-13467 was assigned to a release of #6 fuel on February 20, 1996 after oil was observed in the vicinity of the concrete retaining wall and within the adjacent stream to the west of the power plant (Building #26). Absorbent pad and booms were deployed at the base of the retaining wall and in the stream. The three #6 fuel oil USTs located to the west of Building #26 were replaced between July and December 1996. Approximately 1,000 cubic yards of soil and 15,000 gallons of groundwater were removed from the Site. Following these remedial activities, a non-aqueous phase #6 fuel oil at a thickness of greater that 0.5 inches was observed within two monitoring wells within the basement of Building #26 in 1998. Separate phase product was still present in monitoring wells at a thickness greater than 0.5 inches as of March 2002. Quarterly groundwater gauging was conducted in 7 monitoring wells between August 2003 and May 2007; no measurable non-aqueous phase liquid (NAPL) was identified in any of the wells between January 2006 and May 2007. Based on the results of soil and groundwater sampling data and a Stage I Environmental Screening, a Class A-3 RAO Statement was submitted to MassDEP for RTN 3-13467 on March 21, 2008. The report documented that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-13467 utilizing a Method 1 Risk Characterization relying on an AUL to limit future use of a 123 foot by 145 foot area beneath and to the south of Building #36. The AUL prohibits use of this area as an office, store, residence, school, or child day care; the cultivation of fruits and vegetables destined for human consumption and recreational activities such as baseball, swimming, fishing, and hiking; and leisure activities such as picnicking, sunbathing, and entertaining. The AUL also prohibits the relocation of contaminated soils within the AUL area without a Licensed Site Professional (LSP) Opinion and requires that any subsurface activity which may result in direct contact with, disturbance, or relocation of contaminated soil between 2 and 15 feet be conducted under a Soil Management Plan.

RTN 3-15121

RTN 3-15121 was assigned to a release of approximately 35 gallons of gasoline from a punctured fuel tank on a passenger van on May 20, 1997. This release occurred on the northern portion of the former FDC, outside the Site boundaries. A Class A-2 RAO Statement was submitted to MassDEP on July 11, 1997. The Statement established that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-15121 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved.

RTN 3-15149

RTN 3-15149 was assigned on May 30, 1997 as the result of a photoionization detector (PID) reading over 100 ppm during headspace analysis of a sample collected from the bottom of a tank excavation during removal of a 1,000-gallon gasoline UST located to the north of the power plant (Building #26). Based on laboratory results for soil samples collected from the extent of the tank grave, a Class B-1 RAO Statement was submitted to MassDEP on June 30, 1997. The Statement established that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-15149 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved.

RTN 3-15442
RTN 3-15442 was assigned for a release of approximately 100 gallons of #6 fuel oil when the fuel line from a fuel delivery truck became disconnected during fuel oil delivery to the USTs west of the power plant on August 19, 1997. Approximately 50 gallons of the released oil migrated down a concrete retaining wall into the dry drainage stream bed located west of the power plant. Initially absorbent materials were placed on the driveway and absorbent booms were placed downstream of the impacted portion of the stream bed and in the driveway to prevent additional fuel oil migration into the stream. Approximately 15 cubic yards of soil were excavated from the stream bed and from beneath the driveway and disposed of off-site. A Class A-2 RAO Statement achieved was submitted to MassDEP on October 24, 1997. The Statement indicated that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-15442 utilizing a Method 2 Risk Characterization, but that background conditions were not achieved.

RTN 3-21380
RTN 3-21380 was assigned on January 7, 2002 for a release of approximately 12 gallons of diesel fuel due to a malfunctioning supply pump which served the diesel generator in the basement of the Thom Building. A Class A-1 RAO Statement indicating that RTN 3-21380 had been remediated to background conditions was submitted to MassDEP on July 16, 2002. RTN 3-21380 was not located within the Site boundaries.

RTN 3-30088
A Release Notification form for the detection of arsenic and benzo(a)pyrene in the soil in the vicinity of Building #26 above S-1 Reportable Concentrations was submitted to MassDEP by the Commonwealth of Massachusetts Department of Developmental Services in June 2011; MassDEP assigned RTN 3-30088 to the release. A retraction of this notification was submitted in November 2011 based on the presence of coal and coal ash within the soil samples, making the detection of arsenic and benzo(a)pyrene exempt from reporting.

The following two RTNs are specific to the portion of the FDC to the north of the Site boundary:

RTN 3-21892
RTN 3-21892 was assigned on June 27, 2002 as the result of a PID reading over 100 ppm during removal of a 500 gallon #2 fuel oil UST located in the vicinity of Malone Park Building No. 21. Approximately 45 cubic yards of petroleum impacted soil were removed from the UST grave and disposed of off-site. A light sheen was observed on the groundwater within the excavation. Based on the results of post remediation soil and groundwater sampling data, a Class A-2 RAO Statement indicating that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-21892 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved was submitted to MassDEP on July 3, 2003. RTN 3-21892 was not located within the Site boundaries.

RTN 3-21893
RTN 3-21893 was assigned on June 27, 2002 as the result of a PID reading over 100 ppm during removal of a 500 gallon #2 fuel oil UST located in the vicinity of Malone Park Building No. 23. Approximately 50 cubic yards of petroleum impacted soil were removed from the UST grave and disposed of off-site. A light sheen was observed on the groundwater within the excavation. Based on the results of post remediation soil, groundwater, soil gas, and indoor air sampling data, a Class A-2 RAO Statement indicating that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-21893 utilizing a Method 3 Risk Characterization, but that background conditions were not achieved was submitted to MassDEP on August 4, 2005. RTN 3-21893 was not located within the Site boundaries.

4.4 Physical Setting Sources

CDW reviewed several sources of publications including the United States Geological Survey (USGS), the Federal Emergency Management Agency (FEMA) Maps, MassGIS and EDR, Inc. to gather information pertaining to the subject property and the physical setting source.

According to the Massachusetts 21E Map, there are 6 MassDEP AUL Sites within ½-mile of the Site. These sites are located within the Site boundaries (RTN 3-13467 which is shown to the east of Site is actually located at Building #26), to the northwest, south, and southeast of the Site (Figure 3).

According to available information, the site is not located within an Interim Wellhead Protection Area (IWPA), a Zone II of a public water supply well, a potentially productive aquifer, nor an EPA Sole Source Aquifer (Figure 4).

According to MassGIS, wetlands are present on the southeastern portion of the Site and a stream runs north to south, approximately through the center of the Site, passing just west of Building #26. Wetlands and streams are located within ½-mile to the northwest, south, east, and northeast of the Site and ponds are located within ½-mile to the east and west of the Site (Figure 5).

The portion of the Site south of Building #26 is located within the FEMA Flood Zone X, an area of moderate flood hazard with a 0.2-percent-annual-chance flood, and the FEMA Flood Zone AE, an area subject to inundation by the 1-percent-annual-chance flood event (Figure 6).

The western corner of the Site is shown as a private Open Space area; however, this Open Space Area likely depicts the Girl Scout Museum and Cedar Hill Day Camp which ends at the property line and does not extend on to the Site. Other Open Spaces are located within 0.5-miles of the Site to the north, south, southwest, east, northeast, and west (Figure 7). There are no Natural Heritage and Endangered Species Program (NHESP) Natural Communities, NHESP Priority Habitats of Rare Species, NHESP Estimated Habitats of Rare Wildlife, Areas of Critical Environmental Concern (ACEC), NHESP certified vernal pools, or potential vernal pools mapped on the Site. There are NHESP certified vernal pools and potential vernal pools within ½-miles to the east and west of the

Site (Figure 8).

The Site elevation varies from 45 to 205 feet above sea level, and the topography is generally hilly. The bedrock at the Site consists of Dedham Granite (Proterozoic Z) and Diorite and gabbro (Proterzoic Z) (Zen et. al. 1983). Numerous bedrock outcrops were observed at the Site.

Surface soils at the Site consist of Freetown muck, ponded, 0 to 1 percent slopes; Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes; Narragansett-Hollis-Rock outcrop complex, 15 to 25 percent slopes; Canton fine sandy loam, 3 to 8 percent slopes; urban land; Charlton-Urban Land-Hollis complex, 3 to 15 percent slopes, rocky; and Udorthents, wet substratum according to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (USDA 2014).

4.5 Other Historical Use Information

CDW researched several sources of historical information to identify the approximate year(s) of development of the Site, the past use(s) of the Site since its initial development, and possible historic storage and/or use of oil and/or hazardous materials at the Site. Such sources included, but were not limited to, the research and review of numerous historical reports, historical aerial photographs, and historical Sanborn Maps.

4.5.1 Historic Reports

CDW reviewed numerous historic reports related to the Site. Pertinent information related to the historic use of the Site and storage and use of oil and/or hazardous materials at the Site which was not previously discussed in this report is summarized below.

According to the 2005 History of the Water E. Fernald Development Center prepared by Marie E. Daly:

- Construction of the Massachusetts School for the Feeble-Minded began at the Site in 1888. Prior to that time, the land was used for farming, belonging primarily to the Bird, Baldwin, Lawrence, and Warren families.
- When the school opened in 1889 there were 142 residents; it reached its highest population of 2,600 residents in the 1960s.
- Medical experiments were sometimes conducted on residents, primarily in the 1940s and 1950s, including feeding residents small doses of radioactive isotopes.

According to a July 11, 1995 Phase I Site Investigation for RTN 3-10367 prepared by Lord Associates, Inc.:

- Approximately 1,700,000 gallons per year of #6 fuel oil was used for boiler plant operations at the power plant. The #6 fuel oil was stored in a 23,000 gallon, a 25,000 gallon, and a 28,000 gallon UST which were installed in 1954.
- The depth to groundwater in the vicinity of the power plant was between 0.3 and 9 feet below

ground surface.

- Mo O'Connell of the Massachusetts Department of Mental Retardation (DMR), stated that the only previous release on record occurred on November 30, 1980 when approximately 200 gallons of #6 fuel oil was spilled onto the ground surrounding the USTs to the west of Building #26; approximately 100 gallons of oil water mixture were collected from the brook to address the release.

According to a February 20, 1997 Phase I – Initial Site Investigation & Tier Classification for RTN 3-13467 prepared by VERTEX Engineering Services, Inc.:

- Two 20,000 steel #6 fuel oil USTs located west of the Building #26 were installed in December 1996, replacing three former USTs which were installed in 1954. The capacities of the former tanks were 23,000, 25,000 and 28,000 gallons.
- A spill of approximately 15-gallons of No. 6 oil occurred on March 21, 1988 when a truck from Berlin Transportation Company attempted to back down the parking lot, resulting in a release from the top of the vent of the truck. DEP Case No. N88-405 was issued to the site. Zecco, Inc. was contracted to clean the spill; subsequently, no further actions were deemed necessary and the case was closed.
- MassDEP Incident Response # N92-0797 was issued to the site following an oil spill which occurred behind the Fernald Power Plant on June 24, 1992. During cleanup activities, one buried drum and oily debris were discovered on site. Cyn Oil was contracted to remove the drum which appeared to contain waste oil. Spill cleanup was completed, the drum was transported off-site, and the case was closed.
- According to Mr. O'Connell, approximately 1,623,506 gallons of #6 fuel oil associated with plant operations were consumed in 1996.
- At least six floor drains were observed within the basement of the power plant. Mr. O'Connell stated that "floor drains discharge to a clay pipe which is located along the base of the tank and discharges into the brook from beneath the bridge." Several pipes protrude from the concrete retaining wall located along the brook at the northwestern portion of the site and periodically discharge softened water (utilized during plant operations) into the brook.

According to an October 24, 1997 RAO Statement for RTN 3-15442 prepared by CEA:

- Mr. Maurice O'Connell, the Plant Superintendent at the Fernald School at the time, informed CEA that several releases of #6 fuel oil had occurred in the area west of the power plant and that the largest of these releases occurred approximately 30 years ago (~1967) when about 100 gallons of #6 fuel oil was released to the driveway surface during filling of the USTs.

According to a March 19, 2008 Class A-3 RAO Statement for RTN 3-13467 prepared by Coneco Engineers & Scientists, Inc.:

- On May 27, 1997 two 4,000-gallon steel gasoline USTs were removed from the east of Building #124.
- Groundwater in the vicinity of Building #36 was measured at <1 foot bgs to 9 feet bgs and groundwater flow was in a southwesterly direction in May 2007.

According to the December 21, 2001 DMR – Fernald Developmental Center Site Study:

- Two new 20,000-gallon fuel storage tanks were installed at Building #26 in 1997.

According to the March 2005 Spill Prevention, Control, and Countermeasure (SPCC) Plan, at the time the Plan was written:

- A 22,000 gallon #6 fuel oil UST, a 24,000 gallon #6 fuel oil UST, and a 27,000 gallon #6 fuel oil UST installed prior to 1959 were located at the power plant (Building #26).
- A diesel fuel and a gasoline UST of unknown volume installed prior to 1978 were located at the power plant (Building #26).
- Two 4,000-gallon gasoline USTs installed prior to 1978 were located at the farm & grounds building (Building #124).
- An empty 275-gallon AST installed in 1975 was located at the power plant (Building #26).
- A 275-gallon and a 50-gallon diesel fuel ASTs installed in 1975 were located at the farm & grounds building (Building #124).
- A 100-gallon diesel fuel AST installed in 1984 was located at Building #35.
- A 100-gallon diesel fuel AST installed in 1984 was located at Building #46.
- A 275-gallon #2 fuel oil AST installed in 1975 was located at Building #17.
- A 275-gallon #2 fuel oil AST installed in 1975 was located at Building #18.
- Two 275-gallon waste oil ASTs installed in 1980 and one 55-gallon drum containing waste oil were located at Building #15.
- A 15-gallon pole mounted transformer was located at the farm & grounds building (Building #124).
- A 35-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater was located at Building #24.
- Three pole mounted transformers with a capacity of 70 gallons containing PCBs at concentrations of 50 ppm or greater was located at Building #34.
- A 25-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater was located at Building #18.
- A 219-gallon pad mounted transformer was located at Building #32.
- A 229-gallon pad mounted transformer was located at Building #35.
- A 219-gallon pad mounted transformer was located at Building #37.
- A 213-gallon pad mounted transformer was located at Building #12.
- A 213-gallon pad mounted transformer was located at Building #46.
- Two pad mounted transformers with a capacity of 800 gallons were located at the farm & grounds building (Building #124).
- Three pad mounted transformers with a capacity of 30 gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, were located at the power plant (Building #26).
- Nine pad mounted transformers with a capacity of 30 gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, were located at Building #121.

- A 1,090-gallon transformer containing PCBs at concentrations of 50 ppm or greater was located at Building #22.
- Nine 55-gallon drums of sludge clutter, 4 55-gallon drums of steam condensate treatment, 2 55-gallon drums of #2 oil, 7 55-gallon drums of caustic soda, and 2 55-gallon drums of turbine oil were stored on the concrete floor of the power plant (Building #26) on a May 23, 1996 site visit.
- One 16-gallon drum of grease, one 16-gallon drum of parts cleaner, one 1-gallon container of battery acid, and several cases of motor oil and antifreeze were observed at the garage (Building #15) on a May 23, 1996 site visit.

Select pages of the SPPC Plan are attached as Appendix D.

4.5.2 Sanborn Maps

CDW reviewed Sanborn Maps of the Site and the surrounding areas dated 1897, 1903, 1911, 1918, 1950, and 1972. The Sanborn Map report is provided in Appendix E.

1897

The 1897 Sanborn Maps depict 11 structures at the Site. These buildings include Building #33 and Building #34. Labeled building usage includes coal shed/ heaters/ storage (Building #34), dormitory/school rooms/kitchen (Building #33), administration/ kitchen (possibly Building #1 – outside Site boundaries), coal shed/shed/laundry/engine (possibly Building #16), carpenter, fumigating house, hospital (possibly Building #49), dormitory (possibly Building #6 – outside Site boundaries), and school building/gymnasium (possibly Buildings #4 and #5 – outside Site boundaries). Steam pipes are also shown running between some of the buildings.

1903

The 1903 Sanborn Maps are very similar to the 1897 Maps with no noteworthy differences.

1911

The 1911 Sanborn Maps show the 11 structures depicted on the 1897 and 1903 maps with the same listed usage, and three additional buildings located to the east of the existing structures. These new buildings are assumed to be Building #10, Building #11, and Building #12, which according to the December 21, 2001 DMR-Fernald Developmental Center Site Study were constructed between 1904 and 1907. No usage is noted for these buildings and out of these, only Building #12 is within the Site boundaries.

1918

The 1918 Sanborn Maps depict 21 structures at the Site. These buildings include Buildings #6 (outside Site boundaries), #11 (outside Site boundaries), #12, #16, #23, #33, #34, and #49. Labeled building usage includes boiler house/store house (#34), cow barn, silo, wagon shed, tool house, shed, stable, farm house, men's home, infirmary (#23), laundry building (#16), sterilizer, girl's dormitory (#6), hospital (#49), girls home (#11), and nurses home (#12). Piping subways and water pipes are also shown throughout the Site.

1950
The 1950 Sanborn Maps depict 32 structures at the Site. These buildings include the following Buildings #6 (outside Site boundaries), #11 (outside Site boundaries), #12, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #26, #28, #32, #33, #34, #35, #46, #49, and #120. Labeled building usage includes cow barn, silo, blacksmith, milk room, employees building (#32), garages (#15), shed, stable, farm house, men's home, infirmary (#23, #35, #50), greenhouse (#120), power plant (#26), workshop (#24), store house (#28), laundry (#22), storage of supplies (#16), dwellings (#17, #18, #19, #20), transformer house, girl's dormitory (#6), hospital (#49), girls home (#11), and nurses home (#12). Piping subways and water pipes are also shown throughout the Site.

1972
The 1972 Sanborn Maps depict 33 structures at the Site. These buildings include the following Buildings #6 (outside Site boundaries), #11 (outside Site boundaries), #12, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #26, #28, #32, #33, #34, #35, #46, #49, #120, and #123. Labeled building usage includes silo, employees building (#32), garages (#15), shed, stable, farm house, men's home, infirmary (#23, #35, #50), greenhouse (#120), power plant (#26), workshop (#24), store house (#28), storage (#123), laundry (#22), storage of supplies (#16), dwellings (#17, #18, #19, #20), transformer house, girl's dormitory (#6), hospital (#49), girls home (#11), and nurses home (#12). Piping subways and water pipes are also shown throughout the Site.

4.5.3 Aerial photographs

Aerial photographs were obtained from EDR. Based on aerial photography from 1938, 1955, 1957, 1960, 1969, 1970, 1978, 1980, 1986, 1995, 2006, 2008, 2010 and 2012. The EDR Aerial Photo Decade Package Report is provided in Appendix F. With the exception of a structure to the west of the power plant observed in the 1969 and 1970 photographs (likely the farm house shown on the 1918 through 1972 Sanborn Maps), the layout of the Site appears to have been very similar from 1969 to 2012 to the layout observed during CDW's May 2016 Site Reconnaissance. The earlier photographs show a few additional structures in the south central portion of the Site in comparison to what was observed during the Site Reconnaissance. At least 8 large circular structures, approximately 25 to 100 feet in diameter, which appear to be storage tanks are shown in the 1955 through 1986 aerial photographs immediately to the south east of the Site, across Waverly Oaks Road.

V CONCLUSIONS

CDW has performed this Phase I Environmental Site Assessment of the south portion of the former FDC (as shown on Figure 2) located at 200 Trapelo Road in Waltham, Massachusetts. The assessment was completed in general conformance with the scope and limitations of ASTM Standard E 1527-13. This assessment identified evidence of Recognized Environmental Conditions (RECs), Historical Recognized Environmental Conditions (HRECs), and Controlled Recognized Environmental Conditions (CRECs) in connection with the Site. The RECs include evidence of possible Site contamination from the following sources:

- the past use of Building #15 for vehicle maintenance;
- the past use of Building #16 as a laundry facility;
- the past presence of a fumigating house to the west of Building #49;
- the past use of Building #22 as a laundry and manufacturing facility;
- the past use of large quantities of paint in Building #24;
- the past use of Building #24 as a welding, carpentry, paint, and electrical shop;
- the past use of Building #34 and Building #26 as a power plant;
- the past use of Building #28 as a storage shed for Building #24;
- the past use of Building #120 as a greenhouse;
- the past use of Building #123 as a plumbing shop;
- the past use of Building #124 and surrounding structures for the storage of grounds maintenance equipment and supplies including the purported storage of petroleum products, acids, and batteries at Building #124;
- the past presence of a blacksmith shop northwest of Building #124;
- the purported past use of radioactive isotopes in medical experiments conducted at the former FDC;
- the past use and storage of # 6 fuel oil in USTs (40,000 gallons to 76,000 gallon cumulative storage capacity, with approximately 1,700,000 gallons/year being consumed in the mid-1990s) from 1954 to 2015;
- PCB containing equipment located within Building #26;
- storage of various petroleum products, acids, and batteries, within building #124;
- debris such as appliances, furniture, and tires scattered throughout the woods;
- a diesel fuel and a gasoline UST of unknown volume installed prior to 1978 at Building #26;
- two 4,000-gallon gasoline USTs installed prior to 1978 at Building #124 (removed in May 1997);
- an empty 27- gallon AST installed in 1975 at Building #26;
- a 275-gallon and a 50-gallon diesel fuel ASTs installed in 1975 at Building #124;
- a 100-gallon diesel fuel AST installed in 1984 at Building #35;
- a 100-gallon diesel fuel AST installed in 1984 at Building #46;
- a 275-gallon #2 fuel oil AST installed in 1975 at Building #17;
- a 275-gallon #2 fuel oil AST installed in 1975 at Building #18;
- two 275-gallon waste oil ASTs installed in 1980 at Building #15;

- past storage of waste oil within a 55-gallon drum at Building #15;
- a 15-gallon pole mounted transformer documented at Building #124;
- a 35-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #24;
- three pole mounted transformers with a capacity of 70-gallons containing PCBs at concentrations of 50 ppm or greater documented at Building #34;
- a 25-gallon pole mounted transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #18;
- a 219-gallon pad mounted transformer documented at Building #32;
- a 229-gallon pad mounted transformer documented at Building #35;
- a 219-gallon pad mounted transformer documented at Building #37;
- a 213-gallon pad mounted transformer documented at Building #12;
- a 213-gallon pad mounted transformer documented at Building #46;
- two pad mounted transformers with a capacity of 800-gallons documented at Building #124;
- three pad mounted transformers with a capacity of 30-gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, documented at Building #26;
- nine pad mounted transformers with a capacity of 30 gallons and three pad mounted transforms of unknown capacity, one of which contained PCBs at concentrations of 50 ppm or greater, documented at Building #121 and the presence of a "contains PCBs" sign on the door of Building #121 on May 6, 2016;
- a 1,090-gallon transformer containing PCBs at concentrations of 50 ppm or greater documented at Building #22;
- nine 55-gallon drums of sludge clutter, four 55-gallon drums of steam condensate treatment, two 55-gallon drums of #2 oil, seven 55-gallon drums of caustic soda, and two 55-gallon drums of turbine oil were stored on the concrete floor of Building #26 on May 23, 1996;
- one 16-gallon drum of grease, one 16-gallon drum of parts cleaner, one 1-gallon container of battery acid, and several cases of motor oil and antifreeze were observed at Building #15 on May 23, 1996;
- several empty containers of oil and antifreeze observed in Building #15 on May 4, 2016;
- at least eight 55-gallon drums observed at exterior locations throughout the Site on May 4, 2016 and May 6, 2016;
- a rusting steel tank estimated to be at least 500-gallons observed beneath debris within the former cow barn foundation north of Building #124 on May 6, 2016;
- several empty containers of lube oil, transmission fluid, bleach, lime away, wax striper, and spray paint observed in Building #16 on May 4, 2016;
- unknown/undocumented floor drain discharges from any of the numerous floor drains located at the Site, particularly those located within Building #15, #22, #24, and #26;
- numerous past releases of #6 fuel oil to the area west of Building #26 as reported by Mr. Maurice O'Connell, a former Plant Superintendent at the FDC, in 1997, including a release of approximately 100 gallons of #6 fuel oil to the surface around 1967;
- a November 1980 release of approximately 200 gallons of #6 fuel oil to the ground and brook

west of Building #26; and
- a December 1993 release of approximately 300 gallons of # 6 fuel oil to the ground and brook west of building #26 for which documentation of closure was not on file at the MassDEP Searchable Site List

The HRECs include:
- a release of oil "behind" Building #26 in June 1992 in which a buried drum and oil debris were discovered and cleaned up resulting in No Further Action designation by MassDEP;
- a release of gasoline to the soil and groundwater from one of the 4,000 gallon USTs located to the east of Building #124 identified in March 1994 which was closed out with a Class A-2 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining);
- a release of approximately 30 gallons of #6 fuel oil to the paved area and stream west of Building #26 in November 1997 which was closed out with a Class A-1 RAO Statement (a Permanent Solution remediated to background conditions);
- a release of gasoline to the soil north of Building #26 from a 1,000 gallon UST discovered in May 1997 which was closed out with a Class B-1 RAO Statement (a Permanent Solution where a condition of No Significant Risk was achieved without remediation and where residual contamination remains); and
- a release of approximately 100 gallons of #6 fuel oil to the soil and stream bed west of Building #26 in August 1997 which was closed out with a Class A-2 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining.

CDW has review each of these past releases in regards to changes in the regulatory criteria since their closure and has determined that they do not represent a REC at this time.

The CRECs include:
- a release of #6 fuel oil to the stream west of Building #26, and the soil and groundwater in the vicinity of Building #26 identified in February 1996 which was closed out with a Class A-3 RAO Statement (a Permanent Solution remediated to a condition of No Significant Risk with residual contamination remaining and future use of the area is restricted via an AUL).

CDW identify the following activities at neighboring properties that would indicate a significant potential for RECs, based on the information contained in the databases reviewed:
- the historic use of 313 Waverly Oak Road, located approximately 0.007 miles southeast of the Site as the former Shell Oil Bulk Storage Facility which stored a variety of petroleum products including kerosene, #2 fuel oil, aviation fuel, lube oil, leaded gasoline, and unleaded gasoline between approximately 1939 and 1992.

No areas of distressed vegetation were observed on the Site. No visible evidence of releases of oil or hazardous materials was observed at the Site. Due to the distance and regulatory status of the

identified (non-DPS) MassDEP, LUST, UST, RCRA HW Gen or Drycleaners within the search radius, these sites are not considered RECs at the time of this report.

Based on the information obtained during this ESA, it is the professional opinion of CDW that significant data gaps that affect the ability of the EP to identify RECs, as defined in the ASTM guidelines, have occurred as follows:

- The inaccessibility of Buildings #17, #18, #19, #20, #26, #33, #34, #49, #55, #57, #120, #121, #122, #124, support buildings surrounding #124, and the steamhead houses.

VI RECOMMENDATIONS

The RECs identified represent the potential for Site contamination from one or more sources. However, no conclusions or opinions can be made regarding the subsurface conditions at the Site without the completion of soil and groundwater sampling and analysis. CDW recommends the following to further investigate the environmental condition of the Site:

1. CDW recommends that a Phase II subsurface investigation be conducted including the advancement of soil borings and installation of monitoring wells, and comprehensive soil, groundwater, surface water, and sediment analysis. The sampling locations should evaluate different geological elevations for the development of source identification and a sufficient number of areas to investigate the multiple potential on-site sources, as well as downgradient effects of release(s) of contaminants from USTs and drains, substandard fill, and other historic activities identified as RECs.

2. The results of the soil and groundwater analytical results should be compared with applicable standards under the Massachusetts Contingency Plan for notification and/or mitigation requirements. The outcome of the initial sampling efforts can be used to determine whether further investigation and/or remediation is warranted to mitigate potential environmental impacts prior to or during future planned development.

3. During any future excavation of the subsurface, there is potential for encountering isolated areas of suspect oil or hazardous materials. CDW recommends that a soil management plan be incorporated into future construction documents to provide guidance on the types of conditions requiring special management or mitigating measures.

4. National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations require sampling potential asbestos containing building materials (ACBM) prior to demolition or extensive renovation, regardless of the date of construction; therefore, if such activities are planned, it may be required to conduct a survey of the entire facility, or that portion slated for renovation or demolition, before initiating such destructive activities. That survey should include an assessment of all subject building materials, including those in areas which are normally inaccessible. Any material found to be ACBM should be handled in accordance with applicable regulations.

VII LIMITATIONS

1.0 Purpose

CDW performed a Phase I ESA in conformance with the scope and limitations of the ASTM E1527-13 Standard. The purpose of the assessment was to evaluate the Site history, observable conditions, and current Site use to identify potential presence of RECs at or associated with the Site. RECs are defined by ASTM as:

"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

HRECs are defined by ASTM as:

"A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls). Before calling the past release an HREC, the EP must determine whether the past release is a REC at the time the Phase I ESA is conducted (e.g., if there has been a change in the regulatory criteria). If the EP considers this past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC."

CRECs are defined by ASTM as:

"A REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a NFA letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).

The conclusions are intended to help the user evaluate the "business environmental risk" associated with the Site, defined by ASTM as:

"A risk which can have a material environmental or environmentally-driven financial impact on the business associated with the current or planned use of a parcel of commercial real estate. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations."

2.0 Detailed Scope of Services

The CDW investigation consisted of the following elements: a Site reconnaissance, a review of available historical documents associated with the Site; a review of local, state, and federal environmental databases; and interviews with the Director of Campus Safety and City officials.

3.0 Significant Assumptions

CDW assumes that all available Site information has been provided by the owner or its representative, that the information reviewed and provided by the owner, the City, and information databases are accurate, current, and complete. Where portions of the Site were inaccessible, CDW assumes that Site conditions in those areas would not contradict any observations made herein.

There is a possibility that even with the proper application of these methodologies that there may be conditions that exist on the subject property that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. CDW believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, CDW Consultants cannot and does not warrant or guarantee that the information provided by these sources is accurate or complete. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide the Client with information relating to the Site.

4.0 Limitations and Exceptions

The conclusions of this report are limited to the information available at the time of the investigation and the scope of services as defined. No subsurface exploration was performed on this Site; therefore, no conclusions can be made relative to subsurface conditions or the presence or absence of soil or groundwater contamination from either on-Site or off-Site sources.

Where access to portions of the Site was unavailable or limited, CDW renders no opinion as to the presence of oil or hazardous material or the presence of indirect evidence related to oil or hazardous material in that portion of the Site.

No other conclusions, interpretations, or recommendations are contained or implied in this report other than those expressed. CDW makes no warranty, expressed or implied, on the accuracy of the work and information completed by others and upon which CDW has relied to prepare this report. No other use of this report is warranted without the written consent of CDW.

Events occurring on the Site after May 6, 2016, the date of the inspection, are beyond the scope of this report. CDW makes no expressed or implied representations or warranties regarding any changes in the condition of the premises after this date from on-site or off-site sources.

5.0 Special Terms and Conditions

The terms of CDW's contract for services required that the Phase I ESA be completed within three weeks of written authorization to proceed. This Phase I ESA was conducted as part of a feasibility study for future construction. There were no other special Terms or Conditions.

6.0 User Reliance

This report is intended for the use of the entities listed below, and may be relied upon for up to one year after the date issued. No other individuals or entities may rely upon the report contents, in part or in whole.

Owner: City of Waltham

Architect: Symmes Maini and McKee

7.0 Additional Services

No soil, groundwater, surface water or other media testing was conducted as part of this assessment. A wetlands survey was not performed. A comprehensive asbestos and hazardous building material survey was not included. A professional title search was not included.

VIII REFERENCES

City of Waltham Assessor's Office, Building Department, Board of Health, and Fire Department May 2016.

Clean Harbors Environmental Services, Inc., "Response Action Outcome Statement," RTN 3-11878, January 11, 1995.

Coneco Engineers & Scientists, Inc., "Class A-3 Response Action Outcome Statement," RTN 3-13467, March 19, 2008.

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Environmental Data Resources, The EDR Aerial Photo Decade Package, May 3, 2016.

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GZA GeoEnvironmental, Inc., "Release Abatement Measure (RAM) Completion Report" (Former Shell Property 313 Waverly Oaks Road), RTN 3-3078, December 2003.

Lord Associates, Inc., "Phase I Site Investigation," RTN 3-10367, July 11, 1995.

Marie E. Daly, "History of the Water E. Fernald Development Center," 2005

Massachusetts Department of Environmental Protection, Searchable Site List, May 2016.

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VERTEX Engineering Services, Inc., "Phase I – initial Site Investigation & Tier Classification," RTN 3-13467, February 20, 1997.

VERTEX Engineering Services, Inc., "Phase III – Remedial Action Plan/Class C Response Action Outcome," RTN 3-13467, June 25, 2008.

VERTEX Engineering Services, Inc., "Response Action Outcome," RTN 3-10725, June 21, 2000.

VERTEX Engineering Services, Inc., "Response Action Outcome Statement," RTN 3-15121, June 30, 1997.

VERTEX Engineering Services, Inc., "Response Action Outcome Statement," RTN 3-15149, June 30, 1997.

United States Department of Agriculture, Web Soil Survey.

Zen et. al., Bedrock Geologic Map of Massachusetts, 1983.

IX SIGNATURE AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

The investigation of the Site described in the report was performed by Ms. Lauren Konetzny, Project Manager, who is qualified to make investigations and formulate the opinions herein set forth. Ms. Konetzny has 12 years of experience performing environmental site assessments. She has a Bachelors of Science in Chemical Engineering from Northeastern University in Boston, Massachusetts.

The Site Investigator is knowledgeable regarding the type of industrial, manufacturing, commercial or other processes or operations which might reasonably be expected to generate, use, treat, store or dispose of oil or hazardous material. The Site Investigator has reviewed the recent history of the Site and has considered the potential for the generation, use, treatment, storage or disposal of oil or hazardous material by (a) the uses presently associated with the Site and (b) to the extent ascertainable by inquiry, the uses previously associated with the Site.

This report is dated May 20, 2016, and is signed by individuals who are duly authorized to do so.

Lauren Konetzny, LSP
Project Manager

FIGURES

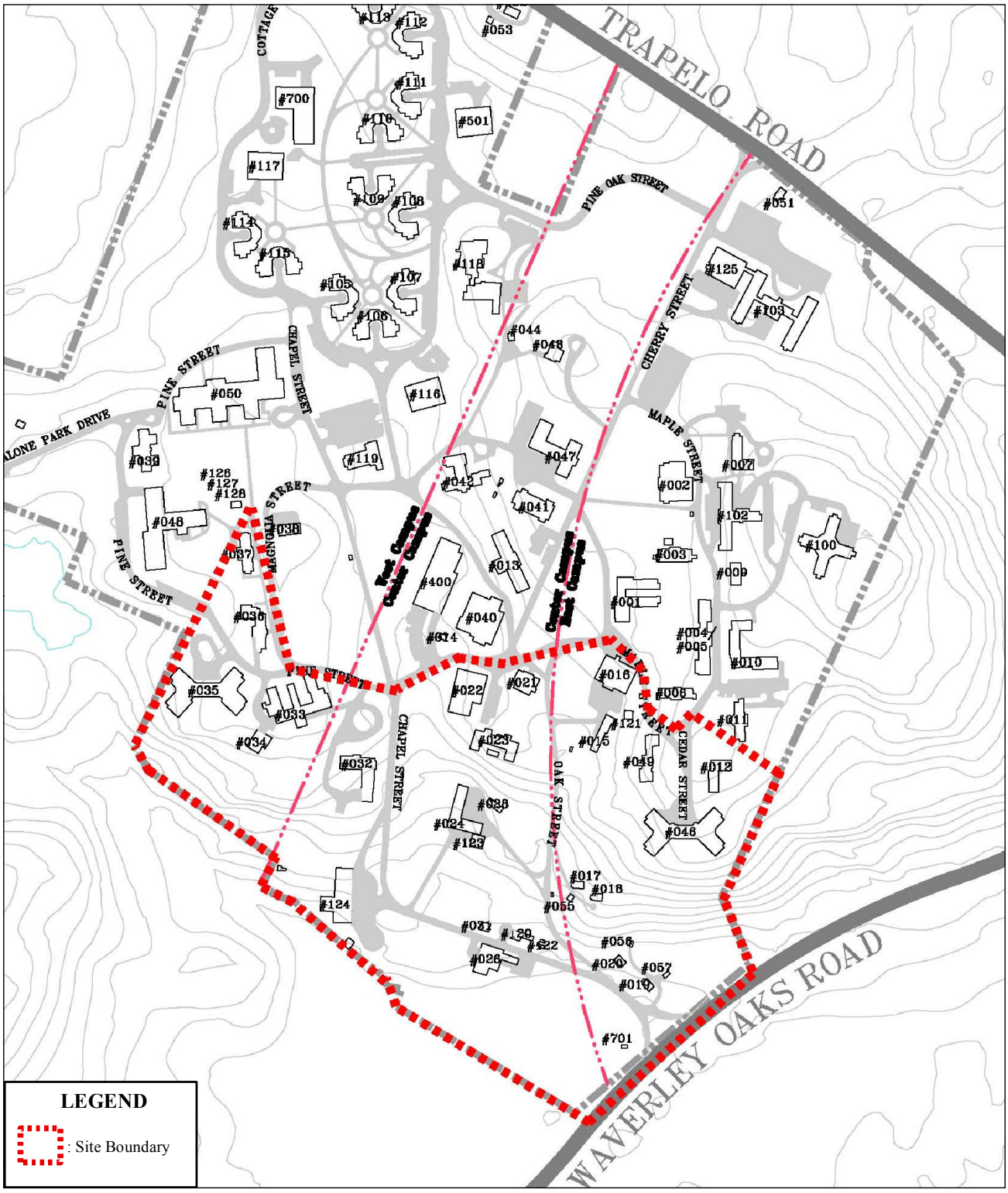
CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 1 - Locus Map

SOURCE: MASSGIS

SCALE: 1 inch = 2,083 feet

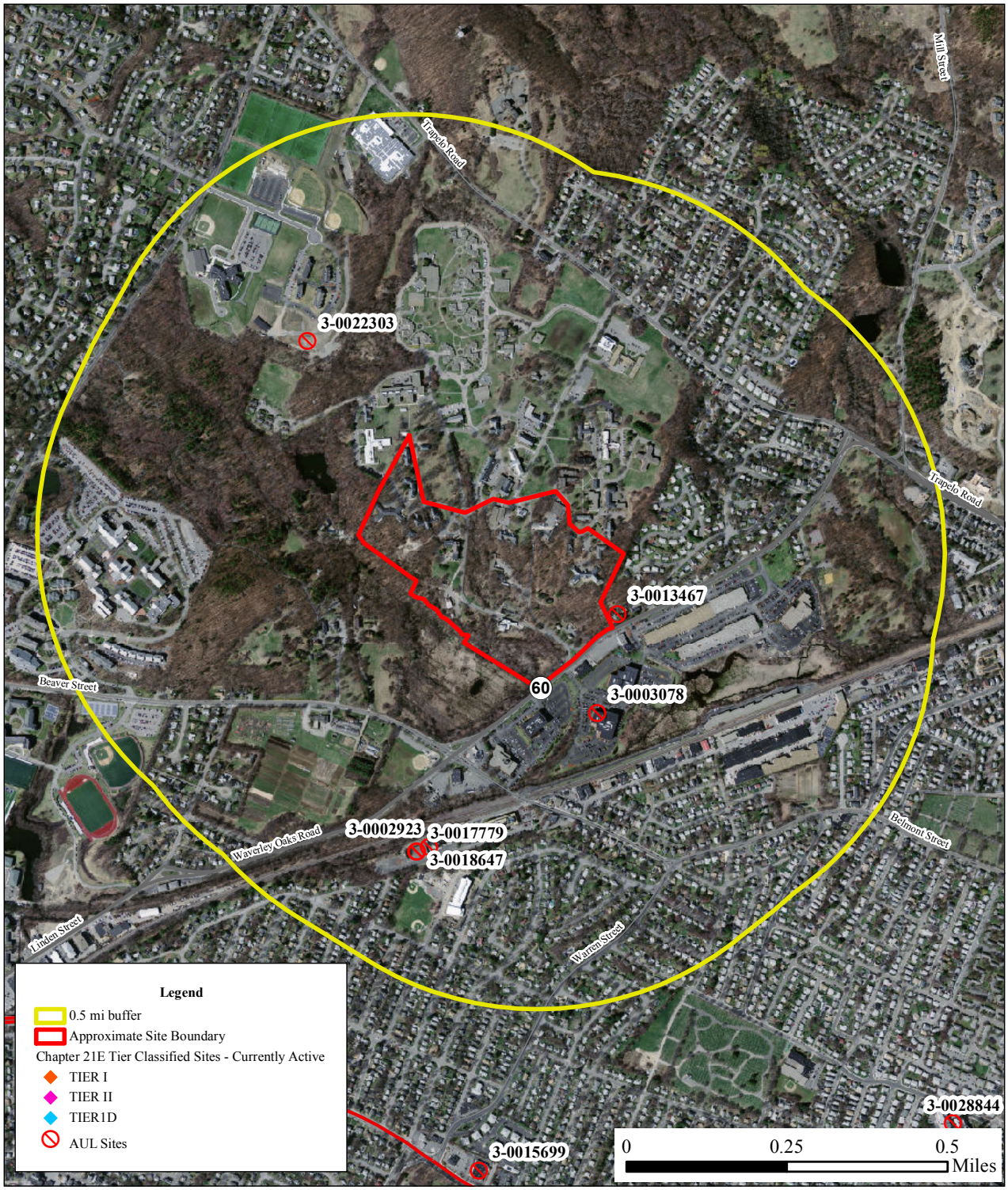


CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 2 - Site Plan

SOURCE: The Walter E. Fernald Developmental Center: Building Index (December 21, 2001) - The Saratoga Associates



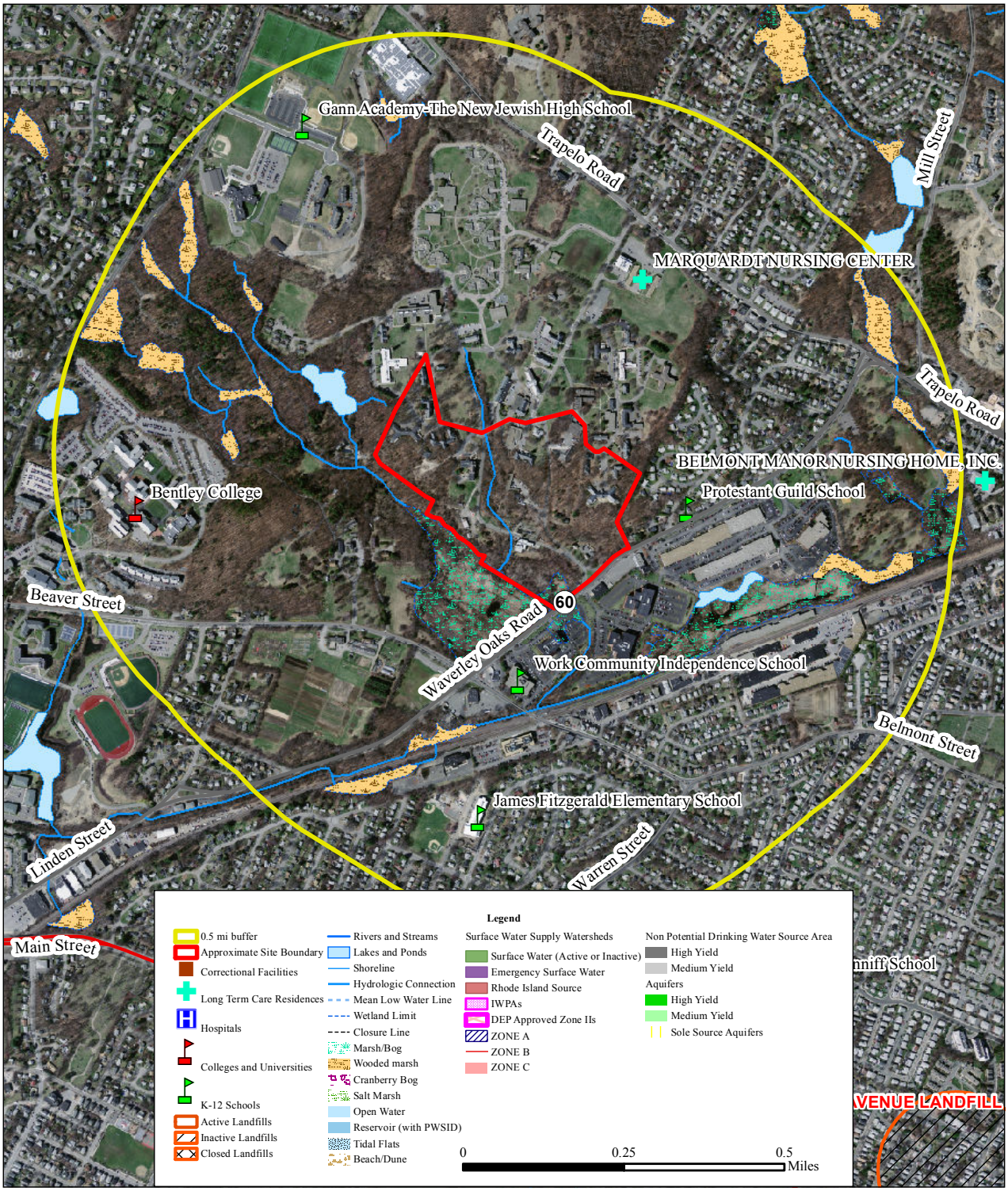
CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 3 - 21E Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet



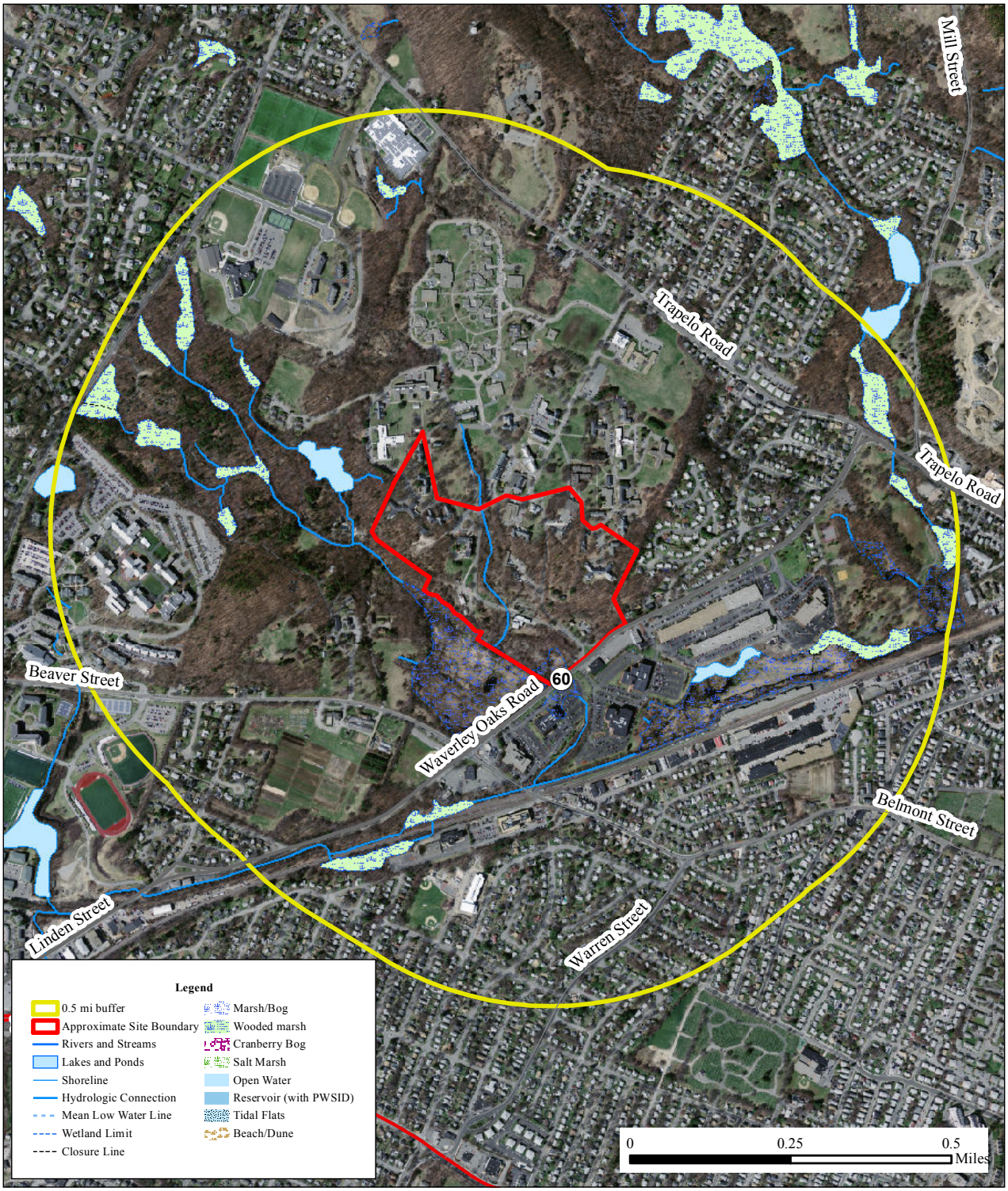
CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 4 - Resource Areas Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet



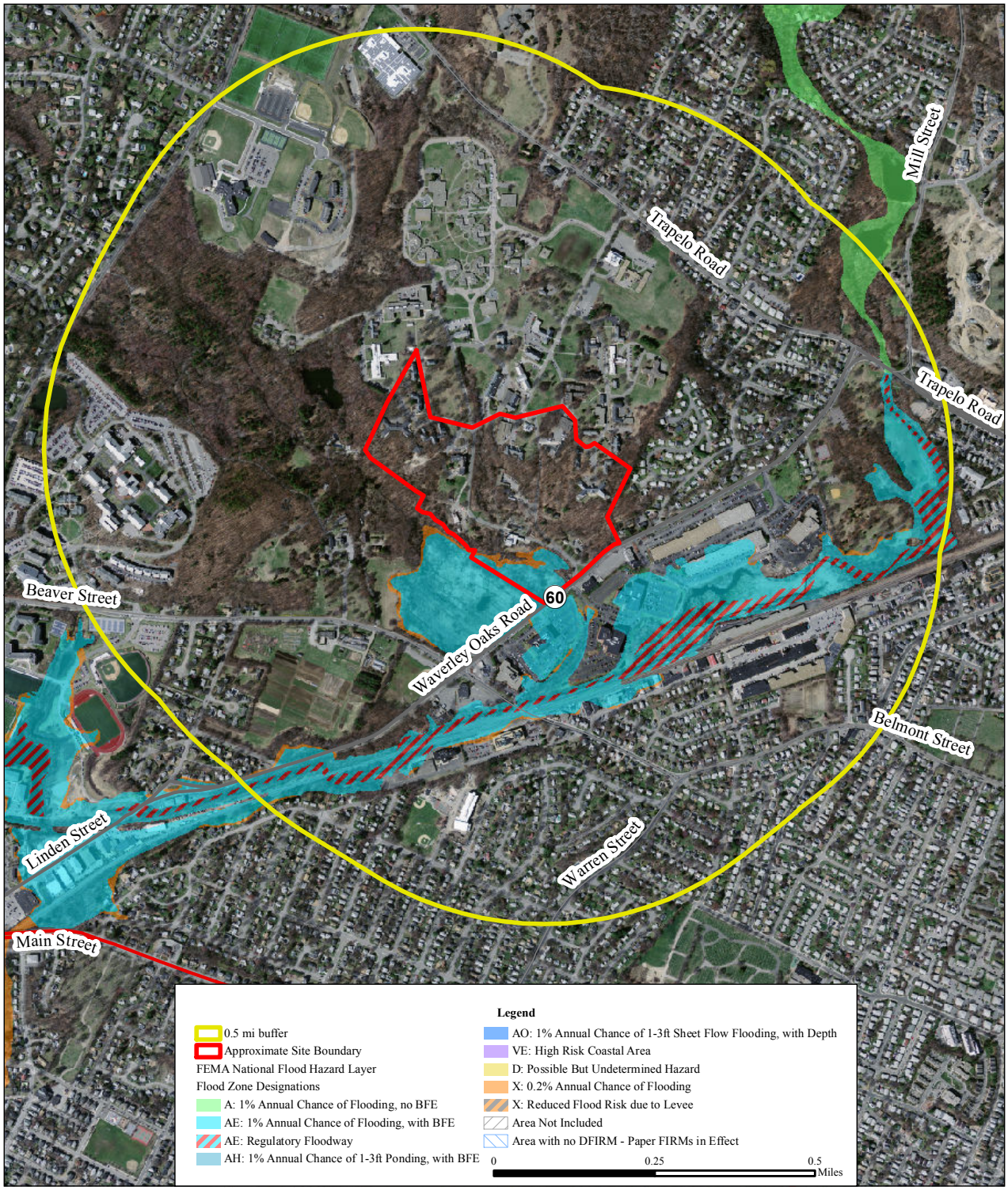
CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 5 - Hydrography Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet



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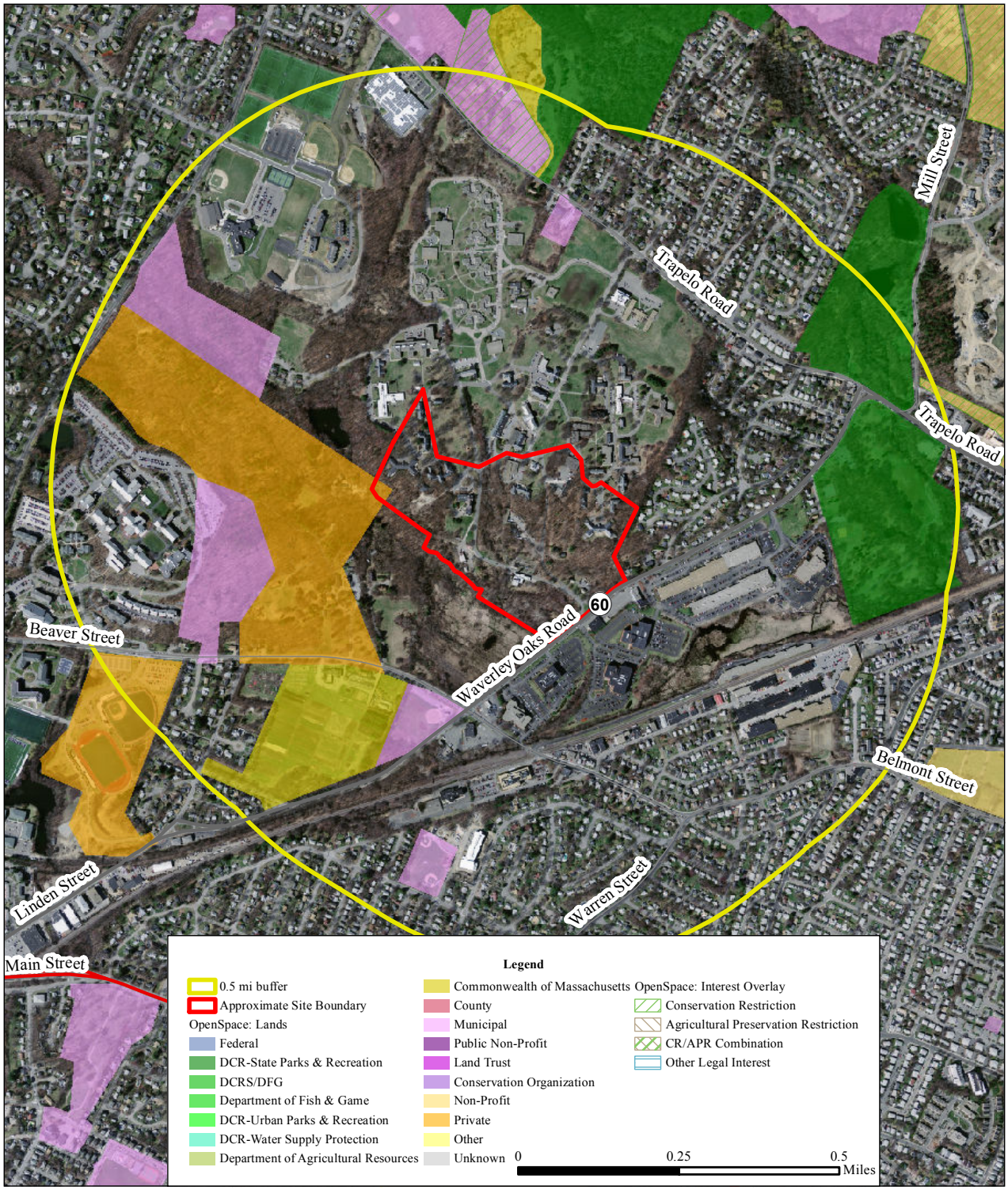
SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 6 - FEMA Flood Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet



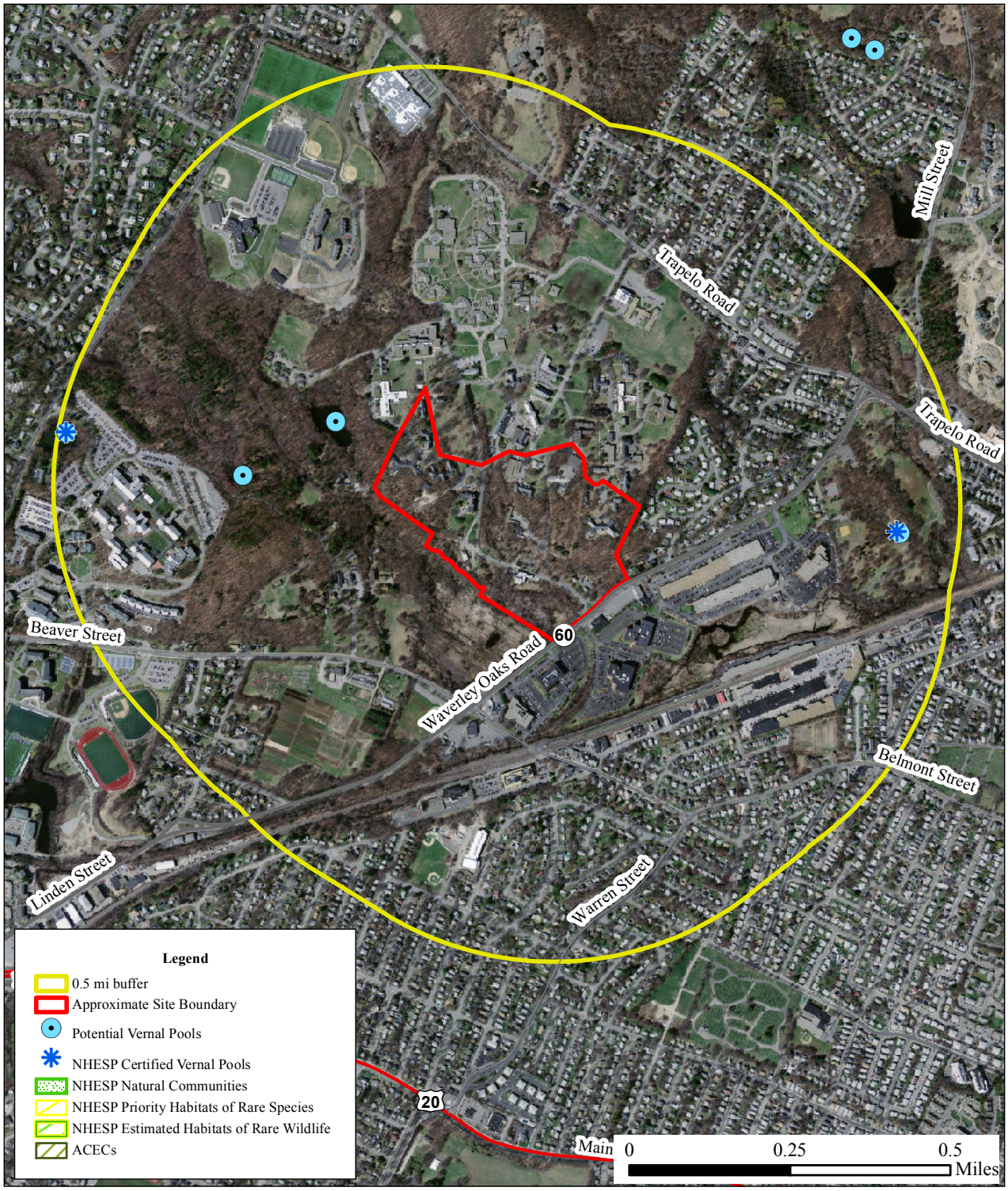
CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 7 - Open Space Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet



CDW CONSULTANTS, INC.

SOUTH PORTION OF FORMER
FERNALD DEVELOPMENTAL CENTER
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 8 - NHESP and ACEC Map

SOURCE: MASSGIS

SCALE:1 inch = 1,250 feet

TABLES

Table 1 - Site Building List
South Portion of Former FDC
200 Trapelo Road
Waltham, MA

Building No.	Building Name	Construction	GSF per DMR-Fernald Dev. Center Site Study 12/21/01	Age per DMR-Fernald Dev. Center Site Study 12/21/01	Heat/Hot Water Supply	Past Use	Observed Possible Oil/Chemical Storage	Floor Drains	Assessor's Card Pages
12	South Nurses Home	Brick 2 stories + basement	17,172	1907	Steam from Power Plant	residential	transformer #20 to north of building - labeled "non-PCB equipment"	In bathrooms & laundry room	31
15	Main Garage	Brick & concrete block 1 story	3,405	1932	Steam from Power Plant	garage including some vehicle maintenance such as brakes, oil changes, & exhaust work	empty concrete block enclosures labeled "Waste Oil" - some staining on ground, but not fully visible due to debris; several empty < 5 gal containers of oil/antifreeze in garage; empty 55 gal drum to east of building; empty 55 gal drum to south of building; 2 small propane tanks south of building	1 floor drain in garage bay	21
16	Storehouse	Brick 1 story + basement	23,940	1891	Steam from Power Plant	Storage, primarily food, clothing, & furniture	Several empty 5 gal or less containers of lube oil, transmission fluid, bleach, lime away, wax striper, & spray paint	none observed	35
17	Cottage #17	Stucco 2 story + basement	2,264	1925	oil	residential	No entry due to structural concerns; fill & vent pipes for ASTs still in place	unknown	55
18	Cottage #18	Stucco 2 story + basement	2,264	1925	oil	residential	No entry due to structural concerns; fill & vent pipes for ASTs still in place	unknown	54
19	Cottage #19	Stucco 2 story + basement	2,264	1925	gas	residential	Limited entry due to structural concerns; pole mounted transformer south of building	unknown	53
20	Cottage #20	Wood shingles 2 story + basement	2,264	1925	gas	residential	No entry due to structural concerns	unknown	52
21	Howe Library	Brick 1 story + basement	8,030	1921	Steam from Power Plant	laboratory, research, & operations	none	none observed	17
22	Laundry/Therapeutic Equipment Center	Brick 1 story + partial basement	27,192	1928	Steam from Power Plant	manufacturing of therapeutic equipment & laundry services	1 argon gas cylinder, small quantities of laundry detergent	1 floor drain in manufacturing area, 3 drains behind washers in laundry area, & at least 5 drains in basement	5
23	Lavers Building	Brick 1 story + partial basement	12,036	1914	Steam from Power Plant	residential	No entry due to structural concerns; small propane tank for grill outside building	unknown	18
24	Maintenance Building	Concrete block 1 story + partial basement	14,322	1930	Steam from Power Plant	welding, carpentry, paint, & electrical shop	No entry into basement; some staining on the floor several empty <5 gal containers of motor oil, paint thinner, & brush cleaner; according to Mr. Bermingham thousands of gal of paint were used in paint shop	floor drain in bathroom, holes in floor possible former floor drains	37
26	Power Plant	Brick 1 story + basement	19,440	1925	Steam from Power Plant	Steam power plant	No entry due to structural concerns; 2 LPG tanks west of building; according to Mr. Bermingham PCB containing equipment is still present in building; no sheen observed in stream to west of building	unknown (at least 5 floor drains were noted in a July 1995 Phase I Site Investigation prepared by Lord Associates, Inc.)	8

Table 1 - Site Building List
South Portion of Former FDC
200 Trapelo Road
Waltham, MA

Building No.	Building Name	Construction	GSF per DMR-Fernald Dev. Center Site Study 12/21/01	Age per DMR-Fernald Dev. Center Site Study 12/21/01	Heat/Hot Water Supply	Past Use	Observed Possible Oil/Chemical Storage	Floor Drains	Assessor's Card Pages
28	Grounds Garage	Concrete block 1 story	2,016	1947	Steam from Power Plant	storage shed primarily for building #24	~13 canisters of gas, legible cans labeled oxygen & acetylene; empty 5 gal containers of "dyed low sulfur kerosene"; 5 gal unlabeled container; 2 < 5 gal gas containers; empty discarded 55 gal drum east of building; discarded paint cans & 2 empty 5 gal containers (one labeled "dyed low sulfur kerosene") east of building; general debris scattered along road southeast of building	none observed	
31	Truck Garage	Not located	748	1928	Steam from Power Plant		Not located	Not located	
32	Tarbell Building	Brick 3 story + basement	38,924	1934	Steam from Power Plant	residential	~5 gal container identified as "corrosive" in basement, label illegible	floor drain in bathrooms & kitchen	48
33	West Building	Brick 2 story + basement	49,041	1890	Steam from Power Plant	residential	No entry due to structural concerns	unknown	27
34	Belmont House	Brick 1 story + basement	6,416	1890	Steam from Power Plant	original power plant with coal fired burners, storage	No entry due to flea infestation; 3 pole mounted transformers south of building	unknown	14
35	Sequin Building	Brick 1 story + partial basement	21,521	1933	Steam from Power Plant	residential	transformer #9 to east of building - labeled "non-PCB equipment"	floor drain in bathrooms & kitchen; 1 floor drain observed in basement	25
36	McDougal Building	Brick 2 story + basement	23,376	1898	Steam from Power Plant	residential	none	floor drain in bathrooms & kitchen; floor grate filled with water in basement mechanical room	16
37	Dolan Hall	Brick 2 story + basement	15,252	1906	Steam from Power Plant	residential	transformer #10 to south of building - labeled "non-PCB equipment"	floor drain in bathrooms; too much debris to see floor of kitchen	50
46	Wallace Building	Brick 1 story + basement	29,550	1936	Steam from Power Plant	residential	transformer #21 to northwest of building - labeled "non-PCB equipment"; <2 gal of dishwashing detergents	floor drain in bathrooms; too much debris to see floor of kitchen	24
49	South Bowen Hall/Hospital	Brick 1 story + basement	12,000	1893	Steam from Power Plant	residential, day program, music therapy, & clothing donations	No entry due to structural concerns	unknown	3
55	Cottage #17 Garage	Concrete block 1 story	1,344	1925	none	2 car garage	No entry due to structural concerns	unknown	
56	Cottage #20 Garage	Concrete block 1 story	440	1930	none	1 car garage	small quantities of paint	none observed	
57	Cottage #19 Garage	Concrete block 1 story	440	1955	none	1 car garage	No entry due to building being packed with debris	unknown	
120	Greenhouse (old)	Concrete/glass block 1 story + partial basement	3,655	1946	Steam from Power Plant	greenhouse	No entry due to structural concerns	unknown	41

Table 1 - Site Building List
South Portion of Former FDC
200 Trapelo Road
Waltham, MA

Building No.	Building Name	Construction	GSF per DMR-Fernald Dev. Center Site Study 12/21/01	Age per DMR-Fernald Dev. Center Site Study 12/21/01	Heat/Hot Water Supply	Past Use	Observed Possible Oil/Chemical Storage	Floor Drains	Assessor's Card Pages
121	Vault	Concrete block 1 story	150	1954	none	Electrical distribution	No entry due to high voltage; sign on door stating "contains PCBs"; crushed empty 55 gal drum south of building	unknown	
122	Electrical Substation	Concrete block 1 story	150	1963	none	Electrical distribution	No entry due to high voltage/NSTAR fence	unknown	
123	Plumbing Shop	Concrete block 1 story	180	1937	Steam from Power Plant	Plumbing shop	several <5 gal containers of household cleaners & paint; 2 empty 5 gal containers discarded to east of building	none observed	
124	Grounds Department ("farm & grounds buidling")	Concrete block with metal siding 1 story	5,760	1973	Propane	Still in use as storage; primarily for grounds maintenance equipment & supplies	No entry; according to Mr. Bermingham storage includes gasoline in <5 gal containers, 55 gal drums of diesel, petroleum greases, acids, lead acid batteries, NiCad batteries, & highway salt/sand; ~1,000 gal propane tank south of building; according to Mr. Bermingham 1 gas & 1 diesel UST were removed ~15 years ago northeast of building, gas UST leaked; empty 55 gal drum northeast of building; piles of brick and asphalt east of building	unknown	
	Grounds Department Garage	Concrete block 1 story				garage		none observed	
	Barn	1 story				barn, not used since at least 1979	Not inspected, located in overgrown gully	unknown	
	Former Butcher Shop	Stucco 1 story					No entry due to structural concerns; partially filled unlabeled 55 gal drum north of building; a few buried 55 gal drums & tank (estimated to be at least 500 gal) buried in debris within foundation north of building	unknown	
701	Greenhouse Sales Building		100	unknown		Flower sales	No longer exists according to Mr. Bermingham, small shed observed at approximate location of building, shed not inspected		
	Mobile home south of #123	Vinyl Siding 1 story				storage	No Entry	unknown	none
	Steamhead Houses	concrete block				several small structures throughout Site to access steam system	No entry due to friable asbestos	unknown	none

APPENDIX K2

LGCI
Lahlaf Geotechnical Consulting, Inc.

PRELIMINARY GEOTECHNICAL REPORT
PROPOSED WALTHAM HIGH SCHOOL – FERNALD SITE STUDY
WALTHAM, MASSACHUSETTS
LGCI Project No. 1616
December 27, 2016

Prepared for:

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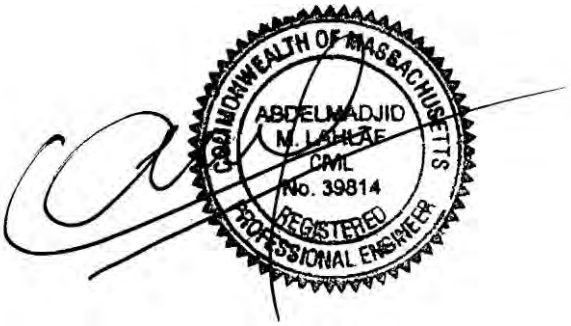

Abdelmadjid M. Lahlaf, Ph.D., P.E.
Principal Engineer

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Preliminary Geotechnical Report
Proposed Waltham High School – Fernald Site Study
Waltham, Massachusetts
LGCI Project No. 1616

1. PROJECT INFORMATION

1.1 Project Authorization

The preliminary geotechnical report presents the results of the subsurface explorations and a preliminary geotechnical evaluation performed by Lahlaf Geotechnical Consulting, Inc. (LGCI) as part of the feasibility study for Waltham High School in Waltham, Massachusetts. LGCI performed our services in general accordance with our proposal No. 16051 dated June 6, 2016 and signed by Ms. Lorraine Finnegan, AIA of Symmes Maini & McKee Associates (SMMA) on September 16, 2016.

1.2 Purpose and Scope of Services

The purpose of this preliminary geotechnical study was to obtain subsurface information at the Fernald Site and provide preliminary recommendations regarding the geotechnical aspects of the project in support of the feasibility study. LGCI performed the following services:

- Reviewed the boring locations that were marked at the site by the project architect, SMMA.
- Reviewed available subsurface data from the USGS and BSCES.
- Contacted Dig Safe Systems Inc. (Dig Safe) and the City of Waltham for utility clearance and had three meetings with personnel from the City of Waltham DPW to review the boring locations with respect to onsite utilities prior to exploration.
- Engaged Northern Drill Service, Inc. of Northborough, Massachusetts, a drilling subcontractor, to obtain a street opening permit, post the required bond, and advance soil borings at the project site. Observation wells were installed at three (3) of the borings.
- Provided a geotechnical field engineer to observe the borings, describe the soil samples, and prepare field logs.
- Submitted two (2) soil samples for laboratory testing.
- Prepared this preliminary geotechnical report containing the results of our subsurface exploration and our preliminary recommendations for foundation design and construction at the site.

We understand that additional borings and test pits may be performed at the site during the schematic and/or the design phases. At this time, our scope does not include schematic and/or design phase services, preparing specifications, performing contract document review, or providing construction services. LGCI would be pleased to perform these services when needed. Recommendations for stormwater management, erosion control, pavement design, and detailed cost or quantity estimates are not included in our scope of work.

LGCI did not perform environmental services for this project. LGCI did not perform an assessment to evaluate for the presence or absence of hazardous or toxic materials above or below the ground surface at or around the site. Any statement about the color, odor, or the presence of suspicious materials included in our boring logs or report were made by LGCI for information only and to support our geotechnical services. No environmental recommendations and/or opinions are included in this report.

1.3 Site Description and Project Description

The Fernald State School site is located along the southern side of Trapelo Road in Waltham, Massachusetts, as shown in Figure 1. The property is currently owned by the City of Waltham and encompasses about 186 acres. The site is mostly wooded with abandoned buildings and roadways that are in various states of disrepair. The Fernald State School had a power plant that generated steam for heat and electricity to power the school buildings. Numerous underground electrical conduits and steam tunnels are present at the site. Records that show the locations of these underground utilities are incomplete.

We understand that the proposed school site may be located in a southern portion of the Fernald State School property that encompasses approximately 50 acres. The site is hilly. The ground surface elevations at the site generally rise in a northerly direction from about El. 60 feet on the southern side of the site to about El. 200 feet on the northern side of the site. A small stream is located near the center of the site and flows from north to south toward an existing wetland.

At the time of this report, the proposed high school site was planned near the northwestern corner of the 50-acre site. The proposed footprint of the high school is shown in Figure 2. Specific structural details regarding the planned facility were not available at the time of this report.

1.4 Elevation Datum

We understand that the elevations provided by Nitsch Engineering, which we included on our boring logs, are referenced to the North American Vertical Datum of 1988.

2. SITE AND SUBSURFACE CONDITIONS

2.1 LGCI's Borings

The project architect (SMMA) marked the boring locations in the field. LGCI notified Dig Safe systems Inc. and the City of Waltham for utility clearance prior to performing the explorations at the site. Due to the buried utilities at the site and the limited information regarding the location of existing utilities, LGCI met with City of Waltham DPW three times prior to the start of the subsurface explorations.

LGCI engaged Northern Drill Service, Inc. of Northborough, Massachusetts to advance eight (8) borings (B-1, B-2/2A, B-3/3AOW, B-4, B-6, B-7/7A, B-8/8AOW, B-11OW) at the site between October 26 and 28, 2016. Seven (7) of the originally planned borings were not performed due to lack of time. The sequence of the performed borings was approved by SMMA.

The boring locations are shown on Figure 2. Borings B-1 to B-4 were performed in the northwestern portion of the site in the vicinity of the proposed footprint of the high school. Borings B-7/7A and B-8/8AOW were performed in the northern central portion of the site, and borings B-6 and B-11 were performed in the southern central portion of the site. Groundwater observation wells were installed in borings B-3/3AOW, B-8/8AOW, and B-11OW.

An LGCI engineer observed and logged the borings in the field. The borings were advanced with a Mobile B-48 rotary drill rig mounted on a rubber track carrier. The borings were initially advanced by employing hollow stem augers. Several of the borings encountered refusal shallower than the planned depths and were offset 5 to 10 feet to explore whether the refusal was due to a boulder or shallow bedrock. After a second refusal, Borings B-2/2A and B-7/7A were advanced into the underlying bedrock using core drilling techniques. Upon completion, boreholes were backfilled with the soil cuttings and topped with cold asphalt patch in paved areas, unless an observation well was installed.

What appeared to be a petroleum based liquid was encountered in borings B-6 and B-11OW. LGCI notified SMMA and the environmental engineer when the condition was encountered in each boring and the environmental engineer obtained samples for analytical testing. The borings were terminated at the depth the petroleum liquids were encountered. An observation well was installed in B-11OW.

The drillers performed Standard Penetration Tests (SPT) and obtained split spoon samples with an automatic hammer at the depth intervals, typically 2 feet or 5 feet, as noted on the boring logs in general accordance with ASTM D-1586. Unless notified otherwise, we will dispose of the soil samples after three months.

Appendix A contains LGCI's boring logs and the groundwater observation well installation reports. The ground surface elevations noted on the boring logs were provided to LGCI by SMMA in an e-mail dated November 21, 2016. Table 1 includes a summary of the borings.

2.2 Subsurface Conditions

The subsurface description in this report is based on a limited number of borings and is intended to highlight the major soil strata encountered during our borings. The subsurface conditions are known only at the actual boring locations. Variations may occur and should be expected between boring locations. The boring logs represent conditions that we observed at the time of our explorations and were edited, as appropriate, based on the results of the laboratory test data and inspection of the soil samples in the laboratory. The strata boundaries shown in our boring logs are based on our interpretations and the actual transitions may be gradual. Graphic soil symbols are for illustration only.

The soil strata encountered in the borings were as follows, starting at the ground surface.

Asphalt – Asphalt was encountered at the ground surface in borings B-6 and B-8/8AOW with observed thicknesses ranging between 3 and 4 inches.

Topsoil/Subsoil – A layer of surficial organic soil was encountered in borings B-1, B-2/2A, and B-4. This layer had thicknesses ranging between 0.5 and 3.5 feet.

Fill – Existing fill was encountered at the ground surface in borings B-3/3AOW, B-7/7A, and B-11OW and below the surficial materials in the remaining borings, except in borings B-1 and B-2/2A which did not encounter fill. The fill samples were generally observed to be sand (16 of 23 samples). The sand samples were described as silty, poorly graded, and well graded, fine to coarse sand. The percentage of fines observed in the samples ranged between 5 and 30 percent, and the percentage of gravel ranged between 0 and 20 percent.

The gravel samples were described as well graded, poorly graded, and silty, fine to coarse gravel. The percentage of fines observed in the samples ranged between 0 and 20 percent, and the percentage of sand ranged between 0 and 35 percent.

The Standard Penetration Test (SPT) N-values in the existing fill ranged between weight of hammer and 67 blows per foot (bpf), with most values lower than 30 bpf, indicating very loose to medium dense material.

Sand – A layer of natural sand was encountered beneath the surficial materials and existing fill. The sand was most often described as silty sand and less frequently as well graded or poorly graded sand. The sand was fine, fine to medium, and fine to coarse grained. The percentage of fines ranged between 5 and 30 percent. The percentage of gravel ranged between 10 and 35, but was most often between 15 and 25 percent.

One sample of well graded gravel was encountered in boring B-4. Boring B-1 terminated within the sand at an approximate depth of 20 feet.

The SPT N-values encountered within the sand and gravel ranged between 48 bpf and more than 100 bpf (sampler refusal), indicating very dense soil. Sampler refusal was encountered in two of the eight samples obtained within this stratum.

Bedrock – Hollow stem auger refusal was encountered in the borings advanced with augers at depths ranging from 1.5 to 19.3 feet on apparent bedrock. Borings B-1 and B-3/3AOW were terminated at the sand/bedrock interface at respective depths of 20 feet and 11 feet.

Boring B-4 encountered weathered bedrock below the sand at an approximate depth of 14 feet. The weathered rock was described as a silty sand and gravel in the samples recovered. The boring terminated within the weathered bedrock at an approximate depth of 19.3 feet.

Coring was initiated in borings B-2/2A and B-7/7A at depths of 3.5 and 1.5 feet, respectively. The bedrock core samples were identified as hard, slightly weathered to fresh, slightly to moderately fractured, dark gray to pink with white mottles, Diorite. Recovery values were 100 percent and the rock quality designation Percentage (RQD) values varied between 89 and 90 percent, indicating very good to excellent quality rock.

2.3 Groundwater

Groundwater observation wells were installed in borings B-3/3AOW, B-8/8AOW, and B-11OW. Groundwater depths were measured in the observation wells shortly after completion of well installation and on November 20, 2016, and each of the wells was dry.

Groundwater was not observed in the borings during drilling. The groundwater levels recorded in these borings at the completion of drilling may not represent the actual groundwater level, as additional time may be required for the groundwater levels to stabilize. The groundwater levels presented in this report only represents the conditions encountered at the time and location of the explorations, unless noted otherwise. Seasonal fluctuation should be anticipated.

2.4 Laboratory Test Data

LGCI submitted two (2) soil samples collected from the borings for grain-size analysis. The results are provided in the data sheets included in Appendix B and are summarized in the table below.

Grain-size Analysis Test Results

Boring No.	Sample No.	Stratum	Sample depth (ft.)	Percent Gravel	Percent Sand	Percent Fines
B-1	S3	Natural Sand	4-6	33.8	36.4	29.8
B-3	S4	Fill	6-8	53.6	30.9	15.5

3. PRELIMINARY EVALUATION AND RECOMMENDATIONS

3.1 General

The borings encountered variable conditions across the site. Specific preliminary recommendations are provided in the subsequent sections for preliminary foundation design and construction at the site. Based on our understanding of the Waltham High School site, our observation of the borings, and the results of our laboratory testing, there are a few issues that we would like to highlight for consideration and discussion.

3.1.1 Site Grading – Cuts and Fills

The proposed 50 acre site for potential development is located on the southern side of the existing 186 acre Fernald State School property. LGCI understands the proposed high school building may be located in the northwestern portion of the proposed 50 acre site. This area of the site is best described as a hilltop. We preliminarily anticipate that cuts and fills of 10 feet or more may be required to develop the grades within the proposed school footprint. The floor elevation of the school should be carefully considered as the project design is advanced. The magnitude of required cuts and fills at the site will be determined once the finished grades are established.

Due to the relatively shallow bedrock at the site, we anticipate that bedrock removal will be required. The borings drilled with hollow stem augers encountered refusal at depths ranging from 1.5 to 19.3 feet. Auger refusal depths approximately indicate the depth to sound rock that will require special means to excavate, such as the use of hoe rams or blasting. Confined excavations, such as excavations for footings, that extend into highly weathered bedrock above the depth of auger refusal may also require special means to excavate. LGCI recommends performing additional borings and test pits during the schematic design phase of the project to collect additional data related to the depth and composition of the underlying bedrock.

3.1.2 Existing Fill and Unsuitable Materials

Existing fill and/or topsoil/subsoil was encountered in each of the borings performed at the site with observed thicknesses ranging from 1.5 to 16 feet. Existing fill that was not placed with strict moisture, density, and gradation control presents risk of unpredictable settlements that may result in poor performance of floor slabs and foundations. Organic soils left in place may result in larger than acceptable settlements. Due to these risks, the existing fill and all organic soils should be entirely removed from within the proposed building and replaced with Structural Fill. The removal should extend 5 feet outside of the proposed building footprint.

Due to the impact the extent of the existing fill/organic soil removal may have on design and construction, the additional test pits recommended above will also allow LGCI to further evaluate the depth, composition, and extent of the fill across the site.

3.1.3 Differing Bearing Materials

Based on the relatively shallow depth to bedrock and assuming that cuts and fills will be required to develop the finished grade at the site, bearing materials for shallow foundations could consist of weathered bedrock, competent bedrock, natural soils, and Structural Fill. To provide a more uniform bearing material and working surface during construction, we recommend that at least 12 inches of Structural Fill be placed below all footings.

3.2 Preliminary Foundation Recommendations

Based on the results of the preliminary borings, the subsurface conditions appear suitable for support of new structures with grade supported floor slabs and shallow foundations after the subgrade is prepared in accordance with the recommendations in this report. Preliminary recommendations for footing design and settlement are presented below.

3.2.1 Preliminary Footing Design

- We recommend new footings be preliminarily designed using a net allowable bearing pressure of 4 kips per square foot (ksf) for footings bearing directly on 12 inches of Structural Fill overlying the natural sand and gravel or bedrock.

- Footing subgrades should be prepared in accordance with the recommendations in Section 4.1.

- All foundations should be designed in accordance with The Commonwealth of Massachusetts State Building Code 780 CMR, Eighth Edition (*MSBC 8th Edition*).

- Exterior footings and footings in unheated areas should be placed at a minimum depth of 4 feet below the final exterior grade to provide adequate frost protection. Interior footings in heated areas may be designed and constructed at a minimum depth of 2 feet below finished floor grades.

- Wall footings should be designed and constructed with continuous, longitudinal steel reinforcement for greater bending strength to span across small areas of loose or soft soils that may go undetected during construction.

- A representative of LGCI should be engaged to observe that the subgrade has been prepared in accordance with our recommendations.

3.2.2 Preliminary Settlement Estimates

For footings designed using the net allowable bearing pressure recommended above, and assuming isolated footings will range in size from 3 ft. x 3 ft. up to 8 ft. x8 ft., we anticipate that the settlement will be about 1 inch, and that the differential settlement of the footings will be 3/4 inch or less over a distance of 25 feet. Total and differential settlements of these magnitudes are usually considered tolerable for the anticipated construction. As the design progresses and the settlement estimates are refined, the tolerance of the proposed structure to predicted total and differential settlements should be assessed by the structural engineer.

3.3 Preliminary Concrete Slab Considerations

- Floor slabs can be constructed as a slab-on-grade bearing on 12 inches of Structural Fill placed directly on top of the natural sand, gravel, or bedrock. The subgrade of the slab should be prepared as described in Section 4.1.

- To reduce the potential for dampness in the proposed floor slab, the project architect may consider placing a vapor barrier beneath the floor slab. To reduce the potential for concrete curling and to protect the vapor barrier, a 3-inch layer of sand should be placed on the vapor barrier.

- For the design of the floor slab bearing on the materials described above, we recommend using a modulus of subgrade reaction, k_{s1}, of 86 tons per cubic foot (tcf). Please note that the values of k_{s1} are for a 1 x 1 square foot area. These values should be adjusted for larger areas using the following expression:

$$Modulus\ of\ Subgrade\ \mathrm{Re}action\ (k_s) = k_{s1} * \left(\frac{B+1}{2B}\right)^2$$

where:
k_s = Coefficient of vertical subgrade reaction for loaded area,
k_{s1}= Coefficient of vertical subgrade reaction for 1 x 1 square foot area, and
B = Width of area loaded, in feet.

- Please note that cracking of slabs-on-grade can occur as a result of heaving or compression of the underlying soil, but also as a result of concrete curing stresses. To reduce the potential for cracking, the precautions listed below should be closely followed for construction of all slab-on-grade:

- Construction joints should be provided between the floor slab and the walls and columns in accordance with the American Concrete Institute (ACI) requirements, or other applicable code.

- Backfill in interior utility trenches should be properly compacted.

- In order for the movement of exterior slabs not to be transmitted to foundations or superstructures, exterior slabs such as approach slabs and sidewalks, should be isolated from the building superstructure.

3.4 Under-slab Drains

Based on the groundwater levels observed in the explorations and the observation wells, it is not anticipated that an under-slab drainage system will be required under a new building. However, once finish floor elevations and building footprint locations are established, LGCI should review and update this recommendation, as necessary.

3.5 Preliminary Seismic Design

In accordance with Section 1613 of *MSBC 8th Edition* and based on the boring data, the seismic criteria for the site are as follows:

- Site Class: D
- Spectral Response Acceleration at short period (Ss): 0.28 g
- Spectral Response Acceleration at 1 sec. (S_1): 0.069g
- Site Coefficient Fa (Table 1613.5.3(1)): 1.58
- Site Coefficient Fv (Table 1613.5.3(2): 2.4
- Adjusted spectral response S_{MS}: 0.442 g
- Adjusted spectral responses S_{M1}: 0.166 g

Based on the boring information, we believe the site soils are not susceptible to liquefaction.

3.6 Lateral Pressures for Wall Design

3.6.1 Preliminary Lateral Earth Pressures

Lateral earth pressures recommended for design of below grade walls are provided below.

Coefficient of Active Earth Pressure, K_A:	0.31
Coefficient of At-Rest Earth Pressure, K_o:	0.50
Coefficient of Passive Earth Pressure, K_p:	3.3
Total Unit Weight γ:	125 pcf

Note: The values in the table are based on a friction angle for the backfill of 32 degrees and neglecting friction between the backfill and the wall. The design active and passive coefficients are based on horizontal surfaces (non-sloping backfill) on both the active and passive sides, and a vertical wall face.

- Exterior walls of below ground spaces, and retaining walls braced at the top to restrain movement/rotation, should be designed using the "at-rest" pressure coefficient.

- We recommend placing free-draining material within the 2 feet immediately behind retaining walls. We recommend providing weep holes in the walls to promote drainage where possible, or a pipe should be placed at the base of the wall to collect the water. Groundwater collected by the wall drains should be discharged in a lower area if gravity flow is possible.

- Passive earth pressures should only be used at the toe of the wall where special measures or provisions are taken to prevent disturbance or future removal of the soil on the passive side of the wall, or in areas where the wall design includes a key. In any case, the passive pressures should be neglected in the top 4 feet.

- Where a permanent vertical uniform load will be applied on the active side immediately adjacent to the wall, a horizontal surcharge load equal to half of the uniform vertical load should be applied over the height of the wall. At a minimum, a temporary construction surcharge of 100 psf should be applied uniformly over the height of the wall.

- We recommend using an ultimate friction factor of 0.5 between the natural sand and the bottom of the wall. Below grade walls should be designed for minimum factors of safety of 1.5 for sliding and 2.0 for overturning.

3.6.2 Seismic Pressures

In accordance with the *Massachusetts State Building Code, 8th Edition*, Section 1610, a lateral earthquake force equal to $0.100*(S_s)*(F_a)*\gamma*H^2$ should be included in the design of walls (for horizontal backfill), where S_s is the maximum considered earthquake spectral response acceleration (defined in Section 3.5), F_a is the site coefficient (defined in Section 3.5), γ is the total unit weight of the soil backfill, and H is the height of the wall.

The earthquake force should be distributed as an inverted triangle over the height of the wall. In accordance with MSBC 8th Edition, Section 1610.2, a load factor of 1.43 shall be applied to the earthquake force for wall strength design.

Temporary surcharges should not be included when designing for earthquake loads. Surcharge loads applied for extended periods of time shall be included in the total static lateral soil pressure and their earthquake lateral force shall be computed and added to the force determined above.

3.7 Perimeter Drains

- We recommend that free-draining material be placed within 2 feet of the exterior of walls of below ground spaces. To reduce the potential for dampness in below ground spaces, proposed below ground walls should be damp-proofed.

- We recommend that drains be provided behind the exterior of walls of below ground spaces to collect and discharge water that may infiltrate through the surface. The drains should consist of 4-inch perforated PVC pipes installed with the slots facing down. Perimeter drains should be installed at the bottom of the wall in 18 inches of crushed stone wrapped in a geotextile for separation and filtration.

- Groundwater collected by the wall drains could be discharged in a lower area if gravity flow is possible. Alternatively, it should be discharged into the street drains. A permit would likely be required for discharge into street drains.

4. PRELIMINARY CONSTRUCTION CONSIDERATIONS

4.1 Subgrade Preparation

- Existing asphalt, forest material/topsoil/organics, existing fill, abandoned utilities, and other below-ground structures should be entirely removed from within the footprint of planned building before the start of foundation work.

- Tree stumps, root balls, and roots larger than ½ inch in diameter should be removed and the cavities filled with suitable material and compacted per Section 4.3 of this report. Care should be exercised during stripping to reduce the potential for disturbance of the subgrade.

- The base of the footing excavations in granular soil should be compacted with a dynamic vibratory compactor weighing at least 200 pounds and imparting a minimum of 4 kips of force to the subgrade, before placing the required 12 inches of Structural Fill.

- Fill placed within the footprint of the proposed building should meet the gradation and compaction requirements of Structural Fill shown in Section 4.3.1.

- To reduce the potential of increasing lateral pressures on the retaining walls, fill placed within 3 feet of the walls should be compacted using a small plate compactor imparting a maximum dynamic effort of 4 kips. The fill within 3 feet of the walls should be placed in maximum 8-inch loose lifts.

- Loose or soft soils identified during the compaction of the footing or floor slab subgrades should be excavated to a suitable bearing stratum as determined by the representative of LGCI. Grades should be restored by backfilling with Structural Fill or crushed stone.

- When crushed stone is required in the drawings or it is used for the convenience of the contractor, it should be wrapped in a geotextile fabric for separation except where introduction of the geotextile promotes sliding. A geotextile should not be placed between the bottoms of the footings and crushed stone.

- An LGCI representative should observe the exposed subgrades prior to fill and concrete placement to verify that the exposed bearing materials are suitable for the design soil bearing pressure. If soft or loose pockets are encountered in the footing excavations, the soft or loose materials should be removed, and the bottom of the footing should be placed at a lower elevation on firm soil, or the resulting excavation should be backfilled with Structural Fill, or crushed stone wrapped in a filter fabric.

4.2 Subgrade Protection

The onsite fill and natural soils are frost susceptible. If construction takes place during freezing weather, special measures should be taken to prevent the subgrade from freezing. Such measures should include the use of heat blankets, or excavating the final six inches of soil just before pouring concrete. Footings should be backfilled as soon as possible after footing construction. Soil used as backfill should be free of frozen material, as should the ground on which it is placed. Filling operations should be halted during freezing weather.

Materials with high fines contents are typically difficult to handle when wet as they are sensitive to moisture content variations. Subgrade support capacities may deteriorate when such soils become wet and/or disturbed. The contractor should keep exposed subgrades properly drained and free of ponded water. Subgrades should be protected from machine and foot traffic to reduce disturbance.

4.3 Fill Materials

Structural Fill and Ordinary Fill should consist of inert, hard, durable sand and gravel, free from organic matter, clay, surface coatings and deleterious materials, and should conform to the gradation requirements shown below.

4.3.1 Structural Fill

The Structural Fill should have a plasticity index of less than 6, and should meet the gradation requirements shown below. Structural Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within ±2 percentage points of optimum moisture content.

Sieve Size Percent	Passing by Weight
3 inches	100
1 ½ inch	80-100
½ inch	50-100
No. 4	30-85
No. 20	15-60
No. 60	5-35
No. 200*	0-10

* 0 – 5 Under sidewalks

4.3.2 Ordinary Fill

Ordinary Fill should have a plasticity index of less than 6, and should meet the gradation requirements shown below. Ordinary Fill should be compacted in maximum 9-inch loose lifts to at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557), with moisture contents within ±2 percentage points of optimum moisture content.

Sieve Size Percent	Passing by Weight
6 inches	100
1 inch	50-100
No. 4	20-100
No. 20	10-70
No. 60	5-45
No. 200	0-20

4.4 Rock Blasting Consideration

4.4.1 Rock Removal

Rock cuts will likely be needed within the proposed building footprint and paved areas. To better define the rock quantities, we recommend that additional borings be advanced at the site.

Minor rock cuts (less than one foot) over short distances may be achieved using hoe-rams or using other non-blasting techniques. Deep rock cuts will require rock blasting.

- Rock should be cut at least 12 inches beneath the bottom of footings, 4.5 feet beneath the FFE, and 18 inches beneath the bottom of paved areas.
- Under utility pipes, manholes, and catch basins, rock should be cut a minimum of 12 inches beneath the pipe or structure.
- Laterally, the rock should be removed at least 1 foot beyond the limits of footings and 2 feet beyond the limits of walls. Rock should be cut a minimum of 12 inches outside utility structures and a minimum of 18 inches on each side of utility pipes.
- To reduce overblasting and the potential for heaved rock, drill holes for blasting should not extend more than 2 feet beneath the minimum depths shown above.
- Rock blasting should be controlled to reduce vibrations and airblast overpressure to below thresholds established in the contract documents.
- Pre-splitting or controlled blasting may be desirable to reduce the amount of overblast.
- To reduce the potential of blasted rock mixing with organic soil, we recommend that the topsoil, roots, tree stumps, and vegetation be removed before blasting. The remainder of the overburden soils and excavatable weathered rock should not be removed before blasting.

- To help obtain information about the top of the rock for rock quantity estimating purposes, we recommend that the Earth Moving Specifications include a requirement for the contractor to perform rock probes at the site in a grid pattern. The results of the probes should include at a minimum the ground surface elevation and the elevation of the top of the rock. The probes should extend at least 10 feet beyond the perceived top of rock to make sure that the perceived top of rock is not a boulder.

4.4.2 Ground Vibration Monitoring

Rock blasting operations will generate ground vibrations that may result in minor cracks and cosmetic damage to nearby structures. To protect the adjacent structures from potential damage, construction blasting should be carefully controlled and monitored. We recommend monitoring vibrations at the ground surface and at nearby structures before and during the rock blasting operations.

Blasting should not be performed within 24 hours of placing fresh concrete. Blasting charges should be selected so as to keep blasting induced vibration peak particle velocity (PPV) below 2 inches per second.

4.4.3 Public Notification

The human perception threshold to vibration is very low, i.e., people are far more sensitive to vibrations than are the structures they occupy. Various studies have indicated that the sound effects are noticeable at peak particle velocity (PPV) values of 0.02 inches per second (ips) and complaints and claims of damage are likely at PPV values of 0.2 to 0.3 ips. These vibration intensities are well below the intensities that would cause structural damage to buildings. For these reasons, we recommend that the owner implement a proactive program of public notification and education of neighbors on the physical characteristics of blasting effects before the start of blasting.

4.4.4 Pre-Construction Condition Survey

We recommend that the Owner perform a pre-construction condition survey of structures located within 250 feet of the nearest blasting operation to document the existing conditions of the structures. The Owner may also consider using crack monitoring gauges to monitor large cracks identified during the pre-construction surveys.

4.5 Reuse of Onsite Materials

Based on our field observations and the results of the grain-size analyses, we do not anticipate that the site soils will be suitable for reuse. Should the contractor encounter materials suitable for reuse during earthwork operations, the contractor should avoid mixing the reusable soils with

fine-grained and/or organic soils. The soils to be reused should be excavated and stockpiled separately for compliance testing.

Soils with 20 percent or greater fines contents are generally very sensitive to moisture content variations and are susceptible to frost. Such soils are very difficult to compact at moisture contents that are much higher or much lower than the optimum moisture content determined from the laboratory compaction test. Therefore, strict moisture control should be implemented during compaction of onsite soils with fines contents of 20 percent or greater. The contractor should be prepared to remove and replace such soils if pumping occurs.

Depending on the magnitude of rock cuts, if any, the contractor may mobilize a crusher and crush the rock and the granular portion of the existing fill at proportions to be determined in the field to produce material that meets the gradations of Ordinary Fill and/or Structural Fill.

All materials to be used as fill should first be tested for compliance with the applicable gradation specifications.

4.6 Groundwater Control Procedures

Based on the groundwater levels encountered in our preliminary explorations, we do not anticipate that groundwater control procedures will be needed during removal of unsuitable soils, site grading, and excavation for proposed footings. We anticipate that filtered sump pumps installed in a series of pits located at least three feet below the bottom of planned excavations may be sufficient to handle surface runoff that may enter the excavation during wet weather.

The contractor should be permitted to employ whatever commonly accepted means and practices are necessary to maintain the groundwater level below the bottom of the excavation, and to maintain a dry excavation during wet weather. Groundwater levels should be maintained at a minimum of 1-foot below the bottom of excavations during construction. Placement of reinforcing steel or concrete in standing water should not be permitted.

To reduce the potential for sinkholes developing over sump pump pits after the sump pumps are removed, the crushed stone placed in the sump pump pits should be wrapped in a geotextile fabric. Alternatively, the crushed stone should be entirely removed after the sump pump is no longer in use and the sump pump pit should be restored with suitable backfill.

4.7 Temporary Excavations

All excavations to receive human traffic should be constructed in accordance with the OSHA guidelines.

The site soils should generally be considered Type "C" and should have a maximum allowable slope of 1.5 Horizontal to 1 Vertical (1.5H:1V) for excavations less than 20 feet deep. Deeper excavations, if needed, should have shoring designed by a professional engineer.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of the excavation sides and bottom and to protect existing structures.

5. RECOMMENDATIONS FOR FUTURE WORK

LGCI's services include attending a meeting with SMMA regarding this report. In addition, we recommend engaging LGCI to perform the following services:

- Observe schematic and/or design phase explorations as the project progresses.
- Prepare schematic and/or design phase geotechnical report(s) as the project progresses.
- Prepare earthwork specifications.
- Review the geotechnical aspects of contractor submittals.
- Provide a field representative to observe the subgrades of foundations and floor slabs during construction.

6. REPORT LIMITATIONS

Our analysis and recommendations are based on project information provided to us at the time of this report. If changes to the type, size, and location of the proposed structures or to the site grading are made, the recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions and recommendations modified in writing by LGCI. LGCI cannot accept responsibility for designs based on our recommendations unless we are engaged to review the final plans and specifications to determine whether any changes in the project affect the validity of our recommendations and whether our recommendations have been properly implemented in the design.

It is not part of our scope to perform a more detailed site history; therefore, we have not explored for or researched the locations of buried utilities or other structures in the area of the proposed construction. Our scope did not include environmental services or services related to moisture, mold, or other biological contaminates in or around the site.

The recommendations in this report are based in part on the data obtained from the subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations from anticipated conditions are encountered, it may be necessary to revise the recommendations in this report. We cannot accept responsibility for designs based on recommendations in this report unless we are engaged to 1) make site visits during construction to check that the subsurface conditions exposed during construction are in general conformance with our design assumptions and 2) ascertain that, in general, the work is being performed in compliance with the contract documents.

Our report has been prepared in accordance with generally accepted engineering practices and in accordance with the terms and conditions set forth in our agreement. No other warranty, expressed or implied, is made. This report has been prepared for the exclusive use of Symmes Maini & McKee Associates for the specific application to Waltham High School – Fernald Site Study in Waltham, Massachusetts as conceived at this time.

7. REFERENCES

In addition to the references included in the text of the report, we used the following references:

The Commonwealth of Massachusetts (2010), "The Massachusetts State Building Code, Eighth Edition," comprised of the International Building Code (IBC-2009) and 780 CMR: Massachusetts Amendments to IBC-2009.

The Department of Labor, Occupational Safety and Health Administration (1989), "Occupational Safety and Health Standards - Excavations; Final Rule," 20 CFR Part 1926, Subpart P.

USGS Waltham, MA topographic map from http://mapserver.mytopo.com.

Table 1 - Summary of LGCI Borings
Proposed Waltham High School - Fernald Site Study
Waltham, MA
LGCI Project No. 1616

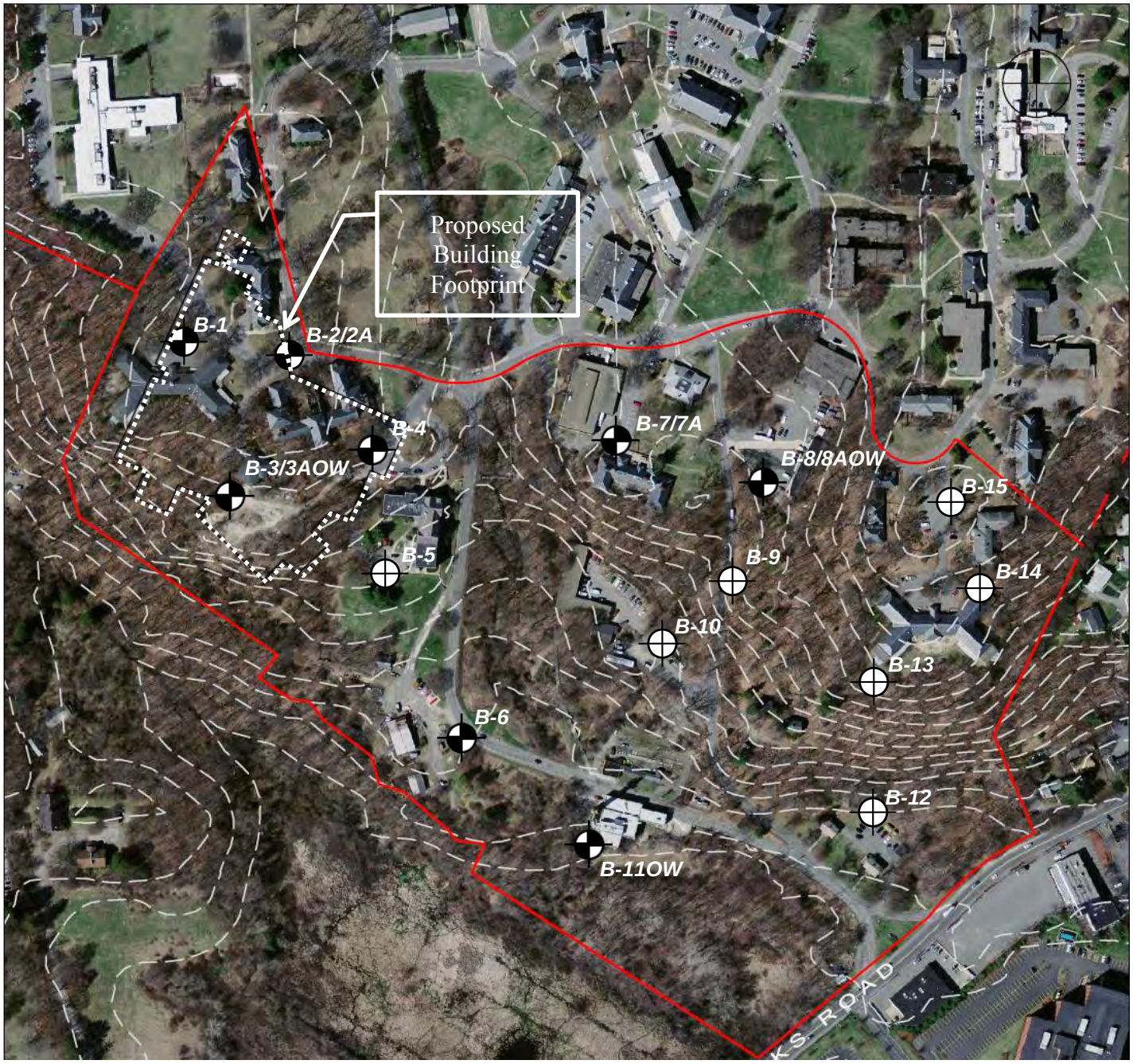
Boring No.	Ground Surface Elevation (ft.)[1]	Bottom of Topsoil/Subsoil Depth / El. (ft.)	Bottom of Fill Depth / El. (ft.)	Bottom of Sand & Gravel Depth / El. (ft.)	Refusal Depth / El. (ft.)	Bottom of Boring Depth / El. (ft.)
B-1	157.30	2.4 / **154.9**	- / **-**	- / **-**	- / **-**	20 / **137.3**
B-2/2A	158.20	2.5 / **155.7**	- / **-**	3.5 / **154.7**	3.5 / **154.7**	8.5 / **149.7**
B-3/3AOW	135.60	- / **-**	7.5 / **128.1**	- / **-**	10 / **125.6**	10 / **125.6**
B-4	142.70	0.5 / **142.2**	4 / **138.7**	14 / **128.7**	19.3 / **123.4**	19.3 / **123.4**
B-6[4]	77.20	- / **-**	4 / **73.2**	- / **-**	- / **-**	4 / **73.2**
B-7/7A	154.40	- / **-**	1.5 / **152.9**	- / **-**	1.5 / **152.9**	3.5 / **150.9**
B-8/8AOW	158.40	- / **-**	11 / **147.4**	- / **-**	11 / **147.4**	11 / **147.4**
B-11OW[4]	61.40	- / **-**	16 / **45.4**	- / **-**	- / **-**	16 / **45.4**

1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Groundwater was not observed in the borings.
3. "-" means layer not encountered. .
4. Halted drilling when environmental conditon observed. Contacted SMMA and project environmental engineer.

Contour Intervals: 3 meters

Figure based on USGS topographic map of Waltham, MA obtained from www.mytopo.com/maps

Client:	Project:		
Symmes Maini & McKee Associates	Proposed Waltham High School – Fernald Site Study	Figure 1 – Site Location Map	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Waltham, MA	LGCI Project No.: 1616	Date: Nov. 2016



Legend

Proposed boring not performed due to time constraint.

Boring advanced by Northern Drill Service, Inc of Northborough, Massachusetts in October 2016 and observed by LGCI.

0 300 600

Approximate Scale (feet)

Note: Figure based on plan titled: "Waltham High School, Fernald Site, Waverly Oaks Street, Waltham, MA," prepared by Symmes, Maini, & McKee Associates and dated September 28, 2016. LGCI received the plan via email from SMMA.

Client:	Project:	Figure 2 – Boring Location Plan	
Symmes Maini & McKee Associates	Proposed Waltham High School – Fernald Site Study		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Waltham, MA	LGCI Project No.: 1616	Date: Dec. 2016

Appendix A – Boring Logs and Groundwater Observation Well Installation Reports

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BORING LOG

Boring B-1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/26/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/26/2016
LGCI Engineer:	Andrew Jefferson	Location:	NW corner of site
Ground Surface El:	El. 157.3' (see remark 1)	Total Depth:	20 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	4	6	6	5	24	20		Topsoil/ Subsoil ~2.4'	S1 - Topsoil
	2-4	S2	3	18	30	18	24	6			S2 - Top 5": Silty SAND with Gravel (SM), fine, trace medium to coarse, ~20% fines, trace of organic fines, ~20% coarse angular gravel, trace of roots, orange to brown, moist (subsoil)
5ft	4-6	S3	16	32	50	62	24	18			Bot. 1": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, ~15% fine to coarse angular gravel, gray, moist (natural)
											S3 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 25-30% fines, 30-35% fine to coarse angular gravel, gray, wet (natural)
10ft	9-11	S4	37	37	28	26	24	16			S4 - Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, 10-15% fine angular gravel, gray, wet
									2	Sand and Gravel	
											S5 - Similar to S4
15ft	14-16	S5	21	34	58	91	24	8			
											S6 - No recovery, gravel in tip
20ft	19-21	S6	68	100			12	0		~20'	
											Bottom of boring at 20 feet. Backfilled borehole with drill cuttings.

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Drill rod chatter at 12 feet. Possible boulder about 1 foot in diameter.

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BORING LOG

Boring B-2/2A

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/26/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/26/2016
LGCI Engineer:	Andrew Jefferson	Location:	North of West Building
Ground Surface El:	El. 158.2' (see remark 1)	Total Depth:	8.5 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	6	5	7	6	24	16		Topsoil/ Subsoil ~2.5'	S1 - Topsoil, subsoil in tip
	2-4	S2	5	7	13	50/0	18	6		Sand ~3.5'	S2 - Silty SAND (SM), fine, trace medium to coarse, 20-25% fines, trace of organic fines, trace of roots, light brown, moist (subsoil) (trace gray sand in tip)
5ft	3.5-8.5	C1					60	60		Bedrock ~8.5'	C1 - 3, 4, 5, 3.5, 4.5 min/ft Hard, slightly weathered to fresh, slightly to moderately fractured, dark gray to pink, white mottles, DIORITE, REC=100%, RQD=90%
10ft											Bottom of boring at 8.5 feet. Backfilled borehole with drill cuttings.
15ft											
20ft											

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Refusal at 3.5 feet. Offset boring ~5' east (B-2A) and encountered refusal at 3.5 feet again, began coring at 3.5 feet.

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BORING LOG

Boring B-3/3AOW
Page 1 of 1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/26/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/26/2016
LGCI Engineer:	Andrew Jefferson	Location:	South of Seguin Hall
Ground Surface El:	El. 135.6' (see remark 1)	Total Depth:	10 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	11	14	19	11	24	10		Fill ~7.5'	S1 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10-15% fines, ~15% fine to coarse angular gravel, trace of organics, dark brown, moist (fill)
	2-4	S2	10	11	11	14	24	12			S2 - Similar to S1, brick fragments
5ft	4-6	S3	28	4	4	2	24	6			S3 - Similar to S1, brick fragments, wet
	6-8	S4	3	3	9	20	24	6			S4 - Top 5": Silty GRAVEL with Sand (GM), fine to coarse, 15-20% fines, 30-35% fine to coarse sand, brown, moist
									2	Silty Sand ~10'	Bot. 1": Silty SAND with Gravel (SM), fine to medium, trace coarse, ~15% fines, ~15% fine angular gravel, gray, moist (natural)
	8-10	S5	43	72	60/5		17	10			S5 - Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~20% fine to coarse angular gravel, gray, moist
10ft									3		Bottom of boring at 10 feet. Installed groundwater observation well to 10 feet. See groundwater observation well installation report for details.
15ft											
20ft											

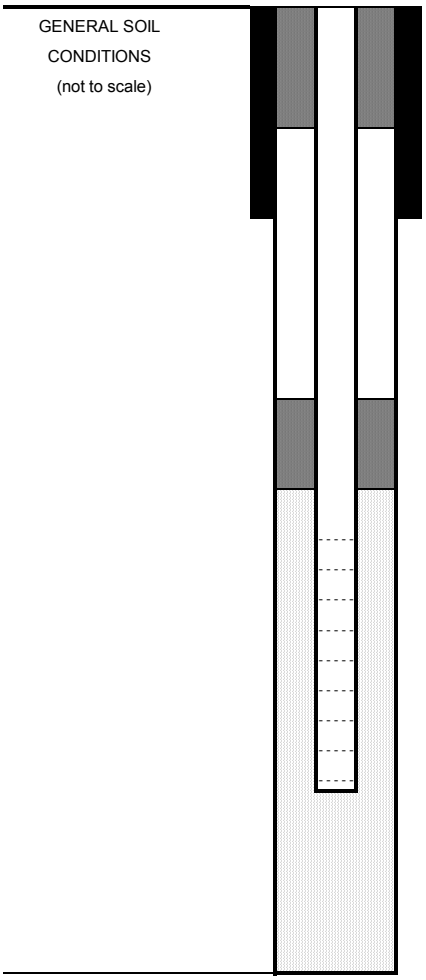
Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Strata transition assumed based on blow counts.
3. Refusal of casing at 10 feet. Offset boring ~5 feet south (B-3AOW) and encountered refusal at 10 feet, installed groundwater observation well.

Lahlaf Geotechnical Consulting, Inc.

GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-3AOW**

Project Name:	**Proposed Waltham High School - Fernald Site Study**		
LGCI Project Number:	**1616**		
Client:	**Symmes Maini & McKee Associates**		
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/27/16
Drilling Foreman:	Tim Tucker	Date Completed:	10/27/16
LGCI Engineer:	Andrew Jefferson	Location:	South of Seguin Hall
Ground Surface Elevation:	El. 135.6'	Total Depth of Boring:	10 feet
Ground Water Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)



Riser Stickup ~0" above ground surface

THICKNESS OF SURFACE SEAL	6 inches
TYPE OF SURFACE SEAL	Concrete
TYPE OF SURFACE CASING	Road box
ID OF SURFACE CASING	4 inches
DEPTH TO BOTTOM OF CASING	8 inches
ID OF RISER PIPE	2 inches
TYPE OF RISER PIPE	PVC Schedule 40
TYPE OF BACKFILL AROUND RISER PIPE	Drill Cuttings
DEPTH TO TOP OF SEAL	3.5 feet
TYPE OF SEAL	Bentonite chips
DEPTH TO BOTTOM OF SEAL	4 feet
DEPTH TO TOP OF PERVIOUS SECTION	5 feet
TYPE OF PERVIOUS SECTION	PVC Schedule 40
DESCRIBE OPENINGS	Slotted
ID OF PERVIOUS SECTION	2 inches
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand
DEPTH TO BOTTOM OF PERVIOUS SECTION	10 feet
DEPTH TO BOTTOM OF SAND COLUMN	10 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand
DIAMETER OF BOREHOLE	4 inches
DEPTH TO BOTTOM OF BOREHOLE	10 feet

NOTES:

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BORING LOG

Boring B-4
Page 1 of 1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/27/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/27/2016
LGCI Engineer:	Andrew Jefferson	Location:	South of West Building
Ground Surface El:	El. 142.7' (see remark 1)	Total Depth:	19.3 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	4	6	12	12	24	16		Topsoil	S1 - Top 6": Topsoil and Subsoil
										Fill ~4'	Bot. 10": Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~5% fines, ~20% fine to coarse angular gravel, light brown, moist (fill)
	2-4	S2	23	27	25	26	24	12			S2 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 20-25% fines, trace of roots, ~15% fine to coarse angular gravel, light brown, moist (fill)
5ft	4-6	S3	21	26	24	41	24	16		Sand and Gravel	S3 - Poorly Graded SAND with Silt (SP-SM), fine, trace medium, 5-10% fines, trace fine angular gravel, light brown, moist (natural)
10ft	9-11	S4	16	17	50	44	24	12			S4 - Top 6": Similar to S3
											Bot. 6": Well Graded GRAVEL with Silt and Sand (GW-GM), fine to coarse, angular, 10-15% fines, 20-25% fine to coarse sand, gray, wet
										~14'	
15ft	14-16	S5	43	63	81	62	24	20		Weathered Rock	S5 - Silty SAND with Gravel (SM), fine to coarse, 30-35% fines, slightly plastic, 20-25% fine to coarse gravel, gray, wet (weathered rock)
											S6 - Similar to S5
										~19.3'	
20ft	19-21	S6	100/3				3	3			Bottom of boring at 19.3 feet. Backfilled borehole with drill cuttings.

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.

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BORING LOG

Boring B-6
Page 1 of 1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/28/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/28/2016
LGCI Engineer:	Andrew Jefferson	Location:	East of grounds department
Ground Surface El:	El. 77.2' (see remark 1)	Total Depth:	4 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0.5-2	S1	7	11	16		18	6		Asphalt	Drilled through about 4" of asphalt and concrete
										Fill	S1 - Silty GRAVEL with Sand (GM), fine to coarse, angular, ~15% fines, ~20% fine to coarse sand, trace of asphalt and concrete, brown and gray, wet
	2-4	S2	8	24	14	4	24	3		~4'	S2 - Similar to S1, petroleum odor
5ft									2		Bottom of boring at 4 feet. Backfilled borehole with drill cuttings.
10ft											
15ft											
20ft											

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Halted drilling and notified SMMA and environmental engineer after petroleum odor noted at 2-4 feet. Environmental Engineer obtained sample S2 for analytical tests.

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BORING LOG

Boring B-7/7A

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/27/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/27/2016
LGCI Engineer:	Andrew Jefferson	Location:	Between Lavers and Laundry/AEC blg.
Ground Surface El:	El. 154.4' (see remark 1)	Total Depth:	3.5 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	4	7	6	60/3"	21	16		Fill ~1.5'	S1 - Silty SAND (SM), fine to coarse, ~15% fines, ~10% fine angular gravel, traces of asphalt, brown to gray, moist (fill)
									2		
	2-5	C1					18	18		Bedrock ~3.5'	C1 - 10, 5/0.5 min/ft Hard, slightly weathered to fresh, slightly to moderately fractured, dark gray to pink, white mottles, DIORITE, REC=100%, RQD=89%
									3		
5ft											
											Bottom of boring at 3.5 feet. Backfilled borehole with drill cuttings.
10ft											
15ft											
20ft											

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Hard drilling at 18". Offset boring ~5 feet west (B-7A), refusal at 18", began coring.
3. Core barrel jammed at 3.5 feet.

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

Boring B-8/8AOW
Page 1 of 1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/27/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/28/2016
LGCI Engineer:	Andrew Jefferson	Location:	East of Oak Street
Ground Surface El:	El. 158.4' (see remark 1)	Total Depth:	11 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0.5-2	S1	8	8	7		18	0		Asphalt	Drilled through ~3" of asphalt
											S1 - No recovery
	2-4	S2	11	50	17	17	24	6			S2 - Silty SAND (SM), fine to coarse, ~15% fines, ~10% fine angular gravel, gray, wet (fill)
5ft	4-6	S3	65	14	10	6	24	4			S3 - Rock fragments
										Fill	
	6-8	S4	5	8	8	5	24	4			S4 - Silty SAND (SM), fine to medium, trace coarse, 25-30% fines, trace oforganic fines, 5-10% fine angular gravel, brown, wet (fill)
	8-10	S5	8	10	8	17	24	8			S5 - Well Graded GRAVEL with Silt (GW-GM), fine to coarse, angular, ~20% fines, brown, wet (fill)
10ft											S6 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 25-30% fines, trace of organic fines, roots, 15-20% fine angular gravel, brown, wet (fill)
	10-12	S6	50/3"				3	3	2	~11'	
											Bottom of boring at 11 feet. Installed groundwater observation well to 11 feet. See groundwater observation well installation report for details.
15ft											
20ft											

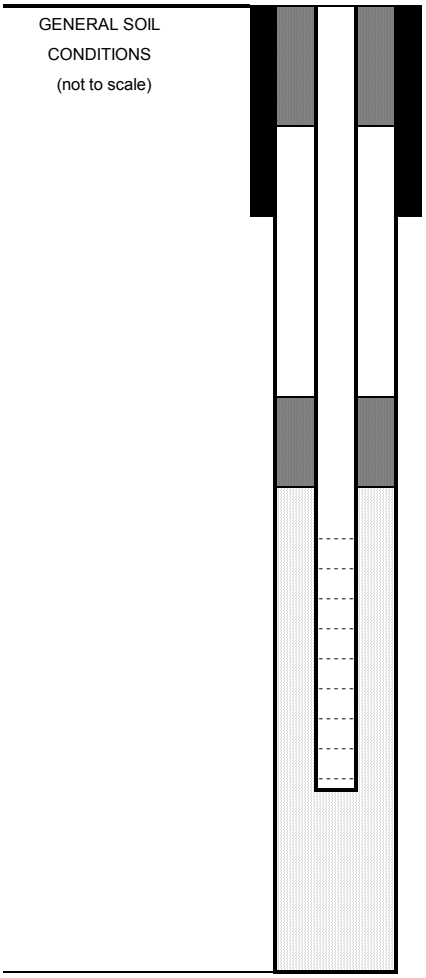
Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Spoon and casing refusal at 10.3 feet. Offset boring about 5' north (B-8AOW), refusal at 11 feet, installed groundwater observation well.

LGCI
Lahlaf Geotechnical Consulting, Inc.

GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-8AOW**

Project Name:	**Proposed Waltham High School - Fernald Site Study**		
LGCI Project Number:	**1616**		
Client:	**Symmes Maini & McKee Associates**		
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/28/16
Drilling Foreman:	Tim Tucker	Date Completed:	10/28/16
LGCI Engineer:	Andrew Jefferson	Location:	East of Oak Street
Ground Surface Elevation:	158.4'	Total Depth of Boring:	11 feet
Ground Water Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)



Riser Stickup ~0" above ground surface

THICKNESS OF SURFACE SEAL	6 inches
TYPE OF SURFACE SEAL	Concrete
TYPE OF SURFACE CASING	Road box
ID OF SURFACE CASING	4 inches
DEPTH TO BOTTOM OF CASING	8 inches
ID OF RISER PIPE	2 inches
TYPE OF RISER PIPE	PVC Schedule 40
TYPE OF BACKFILL AROUND RISER PIPE	Drill Cuttings
DEPTH TO TOP OF SEAL	4.5 feet
TYPE OF SEAL	Bentonite chips
DEPTH TO BOTTOM OF SEAL	5 feet
DEPTH TO TOP OF PERVIOUS SECTION	6 feet
TYPE OF PERVIOUS SECTION	PVC Schedule 40
DESCRIBE OPENINGS	Slotted
ID OF PERVIOUS SECTION	2 inches
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand
DEPTH TO BOTTOM OF PERVIOUS SECTION	11 feet
DEPTH TO BOTTOM OF SAND COLUMN	11 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand
DIAMETER OF BOREHOLE	4 inches
DEPTH TO BOTTOM OF BOREHOLE	11 feet

NOTES:

LGCI
Lahlaf Geotechnical Consulting, Inc.

BORING LOG

Boring B-11OW
Page 1 of 1

Project:	**Proposed Waltham High School - Fernald Site Study, Waltham, MA**		
Client:	**Symmes Maini & McKee Associates**		LGCI Project No.: 1616
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/28/2016
Drilling Foreman:	Tim Tucker	Date Completed:	10/28/2016
LGCI Engineer:	Andrew Jefferson	Location:	SW of power plant
Ground Surface El:	El. 61.4' (see remark 1)	Total Depth:	16 feet
Groundwater Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)
Hammer Weight:	140 lbs	Split Spoon Diameter:	ID - 1.375", OD - 2"
Hammer Type:	Automatic	Rock Core Barrel Size:	N/A
Drop:	30 inches		

Depth Scale	Sample Depth (ft)	Sample No	Blows per 6 inches 0-6	6-12	12-18	18-24	Pen (in)	Rec (in)	Remarks	Strata	Sample Description
	0-2	S1	1	1	2	3	24	16		Fill	S1 - Poorly Graded SAND (SP), fine, trace medium, ~5% fines, light brown, moist (fill)
	2-4	S2	3	3	2	2	24	16			S2 - Similar to S1
5ft	4-6	S3	2	1	1	1	24	10			S3 - Similar to S1
	6-8	S4	WOH/24"				24	10			S4 - Similar to S1
	8-10	S5	2	2	5	4	24	6			S5 - Poorly Graded GRAVEL (GP), fine, trace coarse, angular, wet (fill)
10ft	10-12	S6	6	6	9	9	24	12			S6 - Similar to S5
	12-14	S7	12	11	9	12	24	12			S7 - Similar to S5, tip contained silty sand and petroleum odor
15ft	14-16	S8	14	13	20	27	24	12			S8 - Similar to S5, petroleum in sample
									2	~16'	
											Bottom of boring at 16 feet. Installed groundwater observation well to 14 feet. See groundwater observation well installation report for details.
20ft											

Remarks:
1. The ground surface elevations were provided to us by SMMA in an email dated November 21, 2016.
2. Halted drilling and notified SMMA and environmental engineer after petroleum odor noted at 14-16 feet. Environmental Engineer obtained sample S8 for analytical tests.

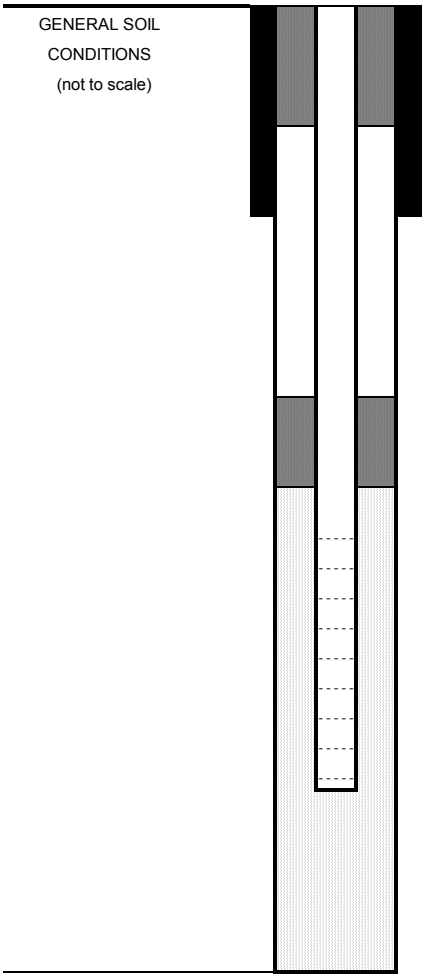
LGCI
Lahlaf Geotechnical Consulting, Inc.

GROUNDWATER OBSERVATION WELL INSTALLATION REPORT

Boring No. : **B-11OW**

Project Name:	**Proposed Waltham High School - Fernald Site Study**		
LGCI Project Number:	**1616**		
Client:	**Symmes Maini & McKee Associates**		
Drilling Subcontractor:	Northern Drill Service, Inc.	Date Started:	10/28/16
Drilling Foreman:	Tim Tucker	Date Completed:	10/28/16
LGCI Engineer:	Andrew Jefferson	Location:	SW of power plant
Ground Surface Elevation:	El. 61.4'	Total Depth of Boring:	16 feet
Ground Water Depth:	N/E	Drill Rig Type:	B-48 Mobile ATV Rig
		Drilling Method:	4" casing (drive and wash)

GENERAL SOIL CONDITIONS
(not to scale)



Riser Stickup ~2' above ground surface

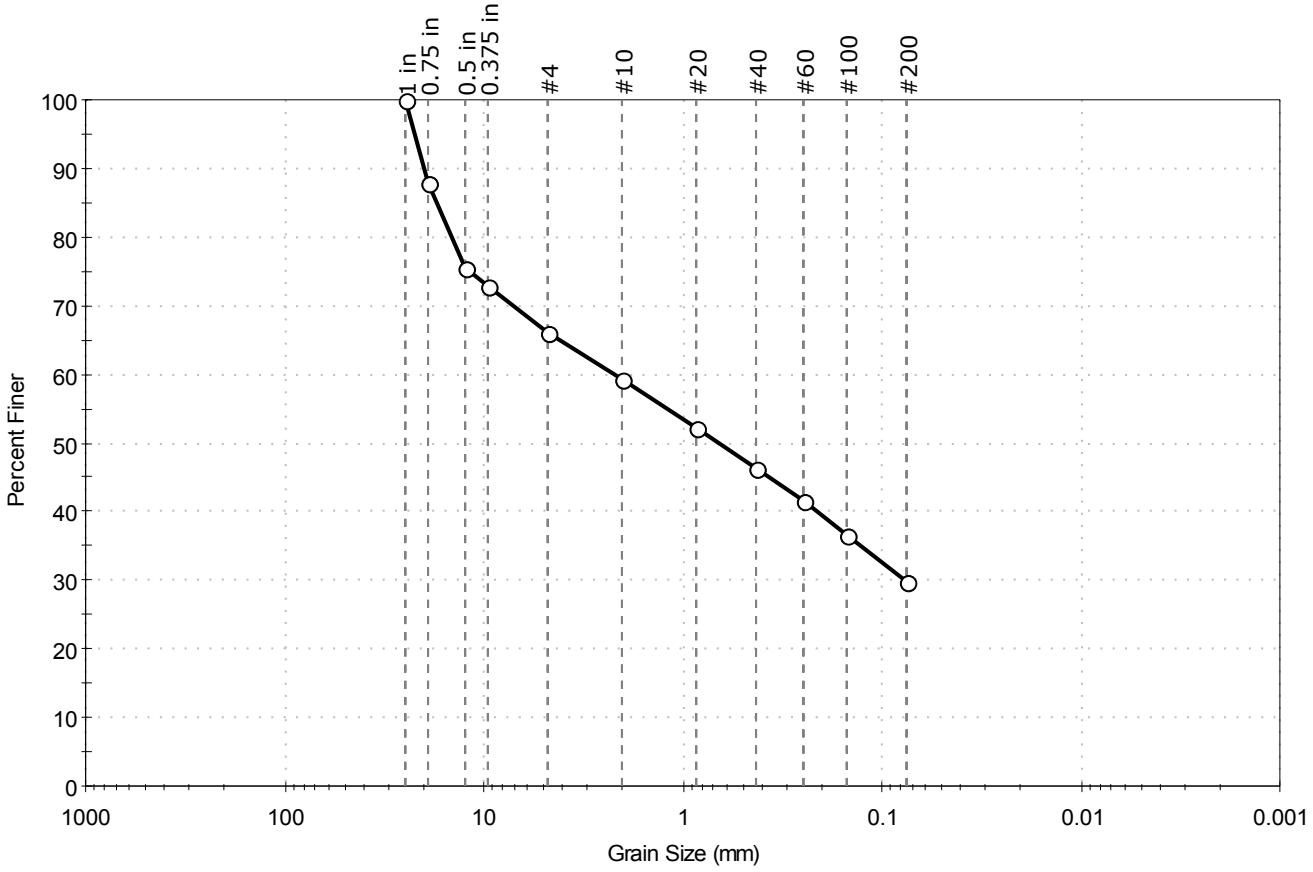
THICKNESS OF SURFACE SEAL	N/A
TYPE OF SURFACE SEAL	N/A
TYPE OF SURFACE CASING	N/A
ID OF SURFACE CASING	N/A
DEPTH TO BOTTOM OF CASING	N/A
ID OF RISER PIPE	2 inches
TYPE OF RISER PIPE	PVC Schedule 40
TYPE OF BACKFILL AROUND RISER PIPE	Drill Cuttings
DEPTH TO TOP OF SEAL	3 feet
TYPE OF SEAL	Bentonite chips
DEPTH TO BOTTOM OF SEAL	3.5 feet
DEPTH TO TOP OF PERVIOUS SECTION	4 feet
TYPE OF PERVIOUS SECTION	PVC Schedule 40
DESCRIBE OPENINGS	Slotted
ID OF PERVIOUS SECTION	2 inches
TYPE OF BACKFILL AROUND PERVIOUS SECTION	Filter sand
DEPTH TO BOTTOM OF PERVIOUS SECTION	14 feet
DEPTH TO BOTTOM OF SAND COLUMN	16 feet
TYPE OF BACKFILL BELOW PERVIOUS SECTION	Filter sand
DIAMETER OF BOREHOLE	4 inches
DEPTH TO BOTTOM OF BOREHOLE	16 feet

NOTES:

Appendix B – Laboratory Test Results

Client:	Lahlaf Geotechnical Consulting				
Project:	Waltham High School				
Location:	Waltham, MA			Project No:	GTX-304659
Boring ID:	B-1	Sample Type:	jar	Tested By:	jbr
Sample ID:	S3	Test Date:	11/10/16	Checked By:	emm
Depth :	4-6 ft	Test Id:	397499		
Test Comment:	---				
Visual Description:	Moist, gray silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	33.8	36.4	29.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	88		
0.5 in	12.50	76		
0.375 in	9.50	73		
#4	4.75	66		
#10	2.00	59		
#20	0.85	52		
#40	0.42	46		
#60	0.25	42		
#100	0.15	37		
#200	0.075	30		

Coefficients

D_{85} = 17.2607 mm D_{30} = 0.0762 mm

D_{60} = 2.2070 mm D_{15} = N/A

D_{50} = 0.6536 mm D_{10} = N/A

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

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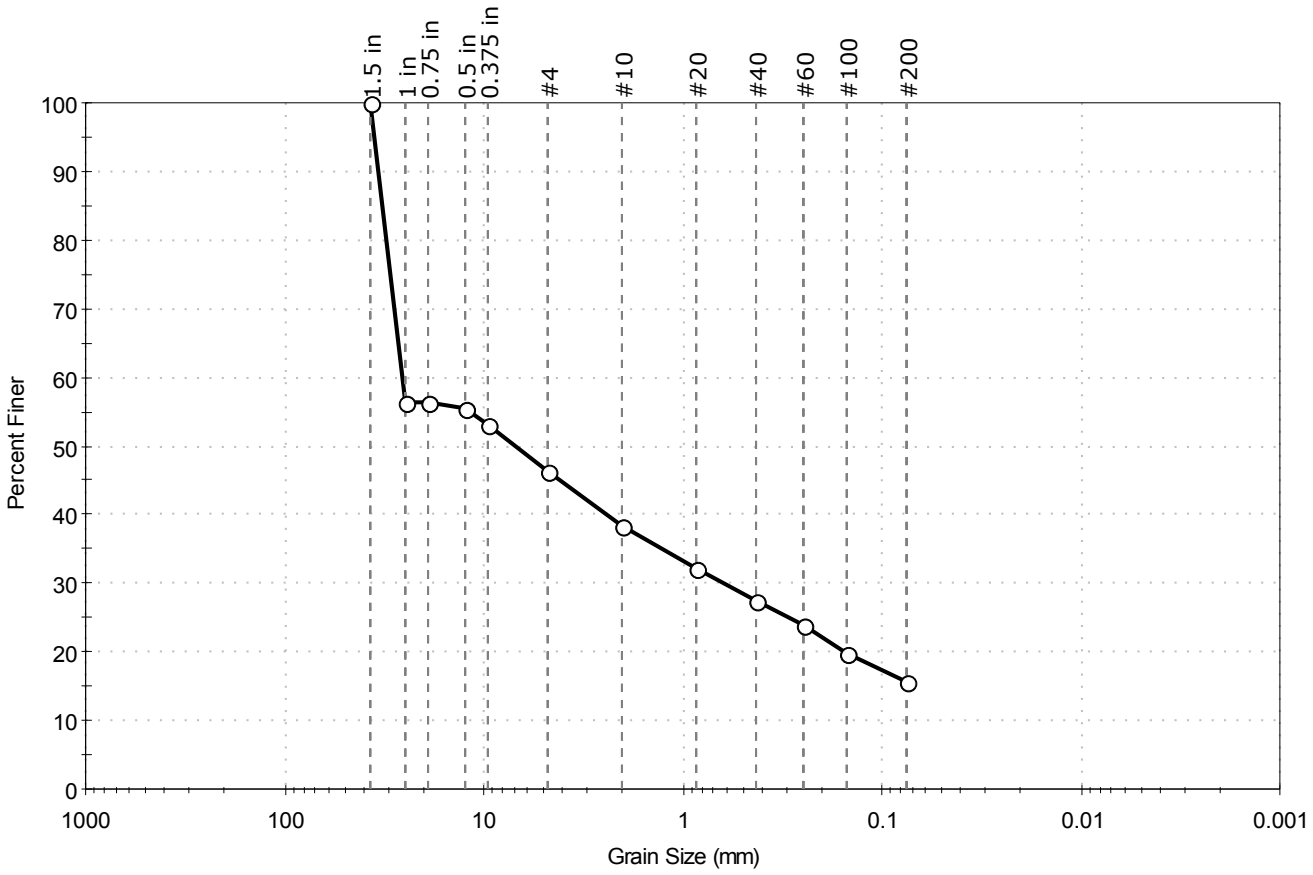
Client:	Lahlaf Geotechnical Consulting				
Project:	Waltham High School				
Location:	Waltham, MA			Project No:	GTX-304659
Boring ID:	B-3	Sample Type:	jar	Tested By:	jbr
Sample ID:	S4	Test Date:	11/10/16	Checked By:	emm
Depth :	6-8 ft	Test Id:	397500		
Test Comment:	---				
Visual Description:	Moist, brown silty gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	53.6	30.9	15.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	56		
0.75 in	19.00	56		
0.5 in	12.50	56		
0.375 in	9.50	53		
#4	4.75	46		
#10	2.00	38		
#20	0.85	32		
#40	0.42	28		
#60	0.25	24		
#100	0.15	20		
#200	0.075	16		

Coefficients

D_{85} = 32.6313 mm	D_{30} = 0.6154 mm
D_{60} = 25.8804 mm	D_{15} = N/A
D_{50} = 6.8643 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

APPENDIX K3

May 16, 2016

Ms. Lauren Konetzny
CDW Consultants, Inc.
Project Manager
40 Speen Street, Suite 301
Framingham, MA 01701

Ref: Limited assessment for hazardous building materials; former Walter E Fernald Development Center, Waltham, Massachusetts

Dear Ms. Konetzny:

CDW Consultants, Inc. (CDW) retained Smith & Wessel Associates, Inc. (SWA) to conduct a limited assessment for suspect asbestos-containing building materials (ACBM) at 30 buildings located on the campus of the former Walter E. Fernald Development Center, 190 Trapelo Road in Waltham, Massachusetts. SWA's qualified Asbestos Inspector, Gary Buda, conducted the assessment on May 4th and 6th, 2016.

The buildings at 190 Trapelo Road are primarily free-standing brick and steel buildings and a few wood-frame houses used in the past as service buildings, residence halls and facilities buildings. Smaller facilities buildings were composed primarily of CMU blocks. The roofs of each building varied between flat rubber membrane, slate shingle and asphalt shingle. Interior finishes included floor tile, carpet and gypsum wallboard.

Asbestos Assessment

The purpose of the limited asbestos assessment was to note the general types and locations of suspect ACBM throughout the buildings. As per client's request, SWA did not conduct sampling and analysis of suspect materials for asbestos content.

SWA's site visit included a walk-through visual assessment of readily accessible and observable areas throughout the buildings (including the basement and exterior) and addressed the following categories of materials:

- Thermal system insulation (TSI), such as insulation on pipes, boilers, tanks and related equipment;
- Surfacing material, acoustical and decorative plasters, fireproofing and other sprayed or trowel applications; and
- Miscellaneous materials, such as window caulking, wallboard, floor tile, adhesives, and other building materials that are not TSI or surfacing materials.

Based on our experience and evaluation of factors such as material type, age of installation, appearance, we categorized suspect ACBM as having a low, medium or high probability of containing asbestos. However, this evaluation is subjective and only representative sampling and analysis can verify a building materials asbestos content.

During SWA's assessment of the buildings, we prepared an inventory of suspect ACBM to establish cost estimates if all materials required remediation. The cost estimate is based on current industry standards that may fluctuate rapidly based on a variety of factors: the prevailing economic climate, seasonal differences, union labor considerations, scale of the abatement, occupancy of the building, and so on. We recommend that qualified abatement contractors be solicited to determine actual pricing involved. In addition to pricing for abatement, we have considered anticipated industrial hygiene costs associated with abatement, including air monitoring and oversight of the abatement.

We did not include an estimated remediation cost for those materials determined to have a low probability of containing asbestos. This included materials that were of newer vintage.

Estimated Costs for Known & Assumed ACBM			
Type of Material & General Location	**Probability to Contain Asbestos (low, medium, high)**	**Quantity / Unit cost ($)**	**Total Estimated Cost ($)**
Bldg #12 – South Nurses			
Gypsum board and associated joint compound	Low	NA	NA
Yellow carpet glue	Low	NA	NA
Orange and White 12″ x 12″ floor tile and associated mastic (newer vintage)	Low	NA	NA
3-tab roofing shingles	Low	NA	NA
Bldg #15 – Main Garage			
Gray window glazing on 16-pane windows	High	10 ea. @ 200/ea.	2,000.
Black tar flashing on roof	High	800 sf @5/sf	4,000.
Bldg #16 – Storeroom			
Black roof tar flashing	High	1,000 sf @ 5/sf	5,000.
Gray exterior window glazing on 12-pane windows	High	60 ea. @ 200/ea.	12,000.
Mudded pipe fittings in basement	High	3 ea. @ /50	150.
Bldg #17 – Cottage 17 – No Access			
Gray exterior window glazing on 12-pane windows	High	25 ea. @ 200/ea.	5,000.
3-tab roofing shingles	Low	NA	NA

Estimated Costs for Known & Assumed ACBM			
Type of Material & General Location	**Probability to Contain Asbestos (low, medium, high)**	**Quantity / Unit cost ($)**	**Total Estimated Cost ($)**
Bldg #18 – Cottage 18 – No Access			
3-tab roofing shingles	Low	NA	NA
Bldg #19 – ICF 19			
Gypsum board and associated joint compound	Low	NA	NA
12″ x 12″ floor tile and associated mastic (newer vintage)	Low	NA	NA
Bldg #20 – ICF 20			
Gypsum board and associated joint compound	Low	NA	NA
12″ x 12″ floor tile and associated mastic (newer vintage)	Low	NA	NA
Gray exterior window glazing on 3-pane basement windows	High	12 ea. @ 100/ea.	1,200.
3-tab roofing shingles	Low	NA	NA
Bldg #21 – Southard Research Lab (Howe Library)			
Gray exterior window glazing on 16-pane windows	High	40 ea. @ 200/ea.	8,000.
3-tab roofing shingles	Low	NA	NA
Gypsum board and associated joint compound	Low	NA	NA
12″ x 12″ floor tile (older vintage) and associated mastic throughout basement and bathrooms	Medium	4,000 sf @ 3/sf	12,000.
9" x 9" floor tile and associated mastic assumed under carpet at 22 MacArthur Boulevard	High	520 sf @ 3/sf	1,560.
Yellow carpet mastic on 1st floor	Low	NA	NA
Bldg #22 – Therapeutic Equipment Center			
12″ x 12″ floor tile (older vintage) and associated mastic	Medium	3,000 sf @ 3/sf	9,000.
Gypsum board and associated joint compound	Low	NA	NA
Pipe insulation and associated mudded fittings throughout rear warehouse room and basement	High	500 lf @ 22/lf	11,000.

Estimated Costs for Known & Assumed ACBM			
Type of Material & General Location	**Probability to Contain Asbestos (low, medium, high)**	**Quantity / Unit cost ($)**	**Total Estimated Cost ($)**
Black tar flashing on roof	High	1,000 sf @ 5/sf	5,000.
Bldg #23 – Lavers – No Access			
Gray exterior window glazing on 3' x 6' windows	High	35 ea. @ 200/ea.	7,000.
Bldg #24 – Maintenance Building			
Gypsum board and associated joint compound	Low	NA	NA
Gray exterior window glazing on 12-pane and 18-pane windows	High	50 ea. @ 200/ea.	10,000.
12″ x 12″ floor tile (older vintage) and associated mastic in office	Medium	500 sf @ 3/sf	1,500.
Bldg #26 – Power Plant – No Access			
Pipe insulation, associated mudded fittings and insulation debris on floor, throughout building	High	Unknown quantity	NA
Bldg #28 – Grounds Garage			
No suspect materials			
Bldg #31 – Truck Garage			
No suspect materials			
Bldg #32 – Tarbell			
12″ x 12″ floor tile (older vintage) and associated mastic throughout building	Medium	38,000 sf @ 3/sf	114,000.
Gypsum board and associated joint compound	Low	NA	NA
Pipe insulation at U-shaped hangers on first floor	High	Unknown quantity	NA
Gray exterior window glazing on 12-pane windows	High	100 ea. @ 200/ea.	20,000.
2' x 2' and 2' x 4' ceiling tiles (newer vintage)	Low	NA	NA
Bldg #33 – West Building – No Access			
Gray exterior window glazing on 12-pane windows	High	80 ea. @ 200/ea.	16,000.
Bldg #34 – Belmont House– No Access			
Bldg #35 – Seguin Hall			

Estimated Costs for Known & Assumed ACBM			
Type of Material & General Location	**Probability to Contain Asbestos (low, medium, high)**	**Quantity / Unit cost ($)**	**Total Estimated Cost ($)**
Gypsum board and associated joint compound	Low	NA	NA
2' x 2' and 2' x 4' ceiling tiles (newer vintage)	Low	NA	NA
12″ x 12″ floor tile and associated mastic (newer vintage)	Low	NA	NA
Tank insulation in basement on 3 small tanks	High	60 sf @ 25/sf	1,500.
3-tab roofing shingles	Low	NA	NA
Bldg #36 – McDougal Hall			
Gray exterior window glazing on 12-pane windows	High	50 ea. @ 200/ea.	10,000.
Mudded pipe fittings in mechanical room	High	20 ea. @ 50/ea	1,000.
2' x 2' and 2' x 4' ceiling tiles (newer vintage)	Low	NA	NA
12″ x 12″ floor tile (older vintage) and associated mastic throughout building	Medium	18,000 sf @ 3/sf	54,000.
Gypsum board and associated joint compound	Low	NA	NA
Bldg #37 – Dolan Hall			
Mudded pipe fittings in mechanical room	High	25 ea. @ 50/ea	1,250.
Gray exterior window glazing on 12-pane windows	High	60 ea. @ 200/ea.	12,000.
12″ x 12″ floor tile (older vintage) and associated mastic throughout building	Medium	12,000 sf @ 3/sf	36,000.
Gypsum board and associated joint compound	Low	NA	NA
Bldg #46 – Wallace Building – No Access			
2' x 2' ceiling tiles (newer vintage)	Low	NA	NA
12″ x 12″ floor tile and associated mastic (newer vintage)	Low	NA	NA
Gypsum board and associated joint compound	Low	NA	NA
Bldg #49 – Bowen Hall – No Access			
Gray exterior window glazing on 12-pane windows	High	50 ea. @ 200/ea.	10,000.

Estimated Costs for Known & Assumed ACBM			
Type of Material & General Location	**Probability to Contain Asbestos (low, medium, high)**	**Quantity / Unit cost ($)**	**Total Estimated Cost ($)**
Bldg #55 – Cottage 17 Garage – No Access			
Gray exterior window glazing on 24-pane windows	High	2 ea. @ 200/ea.	400.
Bldg #56 – ICF 20 Garage			
3-tab roofing shingles	Low	NA	NA
Bldg #57 – ICF 19 Garage			
3-tab roofing shingles	Low	NA	NA
Bldg #120 – Old Greenhouse – No Access			
Gray exterior window glazing on 9-pane windows	High	12 ea. @ 200/ea.	2,400.
3-tab roofing shingles	Low	NA	NA
Bldg #121 – Vault #14			
Gray exterior window glazing on 12-pane windows	High	2 ea. @ 200/ea.	400.
Bldg #122 – Electrical Substation – No Access			
Bldg #123 – Maintenance/Plumbing Shop			
3-tab roofing shingles	Low	NA	NA
Gray exterior window glazing on 12-pane windows	High	8 ea. @ 200/ea.	1,600.
Bldg #124 – Grounds Dept. – No Access			
		Abatement Cost Estimate	**374,960.**
		Industrial Hygiene Cost	**35,000.**
		Total Cost Estimate	**$409,960.**

It is important to note that the Power Plant building was locked and we could not assess. The site contact indicated that it was locked and off limits due to damaged asbestos insulations and excessive debris. Typically, components in these type buildings are jacketed in asbestos-containing insulations such as on pipes, boilers, tanks, breeching, etc. SWA recommends that qualified personnel enter this building wearing personal protective equipment to assess conditions and determine cost estimating for remediation. In addition, if joint compound associated with gypsum wallboard or wall plasters were determined to contain asbestos, the cost for remediation would be increased significantly.

Prior to the buildings being impacted by renovations and or demolition, a comprehensive inspection must be conducted to comply with the US EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) and MA DEP requirements.

Exclusions

While SWA endeavored to conduct a thorough walk through and visual assessment of representative locations of the buildings that were safely accessible, some exclusions are warranted. Our limited visual assessment included building areas only; no assessment of soil, debris, subterranean areas, inaccessible crawl spaces, or inaccessible tunnels or trenches was attempted. SWA did not conduct any intrusive investigations to determine for hidden suspect materials such as floor vapor barrier papers, behind facades, within enclosed chases, behind fixed walls and ceilings, under floor finishes, etc.

Because we did not conduct a complete inspection or perform any sampling, our findings and conclusions are based largely on our extensive field experience. A comprehensive inspection of the buildings is necessary before conducting building renovations or demolition to provide accurate information for contractors who may bid on abatement and demolition work.

Attached please find photographic documentation of our site assessment.

If you have any questions regarding this report, please do not hesitate to call me at your earliest convenience.

Respectfully submitted,
SMITH & WESSEL ASSOCIATES, INC.

Gary Buda
Project Manager

Due to the shere number of buildings with no access and the fact that no sampling was undertaken a minimum of $1.5M should be carried as a basis for ACM removal.

Photographic Documentation

Walter E Fernald Development Center, Waltham, Massachusetts

Building 12, basement

Building 12, exterior

Building 12, interior

Building 12, interior

Building 12, interior

Building 15, exterior

Walter E Fernald Development Center, Waltham, Massachusetts

Building 15, garage bay

Building 16, exterior

Building 16, interior

Building 17, exterior

Building 17, exterior

Building 19, exterior

Walter E Fernald Development Center, Waltham, Massachusetts

Building 20, exterior

Building 21, exterior

Building 21, first floor

Building 22, warehouse

Building 22, exterior

Building 22, suspect floor tile

Walter E Fernald Development Center, Waltham, Massachusetts

Building 22, pipe insulation

Building 23, exterior

Building 24, interior

Building 24, floor tile

Building 26, exterior

Building 26, exterior

Walter E Fernald Development Center, Waltham, Massachusetts

Building 28, exterior

Building 28, exterior

Building 31, exterior

Building 32, exterior

Building 32, first floor

Building 35, exterior

Walter E Fernald Development Center, Waltham, Massachusetts

Building 36, first floor

Building 36, mechanical room

Building 37, exterior

Building 37, mechanical room

Building 46, first floor

Building 46, suspect floor tile

Walter E Fernald Development Center, Waltham, Massachusetts

Building 49, exterior

Building 49, exterior

Building 55, exterior

Building 56, exterior

Building 57, exterior

Building 120, greenhouse

Walter E Fernald Development Center, Waltham, Massachusetts

Building 121,exterior

Building 122, electrical substation

West Building, exterior

CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

December 1, 2016

Ms. Lorraine Finnegan
Symmes Maini & Mckee
1000 Massachusetts Avenue
Cambridge, MA 02138

RE: Hazardous Materials *Preliminary* Costs
Waltham Fernald Site
Waltham, Massachusetts

Dear Ms. Finnegan:

CDW Consultants, Inc. (CDW) is pleased to present this preliminary estimate of abatement construction costs based upon the findings of the feasibility hazardous materials survey of select buildings at the Walter E. Fernald Site in Waltham, Massachusetts.

The associated costs for the asbestos abatement and other hazardous materials are presented in the tables on the next page.

Please call if you have any questions or require additional information.

Very truly yours,

CDW CONSULTANTS, INC.

Susan Cahalan, P.G.
Project Manager

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #15							
Exterior Window Glaze	12A-12G	Cat. 2 Non-friable ACM	Exterior Windows (6' x 4')	35	Ea	$ 150.00	**$ 5,250.00**
Exterior Window Glaze	12A-12G	Cat. 2 Non-friable ACM	Exterior Windows (6' x 3')	15	Ea	$ 150.00	**$ 2,250.00**
Exterior Window Glaze	12A-12G	Cat. 2 Non-friable ACM	Exterior Windows (4' x 4')	10	Ea	$ 130.00	**$ 1,300.00**
Exterior Window Glaze	12A-12G	Cat. 2 Non-friable ACM	Exterior Windows (3' x 3')	20	Ea	$ 120.00	**$ 2,400.00**
Exterior Window Glaze	PACM-Visual	Suspect ACM, Not Sampled	Skylights	32	Ea	$ 120.00	**$ 3,840.00**
Exterior Window Caulk	13A-13E	Cat. 2 Non-friable ACM	Exterior Windows	1,450	LF	$ 14.00	**$ 20,300.00**
Flex Connectors	PACM-Visual	Suspect ACM, Not Sampled	On HVAC	20	Ea	$ 100.00	**$ 2,000.00**
Furnace Components/Insulation	PACM	Suspect ACM, Not Sampled	Basement	1	Ea	$ 10,000.00	**$ 10,000.00**
Tank Insulation	PACM	Suspect ACM, Not Sampled	Basement	1	Ea	$ 5,000.00	**$ 5,000.00**
Subsurface Transite	PACM	Suspect ACM, Not Sampled	Subsurface	200	LF	$ 35.00	**$ 7,000.00**
Pipe Insulation and Fittings	PACM-Visual	Suspect ACM, Not Sampled	Behind Walls/Ceilings/Basement	1,200	LF	$ 17.00	**$ 20,400.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #17 - Cottage							
Exterior Window Glaze	3A-3C	Cat. 2 Non-friable ACM	Exterior Windows	20	EA	$ 150.00	**$ 3,000.00**
Floor Tile/Linoleum	PACM	Suspect ACM, Not Sampled	Interior	250	SF	$ 4.00	**$ 1,000.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	150	LF	$ 17.00	**$ 2,550.00**
Wall Plaster	PACM	Suspect ACM, Not Sampled	Walls	800	SF	$ 8.00	**$ 6,400.00**
Building #18 - Cottage							
Exterior Window Glaze	3A-3C	Cat. 2 Non-friable ACM	Exterior Windows	20	EA	$ 150.00	**$ 3,000.00**
Floor Tile/Linoleum	PACM	Suspect ACM, Not Sampled	Interior	250	SF	$ 4.00	**$ 1,000.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	150	LF	$ 17.00	**$ 2,550.00**
Wall Plaster	PACM	Suspect ACM, Not Sampled	Walls	800	SF	$ 8.00	**$ 6,400.00**
Building #19 - Cottage							
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	150	LF	$ 17.00	**$ 2,550.00**
Building #20 - Cottage							
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	150	LF	$ 17.00	**$ 2,550.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #27 - Belmont House							
Floor Tile/Linoleum	PACM	Cat. 2 Non-friable ACM	Interior	4,000	SF	$ 4.00	**$ 16,000.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	250	LF	$ 17.00	**$ 4,250.00**
Wall Plaster	PACM	Suspect ACM, Not Sampled	Walls	1,200	SF	$ 8.00	**$ 9,600.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	200	LF	$ 35.00	**$ 7,000.00**
Building #30 -South Nurses Home							
Brown Linoleum	2A-2G	Cat. 2 Non-friable ACM	Under 1' x 1' Gray Floor Tile	15,000	SF	$ 4.00	**$ 60,000.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	750	LF	$ 17.00	**$ 12,750.00**
Remnant Caulk	PACM	Suspect ACM, Not Sampled	Under Replacement Windows	600	LF	$ 12.00	**$ 7,200.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**
Building #32 -Greenhouse							
Roof Tar	3A-3B	Cat. 2 Non-friable ACM	Roof	500	SF	$ 12.00	**$ 6,000.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #42 -Music/S. Bowen							
Gray/White Exterior Window Glaze	1A-1E	Cat. 2 Non-friable ACM	Exterior Windows	30	EA	$ 150.00	**$ 4,500.00**
9" x 9" Gray and Tan Floor Tile and Black Mastic	2A-2C, 4A-4C	Cat. 2 Non-friable ACM	Main Floors	8,000	SF	$ 4.00	**$ 32,000.00**
Pipe Insulation Fittings	PACM/Visual	Suspect ACM, Not Sampled	Behind Walls	750	LF	$ 17.00	**$ 12,750.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**
Plaster	PACM	Suspect ACM, Not Sampled	Walls	2,500	SF	$ 8.00	**$ 20,000.00**
Building #48 -Farrell Hall							
Window Glaze	PACM	Suspect ACM, Not Sampled	Windows	15	EA	$ 130.00	**$ 1,950.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	350	LF	$ 17.00	**$ 5,950.00**
Building #49 -Maintenace Shed							
Roof Shingle	1A-1C	Cat. 2 Non-friable ACM	Roof	1,200	SF	$ 8.00	**$ 9,600.00**
Window Glaze	2A-2B	Cat. 2 Non-friable ACM	Windows	7	EA	$ 150.00	**$ 1,050.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #50 -Laundry/Therapeudic Equipment Center							
White Door Caulk	5A-5C	Cat. 2 Non-friable ACM	Exterior Doors	200	LF	$ 14.00	**$ 2,800.00**
1' x 1' Gray Floor Tile	7A-7E	Cat. 2 Non-friable ACM	Flooring Most Rooms	20,000	SF	$ 4.00	**$ 80,000.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**
Pipe Insulation Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	800	LF	$ 17.00	**$ 13,600.00**
Building #53 -Power Plant							
Chimney Firebrick and Ash	PACM	Suspect ACM, Not Sampled	120' Tall Chimney	1	EA	$ 120,000.00	**$ 120,000.00**
Exterior Window Glaze	PACM	Suspect ACM, Not Sampled	Exterior Windows	25	EA	$ 160.00	**$ 4,000.00**
Exterior Window Caulk	PACM	Suspect ACM, Not Sampled	Exterior Windows	2,500	LF	$ 14.00	**$ 35,000.00**
Thermal Insulation	PACM	Suspect ACM, Not Sampled	Furnaces/Tanks/Breeching	2,500	SF	$ 17.00	**$ 42,500.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Piping	1,500	LF	$ 17.00	**$ 25,500.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	1,000	LF	$ 35.00	**$ 35,000.00**
Transite Panels	PACM	Suspect ACM, Not Sampled	Interior	500	SF	$ 12.00	**$ 6,000.00**
Building #55 -The Store Room							
Tar on Metal Freezer	2A-2C	Suspect ACM, Not Sampled	Large Metal Freezer	1	EA	$ 1,000.00	**$ 1,000.00**
Mastic on Wood Freezers	PACM	Suspect ACM, Not Sampled	Visual	11	EA	$ 500.00	**$ 5,500.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	300	LF	$ 35.00	**$ 10,500.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #56 -West Building							
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Piping	2,500	LF	$ 17.00	**$ 42,500.00**
Joint Compound Patch	PACM	Suspect ACM, Not Sampled	Walls, Ceilings	5,000	SF	$ 8.00	**$ 40,000.00**
Thermal Insulation	PACM	Suspect ACM, Not Sampled	Furnaces/Tanks/Breeching	1,500	SF	$ 17.00	**$ 25,500.00**
Flooring	PACM	Suspect ACM, Not Sampled	Visible on First Floor	30,000	SF	$ 4.00	**$ 120,000.00**
Exterior Window Glaze	PACM	Suspect ACM, Not Sampled	Exterior Windows (4' x5')	40	Ea	$ 150.00	**$ 6,000.00**
Exterior Window Glaze	PACM	Suspect ACM, Not Sampled	Exterior Windows (2' x 2')	10	Ea	$ 120.00	**$ 1,200.00**
Exterior Window Glaze	PACM	Suspect ACM, Not Sampled	Exterior Windows (3' x 4')	25	Ea	$ 130.00	**$ 3,250.00**
Exterior Window Caulk	PACM	Suspect ACM, Not Sampled	Exterior Windows	2,500	LF	$ 14.00	**$ 35,000.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**
Building #57 -Howe Library							
Exterior Window Caulk	1A-1E	Cat. 2 Non-friable ACM	Exterior Windows	1,500	LF	$ 14.00	**$ 21,000.00**
1' x 1' Tan Floor Tile and Mastic	2A-2C, 3A-3C	Cat. 2 Non-friable ACM	Basement	2,500	SF	$ 4.00	**$ 10,000.00**
9" x 9" Dark Brown Floor Tile and Mastic	4A-4C, 5A-5C	Cat. 2 Non-friable ACM	Basement	2,500	SF	$ 4.00	**$ 10,000.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Piping	750	LF	$ 17.00	**$ 12,750.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #58-Dolan Hall							
Black Mastic	6A-6G	Cat. 2 Non-friable ACM	Under 1' x 1' Brown Floor Tile with Dark Brown Mottles	10,000	SF	$ 4.00	**$ 40,000.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Piping	1,200	LF	$ 17.00	**$ 20,400.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**
Exterior Window Caulk	1A-1E	Cat. 2 Non-friable ACM	Exterior Windows, Under Replacement Windows	1,500	LF	$ 14.00	**$ 21,000.00**
Exterior Window Glaze	PACM	Suspect ACM, Not Sampled	Older Windows at Front Entrance	6	EA	$ 150.00	**$ 900.00**
Building #59-McDougall Hall							
End Cap Sealant	1A-1C	Cat. 2 Non-friable ACM	On Fiberglass Pipe Fitting in Basement	100	SF	$ 17.00	**$ 1,700.00**
Gray Caulk	4A-4C	Cat. 2 Non-friable ACM	Lintels at Exterior Doors	125	LF	$ 14.00	**$ 1,750.00**
Brown Caulk	5A - 5C	Cat. 2 Non-friable ACM	Exterior Doors	200	LF	$ 14.00	**$ 2,800.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	1,200	LF	$ 17.00	**$ 20,400.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**
Roofing	PACM	Suspect ACM, Not Sampled	Remnant	5,000	SF	$ 12.00	**$ 60,000.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #60-Seguin Hall							
Glaze	1A-1C	Cat. 2 Non-friable ACM	Interior Doors	20	EA	$ 200.00	**$ 4,000.00**
Glaze	2A-2C	Cat. 2 Non-friable ACM	Interior Door Sidelights	40	EA	$ 200.00	**$ 8,000.00**
Black Mastic	7A-7G	Cat. 2 Non-friable ACM	Under 1' x 1' White Floor Tile with Gray Streaks	10,000	SF	$ 4.00	**$ 40,000.00**
Exterior Window Caulk	PACM	Suspect ACM, Not Sampled	Exterior Windows, Under Replacement Windows	750	LF	$ 14.00	**$ 10,500.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	1,200	LF	$ 17.00	**$ 20,400.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**
Building #61-Tarbell Hall							
Black Mastic	7A-7G, 10A-10E	Cat. 2 Non-friable ACM	Under 1' x 1' Light Tan Floor Tile and Under 1' x 1' Red Floor Tile	30,000	SF	$ 4.00	**$ 120,000.00**
Black Paper	Roof-2A through Roof 2C	Cat. 2 Non-friable ACM	Under Slate Roof	15,000	SF	$ 12.00	**$ 180,000.00**
Old Vulcan Stoves	Visual	Cat. 2 Non-friable ACM	Kitchen	2	EA	$ 500.00	**$ 1,000.00**
Walk in Freezer Mastic	PACM	Suspect ACM, Not Sampled	Kitchen	1	EA	$ 1,000.00	**$ 1,000.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	1,200	LF	$ 17.00	**$ 20,400.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**

Table 1
Abatement Cost Estimates
Waltham Fernald Site
Waltham, Massachusetts

Material Description	Laboratory Sample No.	NESHAP Cat.	Location	Est. Quantity	Units	Unit Cost	Total Cost
Building #62-Wallace Hall							
Window Glaze	4A-4C	Cat. 2 Non-friable ACM	Interior Windows	40	EA	$ 200.00	**$ 8,000.00**
Black Mastic	7A-7E	Cat. 2 Non-friable ACM	Under 1' x 1' Gray Floor Tile	25,000	SF	$ 4.00	**$ 100,000.00**
Roof Tar	11A-11C	Cat. 2 Non-friable ACM	On Concrete Roof Deck	15,000	SF	$ 12.00	**$ 180,000.00**
Pipe Insulation and Fittings	PACM	Suspect ACM, Not Sampled	Behind Walls	1,200	LF	$ 17.00	**$ 20,400.00**
Subsurface Steam Pipe	PACM	Suspect ACM, Not Sampled	Subsurface	500	LF	$ 35.00	**$ 17,500.00**
						Subtotal	**$ 2,087,590.00**
						Contingency 20%	**$ 417,518.00**
						Project Monitoring and Air Samples	**$ 250,000.00**
						Total	**$ 2,755,108.00**

Table 1A
Other Hazardous Materials
Waltham Fernald Site

Material Description	Location	Est. Quantity	Units	Unit Cost	Total Coat	Comments
Compact Flourescent Bulbs	Throughout	1500	EA	$1	$1,500	
Fluorescent Bulbs (Mercury)	Throughout	25000	Tubes	$1	$25,000	
DPHE and PCB Light Ballasts	Throughout	12000	Each	$5	$60,000	
Thermostats and Switches (Mercury)	Throughout	800	Ampules	$25	$20,000	
Emergency Light Batteries (Lead)	Throughout	500	EA	$25	$12,500	
Refrigerants Associated With HVAC	Throughout	10000	Gallons	$10	$100,000	
Fire Extinguishers (Compressed Gas)	Throughout	300	EA	$0	$0	Reuse Recommended
Refrigerants Associated with Water Bubblers, Air Conditioners and Freezers	Throughout	1200	Gallons	$10	$12,000	
Exit Signs (Tritium)	Throughout	250	EA	$25	$6,250	
Chemicals (Mercury and Lead)	Science Sink Traps and Photo Processing - Library	NA	NA	$10,000	$10,000	TCLP Laboratory Analytical Costs and Disposal
Ash from Chimney Incinerator	Power Plant	NA	NA	$20,000	$20,000	TCLP Laboratory Analytical Costs and Disposal
Diesel Fuel UST	Power Plant	20000	Gallon	$50,000	$50,000	Removal and 100 CY soil
Diesel Fuel AST	Buildings 60 and 62	400	Gallon	$10,000	$10,000	Removal and Disposal
Fuel Oil AST	Buildings 17 and 18	550	Gallon	$12,000	$12,000	
Hydraulic Fluid	Maintenace, Storage, Elevators	500	Gallons	$20	$20,000	
PCB Fluid	Transformers	2344	Gallons	$50	$117,200	
			TOTAL		**$476,450**	

CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

HAZARDOUS MATERIALS SUMMARY REPORT

Walter E. Fernald School
South Portion of Former Fernald Developmental Center
200 Trapelo Road
Waltham, Massachusetts

Prepared for

Symmes Maini & Mckee
1000 Massachusetts Avenue
Cambridge, MA 02138

November 2016

CDW Project # 1713.0

40 Speen Street Suite 301, Framingham, MA 01701 508-875-2657
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TABLE OF CONTENTS

APPENDICIES

1.0 INTRODUCTION

CDW Consultants, Inc. (CDW) is pleased to present this letter report summarizing the findings of the suspect asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs) and hazardous materials inspection of the south portion of the Walter E. Fernald School ("Site") located in Waltham, Massachusetts. The subject buildings consist of Fernald Map ID buildings 15, 17, 18, 19, 20, 27, 30, 32, 42, 48, 49, 50, 52, 53, 55, 56, 57, 58, 59, 60, 61 and 62. Refer to the overview map and key in Appendix A. Note the Fernald Map ID numbers were used for the identification. The scope of work was to conduct a feasibility inspection to identify and quantify suspect ACM and hazardous materials located in the buildings.

In September and October 2016, Ms. Susan Cahalan (Massachusetts DOS Asbestos Inspector #AI60784) conducted an interior and exterior building inspection for suspect materials. An inspection is required by the United States Environmental Protection Agency (USEPA) National Emission Standards for Hazardous Air Pollutants (NESHAPs), prior to scheduled building demolitions. Samples of suspect materials were collected to confirm the presence or absence of ACM, LBP, & PCBs. Suspect materials were grouped into homogenous areas. By definition a homogenous area is an area that is similar in color, texture and date of application. Hand tools were used to collect bulk samples which were promptly placed in sealed plastic bags using a unique numbering system. Samples were not collected of non-suspect materials, including wood, fiberglass, plastic/vinyl, ceramic, concrete, neoprene/rubber, glass, and carpeting.

2.0 GENERAL SITE CONDITIONS

Site conditions are listed by buildings below.

<u>Building #15 (DCAM #23)</u>
Known as the Lavers Building, is a 12,036-square foot (sf) brick 1-story building with partial basement built in 1914. Older wood framed windows along with glass block windows are located on the exterior. Vinyl composition floor tiles and sheetrock walls are built over wood floors and frames. Ceilings are comprised of lathe ceiling plaster. The roof is slate. The building is in fair condition, with broken windows, rot and spalling concrete.

<u>Buildings #17 and #18</u>
Building #17 and #18 are identical a residential style cottages with wood frames and stucco exteriors constructed in 1925. Both buildings are severely deteriorated with collapsed portions of roofs and rot. There was no entry due to the unsafe conditions. Fill pipes for above ground storage tanks are located on the exterior.

Building #19
Building 19 is a residential style two story wood framed and stucco cottage constructed in 1925. The roof is shingled. The windows are vinyl replacement windows. There is water damage in the interior and spalling stucco.

Building #20
Building 20 is a two-story wood framed cottage with a shingled roof built in 1925. Limited entry due to ceiling collapse. There is spalling stucco on the exterior and water damage on the interior. No pipe insulation was observed. There is also a small furnace with no insulation.

Building 27 (DCAM #34)
Building 27 is a brick one story 6,416 sf building with basement built in 1890. The building is in poor condition with partial ceiling collapse and is unsafe, therefore there was no entry.

Building #30 (DCAM #12)
Building #30, known as the South Nurses' Home, is a two and one-half story brick building built in 1907, and contains a slate roof. The windows are newer aluminum framed with stone sills. The exterior of the building is in fair condition. The interior of the building is significantly damaged and mold is prevalent throughout. The poor air quality only allowed for limited entry. The basement is comprised of fieldstone walls. Fiberglass insulated piping with suspect ACM fittings were observed within the basement.

Building #32
Building 32, is a greenhouse building is a concrete and glass block building with partial basement constructed in 1946. The greenhouse portion is comprised of plexiglass with an aluminum frame. Piping consists of galvanized steel and was not insulated.

Building #42 (DCAM #49)
Building 42 is a one-story brick building with a fieldstone foundation built in 1893. There was partial entry to main areas only due to structural concerns and very poorly degraded condition with collapsed ceilings.

Building #48
Building #48, known as Farrell Hall, is a one-story brick building with a concrete walk out basement built in 1960. The roof is a flat and windows are aluminum framed. No pipe insulation was observed. A vault located to the rear, contains a transformer and is labeled as PCB containing.

Building #49
Is a metal and cinder block garage building with maintenance bays. There are older wood framed windows and a concrete floor. No pipe insulation was visible through the windows. There was no

entry to the building.

Building #50 (DCAM #22)
Building #50, known as the laundry/therapeutic building is a one and one half story 27,192 sf building built in 1928. The exterior is red brick and the roof is flat. Interior walls are cinderblock and sheetrock. Windows are aluminum. There are floor trenches and metal vents from painting and welding operations. There is one transformer, assumed to contain PCBs. A large sewer main runs through one side of the building.

Building #52 (DCAM #24)
Building # 52, known as the maintenance building, is a one story 14,322 sf cinder block building built in 1930. The building contains steel windows and overhead doors. The building is in fair condition with spalled concrete and broken windows. The building was used for paint, welding and electrical trades.

Building #53 (DCAM #26)
Building #53, known as the power plant, is a 19,440 sf building built in 1921. No entry was permitted to structural concerns. According to the Clerk, whom was on site, PCB containing equipment and asbestos pipe insulation and older boilers are present within the building. A large smokestack, approximately 120 feet tall may contain firebrick and ash.

Building #55 (DCAM # 16)
Building #55, known as the storeroom, is a 23,940 sf brick building with basement constructed in 1891. The building was used for storage of food. There are numerous freezers, a loading dock, older windows and painted brick on the interior.

Building #56 (DCAM # 33)
Building # 56, known as the West Building, is a 49,041 sf two story building with basement built in 1890. The exterior consists of brick and decorative facades. The windows appear old with glazing. There was only partial entry due to unsafe conditions. The ceilings and a portion of the roof was caved in; the floor was buckled and contained holes. The interior walls and ceilings are lathe. Visible within the basement was suspect asbestos pipe insulation and lead acid batteries. Old medical equipment was also observed on the interior.

Building #57 (DCAM # 21)
Building #57, known as the Howe Library, is an 8,030 square-foot single story building with basement built in 1921. The exterior is brick, with wood windows. The interior is wood and sheetrock. The basement contains a transite fume hood and sink, and photochemical collection areas

for developing photographs.

Building #58 (DCAM #37)
Building 58, known as Dolan Hall, is a 15,252 sf two and a half-foot story brick building. There are older windows with glaze, sheetrock walls and suspended ceiling tiles. The pipes contain fiberglass insulation with suspect ACM fittings.

Building #59 (DCAM #36)
Building #59, known as McDougall Hall is a two and one half story 23,376 sf brick building built in 1898. The building contains wood and aluminum windows, with a slate roof. The building has significant water damage.

Building #60 (DCAM # 35)
Building #60, known as Seguin Hall, is a one story red brick building built in 1934. The building contains aluminum windows and a slate roof. The building was renovated in the 1990s, with the exception of the roof. There is significant water damage.

Building #61 (DCAM # 32)
Building #61, known as Tarbell Hall, is a three and one half story 38,924 sf brick building. The building contains aluminum and wood replacement windows with a slate roof. The interior contains sheetrock walls, suspended ceiling tiles and vinyl composition floor tiles. The building is in fair to poor condition with peeling paint and water damage.

Building # 62 (DCAM # 46)
Building # 62, known as Wallace Hall, is a one and one half story 29,560 square foot brick building with a walk out basement. The building contains aluminum replacement windows. The stairway to the basement was collapsed and there was no basement access.

3.0 ASBESTOS SURVEY

3.1 Methods

The investigative work for the asbestos survey included conducting a limited visual inspection of physically accessible areas of the structure followed by limited destructive testing to allow access to inaccessible locations. Destructive testing included: installing test holes into roofs, inspect for exterior vapor barrier, opening access panels and opening of drop ceiling systems. Construction of the buildings consist of 18 to 24-inch thick masonry walls. Therefore, no suspect vapor barriers were observed.

Once the visual inspection was completed, the building components were categorized into homogeneous areas. These homogeneous areas included: surfacing materials, thermal system insulation, and miscellaneous materials.

CDW collected bulk samples of different homogeneous suspect materials for asbestos analysis. The bulk samples were delivered under chain of custody to Asbestos Identification Laboratory, Inc. (AIL) and EMSL Analytical (EMSL), both located in Woburn, Massachusetts. EMSL and AIL are state licensed and NVLAP-accredited laboratories for asbestos analysis. Bulk samples were analyzed for asbestos content by polarized light microscopy (PLM) using EPA Method 600/R-93/116. A positive stop method was used – if one sample in a homogeneous group is positive then additional samples of the same material are not analyzed. The asbestos analytical results are provided in Appendix B. Samples analyzed to contain greater than 1% asbestos are to be treated as ACMs as defined by the USEPA and Commonwealth of Massachusetts Department of Environmental Protection (MassDEP).

3.2 Findings

Building # 15– Lavers Building

Field ID	Material	Location	Asbestos %
1A – 1G	1’ x 1’ Tan Floor Tile	Majority of Rooms	ND
2A – 2G	Brown Mastic	Under 1’ x 1’ Tan Floor Tile	ND
3A – 3C	1’ x 1’ Blue Floor Tile	Center Room	ND
4A – 4C	Brown Mastic	Under 1’ x 1’ Blue Floor Tile	ND
5A – 5C	1’ x 1’ Gray Floor Tile	Side Rooms	ND
6A – 6C	Black Mastic	Under 1’ x 1’ Gray Floor Tile	ND
7A – 7C	Yellow Glue	Under Brown Cove Base	<1% to ND
8A – 8C	Light Tan Glue	Under Tan Covebase	ND
9A – 9G	Grout	Glass Block	ND
10A – 10C	Lathe Ceiling Plaster	Ceiling	ND
11A – 11G	Exterior Window Caulk	Exterior Windows – Thin Interior Bead	ND
12A – 12G	**Exterior Window Glaze**	**Exterior Windows**	**2% Chrysotile**
13A – 13E	**White/Gray Window Caulk**	**Exterior Bead on Exterior Windows**	**5% Chrysotile**
14A – 14G	Plaster	Wall and Ceiling	ND
Roof 1A-15 – Roof 1C-15	Black Felt	Under Slate Roof	ND

Building # 17 - Cottage

Field ID	Material	Location	Asbestos %
1A – 1C	Roof Shingle	Roof	ND
2A – 2C	Black Tarpaper	Under Roof Shingle	ND
3A – 3C	**White Glaze**	**Exterior Windows**	**2% Chrysotile**

Building # 18 - Cottage

Field ID	Material	Location	Asbestos %
1A – 1C	Roof Shingle	Roof	ND
2A – 2C	Black Tarpaper	Under Roof Shingle	ND
3A – 3C	**White Glaze**	**Exterior Windows**	**2% Chrysotile**

Building # 19 - Cottage

Field ID	Material	Location	Asbestos %
1A – 1C	Linoleum Flooring	2nd Floor	ND
2A – 2E	Textured Plaster	Ceiling	ND
3A – 3C	1’ x 1’ Gray Floor Tile	Main Floor	ND
4A – 4C	Black Mastic	Under 1’ x 1’ Gray Floor Tile	ND
5A – 5C	Stucco	Exterior Walls	ND
6A – 6C	Shingle	Roof	ND
7A – 7C	Black Tar Paper	Under Roof Shingle	ND

Building # 20 - Cottage

Field ID	Material	Location	Asbestos %
1A – 1E	Textured Plaster	Ceilings	ND
2A – 2C	Linoleum Flooring	2nd Floor	ND
3A – 3C	1’ x 1’ Blue Floor Tile	1st Floor	ND
4A – 4C	Gray Mastic	Under 1’ x 1’ Blue Floor Tile	ND
5A – 5C	Brown Paper	Under Exterior Wood Clapboards	ND
Roof 1A-20 – Roof 1B-20	Roof Shingle	Roof	ND

Building # 27 – Belmont House

Field ID	Material	Location	Asbestos %
1A-27	Black Mastic	Behind Exterior Brick	ND
1B-27	Black Mastic	Behind Exterior Brick	ND
Roof – 1A-27	Tar Paper	On Roof Deck	ND
Roof – 1B - 27	Tar Paper	On Roof Deck	ND

Building # 30 – South Nurse's Home

Field ID	Material	Location	Asbestos %
1A – 1G	1' x 1' Gray Floor Tile	Halls and Rooms	ND
2A – 2G	**Brown Linoleum**	**Under 1' x 1' Gray Floor Tile**	**6% Chrysotile**
3A – 3G	Textured Plaster	Ceilings	ND
4A – 4G	Sheetrock	Walls	ND
5A – 5C	Shingle	Roof	ND
6A – 6C	Felt	Under Roof Shingle	ND

Building # 32 - Greenhouse

Field ID	Material	Location	Asbestos %
1A – 1C	White Glaze	Exterior Windows	<1%
2A – 2C	Roof Shingle	Roof	ND
3A – 3B	**Roof Tar**	**Roof**	**5% Chrysotile**

Building # 42 – Music/S. Bowen

Field ID	Material	Location	Asbestos %
1A – 1E	**Gray/White Glaze**	**Exterior Windows**	**2% Chrysotile**
2A – 2C	**9" x 9" Gray Floor Tile**	**Large Central Room**	**2% Chrysotile**
3A – 3C	Black Mastic	Under 9" x 9" Gray Floor Tile	ND
4A – 4C	**9" x 9" Tan Floor Tile**	**Main Floor**	**3% Chrysotile**
5A – 5C	**Black Mastic**	**Under 9" x 9" Tan Floor Tile**	**5% Chrysotile**
6A – 6C	2' x 4' Suspended Ceiling Tile	Main Floor	ND
7A – 7C	Black Felt	Under Slate Roof	ND
8A – 8C	Roof Tar	Flat Portion of Roof	ND

Building # 48 - Farrell Hall

Field ID	Material	Location	Asbestos %
1A – 1E	Brown Fiberboard	Ceiling	ND
2A – 2C	Black Tarpaper	Roof Over Foam Layer	ND
3A – 3C	Black Tarpaper	On Concrete Roof Deck	ND

Building # 49 – Maintenance Shed

Field ID	Material	Location	Asbestos %
1A – 1C	**Roof Shingle**	**Roof**	**20% Chrysotile**
2A – 2B	**Glaze**	**Exterior Window**	**2% Chrysotile**

Building #50 – Laundry/Therapeutic Equipment Center

Field ID	Material	Location	Asbestos %
1	End Cap Sealant	On Fiberglass Fitting in Basement	ND
2	Pipe Fitting Insulation	4” Diameter Pipe Basement	ND
3	Pipe Fitting Insulation	2” Diameter Pipe Basement	ND
5A – 5C	**White Door Caulk**	**Exterior Doors**	**2% Chrysotile**
6A – 6E	Gray Window Caulk	Exterior Windows	ND
7A – 7E	**1’ x 1’ Gray Floor Tile**	**Main Floor**	**1% Chrysotile**
8A – 8E	Yellow Gray Mastic	Under 1’ x 1’ Gray Floor Tile	ND
9A – 9C	Gray Cove Base	Main Room	ND
10A – 10C	Yellow Mastic	Under Gray Cove Base	ND
11A – 11C	Gray Expansion Joint	Floor in Paint Room	ND
12A – 12E	Skim Coat	Walls	ND
Roof-1A – Roof 1C	Roof Tar	On Metal Roof Deck	ND
2A-2B	Flashing	On Foundation	ND

Building # 52 - Maintenance

Field ID	Material	Location	Asbestos %
Roof – 1A-52	Black Tar	On Concrete Roof Deck	ND
Roof – 1A-52	Black Tar	On Concrete Roof Deck	ND
Roof – 1A-52	Black Tar	On Concrete Roof Deck	ND

Building # 55 – The Store Room

Field ID	Material	Location	Asbestos %
1A – 1E	Gray/White Glaze	Exterior Windows	ND
2A – 2C	**Tar**	**On Ceiling, Large Metal Freezer**	**5% Chrysotile**
3A – 3E	Black Coating	On Cork in wooden Walk In Freezers	ND
4A – 4E	Black Tar	On Roof Deck	ND
5A – 5E	White Board	Roof Deck	ND

Building # 56 – West Building (Unsafe)

Field ID	Material	Location	Asbestos %
Roof – 1A-56	Black Felt	Under Slate Roof	ND
Roof – 1A-56	Black Felt	Under Slate Roof	ND
Roof – 1A-56	Black Felt	Under Slate Roof	ND

Building #57 – Howe Library

Field ID	Material	Location	Asbestos %
1A – 1E	**Gray/White Caulk**	**Interior of Exterior Windows**	**5% Chrysotile**
2A – 2C	**1’ x 1’ Tan Floor Tile**	**Basement**	**10% Chrysotile**
3A – 3C	**Black Mastic**	**Under 1’ x 1’ Tan Floor Tile**	**5% Chrysotile**
4A – 4C	**9” x 9” Dark Brown Floor Tile**	**Basement**	**5% Chrysotile**
5A – 5C	**Black Mastic**	**Under 9” x 9” Brown Floor Tile**	**5% Chrysotile**
6A – 6E	White/Gray Glaze	Exterior Windows	ND
7A – 7C	Black Coating	Basement Ceiling	ND
8A – 8C	Textured Ceiling Plaster	1st Floor	ND
9A – 9C	Textured Wall Plaster	1st Floor	ND
10A – 10C	Black Flooring	Under Carpet, 1st Floor	ND
11A – 11C	Black Mastic	Under Black Flooring, 1st Floor	ND
12A – 12C	Yellow Glue	Under Carpet	ND
13A - 13B	Roof Shingle	Roof	ND
14A – 14B	Black Underlayment	Under Roof Shingle	ND

Building # 58 – Dolan Hall

Field ID	Material	Location	Asbestos %
1A – 1C	Grout	Under Ceramic Tile Bathrooms	ND
2A – 2G	White Glaze	Exterior Windows	ND
3A – 3G	Gray/White Levelastic	Under Floor Tile	ND
4	Glaze	On Interior Door	ND
5A – 5G	1’ x 1’ Brown Floor Tile with Dark Brown Mottles	1st Floor	ND
6A – 6G	**Black Mastic**	**1’ x 1’ Brown Floor Tile with Dark Brown Mottles**	**10% chrysotile**
7A – 7G	Joint Compound	Sheetrock Walls	ND
8A – 8G	Sheetrock	Walls	ND
9A – 9C	Gray Seam Sealant	On HVAC	ND

Building # 59 – McDougall Hall

Field ID	Material	Location	Asbestos %
1A – 1C	**End Cap Sealant**	**On fiberglass Pipe Fitting in Basement**	**5% Chrysotile**
2A – 2B	Gray Seam Sealant	On HVAC Metal	ND
3A – 3B	Flex Connector	Mechanical Room	ND
4A – 4C	**Gray Caulk**	**Lintels at Exterior Doors**	**3% Chrysotile**
5A – 5C	**Brown Caulk**	**Exterior Doors**	**2% Chrysotile**
6A – 6G	Skim Coat	Walls and Ceiling	ND
7A – 7G	Sheet Rock	Walls and Ceiling	ND
8A – 8C	Glaze	Exterior Windows	ND
9A – 9C	Brown Caulk	Exterior Windows	ND
10A – 10E	2’ x 4’ Ceiling Tile	Ceilings	ND

Building #60 – Seguin Hall

Field ID	Material	Location	Asbestos %
1A – 1C	**Glaze**	**Interior Doors**	**2% Chrysotile**
2A – 2C	**Glaze**	**4' x 6' Windows Side of Interior Doors**	**1% Chrysotile**
3A – 3G	Brown Caulk	Exterior Windows	ND
4A – 4G	Plaster Skim	Walls	ND
5A – 5B	Gray Levelastic	Kitchen Floor	ND
6A – 6G	1' x 1' White Floor Tile with Gray Streaks	Approx. ½ of Floor Spaces	ND
7A – 7G	**Black Mastic**	**Under 1' x 1' White Floor Tile with Gray Streaks**	**10% Chrysotile**
8A – 8G	Sheetrock	Walls	ND
9A – 9C	Gray Caulk	Exterior Doors	ND
Roof-1A-Roof 1B-60	Roof Shingle	Roof	ND
Roof-2A-Roof 2B-60	Roof Paper Under Shingle	Roof	ND

Building # 61 – Tarbell Hall

Field ID	Material	Location	Asbestos %
1A – 1E	1' x 1' Light Tan Floor Tile	Basement	ND
2A – 2E	**Black Mastic**	**Under 1' x 1' Light Tan Floor Tile**	**10% Chrysotile**
3A – 3G	Exterior Window Caulk	Exterior Windows	ND
4A – 4G	White Glaze	Exterior Windows	ND
5A – 5G	1' x 1' Tan Floor Tile with Brown Streaks	1st and 2nd Floors	ND
6A – 6G	Black Mastic	Under 1' x 1' Tan Floor Tile with Brown Streaks	ND
7A – 7G	1' x 1' Brown Floor Tile with Brown Mottles	2nd and 3rd Floors	ND
8A – 8G	Black Mastic	Under 1' x 1' Brown Floor Tile	ND
9A – 9E	1' x 1' Red Floor Tile	2nd and 3rd Floors	ND
10A – 10E	**Black Mastic**	**Under 1' x 1' Red Floor Tile**	**5% Chrysotile**
11A – 11C	Glaze	Interior Windows of Office	ND
12A –12G	2' x 2' Textured Floor Tiles	1st and 2nd Floor	ND
13A – 13I	Joint Compound	Walls	ND
14A – 14C	Glaze	Interior Doors	ND

Field ID	Material	Location	Asbestos %
Roof 1A-61 Through Roof 1C-61	Gypsum Deck	Roof Deck building 61	ND
Roof 2A-61 through Roof 2C 61	**Black Roof Paper**	**Under Slate**	**2% Chrysotile**

Building # 62 – Wallace Hall

Field ID	Material	Location	Asbestos %
1A – 1C	Grey Caulk	Exterior Doors	ND
2A – 2C	Dark Brown Caulk	Exterior Windows	ND
3A – 3C	Red Seam Sealant	HVAC Ductwork	ND
4A – 4C	**Window Glaze**	**Interior Windows**	**2% Chrysotile**
5A – 5B	Black Glaze	Interior Doors	ND
6A – 6E	1’ x 1’ Gray Floor Tile	First floor	ND
7A – 7E	**Black Mastic**	**Under 1’ x 1’ Gray Floor Tile**	**10% Chrysotile**
8A – 8E	Skim Coat	Walls and Ceilings	ND
9A – 9C	Tar Paper	Under Slate Roof	ND
10A – 10C	Black Tar	Top of Foam – Flat Roof	ND
11A – 11C	**Roof Tar**	**On Concrete Roof Deck**	**10% Chrysotile**
12A – 12B	Black	Foundation Coating	ND

Bold = ACM Containing. Quantities and presumed asbestos containing materials (PACM) are provided in the cost estimate separately. The laboratory analytical report is provided in Appendix B.

3.3 Recommendations

Prior to disturbance, the ACM identified must be abated by a Commonwealth of Massachusetts-licensed asbestos abatement contractor following all federal, state & local regulations governing asbestos abatement. A copy of the asbestos waste shipment record must be received within 45 days of removal from the Site. Asbestos air quality sampling must be conducted under USEPA regulations following asbestos abatement and prior to re-occupancy of the spaces. If additional materials are discovered that have not been sampled, those materials should be considered ACMs until laboratory analysis determines otherwise. There are numerous steam pipes buried throughout the Site. These are presumed to be ACM. If any subsurface excavations occur, these pipes should be sampled for asbestos content.

4.0 LEAD-BASED PAINT

4.1 Methods

CDW performed a visual inspection of painted surfaces. CDW collected samples from different color paints on various types of building component substrates. Samples were submitted to EMSL Laboratories in Cinnaminson, New Jersey for analysis via Atomic Absorption Spectrometry (AAS). The last number in the sample ID corresponds to the building number.

4.2 Findings

Sample ID	Site	Lead Concentration
LP-1-15	**White Paint on Window Frame**	**11 % wt**
LP-2-15	**White Paint Concrete Wall**	**26 % wt**
LP-3-15	White Paint on Brick	<0.010 % wt
LP-1-50	**Red Paint Steel Columns**	**3.4 % wt**
LP-2-50	Blue Paint on Steel Columns	0.24 % wt
LP-3-50	**White Paint on Brick**	**1.1 % wt**
LP-4-50	White Paint on Wall	<0.010 % wt
LP-1-19	**Grey Paint on Concrete in Basement**	**37 % wt**
LP-2-19	**White Paint on Wood Window Frame**	**2.0 % wt**
LP-3-19	White Paint on Textured Ceiling	<0.010 % wt
LP-1-55	**Blue Paint on Brick**	**25 % wt**
LP-2-55	White Paint on Fieldstones	<0.010%
LP-3-55	**White Paint on Interior Brick**	**31 % wt**
LP-1-61	White Paint on Ceiling Beams	0.040 % wt
LP-2-61	Brown Paint on Radiator	<0.010 % wt
LP-3-61	Red Paint on Metal Stair Rail	<0.010 % wt
LP-4-61	**Yellow Paint on Concrete Wall**	**11 % wt**
LP-5-61	**White Paint on the Wall**	**9.3 % wt**
LP-1-53	**Silver Paint on Iron Beams**	**1.4 % wt**
LP-1-53	**Black Door Paint**	**1.2 % wt**
LP-1-57	**Exterior Window Paint on Wood**	**30 % wt**
LP-2-57	**White Paint Basement Wall**	**14 % wt**
LP-3-57	**Blue Paint Basement Walls**	**24% wt**
LP-4-57	White Paint on Walls	<0.010 % wt
LP-1-59	White Wall Paint	<0.010 % wt
LP-2-59	Brown Paint on Door Frames	0.082 % wt
LP-3-59	Yellow Wall Paint	<0.010 % wt
LP-1-60	Tan Door Paint	<0.010 % wt
LP-2-60	Radiator Paint	<0.010 % wt
LP-3-60	White Wall paint	<0.010 % wt
LP-4-60	Blue Wall Paint	0.010 % wt

Sample ID	Site	Lead Concentration
LP-1-58	Brown Radiator paint	<0.010 % wt
LP-2-58	Yellow Wall paint	<0.010 % wt
LP-3-58	**Brown Paint Metal Stair Rail**	**0.55 % wt**
LP-1-62	Blue Wall Paint	<0.010 % wt
LP-2-62	Brown Paint on Radiator	<0.010 % wt
LP-3-62	White Wall Paint	<0.010 % wt
LP-4-62	White Wall Paint	<0.010 % wt
LP-5-62	Tan Door Frame Paint	<0.010 % wt
LP-1-20	Pink Wall Paint	<0.010 % wt
LP-2-20	White Wall Paint	<0.010 % wt
LP-3-20	**White Window Frame Paint**	**16 % wt**
LP-4-20	**Brown Paint on Wood Shingle (Exterior)**	**18 % wt**
LP-1-48	White Paint on Concrete	<0.010 % wt
LP-2-48	Blue Paint on Brick	0.039 % wt
LP-3-48	**Gray Paint on Metal Pole**	**0.66 % wt**
LP-1-49	**Green Paint on Garage Door**	**2.4 % wt**
LP-1-32	White Paint on Concrete	0.010 % wt
LP-2-32	Pink Paint on Concrete	0.021 % wt
LP-1-17	**Window Frame Paint**	**36 % wt.**
LP-1-30	Blue Wall Paint	0.20 % wt
LP-2-30	Tan Paint on Stair Rails	0.011 % wt
LP-3-30	White Wall Paint	<0.010 % wt
LP-1-42	Green Paint on Concrete	0.44 % wt
LP-2-42	**Tan Paint on Wall**	**48% wt**

Bold = LBP

The Environmental Protection Agency (EPA) defines LBP as any paint or surface coating that contains lead equal to exceeding one milligram per square centimeter (1.0 mg/cm2) or 0.5% by weight. OSHA has not set numerical threshold limits for lead and the OSHA lead-in-construction standard defines lead containing paint (LCP) as a paint or coating containing any detectable level of lead.

Based on the USEPA and OSHA criteria listed above, the results of the sampling revealed building components coated with LBP. The laboratory analytical report is included in Appendix C.

4.3 Recommendations

Based on the conclusions of this testing, the following recommendations are offered:

- Removal of the LBP is not required. However, in accordance with the USEPA Lead Renovation, Repair, and Painting (RRP) Rule 40 CFR 745, workers, students, visitors and

the general public must be protected from lead dust generated during the demolition of LBP or LCP coated surfaces.

- Components identified to contain the presence of lead should not be disturbed in an uncontrolled manner. Disturbance of these materials should only be done by properly trained personnel in a controlled and documented manner to allow for the safety of the workers, bystanders and disposal of waste materials.

- Specifications for the proper work practices, controls and disposal should be developed to document compliance with all applicable regulations.

- Those components/colors not tested, or in locations not inventoried in this report, should be tested for lead content prior to disturbance that may cause airborne release of lead.

5.0 PCB AND OTHER HAZARDOUS MATERIALS SURVEY

5.1 Methods

PCB Sample Collection and Analysis

CDW conducted a visual inspection for suspect PCB containing building materials. CDW collected including exterior window caulk, glaze, expansion joint and paints. Samples were submitted to Phoenix Environmental Laboratories in Manchester, Connecticut for analysis via USEPA Method 8082 with Soxhlet extraction 3540C.

OHM Visual Inspection

CDW visually inspected the Site building for universal, special and hazardous wastes associated with building materials. These included but were not limited to the following:

- Mercury-containing devices (fluorescent light tubes, thermostats, gauges, etc.);
- Polychlorinated bi-phenyl (PCB)-containing articles, equipment and devices (light ballasts, electrical switches, etc.);
- Chlorofluorocarbon (CFC)-containing equipment (refrigerants, air conditioners/HVAC equipment, water bubblers, etc.)
- Tritium-containing devices (Exit signs);
- Lead-Acid batteries (emergency lights, etc.); and
- Pressurized-cylinders (fire extinguishers, etc.).

5.2 Findings

PCBs

The analytical results are compared to the USEPA standard of 50 parts per million (ppm), which is the threshold for bulk product waste, as defined by USEPA 40 CFR § 761.3, and regulated under the Toxic Control Substances Act (TSCA). None of the samples collected had detectable concentrations of PCBs above the TSCA regulatory threshold. Exterior window caulk at building #57, contains <5 milligrams per kilograms (mg/kg) of PCBs. This material also contains asbestos, and therefore must be disposed at a facility that can accept low level PCBs and asbestos. The PCB analytical results are summarized in the below table. The last number in the sample ID corresponds to the building number. A copy of the PCB laboratory report is provided in Appendix D.

Sample ID	Description	Result (mg/kg)
PCB-1-50	Door caulk	ND
PCB-2A-50	Exterior Window Caulk	ND
PCB-2B-50	Exterior Window Caulk	ND
PCB-2C-50	Exterior Window Caulk	ND
PCB-3-50	Floor Expansion Joint	ND
PCB-1A-15	Exterior Window Caulk	ND
PCB-1B-15	Exterior Window Caulk	ND
PCB-1C-15	Exterior Window Caulk	ND
PCB-2A-15	Exterior Window Glaze	ND
PCB-2B-15	Exterior Window Glaze	ND
PCB-2C-15	Exterior Window Glaze	ND
PCB-3A-15	Green Paint	ND
PCB-3A-15	Green Paint	ND
PCB-3A-15	Green Paint	ND
PCB-1A-42	Green Paint	ND
PCB-1B-42	Green Paint	ND
PCB-2A-42	White Paint	ND
PCB-2B-42	White Paint	ND
PCB-1-32	Window Glaze	ND
PCB-1-49	Window Glaze	ND
PCB-1A-62	Exterior Door Caulk	ND
PCB-1B-62	Exterior Door Caulk	ND
PCB-1C-62	Exterior Door Caulk	ND
PCB-2A-62	Exterior Window Caulk	ND
PCB-2B-62	Exterior Window Caulk	ND
PCB-2B-62	Exterior Window Caulk	ND

Sample ID	Description	Result (mg/kg)
PCB-1A-58	Exterior Window Glaze	ND
PCB-1B-58	Exterior Window Glaze	ND
PCB-1C-58	Exterior Window Glaze	ND
PCB-1A-60	Exterior Window Caulk	ND
PCB-1B-60	Exterior Window Caulk	ND
PCB-1C-60	Exterior Window Caulk	ND
PCB-2A-60	Exterior Door Caulk	ND
PCB-2B-60	Exterior Door Caulk	ND
PCB-2C-60	Exterior Door Caulk	ND
PCB-1A-59	Exterior Door Caulk	ND
PCB-1B-59	Exterior Door Caulk	ND
PCB-1A-57	Exterior Window Caulk	2.4
PCB-1B-57	Exterior Window Caulk	2.9
PCB-1C-57	Exterior Window Caulk	2.8
PCB-2A-57	Exterior Window Glaze	ND
PCB-2B-57	Exterior Window Glaze	ND
PCB-2C-57	Exterior Window Glaze	ND
PCB-1A-61	Exterior Window Caulk	ND
PCB-1B-61	Exterior Window Caulk	ND
PCB-1C-61	Exterior Window Caulk	ND
PCB-2A-61	Exterior Window Glaze	ND
PCB-2B-61	Exterior Window Glaze	ND
PCB-2C-61	Exterior Window Glaze	ND
PCB-1A-55	Green Paint	ND
PCB-1B-55	Green Paint	ND
PCB-2A-55	Exterior Door Glaze	ND
PCB-2B-55	Exterior Door Glaze	ND
PCB-2B-55	Exterior Door Glaze	ND

ND = Not Detected

OHM

The visual survey for hazardous materials identified mercury-containing light tubes, PCB-containing light ballasts, mercury containing thermostats and switches, lead and tritium batteries, refrigerants and other hazardous materials. No hazardous materials sampling or analysis was conducted as part of this preliminary survey. A list of total OHMs identified are included in the below table. Additionally, OHMs were identified in the ASTM Phase I ESA, dated May 2016, prepared by CDW.

Material Description	Location	Est. Quantity	Units
Compact Fluorescent Bulbs	Throughout	1,500	EA
Fluorescent Bulbs (Mercury)	Throughout	25,000	Tubes
DPHE and PCB Light Ballasts	Throughout	12,000	Each
Thermostats and Switches (Mercury)	Throughout	800	Ampules
Emergency Light Batteries (Lead)	Throughout	500	EA
Refrigerants Associated with HVAC	Throughout	10,000	Gallons
Fire Extinguishers (Compressed Gas)	Throughout	300	EA
Refrigerants Associated with Water Bubblers and Air Conditioners and freezers in Storage	Throughout	1,200	Gallons
Exit Signs (Tritium)	Throughout	250	EA
Chemicals (Mercury and Lead)	Science Sink Traps and Photo (Library)	50	Gallons
Ash from Chimney at Power Plant	Chimney	100	Cubic Yards
Diesel Fuel Underground Storage tank (UST)	Power Plant	20,000	Gallon
Diesel Fuel Above Ground Storage tank (AST)	Building #60 and #62	200 each (400)	Gallons
Fuel Oil AST	Buildings #17 and #18	275 each (550)	Gallons

Material Description	Location	Est. Quantity	Units
PCB Transformer Fluid (Documented)	Building #27 Building #30 Building #50 Building #53 Building #60 Building #61 Building #58	210 215 1,100 150 230 219 220	Gallons
Hydraulic Fluid	Maintenance, Storage, Elevators	2,500	Gallons
Lead Acid Batteries	Various Buildings	450	Each

5.3 Recommendations

Prior to removal, light tubes, ballasts, compact florescent bulbs, lead and tritium batteries, lead acid batteries, thermostats and switches etc. will require proper handling, removal, transportation and off-site recycling/reclamation. Refrigerants, hydraulic fluid and PCB-containing transformer fluid will require handling and disposal in accordance with applicable state and federal regulations. Any sludge in the science sink traps in the library or other inaccessible buildings and chimney ash from the power plant will need to be sampled for laboratory analysis of compounds of concern to determine proper disposal requirements.

Limitations

The conclusions are limited to the information available at the time of the field survey and the scope of services, as defined. No subsurface soil or groundwater testing was performed. Where access to portions of the Site or to structures on the site was unavailable or limited, CDW renders no opinion as to the presence of hazardous material or the presence of indirect evidence related to hazardous material in that portion of the site or structure. This report cannot be solely relied upon for demolition. The testing performed forms the basis for conclusions expressed and areas inaccessible for testing limits those conclusions. No other conclusions, interpretations or recommendations are contained or implied in this report other than those expressed. No other use of this report is warranted without the written consent of CDW Consultants, Inc.

CDW appreciates the opportunity to provide our services to you on this project.

APPENDIX A

Assume total Sq.Ft. of 354,077

Fernald Center Map Key

Missing State Maintenance shed #49; Houses #17,18,19 & 20; Bldg #48

Fernald Map	DCAM	Campus	Name	Architect	Year	GSF	Renovated ? Y/N	Asbestos?	Condition	Style
1	47	Center	Administration Building	Hoyt	1933	26,856	no	yes	good	Colonial Revival
2	42	Center	East Dowling/Can Redemption	Preston	1906	24,107	no	yes	poor	Queen Anne
15	23	Center	Lavers	Calderwood	1914	12,036	no	yes	good	Craftsman
32	120	Center	Greenhouse (Old)		1940	3,855	no	yes	fair	
43	400	Center	Food Service/Parkman		1983	27,712	new	no	good	Modern
47	43	Center	Hillside Cottage/Garage	Preston	1904	8,115	yes	no	good	Queen Anne
50	22	Center	Laundry/Therapeutic Equip Ctr		1928	27,192	yes	yes	good	Utilitarian
52	24	Center	Maintenance		1930	14,322	no	yes	fair	Utilitarian
53	26	Center	Power Plant		1921	19,440	no	yes	fair	Utilitarian
54	40	Center	Food Service (Old)/Stockroom	Hoyt	1931	36,836	no	yes	fair	Colonial Revival
57	21	Center	Howe Library	Kendall, Ta	1921	8,030	no	yes	good	Craftsman
61	32	Center	Tarbell Hall (Sandra's Lodge)		1934	38,924	no	yes	good	Tudor Revival
69	13	Center	Marquardt Nursing Ctr/Thom Building		1952	32,116	yes	no	good	Colonial Revival
74/75	41	Center	Howe Hall/Canteen		1933	17,362	yes	no	fair	Colonial Revival
14	9	East	East Nurses	Preston	1906	8,640	no	yes	fair	Queen Anne
16	7	East	North Nurses Home	Preston	1904	17,190	yes	no	good	Queen Anne
29	11	East	Warren Hall	Preston	1906	16,296	yes	no	good	Queen Anne
30	12	East	South Nurses Home	Preston	1907	17,172	yes	no	good	Queen Anne
31	103	East	CERC Building	CBT	1969	32,369	yes	yes	good	Modern
33	701	East	Greenhouse Sales		1975	100	no	no	good	
34	10	East	Manual Training	Preston	1904	34,851	yes	yes	good	Queen Anne
35	2	East	North Building	Preston	1897	24,834	yes	no	good	Queen Anne
36	4/5	East	Schoolhouse/Gymnasium	Preston	1891	37,325	yes	no	good	Queen Anne
40	6	East	Chipman	Preston	1892	10,704	no	yes	unusable	Queen Anne
42	49	East	Hospital/S. Bowen	Preston	1893	12,000	no	yes	unusable	Queen Anne
44	3	East	Activity Center (Old)	Preston	1891	21,785	no	yes	unusable	Queen Anne
51	100	East	Kelley Hall/Copy Center		1969	43,740	no	yes	poor	Modern
55	16	East	Storeroom	Preston	1891	23,940	no	yes	fair	Queen Anne
62	46	East	Wallace Hall		1936	29,560	yes	no	good	Colonial Revival
64	102	East	Withington/Tufts Dental	Payette	1979	40,428	yes	yes	good	Modern
65	51	East	Trapelo Cottage/Day Care/Garage		1860	2,877	no	yes	good	Greek Revival
70	125	East	Shriver Center	Caolo&Ben	1967	48,757	no	yes	good	Modern
71	1	East	Waverley Hall	Preston	1891	32,298	no	yes	unusable	Queen Anne
25	38	West	West Nurses	Preston	1906	6,912	no	yes	poor	Queen Anne
26	118	West	Training Activity Center		1963	18,130	new	no	good	Modern
27	34	West	Belmont House	Preston	1890	6,416	yes	yes	good	Queen Anne
28	116	West	Brookside		1981	11,520	new	no	good	Modern
37	501	West	Site 5		1985	12,000	new	no	fair	Modern
38	700	West	Site 7/Flow Incorporated		1985	20,064	new	no	fair	Modern
39	117	West	Woodside		1981	11,520	new	no	good	Modern
41	119	West	Chapel		1960	17,112	no	yes	good	Modern
45	48	West	Farrell Hall		1960	49,940	yes	no	good	Modern
46	50	West	Greene Unit	Main	1953	113,000	yes	no	good	Modern
56	33	West	West Building	Preston	1890	49,041	no	yes	unusable	Queen Anne
58	37	West	Dolan Hall	Preston	1906	15,252	yes	no	good	Queen Anne
59	36	West	McDougall Hall	Preston	1898	23,376	yes	no	good	Queen Anne
60	35	West	Seguin Hall	Hoyt	1934	21,521	yes	no	good	Colonial Revival
66	45	West	Baldwin Cottage/Day Care		1875	3,422	no	yes	good	Vernacular
72	39	West	Wheatly Hall/Furniture Repair		1933	11,640	no	yes	poor	Colonial Revival
3-13	114	West	Cottages 3-13		1979	8,827 each	no	no	fair	Modern
18a	53	West	Cardinal Cottage/Garage	Sanger	1849	4,354	no	yes	good	Greek Revival
21-24	210	West	Malone Park 21-24		1986	4,123	new	no	good	Modern

Cottages 17-20: The cottages (17-20) were constructed in 1925, except for cottage 18, which I'm struggling to figure out. They are all listed as "contributing structures" on the MoA. A number of them appear to be in very poor condition, while a number appear to be in better condition. They are located on the hillside to the right of the entryway when you enter the property from Waverly Oaks Road.
Maintenance Shed #49: I interviewed a number of people about Maintenance Shed #49, as appearing on the map. It appears that it was built atop a more historic structure that was torn down. In the MoA, a barn foundation is listed as a contributing feature. I have yet to figure out if this is one and the same. If it is, it's more problematic. If it's not, the shed itself is not historic.
Building 48 on the map, was a garage constructed in 1932 on the East Campus, behind the original laundry building (55 on the map). It is listed as a "non-contributing structure" and therefore it could conceivably be demolished.
Building 48 as defined in the MoA is Farrell Hall, constructed in 1960. It is listed as a "non-contributing structure" and therefore it could conceivably be demolished.
Building 55 The larger structure we observed next to Stephen Bowen Hall/Music Therapy (#42 on the map) is one of the handful of buildings remaining from the very first wave of construction at the campus. It was built in 1891 as a laundry/services facility to support the school, which is actually very important in the National Register criteria. It is listed as a contributing structure on the MoA. Unless it is in terrible shape (like the Girls Dormitory across the road, or the Boys Dormitory), it will have to be preserved, since the demolition of those two buildings is likely, and reduces the number of original campus buildings to a scarce few. I'll have to get into it to look around and see what modifications have been made, but this is enough information to guide the conversation for now.
Small Brick Structure The out-building next to the old infirmary (Stephen Bowen, #42 on the map) is equally important. It dates to the first decade of the school and appears to have been built to sterilize materials during outbreaks and epidemics. I do not know of any remaining 19th century medical sterilization facility remaining in the country today, and after searching for hours, I think this may be the last one. Again, might seem trivial, but it proves that this place wasn't Aushwitz, and that the people who ran it made a serious effort to care for the children in their charge. Once again, that makes it a building that is both unique, and in the parlance, preferably preserved.
Coal Contamination In my reading, I should warn you that it appears that a significant amount of coal (up to 500 tons) was stored on-site beginning in 1891. Based on the descriptions, I believe it was stored on the hillside below the West Building (Belmont House). I cannot find evidence that this was ever properly remediated. Significant dumping of potentially hazardous waste has happened as recently as the last two months along that ridgeline.
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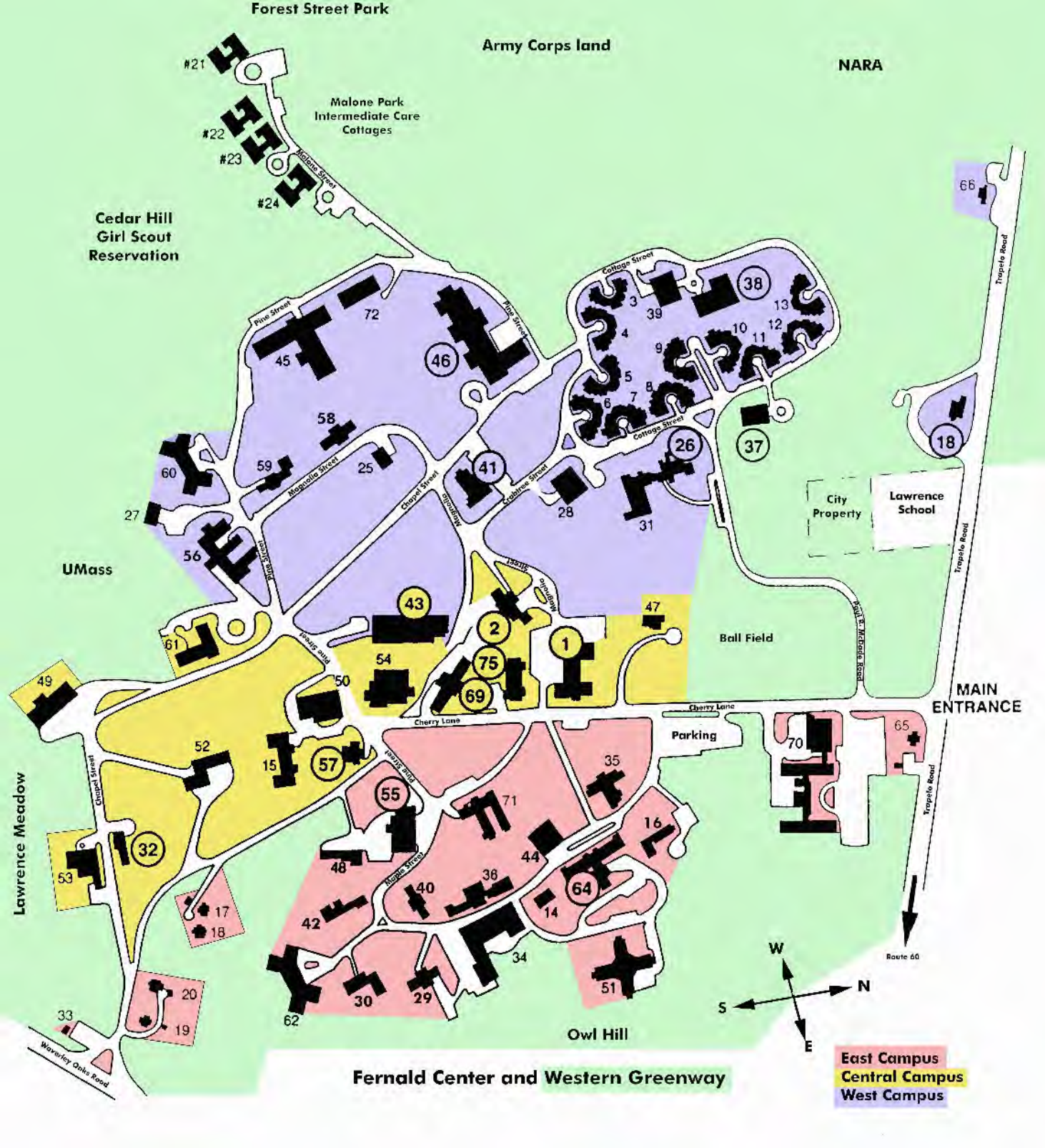
Information provided by Alex Green of Waltham Historic Commission on 6.29.16 via email


Forest Street Park
Army Corps land
NARA
#21
#22
#23
#24
Malone Park
Intermediate Care
Cottages
McGrath Street
Cedar Hill
Girl Scout
Reservation
Pine Street
Cottage Street
Magnolia Street
Chapel Street
Crabtree Street
Maple Street
Cherry Lane
Paul R. McGrath Road
Trapelo Road
City
Property
Lawrence
School
Ball Field
Parking
MAIN
ENTRANCE
UMass
Lawrence Meadow
Owl Hill
Waverley Oaks Road
Route 60
W
N
S
E
East Campus
Central Campus
West Campus
Fernald Center and Western Greenway

APPENDIX B

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 17053

NVLAP®
Lab Code: 200919-0

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald Lavers #15

Date Sampled: 2016-10-03
Work Received: 2016-10-17
Work Analyzed: 2016-10-22

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald Lavers #15

Date Sampled: 2016-10-03
Work Received: 2016-10-17
Work Analyzed: 2016-10-22

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1A 188792	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1B 188793	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1C 188794	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1D 188795	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1E 188796	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1F 188797	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
1G 188798	1x1 Tan Floor Tile	Most Rooms	tan	Non-Fibrous 100	None Detected
2A 188799	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2B 188800	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2C 188801	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2D 188802	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2E 188803	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2F 188804	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected
2G 188805	Brown Mastic	Under 1x1 Tan Floor Tile	brown	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
3A / 188806	1x1 Blue Floor Tile	Center Room	blue	Non-Fibrous 100	None Detected
3B / 188807	1x1 Blue Floor Tile	Center Room	blue	Non-Fibrous 100	None Detected
3C / 188808	1x1 Blue Floor Tile	Center Room	blue	Non-Fibrous 100	None Detected
4A / 188809	Brown Mastic	Under 1x1 Blue Floor Tile	brown	Non-Fibrous 100	None Detected
4B / 188810	Brown Mastic	Under 1x1 Blue Floor Tile	brown	Non-Fibrous 100	None Detected
4C / 188811	Brown Mastic	Under 1x1 Blue Floor Tile	brown	Non-Fibrous 100	None Detected
5A / 188812	1x1 Grey Floor Tile	Side Rooms	gray	Non-Fibrous 100	None Detected
5B / 188813	1x1 Grey Floor Tile	Side Rooms	gray	Non-Fibrous 100	None Detected
5C / 188814	1x1 Grey Floor Tile	Side Rooms	gray	Non-Fibrous 100	None Detected
6A / 188815	Black Mastic	Under 1x1 Floor Tile	black	Non-Fibrous 100	None Detected
6B / 188816	Black Mastic	Under 1x1 Floor Tile	black	Non-Fibrous 100	None Detected
6C / 188817	Black Mastic	Under 1x1 Floor Tile	black	Non-Fibrous 100	None Detected
7A / 188818	Yellow Glue	Under Brown Cove Base	multi	Non-Fibrous 100	**Detected** **Chrysotile < 1**
7B / 188819	Yellow Glue	Under Brown Cove Base	yellow	Non-Fibrous 100	None Detected
7C / 188820	Yellow Glue	Under Brown Cove Base	yellow	Non-Fibrous 100	None Detected
8A / 188821	Light Tan Glue	Under Tan Cove Base	tan	Non-Fibrous 100	None Detected
8B / 188822	Light Tan Glue	Under Tan Cove Base	tan	Non-Fibrous 100	None Detected
8C / 188823	Light Tan Glue	Under Tan Cove Base	multi	Non-Fibrous 100	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
9A 188824	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9B 188825	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9C 188826	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9D 188827	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9E 188828	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9F 188829	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
9G 188830	Grout	Glass Block	gray	Non-Fibrous 100	None Detected
10A 188831	Lathe Ceiling Plaster	Room with Collapsed Ceiling	gray	Non-Fibrous 100	None Detected
10B 188832	Lathe Ceiling Plaster	Room with Collapsed Ceiling	gray	Non-Fibrous 100	None Detected
10C 188833	Lathe Ceiling Plaster	Room with Collapsed Ceiling	gray	Non-Fibrous 100	None Detected
11A 188834	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11B 188835	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11C 188836	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11D 188837	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11E 188838	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11F 188839	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
11G 188840	Exterior Window Caulk	Thin Interior Bead	multi	Non-Fibrous 100	None Detected
12A 188841	White Window Glaze	Exterior Windows	white	Non-Fibrous 98	Detected Chrysotile 2

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
12B 188842	White Window Glaze	Exterior Windows			Not Analyzed
12C 188843	White Window Glaze	Exterior Windows			Not Analyzed
12D 188844	White Window Glaze	Exterior Windows			Not Analyzed
12E 188845	White Window Glaze	Exterior Windows			Not Analyzed
12F 188846	White Window Glaze	Exterior Windows			Not Analyzed
12G 188847	White Window Glaze	Exterior Windows			Not Analyzed
13A 188848	White Gray Window Caulk	Exterior Windows	multi	Non-Fibrous 95	Detected Chrysotile 5
13B 188849	White Gray Window Caulk	Exterior Windows			Not Analyzed
13C 188850	White Gray Window Caulk	Exterior Windows			Not Analyzed
13D 188851	White Gray Window Caulk	Exterior Windows			Not Analyzed
13E 188852	White Gray Window Caulk	Exterior Windows			Not Analyzed
14A 188853	Wall + Ceiling Plaster		multi	Non-Fibrous 100	None Detected
14B 188854	Wall + Ceiling Plaster		white	Non-Fibrous 100	None Detected
14C 188855	Wall + Ceiling Plaster		white	Non-Fibrous 100	None Detected
14D 188856	Wall + Ceiling Plaster		multi	Non-Fibrous 100	None Detected
14E 188857	Wall + Ceiling Plaster		white	Non-Fibrous 100	None Detected
14F 188858	Wall + Ceiling Plaster		multi	Non-Fibrous 100	None Detected
14G 188859	Wall + Ceiling Plaster		white	Non-Fibrous 100	None Detected

Client: QW Consultants
Address: 40 Speen ST Suite 201 Framingham MA
Project Site & #: William Forrad Lavers #15
Phone / email address:
508 875 2657 x 25 / Sahalen@qcw consultants.com
Contact: Susan Cahale
Relinquish by/date: 10/19/16
Received by/date: 10/17/16
# of Samples Received: 68

CHAIN OF CUSTODY
EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 10/3/16

BATCH# 17023

Rev 12/15

Page 1 of 13

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day BJ 10/24/16

Sample Method: Bulk; Soil; Wipe; Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: [signature]

Date: 10/22/16

Temp in Celcius = 24

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
68792	1A	Material: 1x1" tan fiberlike Location: Most Rooms	0	T	N	G	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
93	1B	Material: " Location: "	0	T	N	G	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
94	1C	Material: " Location: "	0	T	N	G	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
95	1D	Material " Location "	C	T	N	G	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														1e	
96	1E	Material " Location "	C	T	N	G	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														1e	
97	1F	Material " Location "	C	T	N	G	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														1e	
98	1G	Material " Location "	C	T	N	G	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														1e	
99	2A	Material Brown Mastic Location Under 1'x1' Tan Floor Tile	C	B	R	B	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														1a	

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
18880	2B	Material " Location "	C	B	R	W	B	Chrysotile															
							W	Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															TE
01	2C	Material " Location "	C	B	R	W	B	Chrysotile															
							W	Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															TE
02	2D	Material " Location "	C	B	R	W	B	Chrysotile															
							W	Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															TE
03	2E	Material " Location "	C	B	R	W	B	Chrysotile															
							W	Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															TE
04	2F	Material " Location "	C	B	R	W	B	Chrysotile															
							W	Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															TE

Layers.

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
05	2C	Material: 〃 Location: 〃	ND	B	N	S	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															1%
06	3A	Material: 1"x1" Blue floor Tile Location: Center Room	ND	B	N	S	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															1%
07	3B	Material: 〃 Location: 〃	ND	B	N	S	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															1%
08	3C	Material: 〃 Location: 〃	ND	B	N	S	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															1%
09	4A	Material: Brown Mastic Location: Under 1'x1' Blue floor Tile	ND	B	N	S	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															1%

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
10	4B	Material " Location "	C	B	RN	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														Ta	
11	4C	Material " Location "	C	B	RN	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														Ta	
12	5A	Material 1'x1' Green floor Tile Location Sidehooms	C	G	TN	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														Ta	
13	5B	Material " Location "	C	G	TN	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														Ta	
14	5C	Material " Location "	C	G	TN	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														Ta	

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
15	6A	Material: Black Mastic Location: under 1'x1' Floor Tile	C	B	FW	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															tal
16	6B	Material: " Location: "	O	B	FW	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															tal
17	6C	Material: " Location: "	C	B	FW	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															tal
18	7A	Material: Yellow Glue Location: Under Brown Calebasc	O	M	CW	SW		Chrysotile	TR	W	P	T	C	W	Yes	Yes							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															tal
19	7B	Material: " Location: "	O	Y	W	SW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															tal

Lavers

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
20	7C	Material: 11 Location: 11	0	C	HG	SF	SW	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														TE	
21	8A	Material: light tan Glue Location: under tan Carebase	0	T	NH	F	SW	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														TE	
22	8B	Material: 11 Location: 11	0	T	NH	F	SW	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														TE	
23	8C	Material: 11 Location: 11	0	M	CH	F	SW	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														TE	
24	9A	Material: Grout Location: Glass Block	C	G	HG	F	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														NE	

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
25	9B	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
26	9C	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
27	9D	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
28	9E	Material 4 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
29	9F	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10

Lavers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
30	9G	Material: 11 / Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
31	10A	Material: Lathe Ceiling Plaster / Location: Room with collapsed ceiling						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
32	10B	Material: 11 / Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
33	10C	Material: 11 / Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10
34	11A	Material: Exterior window caulk / Location: Thin interior Bead						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															10

haven

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
35	11B	Material 11 Location 11	O	M	CUR		U	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														10	
36	11C	Material 11 Location 11	O	M	CUR		U	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														10	
37	11D	Material 11 Location 11	O	M	CUR		U	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														10	
38	11E	Material 11 Location 11	O	M	CUR		U	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														10	
39	11F	Material 11 Location 11		M	CUR		U	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														10	

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
40	11G	Material: 11 Location: 11	0	M	W	RW		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															NAD
41	12A	Material: White window glaze Location: Exterior windows	D	W	N	RW		Chrysotile	2	W	P	+	C	W	1.55	1.550							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															98
42	12B	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															NAD
43	12C	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															NAD
44	12D	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															NAD

Layers

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
45	12E	Material: 1 / Location: 1						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
46	12F	Material: 1 / Location: 1						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
47	12G	Material: 1 / Location: 1						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
48	13A	Material: white gray window caulk / Location: Exterior windows	M	M	M	M	M	Chrysotile	5	W	pf	—	W	W	1.550	1.550							95	
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																
49	13B	Material: 1 / Location: 1						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																

DNA

DNA

DNA

DNA

Layers

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
56	13C	Material // Location //						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
57	13D	Material // Location //						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
52	13E	Material // Location //						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
/		Material / Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
/		Material / Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

NOT on COC - Samples in bag

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ___ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
53	14A	Material: Wall + ceiling 1. Plaster Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite														10	
54	14B	Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite														10	
55	14C	Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite														10	
56	14D	Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite														10	
57	14E	Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite														10	

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location (Temp in Celcius = ____)	% of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ∥	RI ⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
58	145	Material "	0	[illegible]	[illegible]	[illegible]		Chrysotile															100
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															
188859	146	Material "	[illegible]	[illegible]	[illegible]	[illegible]		Chrysotile															100
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															

EMSL Analytical, Inc.

7 Constitution Way, Suite 107 Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605076
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	10/04/2016
Project:	Fernald #17		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605076-0001*	Roof - Shingle	Black Fibrous Homogeneous	25% Cellulose HA: 1	75% Non-fibrous (Other)	None Detected
1B *131605076-0002*	Roof - Shingle	Black Fibrous Homogeneous	25% Cellulose HA: 1	75% Non-fibrous (Other)	None Detected
1C *131605076-0003*	Roof - Shingle	Black Fibrous Homogeneous	25% Cellulose HA: 1	75% Non-fibrous (Other)	None Detected
2A *131605076-0004*	Roof, Under Shingle - Black Paper	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
2B *131605076-0005*	Roof, Under Shingle - Black Paper	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
2C *131605076-0006*	Roof, Under Shingle - Black Paper	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
3A *131605076-0007*	Exterior Windows - Glaze, White	Tan Non-Fibrous Homogeneous	HA: 3	98% Non-fibrous (Other)	2% Chrysotile
3B *131605076-0008*	Exterior Windows - Glaze, White		HA: 3		Positive Stop (Not Analyzed)
3C *131605076-0009*	Exterior Windows - Glaze, White		HA: 3		Positive Stop (Not Analyzed)

Initial report from: 10/25/2016 09:56:33

EMSL Analytical, Inc.
7 Constitution Way, Suite 107 Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605076
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Michael Mink (7)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 09:56:33

EMSL Analytical, Inc.

7 Constitution Way, Suite 107 Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605075
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	
Project:	Fernald #18		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605075-0001*	Roof - Shingle	Gray/Black Fibrous Homogeneous	25% Cellulose 3% Synthetic HA: 1	72% Non-fibrous (Other)	None Detected
1B *131605075-0002*	Roof - Shingle	Black Fibrous Homogeneous	25% Cellulose 3% Synthetic HA: 1	72% Non-fibrous (Other)	None Detected
1C *131605075-0003*	Roof - Shingle	Black Fibrous Homogeneous	25% Cellulose 3% Synthetic HA: 1	72% Non-fibrous (Other)	None Detected
2A *131605075-0004*	Roof - Black Paper Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
2B *131605075-0005*	Roof - Black Paper Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
2C *131605075-0006*	Roof - Black Paper Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 2	60% Non-fibrous (Other)	None Detected
3A *131605075-0007*	Exterior Windows - White Glaze	Tan Non-Fibrous Homogeneous	HA: 3	98% Non-fibrous (Other)	2% Chrysotile
3B *131605075-0008*	Exterior Windows - White Glaze		HA: 3		Positive Stop (Not Analyzed)
3C *131605075-0009*	Exterior Windows - White Glaze		HA: 3		Positive Stop (Not Analyzed)

Initial report from: 10/25/2016 09:32:23

EMSL Analytical, Inc.
7 Constitution Way, Suite 107 Woburn, MA 01801
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EMSL Order:	131605075
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Michael Mink (7)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 09:32:23

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EMSL Order:	131605068
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	
Project:	Fernald #19		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605068-0001*	2nd Floor - Linoleum Flooring	Gray Fibrous Homogeneous	15% Cellulose 3% Glass HA: 1	82% Non-fibrous (Other)	None Detected
1B *131605068-0002*	2nd Floor - Linoleum Flooring	Gray Fibrous Homogeneous	15% Cellulose 3% Glass HA: 1	82% Non-fibrous (Other)	None Detected
1C *131605068-0003*	2nd Floor - Linoleum Flooring	Gray Fibrous Homogeneous	15% Cellulose 3% Glass HA: 1	82% Non-fibrous (Other)	None Detected
2A *131605068-0004*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2B *131605068-0005*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2C *131605068-0006*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2D *131605068-0007*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2E *131605068-0008*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
3A *131605068-0009*	Floors Main - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3B *131605068-0010*	Floors Main - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3C *131605068-0011*	Floors Main - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
4A *131605068-0012*	Black Mastic Under 1'x1' Gray Floor Tile - Black Mastic	Black Non-Fibrous Homogeneous	HA: 4	100% Non-fibrous (Other)	None Detected

Initial report from: 10/25/2016 14:15:20

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EMSL Order: 131605068
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4B *131605068-0013*	Black Mastic Under 1'x1' Gray Floor Tile - Black Mastic	Black Non-Fibrous Homogeneous	HA: 4	100% Non-fibrous (Other)	None Detected
4C *131605068-0014*	Black Mastic Under 1'x1' Gray Floor Tile - Black Mastic	Black Non-Fibrous Homogeneous	HA: 4	100% Non-fibrous (Other)	None Detected
5A *131605068-0015*	Exterior Walls - Stucco	Gray Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
5B *131605068-0016*	Exterior Walls - Stucco	Gray Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
5C *131605068-0017*	Exterior Walls - Stucco	Gray Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
6A *131605068-0018*	Shingle - Roof - Roof Shingle	Tan/Black Fibrous Homogeneous	10% Glass HA: 6	90% Non-fibrous (Other)	None Detected
6B *131605068-0019*	Shingle - Roof - Roof Shingle	Tan/Black Fibrous Homogeneous	10% Glass HA: 6	90% Non-fibrous (Other)	None Detected
6C *131605068-0020*	Shingle - Roof - Roof Shingle	Tan/Black Fibrous Homogeneous	10% Glass HA: 6	90% Non-fibrous (Other)	None Detected
7A *131605068-0021*	Roof Under Shingle - Black Tar Paper	Black Fibrous Homogeneous	40% Cellulose HA: 7	60% Non-fibrous (Other)	None Detected
7B *131605068-0022*	Roof Under Shingle - Black Tar Paper	Black Fibrous Homogeneous	40% Cellulose HA: 7	60% Non-fibrous (Other)	None Detected
7C *131605068-0023*	Roof Under Shingle - Black Tar Paper	Black Fibrous Homogeneous	40% Cellulose HA: 7	60% Non-fibrous (Other)	None Detected

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EMSL Order:	131605068
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Michael Mink (23)

Steve Grise, Laboratory Manager
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EMSL Order:	131605078
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	09/29/2016
Project:	Fernald #20		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605078-0001*	Ceiling - White Textured Plaster	White Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1B *131605078-0002*	Ceiling - White Textured Plaster	White Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1C *131605078-0003*	Ceiling - White Textured Plaster	White Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1D *131605078-0004*	Ceiling - White Textured Plaster	White Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1E *131605078-0005*	Ceiling - White Textured Plaster	White Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
2A *131605078-0006*	Second Floor - Linoleum Flooring	Gray/White Fibrous Homogeneous	15% Cellulose 3% Glass HA: 2	82% Non-fibrous (Other)	None Detected
2B *131605078-0007*	Second Floor - Linoleum Flooring	Gray/White Fibrous Homogeneous	15% Cellulose 3% Glass HA: 2	82% Non-fibrous (Other)	None Detected
2C *131605078-0008*	Second Floor - Linoleum Flooring	Gray/White Fibrous Homogeneous	15% Cellulose 3% Glass HA: 2	82% Non-fibrous (Other)	None Detected
3A *131605078-0009*	First Floor - 1'x1' Blue Floor Tile	Blue Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3B *131605078-0010*	First Floor - 1'x1' Blue Floor Tile	Blue Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3C *131605078-0011*	First Floor - 1'x1' Blue Floor Tile	Blue Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
4A *131605078-0012*	Under 1'x1' Blue Floor Tile - 1st Floor	Gray/Tan Fibrous Homogeneous	15% Cellulose 2% Glass HA: 4	83% Non-fibrous (Other)	None Detected

Initial report from: 10/25/2016 13:31:18

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EMSL Order:	131605078
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4B *131605078-0013*	Under 1'x1' Blue Floor Tile - 1st Floor	Gray/Tan Fibrous Homogeneous	15% Cellulose 2% Glass HA: 4	83% Non-fibrous (Other)	None Detected
4C *131605078-0014*	Under 1'x1' Blue Floor Tile - 1st Floor	Gray/Tan Fibrous Homogeneous	15% Cellulose 2% Glass HA: 4	83% Non-fibrous (Other)	None Detected
5A *131605078-0015*	Under Exterior Wood Clapboards - Brown Paper	Brown Fibrous Homogeneous	98% Cellulose HA: 5	2% Non-fibrous (Other)	None Detected
5B *131605078-0016*	Under Exterior Wood Clapboards - Brown Paper	Brown Fibrous Homogeneous	98% Cellulose HA: 5	2% Non-fibrous (Other)	None Detected
5C *131605078-0017*	Under Exterior Wood Clapboards - Brown Paper	Brown Fibrous Homogeneous	98% Cellulose HA: 5	2% Non-fibrous (Other)	None Detected

Analyst(s)
Michael Mink (17)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 13:31:18

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EMSL Order:	131605079
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	10/04/2016
Project:	Fernald #30		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605079-0001*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1B *131605079-0002*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1C *131605079-0003*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1D *131605079-0004*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1E *131605079-0005*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1F *131605079-0006*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1G *131605079-0007*	Halls & Rooms - 1'x1' Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
2A *131605079-0008*	Under 1'x1' Gray Floor Tile - Brown Linoleum	Brown/Beige Fibrous Homogeneous	HA: 2	94% Non-fibrous (Other)	6% Chrysotile
2B *131605079-0009*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)
2C *131605079-0010*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)
2D *131605079-0011*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)
2E *131605079-0012*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)

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EMSL Order: 131605079
Customer ID: CDWC26
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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2F *131605079-0013*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)
2G *131605079-0014*	Under 1'x1' Gray Floor Tile - Brown Linoleum		HA: 2		Positive Stop (Not Analyzed)
3A *131605079-0015*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3B *131605079-0016*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3C *131605079-0017*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3D *131605079-0018*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3E *131605079-0019*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3F *131605079-0020*	Ceiling - Textured Plaster	White Fibrous Homogeneous	2% Glass HA: 3	98% Non-fibrous (Other)	None Detected
3G *131605079-0021*	Ceiling - Textured Plaster	White Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
4A *131605079-0022*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
4B *131605079-0023*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
4C *131605079-0024*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
4D *131605079-0025*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
4E *131605079-0026*	Walls - Sheetrock	Brown/Gray Fibrous Homogeneous	10% Cellulose 2% Glass HA: 4	88% Non-fibrous (Other)	None Detected

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EMSL Order: 131605079
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4F *131605079-0027*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
4G *131605079-0028*	Walls - Sheetrock	Gray Fibrous Homogeneous	3% Cellulose 3% Glass HA: 4	94% Non-fibrous (Other)	None Detected
5A *131605079-0029*	Roof - Shingle	Black Fibrous Homogeneous	15% Glass HA: 5	85% Non-fibrous (Other)	None Detected
5B *131605079-0030*	Roof - Shingle	Black Fibrous Homogeneous	15% Glass HA: 5	85% Non-fibrous (Other)	None Detected
5C *131605079-0031*	Roof - Shingle	Black Fibrous Homogeneous	15% Glass HA: 5	85% Non-fibrous (Other)	None Detected
6A *131605079-0032*	Roof - Felt Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 6	60% Non-fibrous (Other)	None Detected
6B *131605079-0033*	Roof - Felt Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 6	60% Non-fibrous (Other)	None Detected
6C *131605079-0034*	Roof - Felt Under Shingle	Black Fibrous Homogeneous	40% Cellulose HA: 6	60% Non-fibrous (Other)	None Detected

Analyst(s)
Michael Mink (28)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 15:38:24

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EMSL Order:	131605070
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	09/30/2016
Project:	Fernald #42		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605070-0001*	Exterior Winows - White Glaze	Gray Non-Fibrous Homogeneous	HA: 1	98% Non-fibrous (Other)	2% Chrysotile
1B *131605070-0002*	Exterior Winows - White Glaze		HA: 1		Positive Stop (Not Analyzed)
1C *131605070-0003*	Exterior Winows - White Glaze		HA: 1		Positive Stop (Not Analyzed)
1D *131605070-0004*	Exterior Winows - White Glaze		HA: 1		Positive Stop (Not Analyzed)
1E *131605070-0005*	Exterior Winows - White Glaze		HA: 1		Positive Stop (Not Analyzed)
2A *131605070-0006*	Large Rooms - 9"x9" Gray Floor Tile	Gray Non-Fibrous Homogeneous	HA: 2	98% Non-fibrous (Other)	2% Chrysotile
2B *131605070-0007*	Large Rooms - 9"x9" Gray Floor Tile		HA: 2		Positive Stop (Not Analyzed)
2C *131605070-0008*	Large Rooms - 9"x9" Gray Floor Tile		HA: 2		Positive Stop (Not Analyzed)
3A *131605070-0009*	Large Rooms Under 9"x9" Gray FT - Black Mastic	Black Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3B *131605070-0010*	Large Rooms Under 9"x9" Gray FT - Black Mastic	Black Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3C *131605070-0011*	Large Rooms Under 9"x9" Gray FT - Black Mastic	Black Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
4A *131605070-0012*	Main Area Central - 1'x1' Tan Floor Tile	Tan Non-Fibrous Homogeneous	HA: 4	97% Non-fibrous (Other)	3% Chrysotile

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EMSL Order: 131605070
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
4B *131605070-0013*	Main Area Central - 1'x1' Tan Floor Tile		HA: 4		Positive Stop (Not Analyzed)
4C *131605070-0014*	Main Area Central - 1'x1' Tan Floor Tile		HA: 4		Positive Stop (Not Analyzed)
5A *131605070-0015*	Under 1'x1' Tan Floor Tile - Black Mastic	Black Non-Fibrous Homogeneous	HA: 5	95% Non-fibrous (Other)	5% Chrysotile
5B *131605070-0016*	Under 1'x1' Tan Floor Tile - Black Mastic		HA: 5		Positive Stop (Not Analyzed)
5C *131605070-0017*	Under 1'x1' Tan Floor Tile - Black Mastic		HA: 5		Positive Stop (Not Analyzed)
6A *131605070-0018*	Central Area - 2'x4' Suspended Ceiling Tile	Brown/White Fibrous Homogeneous	90% Cellulose HA: 6	10% Non-fibrous (Other)	None Detected
6B *131605070-0019*	Central Area - 2'x4' Suspended Ceiling Tile	Brown/White Fibrous Homogeneous	90% Cellulose HA: 6	10% Non-fibrous (Other)	None Detected
6C *131605070-0020*	Central Area - 2'x4' Suspended Ceiling Tile	Brown/White Fibrous Homogeneous	90% Cellulose HA: 6	10% Non-fibrous (Other)	None Detected
7A *131605070-0021*	Under Slate Roof - Black Felt	Black Fibrous Homogeneous	30% Cellulose 3% Synthetic HA: 7	67% Non-fibrous (Other)	None Detected
7B *131605070-0022*	Under Slate Roof - Black Felt	Black Fibrous Homogeneous	30% Cellulose 3% Synthetic HA: 7	67% Non-fibrous (Other)	None Detected
7C *131605070-0023*	Under Slate Roof - Black Felt	Black Fibrous Homogeneous	30% Cellulose 3% Synthetic HA: 7	67% Non-fibrous (Other)	None Detected
8A *131605070-0024*	Roof - Flat Portion - Roof Tar	Black Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
8B *131605070-0025*	Roof - Flat Portion - Roof Tar	Black Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
8C *131605070-0026*	Roof - Flat Portion - Roof Tar	Black Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected

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EMSL Order:	131605070
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)

Michael Mink (16)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 14:55:37

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EMSL Order:	131605077
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	09/28/2016
Project:	Fernald #48		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605077-0001*	Ceiling - Brown Fiberboard	Brown Fibrous Homogeneous	98% Cellulose HA: 1	2% Non-fibrous (Other)	None Detected
1B *131605077-0002*	Ceiling - Brown Fiberboard	Brown Fibrous Homogeneous	98% Cellulose HA: 1	2% Non-fibrous (Other)	None Detected
1C *131605077-0003*	Ceiling - Brown Fiberboard	Brown Fibrous Homogeneous	98% Cellulose HA: 1	2% Non-fibrous (Other)	None Detected
1D *131605077-0004*	Ceiling - Brown Fiberboard	Brown Fibrous Homogeneous	98% Cellulose HA: 1	2% Non-fibrous (Other)	None Detected
1E *131605077-0005*	Ceiling - Brown Fiberboard	Brown Fibrous Homogeneous	98% Cellulose HA: 1	2% Non-fibrous (Other)	None Detected
2A *131605077-0006*	Top Roof Core Over Foam - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 2	45% Non-fibrous (Other)	None Detected
2B *131605077-0007*	Top Roof Core Over Foam - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 2	45% Non-fibrous (Other)	None Detected
2C *131605077-0008*	Top Roof Core Over Foam - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 2	45% Non-fibrous (Other)	None Detected
3A *131605077-0009*	Bottom Roof Core Over Concrete Deck - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 3	45% Non-fibrous (Other)	None Detected
3B *131605077-0010*	Bottom Roof Core Over Concrete Deck - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 3	45% Non-fibrous (Other)	None Detected
3C *131605077-0011*	Bottom Roof Core Over Concrete Deck - Black Tarpaper	Black Fibrous Homogeneous	50% Cellulose 5% Glass HA: 3	45% Non-fibrous (Other)	None Detected

Initial report from: 10/25/2016 10:10:37

EMSL Analytical, Inc.
7 Constitution Way, Suite 107 Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605077
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Michael Mink (11)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 10:10:37

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 17044

NVLAP®
Lab Code: 200919-0

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald Building 50

Date Sampled: 2016-09-23
Work Received: 2016-10-13
Work Analyzed: 2016-10-21

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald Building 50

Date Sampled: 2016-09-23
Work Received: 2016-10-13
Work Analyzed: 2016-10-21

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1 / 188578	End Cap Sealant	On FG Pipe Fitting Basement	gray	Mineral Wool 40 Cellulose 20 Non-Fibrous 40	None Detected
2 / 188579	Pipe Fitting Insulation Large	Basement	gray	Mineral Wool 15 Cellulose 35 Non-Fibrous 50	None Detected
3 / 188580	Pipe Fitting Insulation Small	Basement	gray	Mineral Wool 15 Cellulose 25 Non-Fibrous 60	None Detected
4 / 188581	End Cap Sealant	Basement	gray	Mineral Wool 20 Cellulose 30 Non-Fibrous 50	None Detected
5A / 188582	White Door Caulk	Exterior	tan	Non-Fibrous 98	**Detected** **Chrysotile 2**
5B / 188583	White Door Caulk	Exterior			Not Analyzed
5C / 188584	White Door Caulk	Exterior			Not Analyzed
6A / 188585	Gray Window Caulk	Exterior Windows	black	Non-Fibrous 100	None Detected
6B / 188586	Gray Window Caulk	Exterior Windows	black	Non-Fibrous 100	None Detected
6C / 188587	Gray Window Caulk	Exterior Windows	black	Non-Fibrous 100	None Detected
6D / 188588	Gray Window Caulk	Exterior Windows	black	Non-Fibrous 100	None Detected
6E / 188589	Gray Window Caulk	Exterior Windows	black	Non-Fibrous 100	None Detected
7A / 188590	1x1 Gray Floor Tile	Main Floor	gray	Non-Fibrous 100	**Detected** **Chrysotile < 1**

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
7B 188591	1x1 Gray Floor Tile	Main Floor	gray	Non-Fibrous 100	Detected Chrysotile < 1
7C 188592	1x1 Gray Floor Tile	Main Floor	gray	Non-Fibrous 100	Detected Chrysotile < 1
7D 188593	1x1 Gray Floor Tile	Main Floor	gray	Non-Fibrous 100	Detected Chrysotile < 1
7E 188594	1x1 Gray Floor Tile	Main Floor	gray	Non-Fibrous 100	Detected Chrysotile < 1
8A 188595	Yellow Gray Mastic	Under 1x1 Gray Floor Tile	yellow	Non-Fibrous 100	None Detected
8B 188596	Yellow Gray Mastic	Under 1x1 Gray Floor Tile	yellow	Non-Fibrous 100	None Detected
8C 188597	Yellow Gray Mastic	Under 1x1 Gray Floor Tile	yellow	Non-Fibrous 100	None Detected
8D 188598	Yellow Gray Mastic	Under 1x1 Gray Floor Tile	yellow	Non-Fibrous 100	None Detected
8E 188599	Yellow Gray Mastic	Under 1x1 Gray Floor Tile	yellow	Non-Fibrous 100	None Detected
9A 188600	Gray Cove Base	Main Room	gray	Non-Fibrous 100	None Detected
9B 188601	Gray Cove Base	Main Room	gray	Non-Fibrous 100	None Detected
9C 188602	Gray Cove Base	Main Room	gray	Non-Fibrous 100	None Detected
10A 188603	Yellow Mastic	Under Grey Cove Base	tan	Non-Fibrous 100	None Detected
10B 188604	Yellow Mastic	Under Grey Cove Base	tan	Non-Fibrous 100	None Detected
10C 188605	Yellow Mastic	Under Grey Cove Base	tan	Non-Fibrous 100	None Detected
11A 188606	Gray Expansion Joint	Floor Paint Room	gray	Non-Fibrous 100	None Detected
11B 188607	Gray Expansion Joint	Floor Paint Room	gray	Non-Fibrous 100	None Detected
11C 188608	Gray Expansion Joint	Floor Paint Room	gray	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
12A 188609	Skim Coat	Walls	white	Non-Fibrous 100	None Detected
12B 188610	Skim Coat	Walls	white	Non-Fibrous 100	None Detected
12C 188611	Skim Coat	Walls	white	Non-Fibrous 100	None Detected
12D 188612	Skim Coat	Walls	white	Non-Fibrous 100	None Detected
12E 188613	Skim Coat	Walls	white	Non-Fibrous 100	None Detected

Monday 24 October End of Report

Analyzed by: 

Batch: 17044

Client: CDM Consultants
Address: 40 Speen St, Suite 301, Framingham MA
Project Site & #: Waltham Fernald Building 50
Phone / email address:
508 875 2657 x 25
Contact: Susan Cafasla
Relinquish by/date: 10/13/16
Received by/date: 10/13/16
# of Samples Received: 36

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 9/23/16

BATCH# 17049

Rev 12/15

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day 10/24/16

Sample Method: Bulk; Soil; Wipe; Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: [illegible]

Date: 10/21/16

Temp in Celcius = 23

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
18857	1	Material: Pipe Cap Sealant Location: on FG pipe fitting Basement	0	64	4	F/P	4	Chrysotile										TW					
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite										40	20				40
								Actinolite															
79	2	Material: Pipe fitting insulation Large Location: Basement	0	64	4	F/P	4	Chrysotile										TW					
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite										15	35				50
								Actinolite															
80	3	Material: Pipe fitting insulation Small Location: Basement	0	64	4	F/P	4	Chrysotile										TW					
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite										15	25				60
								Actinolite															

68

Fenald #50

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
81	4	Material: Tool cap Sealant Location: basement	0	GY	Y	F/P	Y	Chrysotile															
								Amosite															
								Crocidolite										I	W				
								Tremolite															
								Anthophylite															
								Actinolite										W	30				50
82	5A	Material: White Door Caulk Location: Exterior	0	T	N	GN	Y	Chrysotile	2	W	LL	+	L	N	1.553	1.540							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															98
83	5B	Material: 11 Location: 4						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
84	5C	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA.
85	6A	Material: Gray window Caulk Location: Exterior windows	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fernald #50

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	≡	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
88	6B	Material " Location "	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
87	6C	Material " Location "	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
86	6D	Material " Location "	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
89	6E	Material " Location "	0	BK	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
90	7A	Material 1x1' gray floor tile Location Main floor	0	BK	Y	GW	N	Chrysotile	TR	W	IL	+	L	N	1.553	1.552							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fernald #50

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
91	7B	Material: 11 / Location: 11	0	GY	Y	GR	N	Chrysotile	TR	W	II	+	L	N	1.553	1.552							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
92	7C	Material: 11 / Location: 11	0	GY	Y	GR	N	Chrysotile	TR	W	II	+	L	N	1.553	1.552							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
93	7D	Material: 11 / Location: 11	0	GY	Y	GR	N	Chrysotile	TR	W	II	+	L	N	1.553	1.552							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
94	7E	Material: 11 / Location: 11	0	GY	Y	GR	N	Chrysotile	TR	W	II	+	L	N	1.553	1.552							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
95	8A	Material: Yellow gray Matrix / Location: Matrix gray fiber	0	Y	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fenald #50

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
96	8B	Material ∥ Location ∥	0	Y	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
97	8C	Material ∥ Location ∥	0	Y	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
98	8D	Material ∥ Location ∥	0	Y	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
99	8E	Material ∥ Location ∥	0	Y	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
/		Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

Fernald #52

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
606	9A	Material: Gray Cove base Location: Main Room	0	64	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
01	9B	Material: 11 Location: 11	0	64	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
02	9C	Material: 11 Location: 11	0	64	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
03	10A	Material: Yellow Mastic Location: under green carbon	0	T	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
05	10B	Material: 11 Location: 11	0	T	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100

Fernald #50

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊢	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
05	10C	Material: 11 / Location: 11	0	T	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
06	11A	Material: Gray Expansion Joint / Location: Floor Paint Room	0	GY	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
07	11B	Material: 11 / Location: 11	0	GY	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
08	11C	Material: 11 / Location: 11	0	GY	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
09	12A	Material: Stucco Coat / Location: Walls	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Wattla Ferrald #50

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
10	12B	Material (1) Location (1)	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
11	12C	Material (1) Location (1)	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
12	12D	Material (1) Location (1)	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
13	12E	Material (1) Location (1)	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
1		Material / Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 17049

NVLAP®
Lab Code: 200919-0

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #55

Date Sampled: 2016-10-04
Work Received: 2016-10-17
Work Analyzed: 2016-10-22

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

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- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #55

Date Sampled: 2016-10-04
Work Received: 2016-10-17
Work Analyzed: 2016-10-22

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1A 188763	Grey White Glaze	Exterior Windows	gray	Non-Fibrous 100	None Detected
1B 188764	Grey White Glaze	Exterior Windows	white	Non-Fibrous 100	None Detected
1C 188765	Grey White Glaze	Exterior Windows	white	Non-Fibrous 100	None Detected
1D 188766	Grey White Glaze	Exterior Windows	white	Non-Fibrous 100	None Detected
1E 188767	Grey White Glaze	Exterior Windows	multi	Non-Fibrous 100	None Detected
2A 188768	Tar	On Ceiling Large Metal Freezer	black	Non-Fibrous 95	Detected Chrysotile 5
2B 188769	Tar	On Ceiling Large Metal Freezer			Not Analyzed
2C 188770	Tar	On Ceiling Large Metal Freezer			Not Analyzed
3A 188771	Black Coating	On Cork in Wooden Freezer Walk In	black	Non-Fibrous 100	None Detected
3B 188772	Black Coating	On Cork in Wooden Freezer Walk In	black	Non-Fibrous 100	None Detected
3C 188773	Black Coating	On Cork in Wooden Freezer Walk In	black	Non-Fibrous 100	None Detected
3D 188774	Black Coating	On Cork in Wooden Freezer Walk In	black	Non-Fibrous 100	None Detected
3E 188775	Black Coating	On Cork in Wooden Freezer Walk In	black	Non-Fibrous 100	None Detected
4A 188776	Black Roof Tar	Roof	black	Cellulose 40 Non-Fibrous 60	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
4B 188777	Black Roof Tar	Roof	black	Cellulose 40 Non-Fibrous 60	None Detected
4C 188778	Black Roof Tar	Roof	black	Cellulose 45 Non-Fibrous 55	None Detected
4D 188779	Black Roof Tar	Roof	black	Cellulose 30 Non-Fibrous 70	None Detected
4E 188780	Black Roof Tar	Roof	black	Cellulose 30 Non-Fibrous 70	None Detected
5A 188781	White Board	Roof Layer	multi	Cellulose 10 Non-Fibrous 90	None Detected
5B 188782	White Board	Roof Layer	multi	Cellulose 10 Non-Fibrous 90	None Detected
5C 188783	White Board	Roof Layer	multi	Cellulose 15 Non-Fibrous 85	None Detected
5D 188784	White Board	Roof Layer	multi	Cellulose 5 Non-Fibrous 95	None Detected
5E 188785	White Board	Roof Layer	multi	Cellulose 10 Non-Fibrous 90	None Detected

Monday 24 October

Analyzed by: Michael Thomas

End of Report

Batch: 17049

Client: CDW Consultants
Address: 40 Speen St Suite 301 Framingham MA
Project Site & #: Waltham Fernald #55
Phone / email address:
508 875 2657 / scahala@cdwconsultants.com
Contact: Susan Cahala
Relinquish by/date: 10/21/16
Received by/date: 10/17/16
# of Samples Received: 23

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 10/4/16

BATCH# 17049 Rev 12/15

Page 1 of 5

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day 10/6/16

Sample Method: Bulk; Soil; Wipe; Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: Michael Mann

Date: 10/22/16

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
188763	1A	Material: Grey White glaze Location: Exterior windows	0	Gy	W	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
64	1B	Material: 11 Location: 11	0	W	W	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														100	
65	1C	Material: 1 Location: 1C	0	W	W	GNY		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														100	

Fernald #55

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
66	1D	Material: 11 / Location: 11	0	W	N	Any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
67	1E	Material: 11 / Location: 11	0	ML	N	Any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
68	2A	Material: TAR / Location: On ceiling Large metal freeze	0	Bl	N	Any		Chrysotile	5	W	P	+	C	N	1.556	1.550							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															95
69	2B	Material: 11 / Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
70	2C	Material: 11 / Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA

Fernald #

Page 3 of _____

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
71	3A	Material: Black Coating Location: ON Cork in Wooden freezer walk in	0	BLK	N	CRN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
72	3B	Material: " Location: "	0	BLK	N	CRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
73	3C	Material: " Location: "	0	BLK	N	CRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
74	3D	Material: " Location: "	0	BLK	N	CRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
75	3E	Material: " Location: "	0	BLK	N	CRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
76	4A	Material: Black Roof Tar Location: Roof	0	BLC	N	GN/FN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											40				60
77	4B	Material: 11 Location: 1	0	BLC	N	GN/FN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											40				60
78	4C	Material: 11 Location: 1	0	BLC	N	GN/FN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											45				55
79	4D	Material: 11 Location: 11	0	BLC	N	GN/FN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											30				70
80	4E	Material: 11 Location: 1	0	BLC	N	GN/FN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											30				70

Fernald 55

Page 5 of 5

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
87	SA	Material: White Board Location: Roof Layer	0	ML	N	GN/FY		Chrysotile																
								Amosite																
								Crocidolite											H					
								Tremolite																
								Anthophylite																
								Actinolite											10					90
82	SB	Material: 11 Location: 1	0	ML	N	GN/FY		Chrysotile																
								Amosite																
								Crocidolite											H					
								Tremolite																
								Anthophylite																
								Actinolite											10					90
83	SC	Material: 11 Location: 11	0	ML	N	GN/FY		Chrysotile																
								Amosite																
								Crocidolite											H					
								Tremolite																
								Anthophylite																
								Actinolite											15					85
84	SD	Material: 11 Location: 11	0	ML	N	GN/FY		Chrysotile																
								Amosite																
								Crocidolite											H					
								Tremolite																
								Anthophylite																
								Actinolite											5					95
188785	SE	Material: 11 Location: 11	0	ML	N	GN/FY		Chrysotile																
								Amosite																
								Crocidolite											H					
								Tremolite																
								Anthophylite																
								Actinolite											10					90

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 17047

NVLAP®
Lab Code: 200919-0

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #57

Date Sampled: 2016-10-15
Work Received: 2016-10-18
Work Analyzed: 2016-10-23

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #57

Date Sampled: 2016-10-15
Work Received: 2016-10-18
Work Analyzed: 2016-10-23

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1A 188670	Gray White Caulk	Interior of Exterior Window	tan	Non-Fibrous 95	Detected Chrysotile 5
1B 188671	Gray White Caulk	Interior of Exterior Window			Not Analyzed
1C 188672	Gray White Caulk	Interior of Exterior Window			Not Analyzed
1D 188673	Gray White Caulk	Interior of Exterior Window			Not Analyzed
1E 188674	Gray White Caulk	Interior of Exterior Window			Not Analyzed
2A 188675	1x1 Tan Floor Tile	Basement	tan	Non-Fibrous 90	Detected Chrysotile 10
2B 188676	1x1 Tan Floor Tile	Basement			Not Analyzed
2C 188677	1x1 Tan Floor Tile	Basement			Not Analyzed
3A 188678	Black Mastic	Under 1x1 Tan Floor Tile	black	Non-Fibrous 95	Detected Chrysotile 5
3B 188679	Black Mastic	Under 1x1 Tan Floor Tile			Not Analyzed
3C 188680	Black Mastic	Under 1x1 Tan Floor Tile			Not Analyzed
4A 188681	9x9 Dark Brown Floor Tile	Basement	gray	Non-Fibrous 95	Detected Chrysotile 5
4B 188682	9x9 Dark Brown Floor Tile	Basement			Not Analyzed
4C 188683	9x9 Dark Brown Floor Tile	Basement			Not Analyzed

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
5A 188684	Black Mastic	Under 9x9 Floor Tile	black	Non-Fibrous 95	Detected Chrysotile 5
5B 188685	Black Mastic	Under 9x9 Floor Tile			Not Analyzed
5C 188686	Black Mastic	Under 9x9 Floor Tile			Not Analyzed
6A 188687	White/Gray Glaze	Exterior Windows	multi	Non-Fibrous 100	None Detected
6B 188688	White/Gray Glaze	Exterior Windows	multi	Non-Fibrous 100	None Detected
6C 188689	White/Gray Glaze	Exterior Windows	white	Non-Fibrous 100	None Detected
6D 188690	White/Gray Glaze	Exterior Windows	multi	Non-Fibrous 100	None Detected
6E 188691	White/Gray Glaze	Exterior Windows	multi	Non-Fibrous 100	None Detected
7A 188692	Black Coating	Basement Ceiling	gray	Non-Fibrous 100	None Detected
7B 188693	Black Coating	Basement Ceiling	black	Non-Fibrous 100	None Detected
7C 188694	Black Coating	Basement Ceiling	black	Non-Fibrous 100	None Detected
8A 188695	Textured Ceiling Plaster	1st Floor	white	Non-Fibrous 100	None Detected
8B 188696	Textured Ceiling Plaster	1st Floor	white	Non-Fibrous 100	None Detected
8C 188697	Textured Ceiling Plaster	1st Floor	white	Non-Fibrous 100	None Detected
9A 188698	Textured Wall Plaster	1st Floor	white	Non-Fibrous 100	None Detected
9B 188699	Textured Wall Plaster	1st Floor	white	Non-Fibrous 100	None Detected
9C 188700	Textured Wall Plaster	1st Floor	white	Non-Fibrous 100	None Detected
10A 188701	Black Flooring	Under Carpet 1st Floor	black	Cellulose 5 Non-Fibrous 95	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
10B 188702	Black Flooring	Under Carpet 1st Floor	black	Cellulose 5 Non-Fibrous 95	None Detected
10C 188703	Black Flooring	Under Carpet 1st Floor	black	Cellulose 5 Non-Fibrous 95	None Detected
11A 188704	Black Mastic	Under Black Flooring	brown	Non-Fibrous 100	None Detected
11B 188705	Black Mastic	Under Black Flooring	brown	Non-Fibrous 100	None Detected
11C 188706	Black Mastic	Under Black Flooring	brown	Non-Fibrous 100	None Detected
12A 188707	Yellow Glue	Under Carpet	tan	Non-Fibrous 100	None Detected
12B 188708	Yellow Glue	Under Carpet	tan	Non-Fibrous 100	None Detected
12C 188709	Yellow Glue	Under Carpet	tan	Non-Fibrous 100	None Detected
13A 188710	Roof Shingle	Roof	multi	Cellulose 20 Non-Fibrous 80	None Detected
13B 188711	Roof Shingle	Roof	multi	Cellulose 20 Non-Fibrous 80	None Detected
14A 188712	Black Underlayment Paper	Under Roof Shingle	black	Cellulose 60 Non-Fibrous 40	None Detected
14B 188713	Black Underlayment Paper	Under Roof Shingle	black	Cellulose 60 Non-Fibrous 40	None Detected

Monday 24 October End of Report

Analyzed by:  **Batch:** 17047

Client: CDW Consultants
Address: 40 Speen St, Suite 301 Framingham MA
Project Site & #: Watts Fenald # 57
Phone / email address:
508 875 2657 / sahalang@cdwconsultants.com
Contact: Susan Sahalang
Relinquish by/date: 10/15/16
Received by/date: 10/18/16
# of Samples Received: 44

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled:

BATCH# 17047 Rev 12/15

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day (RSA 10/24/16)
Sample Method: [X] Bulk; [ ] Soil; [ ] Wipe; [ ] Point Count
Stop on 1st Positive? Yes/No
Notify Method: Mail/E-Mail/Verbal
Anayzed By: Christine
Date: 10/23/16

Temp in Celcius = 23

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
188670	1A	Material: gray white caulk Location: Interior of exterior window	0	T	Y	GN	Y	Chrysotile	5	W	P	+	L	N	1.575	1.570							95
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
71	1B	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
72	1C	Material: 11 Location: 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

DNA

DNA

Fernald #54

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
73	1D	Material: 〃 Location: 〃						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
74	1E	Material: 〃 Location: 〃						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA.
75	2A	Material: 1'x1' tan floor tile Location: Basement	O	T	N	GN	N	Chrysotile	10	W	IL	+	C	N	1.553	1.542								
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															9%	
76	2B	Material: 〃 Location: 〃						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
77	2C	Material: 〃 Location: 〃						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA

Fernald # 57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ___ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
78	3A	Material: Black Mastic Location: Under 1'x1' Tan floor Tile	0	BK	Y	T	N	Chrysotile	5	W	II	+	C	N	1.553	1.550							95
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
79	3B	Material: 〃 Location: 〃						Chrysotile															DNA
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
80	3C	Material: 〃 Location: 〃						Chrysotile															DNA
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
81	4A	Material: 9"x9" Dark brown floor Tile Location: Basement	0	64	Y	GN	N	Chrysotile	5	W	II	+	C	N	1.553	1.550							95
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
82	4B	Material: 〃 Location: 〃						Chrysotile															DNA
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

Fernald # 57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
83	4C	Material: 11 / Location: 11						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
84	5A	Material: Black Mastic / Location: under 9"x9" floor tile	0	BK	Y	T	N	Chrysotile	5	W	II	+	C	N	White	White								
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															95	
85	5B	Material: 11 / Location: 11						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
86	5C	Material: 11 / Location: 11						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
87	6A	Material: White/grey glare / Location: Exterior windows	0	MC	N	H	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	

Female 57.

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
88	6B	Material: 11 / Location: 11	0	MC	N	H	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
89	6C	Material: 11 / Location: 11	0	MH	Y	H	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
90	6D	Material: 11 / Location: 11	0	MC	N	H	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
91	6E	Material: 11 / Location: 11	0	MC	N	H	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
92	7A	Material: Black coating / Location: Basement ceiling	0	BK	Y	T	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fernald 57.

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Temp in Celcius = ____	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
				% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
93	7B	Material 11 Location 11		0	BK	Y	T	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
94	7C	Material 11 Location 11		0	BK	Y	T	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
95	8A	Material Textured Ceiling Plaster Location 1st Floor		0	WH	N	GN	Y	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
96	8B	Material 11 Location 11		0	WH	N	GN	Y	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
97	8C	Material 11 Location 11		0	WH	N	GN	Y	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100

Fernald 57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
		Material / Location	% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
98	9A	Material: Textured Wall Plaster Location: 1st floor	0	WH	N	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
99	9B	Material: 11 Location: 11	0	WH	N	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
200	9C	Material: 11 Location: 11	0	WH	N	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
01	10A	Material: Black flooring Location: Under carpet 1st floor	0	BK	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite											W				
								Tremolite															
								Anthophylite											5				95
								Actinolite															
02	10B	Material: 11 Location: 11	0	BK	Y	H	N	Chrysotile															
								Amosite															
								Crocidolite											W				
								Tremolite															
								Anthophylite											5				95
								Actinolite															

Fernald #57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties							RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
03	10C	Material " Location "	0	BK	Y	H	N	Chrysotile																
								Amosite																
								Crocidolite												N				
								Tremolite																
								Anthophylite																
								Actinolite												5				95
04	11A	Material Black Mastic Location Under Black flooring	0	BR	Y	H	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																100
05	11B	Material " Location "	0	BR	Y	H	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																100
06	11C	Material " Location "	0	BR	Y	H	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																100
07	12A	Material Yellow Glue Location Under Carpet	0	T	Y	H	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																100

Fenald 57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Temp in Celcius = ____	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
				% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
08	12B	Material 11 Location 11		O	T	H	H	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
09	12C	Material 11 Location 11		O	T	H	H	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
10	13A	Material Roof Shingle Location Roof		O	MC	N	F/T	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite											W				
									Anthophylite															
									Actinolite											20				80
11	13B	Material 11 Location 11		O	MC	N	F/T	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite											W				
									Anthophylite															
									Actinolite											20				80
12	14A	Material Black Underlayment Paper Location Under Roof Shingle		O	BK	N	F/T	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite											W				
									Anthophylite															
									Actinolite											60				40

Fernald 57

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Calcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
188713	14B	Material "	0	BK	Y	F/FW		Chrysotile											W				
								Amosite															
		Location "						Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite											60				40
		Material						Chrysotile															
								Amosite															
		Location						Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
		Location						Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
		Location						Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
		Location						Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

EMSL Analytical, Inc.

7 Constitution Way, Suite 107 Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605071
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	09/30/2016
Project:	Fernald #59		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605071-0001*	On Fiberglass Pipe in Basement - End Cap Sealant	White Non-Fibrous Homogeneous	HA: 1	95% Non-fibrous (Other)	5% Chrysotile
1B *131605071-0002*	On Fiberglass Pipe in Basement - End Cap Sealant		HA: 1		Positive Stop (Not Analyzed)
1C *131605071-0003*	On Fiberglass Pipe in Basement - End Cap Sealant		HA: 1		Positive Stop (Not Analyzed)
2A *131605071-0004*	On HVAC Mechanical Room - Gray Seam Sealant	Gray Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2B *131605071-0005*	On HVAC Mechanical Room - Gray Seam Sealant	Gray Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
3A *131605071-0006*	Mechanical Room - Flex Connector	White/Black Fibrous Homogeneous	35% Glass HA: 3	65% Non-fibrous (Other)	None Detected
3B *131605071-0007*	Mechanical Room - Flex Connector	White/Black Fibrous Homogeneous	35% Glass HA: 3	65% Non-fibrous (Other)	None Detected
4A *131605071-0008*	Exterior Doors - Gray Lintel Caulk	Gray/Tan Non-Fibrous Homogeneous	HA: 4	97% Non-fibrous (Other)	3% Chrysotile
4B *131605071-0009*	Exterior Doors - Gray Lintel Caulk		HA: 4		Positive Stop (Not Analyzed)
4C *131605071-0010*	Exterior Doors - Gray Lintel Caulk		HA: 4		Positive Stop (Not Analyzed)
5A *131605071-0011*	Exterior Doors - Gray Brown Caulk	Tan Non-Fibrous Homogeneous	HA: 5	98% Non-fibrous (Other)	2% Chrysotile
5B *131605071-0012*	Exterior Doors - Gray Brown Caulk		HA: 5		Positive Stop (Not Analyzed)

Initial report from: 10/25/2016 16:44:00

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7 Constitution Way, Suite 107 Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 131605071
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
5C *131605071-0013*	Exterior Doors - Gray Brown Caulk				Positive Stop (Not Analyzed)
			HA: 5		
6A *131605071-0014*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6B *131605071-0015*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6C *131605071-0016*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6D *131605071-0017*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6E *131605071-0018*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6F *131605071-0019*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
6G *131605071-0020*	Walls & Ceiling - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 6		
7A *131605071-0021*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
			HA: 7		
7B *131605071-0022*	Sheetrock - Walls & Ceiling - Sheetrock	Gray Non-Fibrous Homogeneous	2% Cellulose 3% Glass	95% Non-fibrous (Other)	None Detected
			HA: 7		
7C *131605071-0023*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
			HA: 7		
7D *131605071-0024*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
			HA: 7		
7E *131605071-0025*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
			HA: 7		
7F *131605071-0026*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
			HA: 7		
7G *131605071-0027*	Sheetrock - Walls & Ceiling - Sheetrock	Gray/Tan Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected

Initial report from: 10/25/2016 16:44:00

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7 Constitution Way, Suite 107 Woburn, MA 01801
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EMSL Order: 131605071
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
			HA: 7		
8A *131605071-0028*	Exterior Windows - Glaze	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
8B *131605071-0029*	Exterior Windows - Glaze	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
8C *131605071-0030*	Exterior Windows - Glaze	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 8		
9A *131605071-0031*	Exterior Windows - Brown Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
9B *131605071-0032*	Exterior Windows - Brown Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
9C *131605071-0033*	Exterior Windows - Brown Caulk	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: 9		
10A *131605071-0034*	Ceiling - Ceiling Tile 2'x4'	White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 10		
10B *131605071-0035*	Ceiling - Ceiling Tile 2'x4'	White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 10		
10C *131605071-0036*	Ceiling - Ceiling Tile 2'x4'	White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 10		
10D *131605071-0037*	Ceiling - Ceiling Tile 2'x4'	White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 10		
10E *131605071-0038*	Ceiling - Ceiling Tile 2'x4'	White Fibrous Homogeneous	65% Min. Wool	35% Non-fibrous (Other)	None Detected
			HA: 10		

Initial report from: 10/25/2016 16:44:00

EMSL Analytical, Inc.
7 Constitution Way, Suite 107 Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
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EMSL Order:	131605071
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Steve Grise (32)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 16:44:00

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 17045

NVLAP®
Lab Code: 200919-0

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #60

Date Sampled: 2016-10-07
Work Received: 2016-10-27
Work Analyzed: 2016-10-23

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 24, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald #60

Date Sampled: 2016-10-07
Work Received: 2016-10-27
Work Analyzed: 2016-10-23

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1A 188614	Glaze	Interior Doors	tan	Non-Fibrous 98	Detected Chrysotile 2
1B 188615	Glaze	Interior Doors			Not Analyzed
1C 188616	Glaze	Interior Doors			Not Analyzed
2A 188617	Glaze	Interior 4x6 Windows on Doors	tan	Non-Fibrous 100	Detected Chrysotile < 1
2B 188618	Glaze	Interior 4x6 Windows on Doors	tan	Non-Fibrous 100	Detected Chrysotile < 1
2C 188619	Glaze	Interior 4x6 Windows on Doors	tan	Non-Fibrous 100	Detected Chrysotile < 1
3A 188620	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3B 188621	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3C 188622	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3D 188623	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3E 188624	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3F 188625	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
3G 188626	Brown Caulk	Exterior Windows	brown	Non-Fibrous 100	None Detected
4A 188627	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
4B 188628	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
4C 188629	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
4D 188630	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
4E 188631	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
4F 188632	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
4G 188633	Plaster Skim	Walls	white	Non-Fibrous 100	None Detected
5A 188634	Gray Levelastic	Kitchen Floor	tan	Non-Fibrous 100	None Detected
5B 188635	Gray Levelastic	Kitchen Floor	tan	Non-Fibrous 100	None Detected
6A 188636	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6B 188637	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6C 188638	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6D 188639	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6E 188640	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6F 188641	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
6G 188642	1x1 White with Gray Streaks Floor Tile	1/2 of Building	white	Non-Fibrous 100	None Detected
7A 188643	Black Mastic	Under 1x1 White with Gray Streaks FT	black	Cellulose 5 Non-Fibrous 95	None Detected
7B 188644	Black Mastic	Under 1x1 White with Gray Streaks FT	black	Cellulose 2 Non-Fibrous 88	**Detected** **Chrysotile 10**
7C 188645	Black Mastic	Under 1x1 White with Gray Streaks FT	black		Not Analyzed

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
7D 188646	Black Mastic	Under 1x1 White with Gray Streaks FT			Not Analyzed
7E 188647	Black Mastic	Under 1x1 White with Gray Streaks FT			Not Analyzed
7F 188648	Black Mastic	Under 1x1 White with Gray Streaks FT			Not Analyzed
7G 188649	Black Mastic	Under 1x1 White with Gray Streaks FT			Not Analyzed
8A 188650	Sheetrock	Walls	multi	Cellulose 10 Non-Fibrous 90	None Detected
8B 188651	Sheetrock	Walls	multi	Cellulose 5 Non-Fibrous 95	None Detected
8C 188652	Sheetrock	Walls	multi	Cellulose 25 Non-Fibrous 75	None Detected
8D 188653	Sheetrock	Walls	multi	Fiberglass < 1 Cellulose 30 Non-Fibrous 70	None Detected
8E 188654	Sheetrock	Walls	multi	Fiberglass 2 Cellulose 25 Non-Fibrous 73	None Detected
8F 188655	Sheetrock	Walls	multi	Cellulose 5 Non-Fibrous 95	None Detected
8G 188656	Sheetrock	Walls	multi	Cellulose 5 Non-Fibrous 95	None Detected
9A 188657	Gray Caulk	Exterior Doors	brown	Non-Fibrous 100	None Detected
9B 188658	Gray Caulk	Exterior Doors	brown	Non-Fibrous 100	None Detected
9C 188659	Gray Caulk	Exterior Doors	brown	Non-Fibrous 100	None Detected

Monday 24 October End of Report

Analyzed by: 

Batch: 17045

Client: ACM Consultants
Address: 40 Speen St, Suite 301 Framingham MA
Project Site & #: Walthan Fernald #60
Phone / email address:
508 875 2057 / scahalan@acmconsultants.com
Contact: Susan Cahalan
Relinquish by/date: [signature] 10/19/16
Received by/date: [signature] 10/17/16
# of Samples Received: 46

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 10/7/16

BATCH# 17045 Rev 12/15

Page 1 of 10

Turnaround Time
- [ ] Less 3 Hrs
- [ ] Same Day
- [ ] Next Day
- [ ] Two Day 10/24/2016

Sample Method
- [x] Bulk
- [ ] Soil
- [ ] Wipe
- [ ] Point Count

Stop on 1st Positive? Yes/No
Notify Method: ~~Mail/E-Mail~~/Verbal
Anayzed By: [signature]
Date: 10/23/16

Temp in Celcius = 23

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	% of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI =	RI ⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
168614	1A	Material: Glaze Location: Interior Doors	0	T	N	Gly		Chrysotile	2	GU	II	+	L	N	1.553	1.560							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															98
15	1B	Material: 〃 Location: 〃						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
16	1C	Material: 〃 Location: 〃						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA

Ferrald #600

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ___ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
17	2A	Material: Glaze Location: Interior 9'x6' window on Doors	0	T	N	GW	Y	Chrysotile	TR	W	II	+	L	N	1.553	1.560							100
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
18	2B	Material: 〃 Location: 〃	0	T	N	GW	Y	Chrysotile	TR	W	II	+	L	N	1.553	1.560							100
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
19	2C	Material: 〃 Location: 〃	0	T	N	GW	Y	Chrysotile	TR	W	II	+	L	N	1.553	1.560							100
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
20	3A	Material: Brown Caulk Location: Exterior windows	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
21	3B	Material: 〃 Location: 〃	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Formaldehyde

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp In Celcius = ___ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
22	3C	Material / Location	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
23	3D	Material / Location	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
24	3E	Material / Location	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
25	3F	Material / Location	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
26	3G	Material / Location	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Ferndale WD

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
27	4A	Material: Plaster Skim Location: Walls	0	WH	4	GN	4	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite														100	
28	4B	Material: 11 Location: 11	0	WH	4	GN	4	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
29	4C	Material: 11 Location: 11	0	WH	4	GN	4	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
30	4D	Material: 11 Location: 11	0	WH	4	GN	4	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
31	4E	Material: 4 Location: 11	0	WH	4	GN	4	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fernald LO

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
32	4F	Material: 11 Location: 11	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
33	4G	Material: 11 Location: 11	0	WH	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
34	5A	Material: Gray Levasto Location: Kitchen floor	0	T	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
35	5B	Material: 11 Location: 11	0	T	Y	GN	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
36	6A	Material: White with 1'x1' gray streaks Location: floor Tile 1/2 of building	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Female 6D

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ___ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
37	6B	Material: 11 / Location: 11	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
38	6C	Material: 11 / Location: 11	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
39	6D	Material: 11 / Location: 11	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
40	6E	Material: 11 / Location: 11	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
41	6F	Material: 11 / Location: 11	0	WH	Y	GN	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fernald 60

Temp in Celcius = ____

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
42	6G	Material 11 Location 11	0	WH	Y	GR	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
43	7A	Material Black Mesic Location under 1x1' white with gray streaks	0	BK	Y	T	N	Chrysotile															
								Amosite															
								Crocidolite											W				
								Tremolite															
								Anthophylite															
								Actinolite											5				95
44	7B	Material 11 Location 11	0	BK	Y	T	N	Chrysotile	10	W	11	+	L	N	1.673	1.702							
								Amosite															
								Crocidolite											W				
								Tremolite															
								Anthophylite															
								Actinolite											2				98
45	7C	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															DNA
46	7D	Material 11 Location 11						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															DNA
								Actinolite															

Ferndale WO

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
47	7E	Material: " / Location: "						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
48	7F	Material: " / Location: "						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
49	7G	Material: " / Location: "						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite																DNA
50	8A	Material: Sheetrock / Location: Walls						Chrysotile																
								Amosite																
								Crocidolite												W				
								Tremolite																
			6	MC	N	F/G	Y	Anthophylite																
								Actinolite												10			90	
51	8B	Material: " / Location: "						Chrysotile																
								Amosite																
								Crocidolite												W				
								Tremolite																
			O	MC	N	F/G	Y	Anthophylite																
								Actinolite												5			95	

Fernald LEO

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
52	8C	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location				F		Tremolite											W				
			0	MC	N	GN	Y	Anthophylite															
								Actinolite											25				75
53	8D	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location				F		Tremolite									I		W				
			0	MC	N	GN	Y	Anthophylite															
								Actinolite									TR		30				70
54	8E	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location				F		Tremolite									I		W				
			0	MC	N	GN	Y	Anthophylite															
								Actinolite									2		25				73
55	8F	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location				F		Tremolite											W				
			0	MC	N	GN	Y	Anthophylite															
								Actinolite											5				95
56	8G	Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location				F		Tremolite											W				
			0	MC	N	GN	Y	Anthophylite															
								Actinolite											5				95

Fundld 60

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
57	9A	Material: Gray caulk Location: Exterior Doors	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
58	9B	Material: 11 Location: 11	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
187659	9C	Material: 11 Location: 11	0	BR	Y	R	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
		Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															
		Material Location						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com
Email: mikemanning@asbestosidentificationlab.com

Batch: 16974

NVLAP®
Lab Code: 200919-0

October 20, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernard #61 Tarbell Hall

Date Sampled: 2016-10-03
Work Received: 2016-10-14
Work Analyzed: 2016-10-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 20, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernard #61 Tarbell Hall

Date Sampled: 2016-10-03
Work Received: 2016-10-14
Work Analyzed: 2016-10-18

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
1A 187532	1x1 Tan Light Floor Tile	Basement	tan	Non-Fibrous 100	None Detected
1B 187533	1x1 Tan Light Floor Tile	Basement	tan	Non-Fibrous 100	None Detected
1C 187534	1x1 Tan Light Floor Tile	Basement	tan	Non-Fibrous 100	None Detected
1D 187535	1x1 Tan Light Floor Tile	Basement	tan	Non-Fibrous 100	None Detected
1E 187536	1x1 Tan Light Floor Tile	Basement	tan	Non-Fibrous 100	None Detected
2A 187537	Black Mastic Under Tan 1x1 Floor Tile	Basement	black	Non-Fibrous 90	Detected Chrysotile 10
2B 187538	Black Mastic Under Tan 1x1 Floor Tile	Basement			Not Analyzed
2C 187539	Black Mastic Under Tan 1x1 Floor Tile	Basement			Not Analyzed
2D 187540	Black Mastic Under Tan 1x1 Floor Tile	Basement			Not Analyzed
2E 187541	Black Mastic Under Tan 1x1 Floor Tile	Basement			Not Analyzed
3A 187542	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
3B 187543	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
3C 187544	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
3D 187545	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
3E 187546	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
3F 187547	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
3G 187548	Exterior Window Caulk	Exterior Windows	gray	Non-Fibrous 100	None Detected
4A 187549	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4B 187550	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4C 187551	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4D 187552	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4E 187553	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4F 187554	Glaze, White	Exterior Windows	white	Non-Fibrous 100	None Detected
4G 187555	Glaze, White	Exterior Windows	tan	Non-Fibrous 100	None Detected
5A 187556	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5B 187557	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5C 187558	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5D 187559	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5E 187560	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5F 187561	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
5G 187562	1x1 Tan Floor Tile with Brown Streaks	1st, 2nd Floors	tan	Non-Fibrous 100	None Detected
6A 187563	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 10 Non-Fibrous 90	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
6B 187564	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 5 Non-Fibrous 95	None Detected
6C 187565	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 10 Non-Fibrous 90	None Detected
6D 187566	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 10 Non-Fibrous 90	None Detected
6E 187567	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 5 Non-Fibrous 95	None Detected
6F 187568	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 5 Non-Fibrous 95	None Detected
6G 187569	Black Mastic	Under 1x1 Tan Floor Tile with Brown Streaks	black	Cellulose 10 Non-Fibrous 90	None Detected
7A 187570	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7B 187571	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7C 187572	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7D 187573	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7E 187574	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7F 187575	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
7G 187576	1x1 Brown Floor Tile with Brown Mottled	2 + 3rd Floors	tan	Non-Fibrous 100	None Detected
8A 187577	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 10 Non-Fibrous 90	None Detected
8B 187578	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 5 Non-Fibrous 95	None Detected
8C 187579	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 5 Non-Fibrous 95	None Detected
8D 187580	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 5 Non-Fibrous 95	None Detected
8E 187581	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 10 Non-Fibrous 90	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
8F 187582	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 5 Non-Fibrous 95	None Detected
8G 187583	Black Mastic	Under 1x1 Brown Floor Tile	black	Cellulose 5 Non-Fibrous 95	None Detected
9A 187584	1x1 Red Floor Tile	2nd + 3rd Floors	red	Non-Fibrous 100	None Detected
9B 187585	1x1 Red Floor Tile	2nd + 3rd Floors	red	Non-Fibrous 100	None Detected
9C 187586	1x1 Red Floor Tile	2nd + 3rd Floors	red	Non-Fibrous 100	None Detected
9D 187587	1x1 Red Floor Tile	2nd + 3rd Floors	red	Non-Fibrous 100	None Detected
9E 187588	1x1 Red Floor Tile	2nd + 3rd Floors	red	Non-Fibrous 100	None Detected
10A 187589	Black Mastic	Under 1x1 Red Floor Tile	black	Non-Fibrous 95	**Detected** **Chrysotile 5**
10B 187590	Black Mastic	Under 1x1 Red Floor Tile			Not Analyzed
10C 187591	Black Mastic	Under 1x1 Red Floor Tile			Not Analyzed
10D 187592	Black Mastic	Under 1x1 Red Floor Tile			Not Analyzed
10E 187593	Black Mastic	Under 1x1 Red Floor Tile			Not Analyzed
11A 187594	Glaze	Interior Windows of Office	multi	Non-Fibrous 100	None Detected
11B 187595	Glaze	Interior Windows of Office	multi	Non-Fibrous 100	None Detected
11C 187596	Glaze	Interior Windows of Office	multi	Non-Fibrous 100	None Detected
12A 187597	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 90 Non-Fibrous 10	None Detected
12B 187598	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 80 Non-Fibrous 20	None Detected
12C 187599	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 85 Non-Fibrous 15	None Detected

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
12D 187600	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 90 Non-Fibrous 10	None Detected
12E 187601	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 85 Non-Fibrous 15	None Detected
12F 187602	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 85 Non-Fibrous 15	None Detected
12G 187603	2x2 Textured Ceiling Tiles	1st + 2nd Floor	gray	Mineral Wool 85 Non-Fibrous 15	None Detected
13A 187604	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13B 187605	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13C 187606	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13D 187607	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13E 187608	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13F 187609	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13G 187610	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13H 187611	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
13I 187612	Joint Compound	Walls	white	Non-Fibrous 100	None Detected
14A 187613	Glaze	Interior Doors	multi	Non-Fibrous 100	None Detected
14B 187614	Glaze	Interior Doors	multi	Non-Fibrous 100	None Detected
14C 187615	Glaze	Interior Doors	multi	Non-Fibrous 100	None Detected

Analyzed by: Michael Ramsey

Batch: 16974

Client: CDM Consultants

Address: 75 Speen ST Suite 301, Framingham MA

Project Site & #: Waltham Fernald # 61 Tarbell Hall

Phone / email address:

508 875 2657 ext 25

Contact: Susan Cahala

Relinquish by/date: 10/13/16

Received by/date: 10/14/16

# of Samples Received: 84

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab

165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 10/3/16

BATCH# 16974

Rev 12/15

Page 1 of 18

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day

Sample Method: Bulk (X); Soil; Wipe; Point Count

By Oct 24 2016

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: Michael Khan

Date: 10/18/16

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Temp in Celcius = ____	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
18732	1A	Material: 1'X1' Tan Light Floor Tile Location: Basement		0	T	N	Lam	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
33	1B	Material: 11 Location: 11		0	T	N	Lam	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100
34	1C	Material: 11 Location: 11		0	T	N	Lam	N	Chrysotile															
									Amosite															
									Crocidolite															
									Tremolite															
									Anthophylite															
									Actinolite															100

Torbell Hill

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
35	1D	Material ∥ Location ∥	0	T	N	aw	W	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	
36	1E	Material ∥ Location ∥	0	T	N	aw	W	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	
37	2A	Material Location Back Mortar under tan floor tile	0	BK	N	aw	W	Chrysotile	10	W	P	+	2	N	1.556	1.553								
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															90	
38	2B	Material ∥ Location ∥						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																DNA
								Anthophylite																
								Actinolite																
39	2C	Material ∥ Location ∥						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																DNA
								Anthophylite																
								Actinolite																

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
40	2D	Material " Location "						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																DNA
								Anthophylite																
								Actinolite																
41	2E	Material " Location "						Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																DNA
								Anthophylite																
								Actinolite																
42	3A	Material Exterior under Caulk Location Exterior Windows	0	6Y	N	aw	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	
43	3B	Material " Location "	0	6Y	N	aw	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	
44	3C	Material " Location "	0	6Y	N	aw	N	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophylite																
								Actinolite															100	

Tarbell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
45	3D	Material 11 Location 11	0	GY	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
46	3E	Material 11 Location 11	0	GY	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
47	3F	Material 1 Location 1	0	GY	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
48	3G	Material 11 Location 11	0	GY	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
49	4A	Material Glaze White Location Exterior window	0	W	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
50	4B	Material 11 Location 11	0	un	un	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
51	4C	Material 11 Location 11	0	un	un	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
52	4D	Material 11 Location 11	0	un	un	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
53	4E	Material 11 Location 11	0	un	un	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
54	4F	Material 11 Location 11	0	un	un	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
55	4C	Material: 11 Location: 11	0	T	N	aan	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
56	5A	Material: 1x1' Tan floor tile with brown streaks 1st, 2nd floors Location:	0	T	N	aan	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
57	5B	Material: 11 Location: 11	0	T	N	aan	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
58	5C	Material: 11 Location: 11	0	T	N	aan	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
59	5D	Material: 11 Location: 11	0	T	N	aan	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Tabell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
60	5E	Material: 11 / Location: 11	0	T	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
61	5F	Material: 11 / Location: 11	0	T	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
62	5G	Material: 11 / Location: 11	0	T	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
63	6A	Material: Black Mastic / Location: under 1'x1' tan floor tile with brown streaks	0	BK	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite											10				90
								Actinolite															
64	6B	Material: 11 / Location: 11	0	BK	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite											5				95
								Actinolite															

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
65	6C	Material " Location "	0	BK	HN	Rough	W	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											10				90
66	6D	Material " Location "	0	BK	N	Rough	W	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											10				90
67	6E	Material " Location "	0	BK	N	Rough	W	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5				95
68	6F	Material " Location "	0	BK	N	Rough	W	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5				95
69	6G	Material " Location "	0	BK	N	Rough	N	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											10				90

Tibbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
70	7A	Material: 1X1' Brown floor tile with brown Mottles Location: 2+3rd floor	0	T	N	am	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
71	7B	Material: 11 Location: 11	0	T	N	am	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
72	7C	Material: 11 Location: 11	0	T	N	am	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
73	7D	Material: 11 Location: 11	0	T	N	am	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
74	7E	Material: 11 Location: 11	0	T	N	am	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
75	7F	Material: 4 Location: 11	0	BRN	BRN	BRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
76	7G	Material: 11 Location: 11	0	T	N	BRN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
77	8A	Material: Black Mastic Location: under 12" Brown floor tile	0	BLK	N	BRN		Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											10				90
78	8B	Material: 11 Location: 11	0	BLK	N	BRN		Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5				95
79	8C	Material: 11 Location: 11	0	BLK	N	BRN		Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5				95

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
80	8D	Material 1 / Location 1	0	BLK	N	aw	N	Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite											5				95
								Anthophylite															
								Actinolite															
81	8E	Material 1 / Location 1	0	BLK	N	aw	N	Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite											10				90
								Anthophylite															
								Actinolite															
82	8F	Material 1 / Location 1	0	BLK	N	aw	N	Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite											5				95
								Anthophylite															
								Actinolite															
83	8G	Material 1 / Location 1	0	BLK	N	aw	N	Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite											5				95
								Anthophylite															
								Actinolite															
84	9A	Material 1X1' Red Floor Tile / Location 2nd + 3rd Floors	0	RD	N	aw	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															100
								Actinolite															

Tarbell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
85	9B	Material: 1 / Location: 1	0	RD	N	aw		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
86	9C	Material: 1 / Location: 1	0	RD	N	aw		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
87	9D	Material: 4 / Location: 1	0	RD	N	aw		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
88	9E	Material: 1 / Location: 1	0	RD	N	aw		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
89	10A	Material: Black Mastic / Location: Under 1X1 Red Floor Tile	0	BKN		aw		Chrysotile	5	W	P	+	C	N	1556	1550							
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															95

Tarbell Hall

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Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location (Temp in Celcius = 21)	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
90	10B	Material: " Location: "						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite																DNA
91	10C	Material: " Location: "						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite																DNA
92	10D	Material: " Location: "						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite																DNA
93	10E	Material: " Location: "						Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite																DNA
94	11A	Material: Glaze Location: Interior windows @ offices	0	[illegible]				Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100	

Tarbell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
95	11B	Material: 〃 / Location: 〃	0	ML	N	any	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
96	11C	Material: 〃 / Location: 〃	0	ML	N	any	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
97	12A	Material: 2'x2' Textured Ceiling Tile / Location: 1st + 2nd floor	0	GY	N	GW/FY		Chrysotile															
								Amosite															
								Crocidolite											I				
								Tremolite															
								Anthophylite											90				
								Actinolite															10
98	12B	Material: 〃 / Location: 〃	0	GY	N	GW/FY		Chrysotile															
								Amosite															
								Crocidolite											I				
								Tremolite															
								Anthophylite															
								Actinolite											80				20
99	12C	Material: 〃 / Location: 〃	0	GY	N	GW/FY		Chrysotile															
								Amosite															
								Crocidolite											I				
								Tremolite															
								Anthophylite											85				
								Actinolite															15

Turbell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
600	12D	Material " Location "	0	GY	N	SN/FY		Chrysotile															
								Amosite															
								Crocidolite										I					
								Tremolite															
								Anthophylite										90					10
								Actinolite															
01	12E	Material " Location "	0	GY	N	SN/FY		Chrysotile															
								Amosite															
								Crocidolite										I					
								Tremolite															
								Anthophylite										85					15
								Actinolite															
02	12F	Material " Location "	0	GY	N	SN/FY		Chrysotile															
								Amosite															
								Crocidolite										I					
								Tremolite															
								Anthophylite										85					15
								Actinolite															
03	12G	Material " Location "	0	GY	N	SN/FY		Chrysotile															
								Amosite															
								Crocidolite										I					
								Tremolite															
								Anthophylite										85					15
								Actinolite															
04	13A	Material Joint Compound Location Walls	0	W	N	SOFT		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															100
								Actinolite															

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	∥	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
05	13B	Material 11 Location 11	0	un	un	any		Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
06	13C	Material 11 Location 11	0	un	un	any		Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
07	13D	Material 11 Location 11	0	un	un	any		Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
08	13E	Material 11 Location 11	0	un	un	any		Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100
09	13F	Material 11 Location 11	0	un	un	any		Chrysotile Amosite Crocidolite Tremolite Anthophylite Actinolite															100

Tarbell Hall

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
10	13G	Material: " / Location: "	0	wh	w	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
11	13H	Material: " / Location: "	0	wh	w	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
12	13I	Material: " / Location: "	0	wh	w	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
13	14A	Material: Glaze / Location: Interior Doors	0	ML	N	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
14	14B	Material: " / Location: "	0	ML	N	any		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Tarbell Hall

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
187665	HC	Material "	0mmwary					Chrysotile															
								Amosite															
								Crocidolite															
		Location "						Tremolite															100
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															

EMSL Analytical, Inc.

7 Constitution Way, Suite 107 Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605080
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	10/03/2016
Project:	Fernald #62		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605080-0001*	Exterior Doors - Gray Door Caulk	Brown Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1B *131605080-0002*	Exterior Doors - Gray Door Caulk	Brown Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
1C *131605080-0003*	Exterior Doors - Gray Door Caulk	Brown Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
2A *131605080-0004*	Exterior Windows - Dr Brown Caulk	Brown Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2B *131605080-0005*	Exterior Windows - Dr Brown Caulk	Brown Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
2C *131605080-0006*	Exterior Windows - Dr Brown Caulk	Brown Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
3A *131605080-0007*	Ductwork HVAC - Seam Sealant, Red	Red Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3B *131605080-0008*	Ductwork HVAC - Seam Sealant, Red	Red Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
3C *131605080-0009*	Ductwork HVAC - Seam Sealant, Red	Red Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
4A *131605080-0010*	Interior Windows - Glaze	Gray Non-Fibrous Homogeneous	HA: 4	98% Non-fibrous (Other)	2% Chrysotile
4B *131605080-0011*	Interior Windows - Glaze		HA: 4		Positive Stop (Not Analyzed)
4C *131605080-0012*	Interior Windows - Glaze		HA: 4		Positive Stop (Not Analyzed)

Initial report from: 10/25/2016 18:10:31

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EMSL Order:	131605080
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
5A *131605080-0013*	Interior Doors - Black Glaze	Black Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
5B *131605080-0014*	Interior Doors - Black Glaze	Black Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
6A *131605080-0015*	First Floor - 1'x1' Gray Floor Tile	White Non-Fibrous Homogeneous	HA: 6	100% Non-fibrous (Other)	None Detected
6B *131605080-0016*	First Floor - 1'x1' Gray Floor Tile	White Non-Fibrous Homogeneous	HA: 6	100% Non-fibrous (Other)	None Detected
6C *131605080-0017*	First Floor - 1'x1' Gray Floor Tile	White Non-Fibrous Homogeneous	HA: 6	100% Non-fibrous (Other)	None Detected
6D *131605080-0018*	First Floor - 1'x1' Gray Floor Tile	White Non-Fibrous Homogeneous	HA: 6	100% Non-fibrous (Other)	None Detected
6E *131605080-0019*	First Floor - 1'x1' Gray Floor Tile	White Non-Fibrous Homogeneous	HA: 6	100% Non-fibrous (Other)	None Detected
7A *131605080-0020*	Under 1'x1' Gray Floor Tile - Black Mastic	Black Non-Fibrous Homogeneous	HA: 7	90% Non-fibrous (Other)	10% Chrysotile
7B *131605080-0021*	Under 1'x1' Gray Floor Tile - Black Mastic		HA: 7		Positive Stop (Not Analyzed)
7C *131605080-0022*	Under 1'x1' Gray Floor Tile - Black Mastic		HA: 7		Positive Stop (Not Analyzed)
7D *131605080-0023*	Under 1'x1' Gray Floor Tile - Black Mastic		HA: 7		Positive Stop (Not Analyzed)
7E *131605080-0024*	Under 1'x1' Gray Floor Tile - Black Mastic		HA: 7		Positive Stop (Not Analyzed)
8A *131605080-0025*	Walls & Ceiling - Skim Coat, White	White Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
8B *131605080-0026*	Walls & Ceiling - Skim Coat, White	White Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected

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EMSL Order: 131605080
Customer ID: CDWC26
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
8C *131605080-0027*	Walls & Ceiling - Skim Coat, White	White Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
8D *131605080-0028*	Walls & Ceiling - Skim Coat, White	White Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
8E *131605080-0029*	Walls & Ceiling - Skim Coat, White	White Non-Fibrous Homogeneous	HA: 8	100% Non-fibrous (Other)	None Detected
9A *131605080-0030*	Under Slate Roof - Tar Paper	Black Fibrous Homogeneous	30% Cellulose 10% Synthetic HA: 9	60% Non-fibrous (Other)	None Detected
9B *131605080-0031*	Under Slate Roof - Tar Paper	Black Fibrous Homogeneous	30% Cellulose 10% Synthetic HA: 9	60% Non-fibrous (Other)	None Detected
9C *131605080-0032*	Under Slate Roof - Tar Paper	Black Fibrous Homogeneous	30% Cellulose 10% Synthetic HA: 9	60% Non-fibrous (Other)	None Detected
10A *131605080-0033*	Top Flat Roof Layer - Black Tar	Black Fibrous Homogeneous	40% Cellulose HA: 10	60% Non-fibrous (Other)	None Detected
10B *131605080-0034*	Top Flat Roof Layer - Black Tar	Black Fibrous Homogeneous	40% Cellulose HA: 10	60% Non-fibrous (Other)	None Detected
10C *131605080-0035*	Top Flat Roof Layer - Black Tar	Black Fibrous Homogeneous	40% Cellulose HA: 10	60% Non-fibrous (Other)	None Detected
11A *131605080-0036*	Top of Roof Deck on Concrete - Roof Tar	Black Non-Fibrous Homogeneous	HA: 11	90% Non-fibrous (Other)	10% Chrysotile
11B *131605080-0037*	Top of Roof Deck on Concrete - Roof Tar		HA: 11		Positive Stop (Not Analyzed)
11C *131605080-0038*	Top of Roof Deck on Concrete - Roof Tar		HA: 11		Positive Stop (Not Analyzed)
12A *131605080-0039*	Foundation - Coating, Brown-Black	Brown Non-Fibrous Homogeneous	HA: 12	100% Non-fibrous (Other)	None Detected
12B *131605080-0040*	Foundation - Coating, Brown-Black	Brown Non-Fibrous Homogeneous	HA: 12	100% Non-fibrous (Other)	None Detected

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EMSL Order:	131605080
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Analyst(s)
Kevin Pine (32)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 18:10:31

EMSL Analytical, Inc.

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http://www.EMSL.com / bostonlab@emsl.com

EMSL Order:	131605074
Customer ID:	CDWC26
Customer PO:	
Project ID:	

Attention:	Susan Cahalan	**Phone:**	(508) 875-2657
	CDW Consultants	**Fax:**	
	40 Speen Street	**Received Date:**	10/18/2016 9:30 AM
	Suite 301	**Analysis Date:**	10/25/2016
	Framingham, MA 01701	**Collected Date:**	09/23/2016
Project:	Fernald Greenhouse		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
1A *131605074-0001*	Exterior Windows - White Glaze	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	<1% Chrysotile
1B *131605074-0002*	Exterior Windows - White Glaze	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	<1% Chrysotile
1C *131605074-0003*	Exterior Windows - White Glaze	Gray Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	<1% Chrysotile
2A *131605074-0004*	Roof - Wooden Structure - Shingle	Black Fibrous Homogeneous	10% Glass HA: 2	90% Non-fibrous (Other)	None Detected
2B *131605074-0005*	Roof - Wooden Structure - Shingle	Black Fibrous Homogeneous	10% Glass HA: 2	90% Non-fibrous (Other)	None Detected
2C *131605074-0006*	Roof - Wooden Structure - Shingle	Black Fibrous Homogeneous	10% Glass HA: 2	90% Non-fibrous (Other)	None Detected
3A *131605074-0007*	Roof Greenhouse - Roof Tar	Black Non-Fibrous Homogeneous	HA: 3	95% Non-fibrous (Other)	5% Chrysotile
3B *131605074-0008*	Roof Greenhouse - Roof Tar		HA: 3		Positive Stop (Not Analyzed)

Analyst(s)

Michael Mink (7)

Steve Grise, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/25/2016 09:03:29

Asbestos Identification Laboratory

165 New Boston St., Ste 227
Woburn, MA 01801
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Batch: 17116

NVLAP®
Lab Code: 200919-0

October 26, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

Project Number:
Project Name: Waltham Fernald

Date Sampled: 2016-10-05
Work Received: 2016-10-24
Work Analyzed: 2016-10-26

Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

Dear Susan Cahalan,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project .

The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.

Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Susan Cahalan for your business.

Michael Manning
Owner/Director

October 26, 2016

Susan Cahalan
CDW Consultants, Inc.
40 Speen St.
Suite 301
Framingham, MA 01701

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Project Name: Waltham Fernald

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Analysis Method: BULK PLM ANALYSIS EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
Roof-1A-60 / 189412	Roof Shingle	Roof	black	Fiberglass 30 Non-Fibrous 70	None Detected
Roof-1B-60 / 189413	Roof Shingle	Roof	black	Fiberglass 20 Non-Fibrous 80	None Detected
Roof-2A-60 / 189414	Paper	Under Roof Shingle	black	Cellulose 80 Non-Fibrous 20	None Detected
Roof-2B-60 / 189415	Paper	Under Roof Shingle	black	Cellulose 75 Non-Fibrous 25	None Detected
Roof-1A-20 / 189416	Roof Shingle	Roof Building 20	black	Cellulose 35 Non-Fibrous 65	None Detected
Roof-1B-20 / 189417	Roof Shingle	Roof Building 20	black	Cellulose 35 Non-Fibrous 65	None Detected
Roof-1A-50 / 189418	Roof Tar	On Metal Deck Building 50	black	Cellulose 20 Non-Fibrous 80	None Detected
Roof-1B-50 / 189419	Roof Tar	On Metal Deck Building 50	black	Cellulose 25 Non-Fibrous 75	None Detected
Roof-1C-50 / 189420	Roof Tar	On Metal Deck Building 50	black	Cellulose 15 Non-Fibrous 85	None Detected
2A-50 / 189421	Flashing	Foundation Building 50	black	Non-Fibrous 100	None Detected
2B-50 / 189422	Flashing	Foundation Building 50	black	Non-Fibrous 100	None Detected
Roof-1A-56 / 189423	Black Felt	Under Slate Roof Building 56	black	Cellulose 60 Non-Fibrous 40	None Detected
Roof-1B-56 / 189424	Black Felt	Under Slate Roof Building 56	black	Cellulose 55 Non-Fibrous 45	None Detected
Roof-1C-56 / 189425	Black Felt	Under Slate Roof Building 56	black	Cellulose 70 Non-Fibrous 30	None Detected

FieldID LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
Roof-1A-52 189426	Roof Tar	On Concrete Deck Building 52	black	Cellulose 15 Non-Fibrous 85	None Detected
Roof-1B-52 189427	Roof Tar	On Concrete Deck Building 52	black	Cellulose 5 Non-Fibrous 95	None Detected
Roof-1C-52 189428	Roof Tar	On Concrete Deck Building 52	black	Non-Fibrous 100	None Detected
1A-27 189429	Black Mastic	Behind Exterior Brick Building 27	black	Non-Fibrous 100	None Detected
1B-27 189430	Black Mastic	Behind Exterior Brick Building 27	black	Non-Fibrous 100	None Detected
Roof-1A-15 189431	Black Felt	Under Slate Roof Building #15	black	Cellulose 70 Non-Fibrous 30	None Detected
Roof-1B-15 189432	Black Felt	Under Slate Roof Building #15	black	Cellulose 75 Non-Fibrous 25	None Detected
Roof-1C-15 189433	Black Felt	Under Slate Roof Building #15	black	Cellulose 70 Non-Fibrous 30	None Detected
Roof-1A-27 189434	Tar Paper	Roof #27	black	Non-Fibrous 100	None Detected
Roof-1B-27 189435	Tar Paper	Roof #27	black	Cellulose 10 Non-Fibrous 90	None Detected
Roof-1A-61 189436	Gypsum Deck	Building 61 Roof	gray	Cellulose 5 Non-Fibrous 95	None Detected
Roof-1B-61 189437	Gypsum Deck	Building 61 Roof	gray	Cellulose 5 Non-Fibrous 95	None Detected
Roof-1C-61 189438	Gypsum Deck	Building 61 Roof	gray	Cellulose 3 Non-Fibrous 97	None Detected
Roof-2A-61 189439	Black Roof Paper	Under Slate Under #61	black	Cellulose 68 Non-Fibrous 30	**Detected** **Chrysotile 2**
Roof-2B-61 189440	Black Roof Paper	Under Slate Under #61			Not Analyzed
Roof-2C-61 189441	Black Roof Paper	Under Slate Under #61			Not Analyzed

Wednesday 26

Analyzed by: Michael Ramsey

End of Report

Batch: 17116

Client: CDW Consultants

Address: 10 Speen St, Suite 301 Framingham MA

Project Site & #: Waltham Ferrara

Phone / email address: 508 875 2657 / scahalan@cdwconsultants.com

Contact: Susan Cahalan

Relinquish by/date: 10/20/16

Received by/date: 10/21/16

# of Samples Received: 30

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 10/6/16

BATCH# 17116 Rev 12/15

Page 1 of 7

Turnaround Time: Less 3 Hrs; Same Day; Next Day; Two Day (By 10/26)

Sample Method: Bulk; Soil; Wipe; Point Count

Stop on 1st Positive? Yes/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By: [signature]

Date: 10/26/16

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
89412	Roof-1A-60	Material: Roof Shingle Location: Roof	0	BLCK	HOM	SW/FW		Chrysotile															
								Amosite									I						
								Crocidolite															
								Tremolite									30						70
								Anthophylite															
								Actinolite															
13	Roof 1B-60	Material: 11 Location: 11	0	BLCK	HOM	SW/FW		Chrysotile															
								Amosite															
								Crocidolite									I						
								Tremolite															
								Anthophylite									20						80
								Actinolite															
14	Roof-2A-60	Material: Paper Location: Under Roof Shingle	0	BLCK	HOM	SW/FW		Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite											80				20
								Actinolite															

Femald

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
15	Roof-2B-60	Material: " / Location: "	0	BLK N	GN/FN			Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite											75				25
16	Roof-1A-20	Material: Roof Shingle / Location: Roof Building 20	0	BLK N	GN/FN			Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite											35				65
17	Roof-1B-20	Material: " / Location: "	0	BLK N	GN/FN			Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite											35				65
18	Roof-1A-50	Material: Rock Tar / Location: ON Metal Deck Building 50	0	BLK N	GN/FN			Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											20				80
19	Roof-1B-50	Material: " / Location: "	0	BLK N	GN/FN			Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											25				75

Fenald.

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
20	Roof-1C-50	Material: " / Location: "	0	BI	CN	GN	FN	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											15				85
21	2A-50	Material: flashing / Location: foundation Building 50	0	BI	CN	GN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
22	2B-50	Material: " / Location: "	0	BI	CN	GN		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
23	Roof-1A-56	Material: Black felt / Location: Understate Roof Building 56	0	BI	CN	GN	FN	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											60				40
24	Roof-1B-56	Material: " / Location: "	0	BI	CN	GN	FN	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											55				45

Fungal.

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
25	Roof-1C-52	Material: 11 Location: 11	0	Blk/Wh	Gr/Tan			Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											70				30
26	Roof-1A-52	Material: Roof Tar Location: on Concrete deck Building 52	0	Blk	Tan			Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											15				85
27	Roof-1B-52	Material: 11 Location: 11	0	Blk/Wh	Gr/Tan			Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											H				
								Anthophylite															
								Actinolite											5				95
28	Roof-1C-52	Material: 11 Location: 11	0	Blk/Wh	Gr/Tan			Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
29	IA-27	Material: Black Mastic Location: Behind exterior Brick Building 27	0	Blk	Tan			Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Ronald

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
30	B-27	Material: 11 Location: 11	0	BLK/GRY	GRY	GRY		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100
31	Roof-1A-15	Material: Black Felt Location: under Slate Roof Building #15	0	BLK/GRY	GRY	GRY/FIB	FIB	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											#				
								Anthophylite															
								Actinolite											70				30
32	Roof-1B-15	Material: 11 Location: 11	0	BLK/GRY	GRY	GRY/FIB	FIB	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											#				
								Anthophylite															
								Actinolite											75				25
33	Roof-1C-15	Material: 11 Location: 11	0	BLK/GRY	GRY	GRY/FIB	FIB	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											#				
								Anthophylite															
								Actinolite											70				30
34	Roof-1A-27	Material: Tar Paper Location: Roof #27	0	BLK/GRY	GRY	GRY		Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite															100

Fenald

Page 4 of 7

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 24 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: =	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
35	Roof-1B-27	Material: 11 Location: 11	0	Blk	N	any	N	Chrysotile											H				
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophylite															
								Actinolite											10				90
36	Roof-1A-01	Material: Gypsum Deck Location: Building 01 Roof	0	Gy	N	any	Y	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5			95	
37	Roof-1B-01	Material: 11 Location: 11	0	Gy	N	any	Y	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											5			95	
38	Roof-1C-01	Material: 11 Location: 11	0	Gy	N	any	N	Chrysotile															
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											3			97	
39	Roof-2A-01	Material: Black Roof Paper Location: under slate under #01	0	Blk	N	fib/fN	N	Chrysotile	2	W	P	+	C	N	1556	1550							
								Amosite															
								Crocidolite											H				
								Tremolite															
								Anthophylite															
								Actinolite											69			30	

Fernald

Page 7 of 7

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 Material / Location	Stereo Scope % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ‖	⊥	Non-Asbestos Percentage (%) Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
30	Roof-2B-01	Material "	0	BlK	N	GN/F	N	Chrysotile											H				
								Amosite															
								Crocidolite															
		Location "						Tremolite											70				30 DNA
								Anthophylite															
								Actinolite															
1894[illegible]	Roof-2C-01	Material "	0	BlK	N	GN/F	N	Chrysotile											H				
								Amosite															
								Crocidolite															
		Location "						Tremolite											70				30 DNA
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophylite															
								Actinolite															

OrderID: 131605076

EMSL Analytical, Inc.
7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: **131605076**

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fernald #17	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 10/14/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Roof	Shingle
1B	1	"	"
1C	1	"	"
2A	2	Roof, under Shingle	Black Paper
2B	2	"	"
2C	2	"	"
3A	3	Exterior windows	Glaze, white
3B	3	"	
3C	3	"	

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/16/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

Ex 777475438427

RECEIVED
OCT 18 2016
By 9:30

OrderID: 131605075

EMSL Analytical, Inc.
7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605075

Company : CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fenald # 18	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/

Samplers Name: Susan Cahal **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Roof	Shingle
1B	1	"	"
1C	1	"	"
2A	2	Roof	Black Paper under Shingle
2B	2	"	
2C	2	"	
3A	3	Exterior windows	white glaze
3B	3	"	"
3C	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/16/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

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OrderID: 131605068

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Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605068

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fernald #19	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☑ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:**

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	2nd floor	Linoleum flooring
1B	1	"	"
1C	1	"	"
2A	2	Ceilings	Textured plaster
2B	2	"	"
2C	2	"	"
2D	2	"	"
2E	2	"	"
3A	3	1'x1' Gray floor tile	floors main
3B	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/15/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

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Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
3C	3	"	"
4A	4	Black Mastic under 1'x1' gray tar tile	Black Mastic
4B	4	"	"
4C	4	"	"
5A	5	Exterior Walls	Stucco
5B	5	"	"
5C	5	"	"
6A	6	Shingle - Roof	Roof Shingle
6B	6	"	"
6C	6	"	"
7A	7	Roof under Shingle	Black Tarpaper
7B	7	"	"
7C	7	"	"

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EMSL ANALYTICAL, INC.
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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: **131605078**

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Waltham Fernald #32	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/29/16

Samplers Name: Susan Cahal **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Ceiling	White Textured plaster
1B	1	"	"
1C	1	"	"
1D	1	"	"
1E	1	"	"
2A	2	Second floor	Linoleum flooring
2B	2	"	"
2C	2	"	"
3A	3	First floor	1'x1' Blue floor Tile
3B	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/16/16 **Time:**

Received (Lab): **Date:** **Time:**

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

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Woburn, MA 01801
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FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
3C	3	"	"
4A	4	Under 1'x1' floor tile	1st floor
4B	4	"	"
4C	4	"	"
5A	5	Under exterior Wood Clapboards	Brown paper
5B	5	"	"
5C	5	"	"

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: **131605079**

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Waltham Fernald #30	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

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PLM - Bulk (reporting limit)	TEM – Bulk
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☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 10/14/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Halls + Rooms	1'x1' Gray floor tile
1B	1	"	"
1C	1	"	"
1D	1	"	"
1E	1	"	"
1F	1	"	"
1G	1	"	"
2A	2	Under 1'x1' gray floor tile	Brown Linoleum
2B	2	"	"
2C	2	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/14/16 **Time:**

Received (Lab): **Date:** **Time:**

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605079

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
2D	2	11	11
2E	2	11	11
2F	2	11	11
2G	2	11	11
3A	3	Ceiling	Textured Plaster
3B	3	11	11
3C	3	11	11
3D	3	11	11
3E	3	11	11
3F	3	11	11
3G	3	11	11
4A	4	Walls	Sheetrock
4B	4	11	11
4C	4	11	11
4D	4	11	11
4E	4	11	11
4F	4	11	11
4G	4	11	11
5A	5	Roof	Shingle
5B	5	11	11
5C	5	11	11
6A	6	Roof	Felt under Shingle
6B	6	11	11
6C	6	11	11

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PHONE: (781) 933-8411
FAX: (781) 933-8412

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Watthorn Emerald #42	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☑ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

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PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/30/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Exterior windows	White glaze
1B	1	"	"
1C	1	"	"
1D	1	"	"
1E	1	"	"
2A	2	Large rooms	9"x9" Gray floor Tile
2B	2	"	"
2C	2	"	"
3A	3	Large rooms under 9"x9" gray ft	Black Mastic
3B	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/16/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605070

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Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
3C	3	"	"
4A	4	Main Area Control	1' x 1' Tan Floor Tile
4B	4	"	"
4C	4	"	"
5A	5	Under 1' x 1' tan floor Tile	Black Mastic
5B	5	"	"
5C	5	"	"
6A	6	Control Area	2'x4' Fissured Ceiling Tile
6B	6	"	
6C	6	"	
7A	7	Under Slate Roof	Black felt
7B	7	"	"
7C	7	"	"
8A	8	Roof - flat portion	Roof TAR
8B	8	"	"
8C	8	"	"

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 131605077

Company : CDW Consultants		**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*	
Street: 40 Speen Street; Suite 301			
City: Framingham	**State/Province:** MA	**Zip/Postal Code:** 01701	**Country:** US
Report To (Name): Susan Cahalan		**Telephone #:** 5088752657	
Email Address: scahalan@cdwconsultants.com		**Fax #:**	**Purchase Order:**
Project Name/Number:		**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail	
U.S. State Samples Taken: MA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

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PLM - Bulk (reporting limit)	TEM – Bulk
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☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/28/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Ceiling	Brown fiberboard
1B	1	"	"
1C	1	"	"
1D	1	"	"
1E	1	"	"
2A	2	Top Roof Core over foam	Black Tarpaper
2B	2	"	"
2C	2	"	"
3A	3	Bottom of Roof Core over Concrete deck	"
3B	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/14/16 **Time:**

Received (Lab): **Date:** **Time:**

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EMSL Order Number *(Lab Use Only)*:

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Woburn, MA 01801
PHONE: (781) 933-8411
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Sample #	HA #	Sample Location	Material Description
3C	3	11	11

*Comments/Special Instructions:

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: **131605071**

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fernald #59	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

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☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
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☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/30/16

Samplers Name: Susan Cahala **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	ON Fiberglass pipe in Basement	End cap Sealant
1B	1	"	"
1C	1	"	"
2A	2	ON HVAC Mechanical Room	Gray Seam Sealant
2B	2	"	"
3A	3	Mechanical Room	Flex Connector
3B	3	"	"
4A	4	Exterior Doors	Gray Lintel Caulk
4B	4	"	"
4C	4	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/15/16 **Time:**

Received (Lab): **Date:** **Time:**

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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605071

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7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
5A	5	Exterior Doors	Gray brown caulk
5B	5	"	"
5C	5	"	"
6A	6	Walls + Ceilings	Skim Coat
6B	6	"	"
6C	6	"	"
6D	6	"	"
6E	6	"	"
6F	6	"	"
6G	6	"	"
7A	7	Sheetrock - Walls + Ceiling	Sheetrock
7B	7	"	"
7C	7	"	"
7D	7	"	"
7E	7	"	"
7F	7	"	"
7G	7	"	"
8A	8	Exterior windows	Glaze
8B	8	"	"
8C	8	"	"
9A	9	Exterior Windows	Brown Caulk
9B	9	"	"
9C	9	"	"
10A	10	Ceilings	Ceiling Tile 2x4'

*Comments/Special Instructions:

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EMSL Order Number *(Lab Use Only)*:

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EMSL Analytical, Inc.
7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
10B	10	〃	〃
10C	10	〃	〃
10D	10	〃	〃
10E	10	〃	〃
~~F~~			

*Comments/Special Instructions:

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OrderID: 131605080

EMSL Analytical, Inc.
7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
FAX: (781) 933-8412

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605080

Company: CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fernald #102	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☑ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 10/13/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	Exterior Doors	Gray Door Caulk
1B	1	"	"
1C	1	"	"
2A	2	Exterior Windows	Dr Brown Caulk
2B	2	"	"
2C	2	"	"
3A	3	Ductwork HVAC	Seam Sealant, Tape
3B	3	"	"
3C	3	"	"
4A	4	Interior Windows	Glaze

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/15/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

Ex 772754288116

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OrderID: 131605080

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EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605080

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
4B	4	Interior windows	Glaze
4C	4	"	"
5A	5	Interior Doors	Black glaze
5B	5	"	"
6A	6	First floor	1'x1' gray floor Tile
6B	6	"	"
6C	6	"	"
6D	6	"	"
6E	6	"	"
7A	7	Under 1'x1' gray floor Tile	Black Mastic
7B	7	"	"
7C	7	"	"
7D	7	"	"
7E	7	"	"
8A	8	Walls + ceilings	Skim Coat, white
8B	8	"	"
8C	8	"	"
8D	8	"	"
8E	8	"	"
9A	9	Under slate Roof	tar paper
9B	9	"	"
9C	9	"	"
10A	10	Top Roof layer	Black Tar
10B	10	"	"

***Comments/Special Instructions:**

Page 2 of ____ pages

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OrderID: 131605080

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EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605080

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
10C	10	"	"
11A	11	Top of Roof deck on Concrete	Roof Tar
11B	11	"	"
11C	11	"	"
12A	12	foundation	coating, Brown-Black
12B	12	"	"

*Comments/Special Instructions:

Page 3 of ____ pages

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OrderID: 131605074

EMSL Analytical, Inc.
7 Constitution Way, Suite 107

Woburn, MA 01801
PHONE: (781) 933-8411
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EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

131605074

Company : CDW Consultants	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 40 Speen Street; Suite 301	
City: Framingham **State/Province:** MA	**Zip/Postal Code:** 01701 **Country:** US
Report To (Name): Susan Cahalan	**Telephone #:** 5088752657
Email Address: scahalan@cdwconsultants.com	**Fax #:** **Purchase Order:**
Project Name/Number: Fernald Greenhouse	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: MA	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☒ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 9/23/16

Samplers Name: Susan Cahalan **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
1A	1	exterior windows	white glaze
1B	1	"	"
1C	1	"	"
2A	2	Roof - wooden structure	shingle
2B	2	"	"
2C	2	"	"
3A	3	Roof Greenhouse	Roof Tar
3B	3	"	"

Client Sample # (s): - **Total # of Samples:**

Relinquished (Client): **Date:** 10/16/16 **Time:**

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

fx 7747543 8427

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Page 1 of 1 pages

APPENDIX C

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201611357
CustomerID:	CDWC26
CustomerPO:	
ProjectID:	

Attn: **Susan Cahalan**
CDW Consultants
40 Speen Street
Suite 301
Framingham, MA 01701

Phone:	(508) 875-2657
Fax:	
Received:	10/18/16 10:15 AM
Collected:	

Project: **Waltham Fernald**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
LP-1-15	*201611357-0001*		10/21/2016	11 % wt
	Site: White Paint Window Frame			
LP-2-15	*201611357-0002*		10/21/2016	26 % wt
	Site: White Paint Concrete Wall			
LP-3-15	*201611357-0003*		10/21/2016	<0.010 % wt
	Site: White Paint on Brick			
LP-4-15	*201611357-0004*		10/21/2016	<0.010 % wt
	Site: Gray Paint on Concrete Wall			
LP-1-50	*201611357-0005*		10/21/2016	3.4 % wt
	Site: Red Paint Steel Columns			
LP-2-50	*201611357-0006*		10/22/2016	0.24 % wt
	Site: Blue Paint on Steel Columns			
LP-3-50	*201611357-0007*		10/21/2016	1.1 % wt
	Site: White Paint on Brick			
LP-4-50	*201611357-0008*		10/22/2016	<0.010 % wt
	Site: White Paint on Wall			
LP-1-19	*201611357-0009*		10/21/2016	37 % wt
	Site: Grey Paint Concrete Baswement			
LP-2-19	*201611357-0010*		10/21/2016	2.0 % wt
	Site: White Paint Wood Window Frame			
LP-3-19	*201611357-0011*		10/21/2016	<0.010 % wt
	Site: White Textured Ceiling			
LP-1-55	*201611357-0012*		10/21/2016	25 % wt
	Site: Blue Paint on Brick			
LP-2-55	*201611357-0013*		10/21/2016	<0.010 % wt
	Site: White Paint on Field Stones			
LP-3-55	*201611357-0014*		10/20/2016	31 % wt
	Site: White Paint on Interior Brick			
LP-1-61	*201611357-0015*		10/21/2016	0.040 % wt
	Site: White Paint on Ceiling Beams			

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 10/22/2016 12:17:21

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order: 201611357
CustomerID: CDWC26
CustomerPO:
ProjectID:

Attn: **Susan Cahalan**
CDW Consultants
40 Speen Street
Suite 301
Framingham, MA 01701

Phone: (508) 875-2657
Fax:
Received: 10/18/16 10:15 AM
Collected:

Project: **Waltham Fernald**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
LP-2-61	*201611357-0016*		10/22/2016	<0.010 % wt
	Site: Brown Paint on Radiator			
LP-3-61	*201611357-0017*		10/21/2016	<0.010 % wt
	Site: Red Paint Metal Stair Rail			
LP-4-61	*201611357-0018*		10/21/2016	11 % wt
	Site: Yellow Paint on Concrete Wall			
LP-5-61	*201611357-0019*		10/21/2016	9.3 % wt
	Site: White Paint Wall			
LP-1-53	*201611357-0020*		10/21/2016	1.4 % wt
	Site: Silver Paint on Iron Beams			
LP-1-53	*201611357-0021*		10/21/2016	1.2 % wt
	Site: Black Door Paint			
LP-1-57	*201611357-0022*		10/22/2016	30 % wt
	Site: Ext. Window Paint on Wood			
LP-2-57	*201611357-0023*		10/20/2016	14 % wt
	Site: White Paint Basement Wall			
LP-3-57	*201611357-0024*		10/21/2016	24 % wt
	Site: Blue Paint on Basement Walls			
LP-4-57	*201611357-0025*		10/21/2016	0.43 % wt
	Site: White Paint on Walls 1st Floor			
LP-1-59	*201611357-0026*		10/21/2016	<0.010 % wt
	Site: White Wall Paint			
LP-2-59	*201611357-0027*		10/21/2016	0.082 % wt
	Site: Brown Paint Door Frames			
LP-3-59	*201611357-0028*		10/21/2016	<0.010 % wt
	Site: Yellow Wall Paint			
LP-1-60	*201611357-0029*		10/20/2016	<0.010 % wt
	Site: Tan Door Paint			
LP-2-60	*201611357-0030*		10/21/2016	<0.010 % wt
	Site: Radiator Paint			

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 10/22/2016 12:17:21

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order: 201611357
CustomerID: CDWC26
CustomerPO:
ProjectID:

Attn: **Susan Cahalan**
CDW Consultants
40 Speen Street
Suite 301
Framingham, MA 01701

Phone: (508) 875-2657
Fax:
Received: 10/18/16 10:15 AM
Collected:

Project: **Waltham Fernald**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
LP-3-60	*201611357-0031*		10/22/2016	<0.010 % wt
	Site: White Wall Paint			
LP-4-60	*201611357-0032*		10/21/2016	0.010 % wt
	Site: Blue Wall Paint			
LP-1-58	*201611357-0033*		10/21/2016	<0.010 % wt
	Site: Brown Radiator Paint			
LP-2-58	*201611357-0034*		10/22/2016	<0.010 % wt
	Site: Yellow Wall Paint			
LP-3-58	*201611357-0035*		10/22/2016	0.55 % wt
	Site: Brown Paint Metal Stair Rail			
LP-1-62	*201611357-0036*		10/21/2016	<0.010 % wt
	Site: Blue Wall Paint			
LP-2-62	*201611357-0037*		10/21/2016	<0.010 % wt
	Site: Brown Paint on Radiator			
LP-3-62	*201611357-0038*		10/21/2016	<0.010 % wt
	Site: White Wall Paint			
LP-4-62	*201611357-0039*		10/21/2016	<0.010 % wt
	Site: White Hall aint			
LP-5-62	*201611357-0040*		10/21/2016	<0.010 % wt
	Site: Tan Door Frame Paint			
LP-1-20	*201611357-0041*		10/21/2016	<0.010 % wt
	Site: Pink Wall Paint			
LP-2-20	*201611357-0042*		10/21/2016	<0.010 % wt
	Site: White Wall Paint			
LP-3-20	*201611357-0043*		10/21/2016	16 % wt
	Site: White Window Frame Paint			
LP-4-20	*201611357-0044*		10/22/2016	18 % wt
	Site: Brown Exterior Shingle			
LP-1-48	*201611357-0045*		10/21/2016	<0.010 % wt
	Site: White on Concrete			

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

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EMSL Order: 201611357
CustomerID: CDWC26
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ProjectID:

Attn: **Susan Cahalan**
CDW Consultants
40 Speen Street
Suite 301
Framingham, MA 01701

Phone: (508) 875-2657
Fax:
Received: 10/18/16 10:15 AM
Collected:

Project: **Waltham Fernald**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
LP-2-48	*201611357-0046*		10/21/2016	0.039 % wt
	Site: Blue Paint on Brick			
LP-3-48	*201611357-0047*		10/21/2016	0.66 % wt
	Site: Gray Paint on Metal Pole			
LP-1-49	*201611357-0048*		10/22/2016	2.4 % wt
	Site: Green Paint Garage Door			
LP-1-32	*201611357-0049*		10/20/2016	0.010 % wt
	Site: White Paint on Concrete			
LP-2-32	*201611357-0050*		10/20/2016	0.021 % wt
	Site: Pink on Concrete			
LP-1-17	*201611357-0051*		10/22/2016	36 % wt
	Site: Window Frame Paint			
LP-1-30	*201611357-0052*		10/22/2016	0.20 % wt
	Site: Blue Wall Paint			
LP-2-30	*201611357-0053*		10/20/2016	0.011 % wt
	Site: Tan Paint on Stair Rails			
LP-3-30	*201611357-0054*		10/22/2016	<0.010 % wt
	Site: White Wall Paint			
LP-1-42	*201611357-0055*		10/20/2016	0.44 % wt
	Site: Green on Concrete			
LP-2-42	*201611357-0056*		10/20/2016	48 % wt
	Site: Tan Paint on Wall			

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

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Initial report from 10/22/2016 12:17:21

OrderID: 201611357

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID *(Lab Use Only)*: 201611357

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Company: CDW Consultants		**EMSL-Bill to:** ☐ Different ☑ Same If Bill to is Different note instructions in Comments**	
Street: 40 Speen Street, Suite 301		*Third Party Billing requires written authorization from third party*	
City: Framingham	**State/Province:** MA	**Zip/Postal Code:** 01701	**Country:** US
Report To (Name): Susan Cahalan		**Telephone #:** 5088752657	
Email Address: scahalan@cdwconsultants.com		**Fax #:**	**Purchase Order:**
Project Name/Number: Waltham Fernald		**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail	
U.S. State Samples Taken: MA		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ☐ 72 Hour | ☒ 96 Hour | ☐ 1 Week | ☐ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

Matrix	Method	Instrument	Reporting Limit	Check
Chips ☒ % by wt. ☐ mg/cm² ☐ ppm	SW846-7000B	Flame Atomic Absorption	0.01%	☒
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	☐
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	☐
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	☐
Wipe* ASTM ☐ non ASTM ☐ *If no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	☐
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	☐
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe	☐
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	☐
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)	☐
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	☐
Wastewater Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	☐
Drinking Water Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☐
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter	☐
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	☐
Other:				☐

Name of Sampler: Susan Cahalan **Signature of Sampler:**

	Sample #	Location	Volume/Area	Date/Time Sampled
1	LP-1-15	White paint window frame	-	9/23/16→10/3/16
2	LP-2-15	White paint concrete wall	-	
3	LP-3-15	White paint on brick	-	
4	LP-4-15	Gray paint on Concrete Wall	-	
5	LP-150	Red paint Steel Columns	-	

Client Sample #'s - **Total # of Samples:**

Relinquished (Client): **Date:** 10/18/16 **Time:**

Received (Lab): CUOMK **Date:** 10/18/16 **Time:** 1015 Fedex

Comments:

Page 1 of 4 pages

Martha Fernald

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID *(Lab Use Only)*: 201611357

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

	Sample #	Location	Volume/Area	Date/Time Sampled
6	LP-2-50	Blue Paint on steel Columns	-	
7	LP-3-50	White Paint on Brick	-	
8	LP-4-50	White Paint on Wall	-	
9	LP-1-19	Gray Paint Concrete basement	-	
10	LP-2-19	White Paint wood window frame	-	
11	LP-3-19	White textured ceiling	-	
12	LP-1-55	Blue Paint on brick	-	
13	LP-2-55	White Paint on fieldstone	-	
14	LP-3-55	White Paint on interior brick	-	
15	LP-1-61	White Paint on ceiling beams	-	
16	LP-2-61	Brown Paint on radiator	-	
17	LP-3-61	Red Paint Metal Stair rail	-	
18	LP-4-61	Yellow Paint on Concrete wall	-	
19	LP-5-61	White Paint wall	-	
20	LP-1-53	Silver Paint on I-Beams	-	
21	LP-1-53	Black door paint	-	
22	LP-1-57	Ext. window Paint on wood	-	
23	LP-2-57	White Paint Basement wall	-	

Comments/Special Instructions:

Page 2 of 4 pages

Waltham fernald

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID *(Lab Use Only)*:

201611357

EMSL Analytical, Inc.
200 Route 130 North

Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

	Sample #	Location	Volume/Area	Date/Time Sampled
24	LP-3-57	Blue paint on basement wall	–	
25	LP-4-57	White paint on walls 1st floor	–	
26	LP-1-59	White wall paint	–	
27	LP-2-59	Brown paint Door frames	–	
28	LP-3-59	Yellow wall paint	–	
29	LP-1-60	Tan door paint	–	
30	LP-2-60	Radiator paint	–	
31	LP-3-60	white wall paint	–	
32	LP-4-60	Blue wall paint	–	
33	LP-1-58	Brown Radiator paint	–	
34	LP-2-58	Yellow wall paint	–	
35	LP-3-58	Brown paint Metal stair rail	–	
36	LP-1-62	Blue wall paint	–	
37	LP-2-62	Brown paint on Radiator	–	
38	LP-3-62	White wall paint	–	
39	LP-4-62	White Hall paint	–	
40	LP-5-62	Tan door frame paint	–	
41	LP-1-20	Pink wall paint	–	

Comments/Special Instructions:

Page 3 of 4 pages

OrderID: 201611357

Waltham Fernald

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID *(Lab Use Only)*: 201611357

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

	Sample #	Location	Volume/Area	Date/Time Sampled
42	LP-2-20	White wall paint	-	
43	LP-3-20	White window frame paint	-	
44	LP-4-20	Brown exterior shingle	-	
45	LP-1-48	White on concrete	-	
46	LP-2-49	Blue paint on brick	-	
47	LP-3-48	Gray paint on Metal pole	-	
48	LP-1-49	Green paint garage door	-	
49	LP-1-32	White paint on Concrete	-	
50	LP-2-32	Brick on concrete	-	
51	LP-1-17	Window frame Paint	-	
52	LP-1-30	Blue wall paint	-	
53	LP-230	Tan Paint on Stair rails	-	
54	LP-3-30	White wall Paint	-	
55	LP-1-42	Green on Concrete	-	
56	LP-2-42	Tan Paint on wall	-	

Comments/Special Instructions:

Page 4 of 4 pages

APPENDIX D

PHOENIX
Environmental Laboratories, Inc.

Thursday, October 27, 2016

Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Project ID: FERNALD WALTHAM
Sample ID#s: BV56923 - BV56938, BV56940 - BV56960, BV56962 - BV56978

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

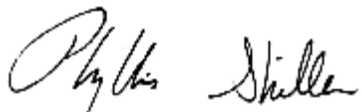
This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,



Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56923

Project ID: FERNALD WALTHAM
Client ID: PCB-1-50 DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	70		%	2	10/20/16	AW	40 - 140 %
% TCMX	55		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

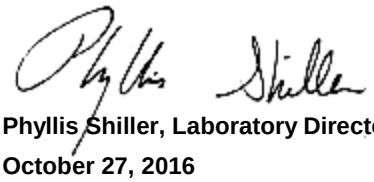
RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56924

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-50 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1221	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1232	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1242	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1248	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1254	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1260	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1262	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1268	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	86		%	2	10/24/16	AW	40 - 140 %
% TCMX	68		%	2	10/24/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

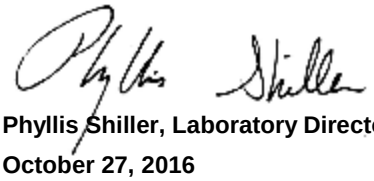
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, due to matrix interference from non target compounds in the sample an elevated RL was reported. Multiple cleanup steps were performed but were unsuccessful. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56925

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-50 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1221	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1232	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1242	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1248	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1254	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1260	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1262	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1268	ND	1.4	mg/Kg	2	10/24/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	80		%	2	10/24/16	AW	40 - 140 %
% TCMX	62		%	2	10/24/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, due to matrix interference from non target compounds in the sample an elevated RL was reported. Multiple cleanup steps were performed but were unsuccessful. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56926

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-50 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1221	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1232	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1242	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1248	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1254	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1260	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1262	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
PCB-1268	ND	1	mg/Kg	2	10/24/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	48		%	2	10/24/16	AW	40 - 140 %
% TCMX	40		%	2	10/24/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

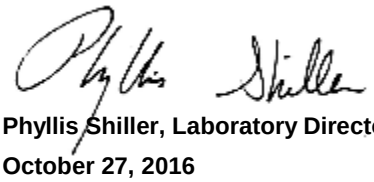
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, in order to reach the desired RL, multiple cleanup steps were performed. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56927

Project ID: FERNALD WALTHAM
Client ID: PCB-3-50 EXT JOINT FLOOR

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1221	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1232	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1242	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1248	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1254	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1260	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1262	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1268	ND	19	mg/Kg	50	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	Diluted Out		%	50	10/20/16	AW	40 - 140 %
% TCMX	Diluted Out		%	50	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

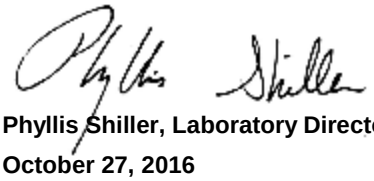
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56928

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-15 EXTERIOR WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C	
PCB (Soxhlet SW3540C)								
PCB-1016	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1221	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1232	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1242	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1248	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1254	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1260	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1262	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
PCB-1268	ND	0.56	mg/Kg	2	10/21/16	AW	SW8082A	
QA/QC Surrogates								
% DCBP	50		%	2	10/21/16	AW	40 - 140 %	
% TCMX	38		%	2	10/21/16	AW	40 - 140 %	3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

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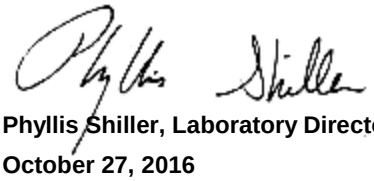

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56929

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-15 EXTERIOR WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	3.3	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	47		%	10	10/20/16	AW	40 - 140 %
% TCMX	41		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-15 EXTERIOR WINDOW CAULK

Phoenix I.D.: BV56929

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

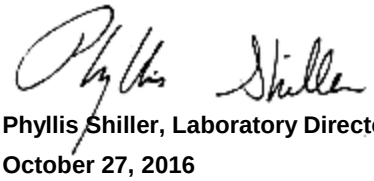
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56930

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-15 EXTERIOR WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/21/16	Q/I	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1221	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1232	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1242	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1248	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1254	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1260	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1262	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
PCB-1268	ND	0.63	mg/Kg	2	10/26/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	62		%	2	10/26/16	AW	40 - 140 %
% TCMX	58		%	2	10/26/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

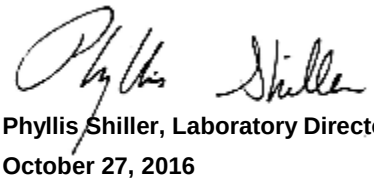
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, in order to reach the desired RL, multiple cleanup steps were performed. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56931

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-15 EXTERIOR WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C	
PCB (Soxhlet SW3540C)								
PCB-1016	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1221	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1232	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1242	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1248	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1254	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1260	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1262	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1268	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A	
QA/QC Surrogates								
% DCBP	35		%	2	10/20/16	AW	40 - 140 %	3
% TCMX	30		%	2	10/20/16	AW	40 - 140 %	3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56932

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-15 EXTERIOR WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference	
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C	
PCB (Soxhlet SW3540C)								
PCB-1016	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1221	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1232	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1242	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1248	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1254	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1260	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1262	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
PCB-1268	ND	0.42	mg/Kg	2	10/20/16	AW	SW8082A	
QA/QC Surrogates								
% DCBP	41		%	2	10/20/16	AW	40 - 140 %	
% TCMX	34		%	2	10/20/16	AW	40 - 140 %	3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

3 = This parameter exceeds laboratory specified limits.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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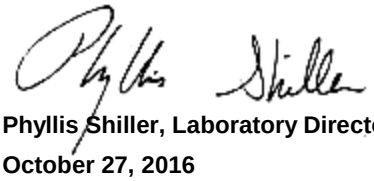

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56933

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-15 EXTERIOR WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.39	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	66		%	2	10/20/16	AW	40 - 140 %
% TCMX	51		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-15 EXTERIOR WINDOW GLAZE

Phoenix I.D.: BV56933

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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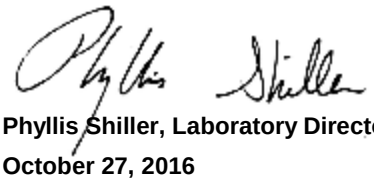


Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56934

Project ID: FERNALD WALTHAM
Client ID: PCB-3A-15 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1221	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1232	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1242	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1248	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1254	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1260	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1262	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1268	ND	2.2	mg/Kg	10	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	104		%	10	10/21/16	AW	40 - 140 %
% TCMX	74		%	10	10/21/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

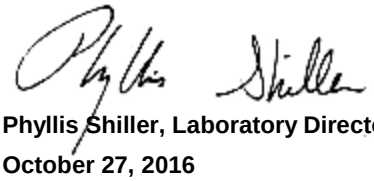
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56935

Project ID: FERNALD WALTHAM
Client ID: PCB-3B-15 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1221	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1232	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1242	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1248	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1254	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1260	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1262	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
PCB-1268	ND	10	mg/Kg	50	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	Diluted Out		%	50	10/20/16	AW	40 - 140 %
% TCMX	Diluted Out		%	50	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-3B-15 GREEN PAINT

Phoenix I.D.: BV56935

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

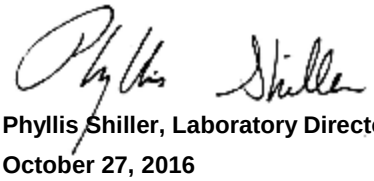
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56936

Project ID: FERNALD WALTHAM
Client ID: PCB-3C-15 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1221	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1232	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1242	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1248	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1254	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1260	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1262	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
PCB-1268	ND	2.6	mg/Kg	10	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	107		%	10	10/21/16	AW	40 - 140 %
% TCMX	83		%	10	10/21/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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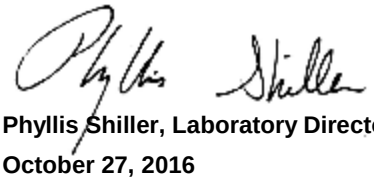


Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56937

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-42 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	4.6	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	94		%	10	10/20/16	AW	40 - 140 %
% TCMX	78		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-42 GREEN PAINT

Phoenix I.D.: BV56937

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

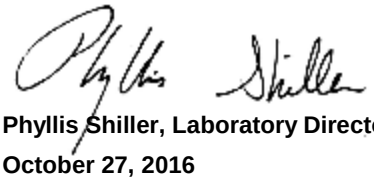
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56938

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-42 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	3.4	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	90		%	10	10/20/16	AW	40 - 140 %
% TCMX	77		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-42 GREEN PAINT

Phoenix I.D.: BV56938

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

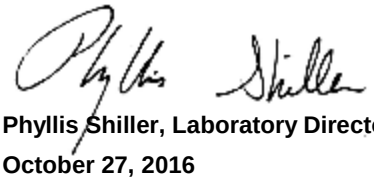
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56940

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-42 WHITE PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	0.94	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	93		%	10	10/20/16	AW	40 - 140 %
% TCMX	74		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-42 WHITE PAINT

Phoenix I.D.: BV56940

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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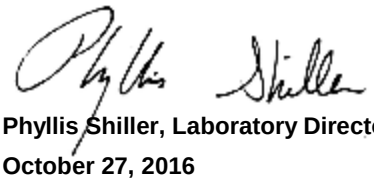

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56941

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-42 WHITE PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	0.95	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	94		%	10	10/20/16	AW	40 - 140 %
% TCMX	78		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-42 WHITE PAINT

Phoenix I.D.: BV56941

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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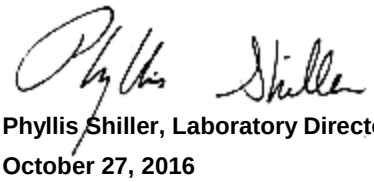

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56942

Project ID: FERNALD WALTHAM
Client ID: PCB-1-32 WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.44	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	90		%	2	10/20/16	AW	40 - 140 %
% TCMX	78		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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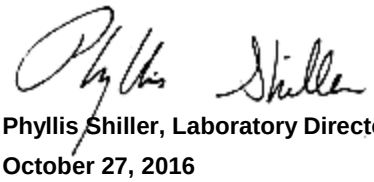

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56943

Project ID: FERNALD WALTHAM
Client ID: PCB-1-49 WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.38	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	83		%	2	10/20/16	AW	40 - 140 %
% TCMX	54		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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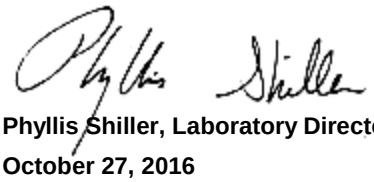

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56944

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-62 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.73	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	74		%	2	10/20/16	AW	40 - 140 %
% TCMX	63		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-62 EXT DOOR CAULK

Phoenix I.D.: BV56944

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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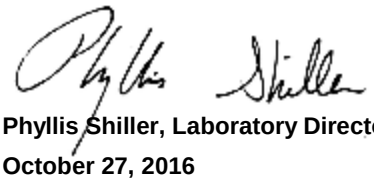

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56945

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-62 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	67		%	2	10/20/16	AW	40 - 140 %
% TCMX	59		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-62 EXT DOOR CAULK

Phoenix I.D.: BV56945

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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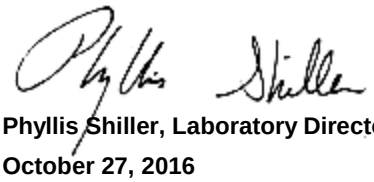

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56946

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-62 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	63		%	2	10/20/16	AW	40 - 140 %
% TCMX	56		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-62 EXT DOOR CAULK

Phoenix I.D.: BV56946

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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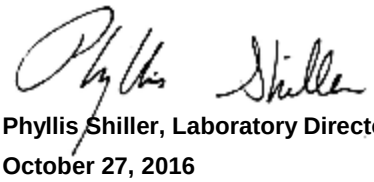

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56947

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-62 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	1	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	73		%	2	10/20/16	AW	40 - 140 %
% TCMX	59		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-62 EXT WINDOW CAULK

Phoenix I.D.: BV56947

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
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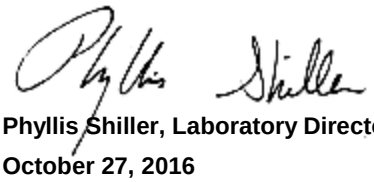

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56948

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-62 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.53	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	74		%	2	10/20/16	AW	40 - 140 %
% TCMX	61		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56949

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-62 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.57	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	79		%	2	10/20/16	AW	40 - 140 %
% TCMX	77		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56950

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-58 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	70		%	2	10/20/16	AW	40 - 140 %
% TCMX	60		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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Comments:

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October 27, 2016
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56951

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-58 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.4	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	76		%	2	10/20/16	AW	40 - 140 %
% TCMX	63		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

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October 27, 2016
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Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56952

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-58 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.46	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	63		%	2	10/21/16	AW	40 - 140 %
% TCMX	47		%	2	10/21/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-58 EXT WINDOW GLAZE

Phoenix I.D.: BV56952

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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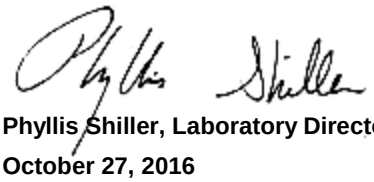

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56953

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-60 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	66		%	2	10/21/16	AW	40 - 140 %
% TCMX	55		%	2	10/21/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
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40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56954

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-60 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	71		%	2	10/20/16	AW	40 - 140 %
% TCMX	66		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56955

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-60 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.67	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	62		%	2	10/21/16	AW	40 - 140 %
% TCMX	51		%	2	10/21/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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October 27, 2016
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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56956

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-60 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.99	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	72		%	2	10/20/16	AW	40 - 140 %
% TCMX	62		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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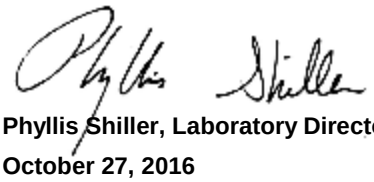

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56957

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-60 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.53	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	68		%	2	10/21/16	AW	40 - 140 %
% TCMX	57		%	2	10/21/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-60 EXT DOOR CAULK

Phoenix I.D.: BV56957

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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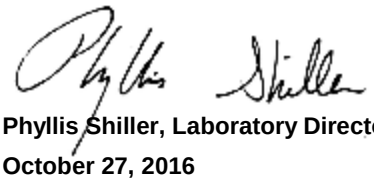

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56958

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-60 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.79	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	62		%	2	10/21/16	AW	40 - 140 %
% TCMX	52		%	2	10/21/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-60 EXT DOOR CAULK

Phoenix I.D.: BV56958

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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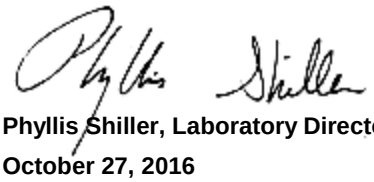

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56959

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-59 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1221	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1232	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1242	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1248	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1254	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1260	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1262	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1268	ND	6.8	mg/Kg	20	10/24/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	78		%	20	10/24/16	AW	40 - 140 %
% TCMX	66		%	20	10/24/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, due to matrix interference from non target compounds in the sample an elevated RL was reported. Multiple cleanup steps were performed but were unsuccessful. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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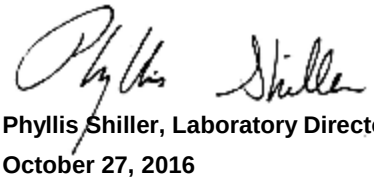

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

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587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56960

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-59 EXT DOOR CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1221	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1232	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1242	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1248	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1254	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1260	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1262	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
PCB-1268	ND	7.6	mg/Kg	20	10/24/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	79		%	20	10/24/16	AW	40 - 140 %
% TCMX	65		%	20	10/24/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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Comments:

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PCB Comment:
For PCBs, due to matrix interference from non target compounds in the sample an elevated RL was reported. Multiple cleanup steps were performed but were unsuccessful. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

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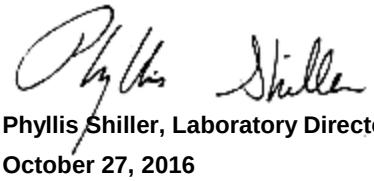

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56962

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-57 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	2.4	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.74	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	79		%	2	10/20/16	AW	40 - 140 %
% TCMX	57		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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October 27, 2016
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56963

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-57 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	2.9	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.75	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	80		%	2	10/20/16	AW	40 - 140 %
% TCMX	59		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-57 EXT WINDOW CAULK

Phoenix I.D.: BV56963

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

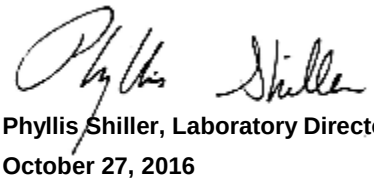
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, in order to reach the desired RL, multiple cleanup steps were performed. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56964

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-57 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	2.8	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	2	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	73		%	10	10/20/16	AW	40 - 140 %
% TCMX	50		%	10	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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October 27, 2016
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Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56965

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-57 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.31	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	72		%	2	10/20/16	AW	40 - 140 %
% TCMX	69		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56966

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-57 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.29	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	72		%	2	10/20/16	AW	40 - 140 %
% TCMX	60		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

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October 27, 2016
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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56967

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-57 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.68	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	76		%	2	10/20/16	AW	40 - 140 %
% TCMX	56		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-57 EXT WINDOW GLAZE

Phoenix I.D.: BV56967

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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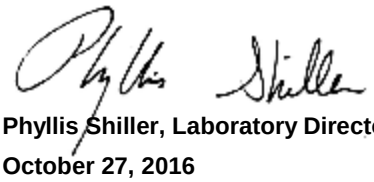

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56968

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-61 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.93	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	70		%	2	10/20/16	AW	40 - 140 %
% TCMX	58		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-61 EXT WINDOW CAULK

Phoenix I.D.: BV56968

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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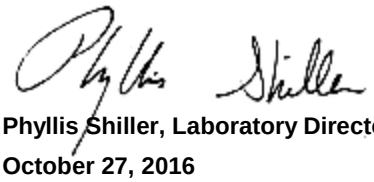

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56969

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-61 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.89	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	75		%	2	10/20/16	AW	40 - 140 %
% TCMX	62		%	2	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56970

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-61 EXT WINDOW CAULK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.88	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	73		%	2	10/20/16	AW	40 - 140 %
% TCMX	56		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1C-61 EXT WINDOW CAULK

Phoenix I.D.: BV56970

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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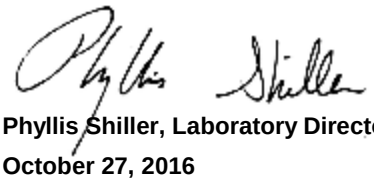

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56971

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-61 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.33	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	75		%	2	10/20/16	AW	40 - 140 %
% TCMX	58		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-61 EXT WINDOW GLAZE

Phoenix I.D.: BV56971

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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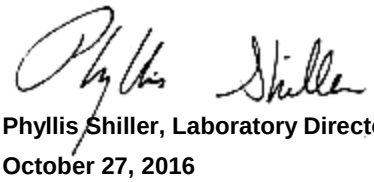

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56972

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-61 EXT WINDOW GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.32	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	70		%	2	10/20/16	AW	40 - 140 %
% TCMX	53		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-61 EXT WINDOW GLAZE

Phoenix I.D.: BV56972

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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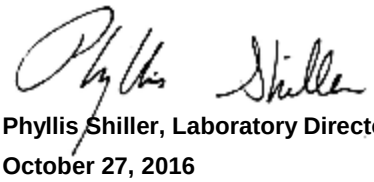

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56973

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-61 EXT GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1221	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1232	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1242	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1248	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1254	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1260	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1262	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
PCB-1268	ND	0.43	mg/Kg	2	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	75		%	2	10/20/16	AW	40 - 140 %
% TCMX	57		%	2	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-61 EXT GLAZE

Phoenix I.D.: BV56973

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

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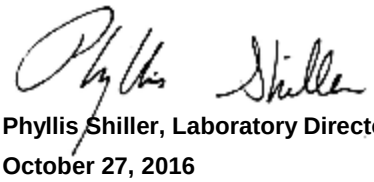


Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56974

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-55 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1221	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1232	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1242	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1248	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1254	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1260	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1262	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
PCB-1268	ND	22	mg/Kg	100	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	Diluted Out		%	100	10/20/16	AW	40 - 140 %
% TCMX	Diluted Out		%	100	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-1A-55 GREEN PAINT

Phoenix I.D.: BV56974

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

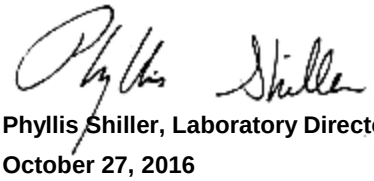
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56975

Project ID: FERNALD WALTHAM
Client ID: PCB-1B-55 GREEN PAINT

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1221	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1232	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1242	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1248	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1254	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1260	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1262	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
PCB-1268	ND	230	mg/Kg	1000	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	Diluted Out		%	1000	10/20/16	AW	40 - 140 %
% TCMX	Diluted Out		%	1000	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
For PCBs, due to matrix interference from non target compounds in the sample an elevated RL was reported. Multiple cleanup steps were performed but were unsuccessful. The extract was cleaned up with a combination of sulfuric acid, potassium permanganate, copper powder and additional florisil.

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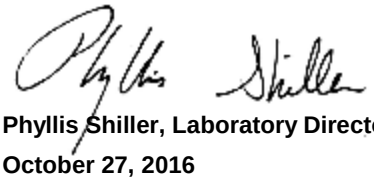


Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56976

Project ID: FERNALD WALTHAM
Client ID: PCB-2A-55 EXT OOR GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1221	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1232	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1242	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1248	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1254	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1260	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1262	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
PCB-1268	ND	2.9	mg/Kg	20	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	96		%	20	10/20/16	AW	40 - 140 %
% TCMX	90		%	20	10/20/16	AW	40 - 140 %

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

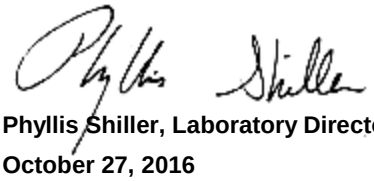
Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

PCB Comment:
Due to the presence of what appears to be Chlordane in the sample which co-elutes with the PCBs, an elevated RL was reported.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56977

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-55 EXT DOOR GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1221	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1232	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1242	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1248	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1254	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1260	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1262	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
PCB-1268	ND	0.38	mg/Kg	2	10/21/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	70		%	2	10/21/16	AW	40 - 140 %
% TCMX	55		%	2	10/21/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2B-55 EXT DOOR GLAZE

Phoenix I.D.: BV56977

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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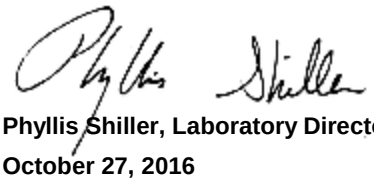

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 27, 2016

FOR: Ms. Susan Cahalan
CDW Consultants, Inc
40 Speen Street
Suite 301
Framingham, MA 01701

Sample Information		Custody Information		Date	Time
Matrix:	SOLID	Collected by:		10/05/16	
Location Code:	CDW-PCB	Received by:	B	10/19/16	15:02
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GBV56923
Phoenix ID: BV56978

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-55 EXT DOOR GLAZE

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Caulk Extraction for PCB	Completed				10/19/16	Q/IR	SW3540C
PCB (Soxhlet SW3540C)							
PCB-1016	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1221	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1232	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1242	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1248	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1254	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1260	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1262	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
PCB-1268	ND	0.92	mg/Kg	10	10/20/16	AW	SW8082A
QA/QC Surrogates							
% DCBP	105		%	10	10/20/16	AW	40 - 140 %
% TCMX	77		%	10	10/20/16	AW	40 - 140 %

Project ID: FERNALD WALTHAM
Client ID: PCB-2C-55 EXT DOOR GLAZE

Phoenix I.D.: BV56978

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

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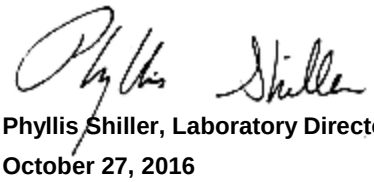

Phyllis Shiller, Laboratory Director
October 27, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 27, 2016

QA/QC Data

SDG I.D.: GBV56923

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 363657 (mg/Kg), QC Sample No: BV42382 10X (BV56930)										
Polychlorinated Biphenyls - Solid										
PCB-1016	ND	0.17	74	89	18.4	92	94	2.2	40 - 140	30
PCB-1221	ND	0.17							40 - 140	30
PCB-1232	ND	0.17							40 - 140	30
PCB-1242	ND	0.17							40 - 140	30
PCB-1248	ND	0.17							40 - 140	30
PCB-1254	ND	0.17							40 - 140	30
PCB-1260	ND	0.17	83	92	10.3	120	105	13.3	40 - 140	30
PCB-1262	ND	0.17							40 - 140	30
PCB-1268	ND	0.17							40 - 140	30
% DCBP (Surrogate Rec)	100	%	85	96	12.2	92	94	2.2	40 - 140	30
% TCMX (Surrogate Rec)	63	%	72	83	14.2	88	90	2.2	40 - 140	30
QA/QC Batch 363457 (mg/Kg), QC Sample No: BV56923 10X (BV56923, BV56924, BV56925, BV56926, BV56927, BV56928, BV56929, BV56931, BV56932, BV56933, BV56934, BV56935, BV56936, BV56937, BV56938, BV56940, BV56941, BV56942, BV56943)										
Polychlorinated Biphenyls - Solid										
PCB-1016	ND	0.17	74	95	24.9				40 - 140	30
PCB-1221	ND	0.17							40 - 140	30
PCB-1232	ND	0.17							40 - 140	30
PCB-1242	ND	0.17							40 - 140	30
PCB-1248	ND	0.17							40 - 140	30
PCB-1254	ND	0.17							40 - 140	30
PCB-1260	ND	0.17	93	101	8.2				40 - 140	30
PCB-1262	ND	0.17							40 - 140	30
PCB-1268	ND	0.17							40 - 140	30
% DCBP (Surrogate Rec)	90	%	96	106	9.9				40 - 140	30
% TCMX (Surrogate Rec)	79	%	87	95	8.8				40 - 140	30

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 363469 (mg/Kg), QC Sample No: BV56944 10X (BV56944, BV56945, BV56946, BV56947, BV56948, BV56949, BV56950, BV56951, BV56952, BV56953, BV56954, BV56955, BV56956, BV56957, BV56958, BV56959, BV56960, BV56962, BV56963, BV56964)										
Polychlorinated Biphenyls - Solid										
PCB-1016	ND	0.17	93	91	2.2				40 - 140	30
PCB-1221	ND	0.17							40 - 140	30
PCB-1232	ND	0.17							40 - 140	30
PCB-1242	ND	0.17							40 - 140	30
PCB-1248	ND	0.17							40 - 140	30
PCB-1254	ND	0.17							40 - 140	30
PCB-1260	ND	0.17	97	96	1.0				40 - 140	30
PCB-1262	ND	0.17							40 - 140	30
PCB-1268	ND	0.17							40 - 140	30

QA/QC Data

SDG I.D.: GBV56923

Parameter	Blank	Blk RL		LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
% DCBP (Surrogate Rec)	96	%		105	109	3.7				40 - 140	30
% TCMX (Surrogate Rec)	86	%		98	97	1.0				40 - 140	30

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

QA/QC Batch 363470 (mg/Kg), QC Sample No: BV58803 10X (BV56965, BV56966, BV56967, BV56968, BV56969, BV56970, BV56971, BV56972, BV56973, BV56974, BV56975, BV56976, BV56977, BV56978)

Polychlorinated Biphenyls - Solid

PCB-1016	ND	0.17		80	77	3.8	83	82	1.2	40 - 140	30
PCB-1221	ND	0.17								40 - 140	30
PCB-1232	ND	0.17								40 - 140	30
PCB-1242	ND	0.17								40 - 140	30
PCB-1248	ND	0.17								40 - 140	30
PCB-1254	ND	0.17								40 - 140	30
PCB-1260	ND	0.17		96	81	16.9	86	84	2.4	40 - 140	30
PCB-1262	ND	0.17								40 - 140	30
PCB-1268	ND	0.17								40 - 140	30
% DCBP (Surrogate Rec)	109	%		107	95	11.9	104	104	0.0	40 - 140	30
% TCMX (Surrogate Rec)	72	%		70	83	17.0	95	94	1.1	40 - 140	30

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 27, 2016

Sample Criteria Exceedances Report

GBV56923 - CDW-PCB

Criteria: None

State: MA

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Pg 1 of 5

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Cooler: Yes ☑ No ☐
Coolant: IPK ☐ ICE ☑ No ☐
Temp 1 °C Pg of

Data Delivery:
☐ Fax #:
☐ Email:

Customer: CDM Consultants
Address: 40 Speen St, Suite 301, Framingham MA

Project: Fernald, Waltham
Report to: Susan Cahalan
Invoice to: CDM
Phone #: 508 875 2657
Fax #: –

Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature
Date: 9/17/16

Client Sample Information - Identification

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	PCBs 8082 Soxhlet	Baggie	Soil VOA Vials [ ] methanol [ ] H_2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H_2SO_4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H_2SO_4 [ ] 250ml [ ] 500ml [ ] 1500ml	PL HNO_3 250ml	PL NaOH 250ml	Bacteria Bottle
56923	PCB-1-50 Duct Caulk	SD	10/5/16	–	X							1				
56924	PCB-2A-50 Ext Window Caulk			–	X							1				
56925	PCB-2B-50 "			–	X							1				
56926	PCB-2C-50 "			–	X							1				
56927	PCB-3-50 Exp Joint Flock			–	X							1				
56928	PCB-1A-15 Exterior Window Caulk			–	X							1				
56929	PCB-1B-15 "			–	X							1				
56930	PCB-1C-15 "			–	X							1				
56931	PCB-2A-15 Ext Window Glaze			–	X							1				
56932	PCB-2B-15 "			–	X							1				
56933	PCB-2C-15 "			–	X							1				
56934	PCB-3A-15 Green Paint	↓	↓	–	X							1				

Relinquished by:	Accepted by:	Date:	Time:
		10-19-16	13:10
	Melissa Pelli	10-19-16	15:02

Comments, Special Requirements or Regulations:
TSCA Detection Limits

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days* By 10/26/16
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

Cooler: Yes ☑ No ☐
Coolant: IPK ☐ ICE ☑ No ☐

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 1 °C Pg of

Data Delivery:
☐ Fax #:
☐ Email:

Customer: See pg 1
Address:

Project: See pg 1
Report to:
Invoice to:
Phone #:
Fax #:

Project P.O:

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request: PCBs 8082 Soxhlet

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
56935	PCB-3B-15 green paint	SD	10/5/16	–		X								
56936	PCB-3C-15 green paint			–		X								
56937	PCB-1A-42 Green Paint			–		X								
56938	PCB-1B-42 "			–		X								
56940	PCB-2A-42 white paint			–		X								
56941	PCB-2B-42 "			–		X								
56942	PCB-1-32 window glaze			–		X								
56943	PCB-1-49 window glaze			–		X								
56944	PCB-1A-62 ext door caulk			–		X								
56945	PCB-1B-62 "			–		X								
56946	PCB-1C-62 "			–		X								
56947	PCB-2A-62 ext window caulk	↓		–		X								

Relinquished by:	Accepted by:	Date:	Time:
		10/9/16	13:10
	Seneca PLL	10.14.16	15:02

Comments, Special Requirements or Regulations:
See pg 1

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ Standard See pg 1
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: _____

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

* SURCHARGE APPLIES

Pg 3 of 5

Cooler: Yes [✓] No [ ]
Coolant: IPK [ ] ICE [✓] No [ ]

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 1 °C Pg of

Data Delivery:
[ ] Fax #:
[ ] Email:

Customer: See Pg 1
Address:

Project: See page 1
Report to:
Invoice to:
Phone #:
Fax #:

Project P.O:

This section MUST be completed with Bottle Quantities.

Client Sample Information - Identification

Sampler's Signature: Date: 10/17/16

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	PCBs 9082 Soxhlet	PAH 8270 C	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [ ] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
56948	PCB-2B-60 ext window caulk	SD	10/17/16	—	X							1				
56949	PCB-2C-60 "	SD		—	X							1				
56950	PCB-1A-50 ext. window glaze			—	X							1				
56951	PCB-1B-50 "			—	X							1				
56952	PCB-1C-50 "			—	X							1				
56953	PCB-1A-60 ext. window caulk			—	X							1				
56954	PCB-1B-60 "			—	X							1				
56955	PCB-1C-60 "			—	X							1				
56956	PCB-2A-60 ext door caulk			—	X							1				
56957	PCB-2B-60 "			—	X							1				
56958	PCB-2C-60 "			—	X							1				
56959	PCB-1A-59 ext door caulk			—	X							1				

Relinquished by:	Accepted by:	Date:	Time:
		10/19/16	13:20
		10/14-16	15:02

Comments, Special Requirements or Regulations:
See Pg 1

Turnaround: See Pg 1
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[ ] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] Direct Exposure (Residential)
[ ] GW
[ ] Other

CT
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1
[ ] GW-2
[ ] GW-3
[ ] S-1
[ ] S-2
[ ] S-3
[ ] MWRA eSMART
[ ] Other

State where samples were collected: _____

Data Format
[ ] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other

* SURCHARGE APPLIES

Pg 4 of 5

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Cooler: Yes ☑ No ☐
Coolant: IPK ☐ ICE ☑ No ☐
Temp 1 °C Pg of

Data Delivery:
☐ Fax #:
☐ Email:

Customer: See Pg 1
Address:

Project: See Pg 1
Report to:
Invoice to:
Phone #:
Fax #:

Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature
Date: 10/17/16

Client Sample - Information - Identification

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PCBs 8082 Full List

Soil VOA Vials [ ] methanol [ ] H_2O
GL Soil container ( ) oz
GL Soil container ( ) oz
40 ml VOA Vial [ ] As is [ ] HCl
GL Amber 1000ml [ ] As is [ ] H_2SO_4
PL As is [ ] 250ml [ ] 500ml [ ] 1000ml
PL H_2SO_4 [ ] 250ml [ ] 500ml
PL HNO_3 250ml
PL NaOH 250ml
Bacteria Bottle

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled
569160	RB-1B-S7 ext door caulk	SL		
569162	RB-1A-S7 ext window caulk			
569163	RB-1B-S7 "			
569164	RB-1C-S7 "			
569165	RB-2A-S7 ext. window glaze			
569166	RB-2B-S7 "			
569167	RB-2C-S7 "			
569168	RB-1A-61 ext under caulk			
569169	RB-1B-61 "			
569170	RB-1C-61 "			
569171	RB-2A-61 ext window glaze			
569172	RB-2B-61 "			

Relinquished by:	Accepted by:	Date:	Time:
		10/18/16	13:40
		10-19-16	15:02

Comments, Special Requirements or Regulations:

See Pg 4

Turnaround: See Pg 1
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Cooler: Yes ☑ No ☐
Coolant: IPK ☐ ICE ☑ No ☐
Temp 1 °C Pg of

Data Delivery:
☐ Fax #:
☐ Email:

Customer: See Pg 1
Address:

Project: See Pg 1
Report to:
Invoice to:
Phone #:
Fax #:

Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature
Date: 10/7/16

Client Sample - Information - Identification

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Soil VOA Vials [ ]	Methanol [ ]	H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ]	GL Amber 1000ml [ ]	As is [ ]	HCl	PL As is [ ] 250ml [ ]	As is [ ]	H2SO4	PL H2SO4 [ ] 250ml [ ]	500ml [ ]	1000ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle
56973	RCB-2C-01 EXT Glare	SO	10/5/16	—	X														1			
56974	RB-1A-55 green pearl-ST			—	X														1			
56975	RCB-1B-55 "			—	X														1			
56976	RB-2A-55 EXT Window Glare			—	X														1			
56977	RCB-2B-55 "			—	X														1			
56978	RCB-2C-55 "			—	X														1			

Relinquished by:	Accepted by:	Date:	Time:
		10/9/16	13:10
		10/9-16	15:02

Comments, Special Requirements or Regulations:
See Pg 1

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☐ Standard
☐ Other
* SURCHARGE APPLIES
See Pg 1

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

APPENDIX K5

APPENDIX A

Traffic Counts

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759B
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	0	0	1	0	45	0	0	0	0	0	0	0	43	0	0	89
06:15 AM	0	0	0	0	0	54	0	0	0	0	0	2	0	72	0	0	128
06:30 AM	0	0	0	1	0	78	0	0	0	0	0	0	0	74	0	0	153
06:45 AM	0	0	0	0	0	89	0	0	0	0	0	1	0	105	0	0	195
Total	0	0	0	2	0	266	0	0	0	0	0	3	0	294	0	0	565
07:00 AM	0	0	0	0	0	110	0	0	0	0	0	0	0	100	0	0	210
07:15 AM	0	0	0	1	0	125	0	0	0	0	0	0	0	98	0	0	224
07:30 AM	0	0	0	3	0	134	0	0	0	0	0	0	0	109	0	0	246
07:45 AM	0	0	0	4	0	143	0	0	0	0	0	0	0	143	0	0	290
Total	0	0	0	8	0	512	0	0	0	0	0	0	0	450	0	0	970
08:00 AM	0	0	0	6	0	141	0	0	0	0	0	0	0	124	0	0	271
08:15 AM	0	0	0	4	0	141	0	0	0	0	0	2	0	132	0	0	279
08:30 AM	0	0	0	5	0	165	0	0	0	0	0	0	0	121	0	0	291
08:45 AM	0	0	0	4	0	179	0	0	0	0	0	0	0	142	0	0	325
Total	0	0	0	19	0	626	0	0	0	0	0	2	0	519	0	0	1166
09:00 AM	0	0	0	0	0	159	0	0	0	0	0	0	0	120	0	0	279
09:15 AM	0	0	0	1	0	151	0	0	0	0	0	1	0	103	0	0	256
09:30 AM	0	0	0	1	0	136	0	0	0	0	0	0	2	100	0	0	239
09:45 AM	0	0	0	0	0	108	0	0	0	0	0	0	0	98	0	0	206
Total	0	0	0	2	0	554	0	0	0	0	0	1	2	421	0	0	980
Grand Total	0	0	0	31	0	1958	0	0	0	0	0	6	2	1684	0	0	3681
Apprch %	0	0	0	100	0	100	0	0	0	0	0	100	0.1	99.9	0	0	
Total %	0	0	0	0.8	0	53.2	0	0	0	0	0	0.2	0.1	45.7	0	0	
Cars & Peds	0	0	0	31	0	1904	0	0	0	0	0	6	2	1637	0	0	3580
% Cars & Peds	0	0	0	100	0	97.2	0	0	0	0	0	100	100	97.2	0	0	97.3
Trucks & Buses	0	0	0	0	0	43	0	0	0	0	0	0	0	41	0	0	84
% Trucks & Buses	0	0	0	0	0	2.2	0	0	0	0	0	0	0	2.4	0	0	2.3
Bikes by Direction	0	0	0	0	0	11	0	0	0	0	0	0	0	6	0	0	17
% Bikes by Direction	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0.4	0	0	0.5

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	0	0	0	4	4	0	141	0	0	141	0	0	0	**2**	**2**	0	132	0	0	132	279
08:30 AM	0	0	0	**5**	**5**	0	165	0	0	165	0	0	0	0	0	0	121	0	0	121	291
08:45 AM	0	0	0	4	4	0	**179**	0	0	**179**	0	0	0	0	0	0	**142**	0	0	**142**	**325**
09:00 AM	0	0	0	0	0	0	159	0	0	159	0	0	0	0	0	0	120	0	0	120	279
Total Volume	0	0	0	13	13	0	644	0	0	644	0	0	0	2	2	0	515	0	0	515	1174
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.650	.650	.000	.899	.000	.000	.899	.000	.000	.000	.250	.250	.000	.907	.000	.000	.907	.903
Cars & Peds	0	0	0	13	13	0	633	0	0	633	0	0	0	2	2	0	495	0	0	495	1143
% Cars & Peds	0	0	0	100	100	0	98.3	0	0	98.3	0	0	0	100	100	0	96.1	0	0	96.1	97.4
Trucks & Buses	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	17	0	0	17	25
% Trucks & Buses	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	3.3	0	0	3.3	2.1
Bikes by Direction	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
% Bikes by Direction	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.6	0	0	0.6	0.5

Transportation Data Corporation

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759B
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	0	0	1	0	45	0	0	0	0	0	0	0	42	0	0	88
06:15 AM	0	0	0	0	0	51	0	0	0	0	0	2	0	71	0	0	124
06:30 AM	0	0	0	1	0	71	0	0	0	0	0	0	0	73	0	0	145
06:45 AM	0	0	0	0	0	81	0	0	0	0	0	1	0	103	0	0	185
Total	0	0	0	2	0	248	0	0	0	0	0	3	0	289	0	0	542
07:00 AM	0	0	0	0	0	107	0	0	0	0	0	0	0	98	0	0	205
07:15 AM	0	0	0	1	0	123	0	0	0	0	0	0	0	97	0	0	221
07:30 AM	0	0	0	3	0	129	0	0	0	0	0	0	0	107	0	0	239
07:45 AM	0	0	0	4	0	139	0	0	0	0	0	0	0	140	0	0	283
Total	0	0	0	8	0	498	0	0	0	0	0	0	0	442	0	0	948
08:00 AM	0	0	0	6	0	139	0	0	0	0	0	0	0	122	0	0	267
08:15 AM	0	0	0	4	0	139	0	0	0	0	0	2	0	129	0	0	274
08:30 AM	0	0	0	5	0	164	0	0	0	0	0	0	0	113	0	0	282
08:45 AM	0	0	0	4	0	177	0	0	0	0	0	0	0	140	0	0	321
Total	0	0	0	19	0	619	0	0	0	0	0	2	0	504	0	0	1144
09:00 AM	0	0	0	0	0	153	0	0	0	0	0	0	0	113	0	0	266
09:15 AM	0	0	0	1	0	148	0	0	0	0	0	1	0	99	0	0	249
09:30 AM	0	0	0	1	0	133	0	0	0	0	0	0	2	93	0	0	229
09:45 AM	0	0	0	0	0	105	0	0	0	0	0	0	0	97	0	0	202
Total	0	0	0	2	0	539	0	0	0	0	0	1	2	402	0	0	946
Grand Total	0	0	0	31	0	1904	0	0	0	0	0	6	2	1637	0	0	3580
Apprch %	0	0	0	100	0	100	0	0	0	0	0	100	0.1	99.9	0	0	
Total %	0	0	0	0.9	0	53.2	0	0	0	0	0	0.2	0.1	45.7	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	**6**	**6**	0	139	0	0	139	0	0	0	0	0	0	122	0	0	122	267
08:15 AM	0	0	0	4	4	0	139	0	0	139	0	0	0	**2**	**2**	0	129	0	0	129	274
08:30 AM	0	0	0	5	5	0	164	0	0	164	0	0	0	0	0	0	113	0	0	113	282
08:45 AM	0	0	0	4	4	0	**177**	0	0	**177**	0	0	0	0	0	0	**140**	0	0	**140**	**321**
Total Volume	0	0	0	19	19	0	619	0	0	619	0	0	0	2	2	0	504	0	0	504	1144
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.792	.792	.000	.874	.000	.000	.874	.000	.000	.000	.250	.250	.000	.900	.000	.000	.900	.891

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759B
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Trucks & Buses

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
06:15 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
06:30 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	1	0	0	7
06:45 AM	0	0	0	0	0	8	0	0	0	0	0	0	0	1	0	0	9
Total	0	0	0	0	0	17	0	0	0	0	0	0	0	4	0	0	21
07:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
07:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
07:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
07:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
Total	0	0	0	0	0	9	0	0	0	0	0	0	0	7	0	0	16
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	12	0	0	14
09:00 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0	0	12
09:15 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	0	7
09:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	7	0	0	10
09:45 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
Total	0	0	0	0	0	15	0	0	0	0	0	0	0	18	0	0	33
Grand Total	0	0	0	0	0	43	0	0	0	0	0	0	0	41	0	0	84
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	51.2	0	0	0	0	0	0	0	48.8	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	0	0	0	0	0	0	**6**	0	0	**6**	0	0	0	0	0	0	6	0	0	6	**12**
09:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
09:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	**7**	0	0	**7**	10
09:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Total Volume	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	18	0	0	18	33
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.000	.643	.000	.000	.643	.688

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759B
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Bikes by Direction

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
07:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	1	0	0	6
08:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
08:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
08:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	8
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Grand Total	0	0	0	0	0	11	0	0	0	0	0	0	0	6	0	0	17
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	64.7	0	0	0	0	0	0	0	35.3	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	0	0	**1**	0	0	**1**	**3**
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	10
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.875	.000	.000	.875	.000	.000	.000	.000	.000	.000	.750	.000	.000	.750	.833

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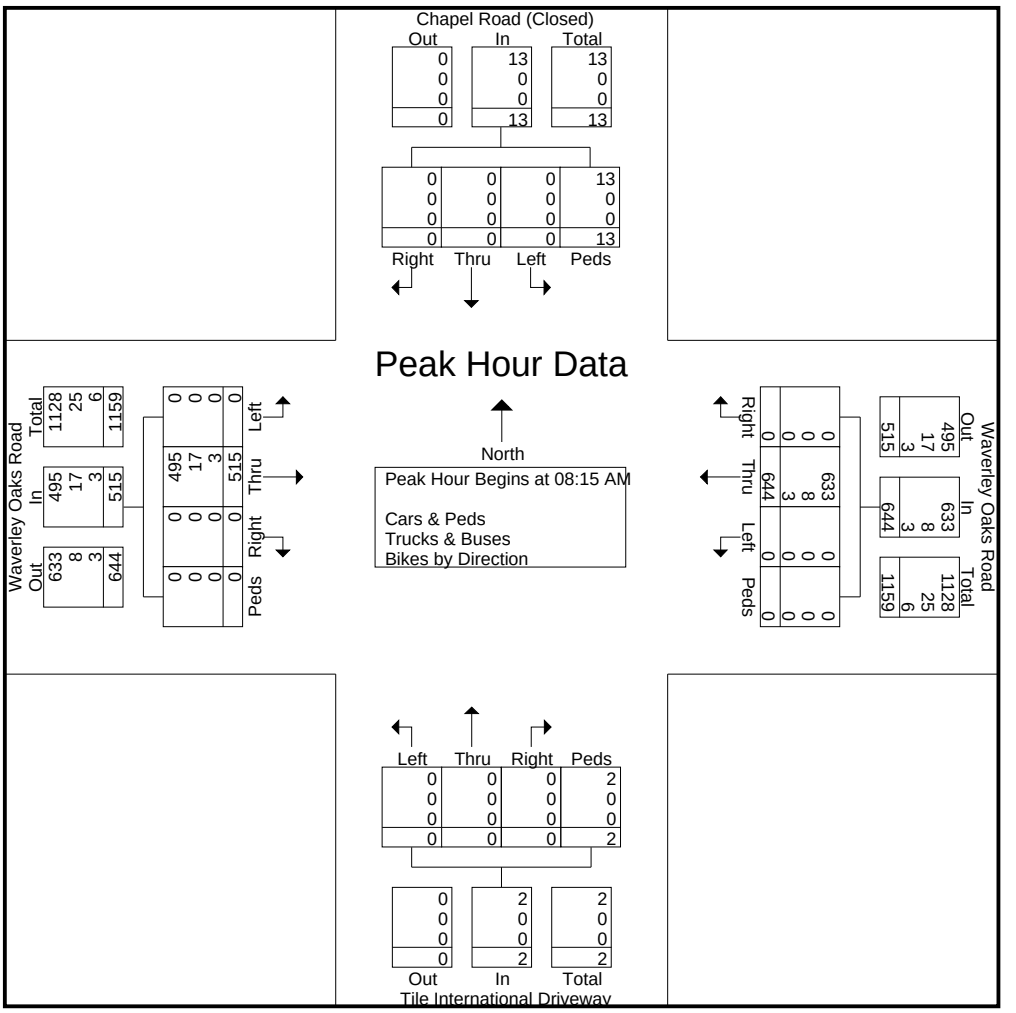
N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759B
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	0	0	0	4	4	0	141	0	0	141	0	0	0	**2**	**2**	0	132	0	0	132	279
08:30 AM	0	0	0	**5**	**5**	0	165	0	0	165	0	0	0	0	0	0	121	0	0	121	291
08:45 AM	0	0	0	4	4	0	**179**	0	0	**179**	0	0	0	0	0	0	**142**	0	0	**142**	**325**
09:00 AM	0	0	0	0	0	0	159	0	0	159	0	0	0	0	0	0	120	0	0	120	279
Total Volume	0	0	0	13	13	0	644	0	0	644	0	0	0	2	2	0	515	0	0	515	1174
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.650	.650	.000	.899	.000	.000	.899	.000	.000	.000	.250	.250	.000	.907	.000	.000	.907	.903
Cars & Peds	0	0	0	13	13	0	633	0	0	633	0	0	0	2	2	0	495	0	0	495	1143
% Cars & Peds	0	0	0	100	100	0	98.3	0	0	98.3	0	0	0	100	100	0	96.1	0	0	96.1	97.4
Trucks & Buses	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	17	0	0	17	25
% Trucks & Buses	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	3.3	0	0	3.3	2.1
Bikes by Direction	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
% Bikes by Direction	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.6	0	0	0.6	0.5



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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	113	0	0	1	0	0	0	0	113	0	0	227
01:15 PM	0	0	0	0	1	81	0	0	0	0	0	0	0	99	0	0	181
01:30 PM	0	0	0	1	0	97	1	0	0	0	0	1	0	96	0	0	196
01:45 PM	0	0	0	1	0	90	0	0	0	0	0	0	1	93	0	0	185
Total	0	0	0	2	1	381	1	0	1	0	0	1	1	401	0	0	789
02:00 PM	0	0	0	1	0	98	0	0	0	0	0	0	0	111	0	0	210
02:15 PM	0	0	0	1	0	119	0	0	0	0	0	0	0	113	0	0	233
02:30 PM	0	0	0	0	0	97	0	0	0	0	0	0	1	104	0	0	202
02:45 PM	0	0	0	1	0	109	0	0	1	0	0	0	1	119	0	0	231
Total	0	0	0	3	0	423	0	0	1	0	0	0	2	447	0	0	876
03:00 PM	0	0	0	1	0	135	0	0	0	0	0	0	0	159	0	0	295
03:15 PM	0	0	0	1	0	130	0	0	0	0	0	0	0	145	0	0	276
03:30 PM	0	0	0	1	1	149	0	0	0	0	0	0	0	131	0	0	282
03:45 PM	0	0	0	0	0	153	0	0	0	0	0	0	0	145	0	0	298
Total	0	0	0	3	1	567	0	0	0	0	0	0	0	580	0	0	1151
04:00 PM	0	0	0	1	0	138	0	0	0	0	0	0	1	143	0	0	283
04:15 PM	0	0	0	4	0	143	0	0	0	0	0	0	0	169	0	0	316
04:30 PM	0	0	0	2	0	151	0	0	0	0	0	0	0	171	0	0	324
04:45 PM	0	0	0	2	0	139	0	0	0	0	0	1	0	162	0	0	304
Total	0	0	0	9	0	571	0	0	0	0	0	1	1	645	0	0	1227
05:00 PM	0	0	0	3	0	162	0	0	0	0	0	0	0	182	0	0	347
05:15 PM	0	0	0	1	0	150	0	0	0	0	0	1	0	169	0	0	321
05:30 PM	0	0	0	2	0	131	0	0	0	0	0	1	0	200	0	0	334
05:45 PM	0	0	0	5	0	138	0	0	0	0	0	0	0	194	0	0	337
Total	0	0	0	11	0	581	0	0	0	0	0	2	0	745	0	0	1339
Grand Total	0	0	0	28	2	2523	1	0	2	0	0	4	4	2818	0	0	5382
Apprch %	0	0	0	100	0.1	99.9	0	0	33.3	0	0	66.7	0.1	99.9	0	0	
Total %	0	0	0	0.5	0	46.9	0	0	0	0	0	0.1	0.1	52.4	0	0	
Cars & Peds	0	0	0	28	2	2502	1	0	2	0	0	4	4	2774	0	0	5317
% Cars & Peds	0	0	0	100	100	99.2	100	0	100	0	0	100	100	98.4	0	0	98.8
Trucks & Buses	0	0	0	0	0	20	0	0	0	0	0	0	0	37	0	0	57
% Trucks & Buses	0	0	0	0	0	0.8	0	0	0	0	0	0	0	1.3	0	0	1.1
Bikes by Direction	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.1

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	**1**	**1**	0	135	0	0	135	0	0	0	0	0	0	**159**	0	0	**159**	295
03:15 PM	0	0	0	1	1	0	130	0	0	130	0	0	0	0	0	0	145	0	0	145	276
03:30 PM	0	0	0	1	1	**1**	149	0	0	150	0	0	0	0	0	0	131	0	0	131	282
03:45 PM	0	0	0	0	0	0	**153**	0	0	**153**	0	0	0	0	0	0	145	0	0	145	**298**
Total Volume	0	0	0	3	3	1	567	0	0	568	0	0	0	0	0	0	580	0	0	580	1151
% App. Total	0	0	0	100		0.2	99.8	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.750	.750	.250	.926	.000	.000	.928	.000	.000	.000	.000	.000	.000	.912	.000	.000	.912	.966
Cars & Peds	0	0	0	3	3	1	561	0	0	562	0	0	0	0	0	0	567	0	0	567	1132
% Cars & Peds	0	0	0	100	100	100	98.9	0	0	98.9	0	0	0	0	0	0	97.8	0	0	97.8	98.3
Trucks & Buses	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	13	0	0	13	19
% Trucks & Buses	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	2.2	0	0	2.2	1.7
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transportation Data Corporation

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	3	3	0	**162**	0	0	**162**	0	0	0	0	0	0	182	0	0	182	**347**
05:15 PM	0	0	0	1	1	0	150	0	0	150	0	0	0	**1**	**1**	0	169	0	0	169	321
05:30 PM	0	0	0	2	2	0	131	0	0	131	0	0	0	1	1	0	**200**	0	0	**200**	334
05:45 PM	0	0	0	**5**	**5**	0	138	0	0	138	0	0	0	0	0	0	194	0	0	194	337
Total Volume	0	0	0	11	11	0	581	0	0	581	0	0	0	2	2	0	745	0	0	745	1339
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.550	.550	.000	.897	.000	.000	.897	.000	.000	.000	.500	.500	.000	.931	.000	.000	.931	.965
Cars & Peds	0	0	0	11	11	0	579	0	0	579	0	0	0	2	2	0	735	0	0	735	1327
% Cars & Peds	0	0	0	100	100	0	99.7	0	0	99.7	0	0	0	100	100	0	98.7	0	0	98.7	99.1
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.5	0	0	0.5	0.4
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.8	0	0	0.8	0.5

Transportation Data Corporation

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	112	0	0	1	0	0	0	0	112	0	0	225
01:15 PM	0	0	0	0	1	81	0	0	0	0	0	0	0	98	0	0	180
01:30 PM	0	0	0	1	0	97	1	0	0	0	0	1	0	93	0	0	193
01:45 PM	0	0	0	1	0	90	0	0	0	0	0	0	1	91	0	0	183
Total	0	0	0	2	1	380	1	0	1	0	0	1	1	394	0	0	781
02:00 PM	0	0	0	1	0	95	0	0	0	0	0	0	0	109	0	0	205
02:15 PM	0	0	0	1	0	117	0	0	0	0	0	0	0	112	0	0	230
02:30 PM	0	0	0	0	0	97	0	0	0	0	0	0	1	102	0	0	200
02:45 PM	0	0	0	1	0	108	0	0	1	0	0	0	1	117	0	0	228
Total	0	0	0	3	0	417	0	0	1	0	0	0	2	440	0	0	863
03:00 PM	0	0	0	1	0	135	0	0	0	0	0	0	0	158	0	0	294
03:15 PM	0	0	0	1	0	130	0	0	0	0	0	0	0	143	0	0	274
03:30 PM	0	0	0	1	1	145	0	0	0	0	0	0	0	126	0	0	273
03:45 PM	0	0	0	0	0	151	0	0	0	0	0	0	0	140	0	0	291
Total	0	0	0	3	1	561	0	0	0	0	0	0	0	567	0	0	1132
04:00 PM	0	0	0	1	0	137	0	0	0	0	0	0	1	140	0	0	279
04:15 PM	0	0	0	4	0	142	0	0	0	0	0	0	0	166	0	0	312
04:30 PM	0	0	0	2	0	148	0	0	0	0	0	0	0	171	0	0	321
04:45 PM	0	0	0	2	0	138	0	0	0	0	0	1	0	161	0	0	302
Total	0	0	0	9	0	565	0	0	0	0	0	1	1	638	0	0	1214
05:00 PM	0	0	0	3	0	162	0	0	0	0	0	0	0	180	0	0	345
05:15 PM	0	0	0	1	0	150	0	0	0	0	0	1	0	166	0	0	318
05:30 PM	0	0	0	2	0	130	0	0	0	0	0	1	0	199	0	0	332
05:45 PM	0	0	0	5	0	137	0	0	0	0	0	0	0	190	0	0	332
Total	0	0	0	11	0	579	0	0	0	0	0	2	0	735	0	0	1327
Grand Total	0	0	0	28	2	2502	1	0	2	0	0	4	4	2774	0	0	5317
Apprch %	0	0	0	100	0.1	99.9	0	0	33.3	0	0	66.7	0.1	99.9	0	0	
Total %	0	0	0	0.5	0	47.1	0	0	0	0	0	0.1	0.1	52.2	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	**1**	**1**	0	135	0	0	135	0	0	0	0	0	0	**158**	0	0	**158**	**294**
03:15 PM	0	0	0	1	1	0	130	0	0	130	0	0	0	0	0	0	143	0	0	143	274
03:30 PM	0	0	0	1	1	**1**	145	0	0	146	0	0	0	0	0	0	126	0	0	126	273
03:45 PM	0	0	0	0	0	0	**151**	0	0	**151**	0	0	0	0	0	0	140	0	0	140	291
Total Volume	0	0	0	3	3	1	561	0	0	562	0	0	0	0	0	0	567	0	0	567	1132
% App. Total	0	0	0	100		0.2	99.8	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.750	.750	.250	.929	.000	.000	.930	.000	.000	.000	.000	.000	.000	.897	.000	.000	.897	.963

Transportation Data Corporation

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 2

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	3	3	0	**162**	0	0	**162**	0	0	0	0	0	0	180	0	0	180	**345**
05:15 PM	0	0	0	1	1	0	150	0	0	150	0	0	0	**1**	**1**	0	166	0	0	166	318
05:30 PM	0	0	0	2	2	0	130	0	0	130	0	0	0	1	1	0	**199**	0	0	**199**	332
05:45 PM	0	0	0	**5**	**5**	0	137	0	0	137	0	0	0	0	0	0	190	0	0	190	332
Total Volume	0	0	0	11	11	0	579	0	0	579	0	0	0	2	2	0	735	0	0	735	1327
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.550	.550	.000	.894	.000	.000	.894	.000	.000	.000	.500	.500	.000	.923	.000	.000	.923	.962

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Trucks & Buses

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
02:00 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
02:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
02:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	0	0	0	0	6	0	0	0	0	0	0	0	7	0	0	13
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
03:30 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	5	0	0	9
03:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	5	0	0	7
Total	0	0	0	0	0	6	0	0	0	0	0	0	0	13	0	0	19
04:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
04:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
04:30 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0	0	12
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	5
Grand Total	0	0	0	0	0	20	0	0	0	0	0	0	0	37	0	0	57
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	35.1	0	0	0	0	0	0	0	64.9	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
03:30 PM	0	0	0	0	0	0	**4**	0	0	**4**	0	0	0	0	0	0	**5**	0	0	**5**	**9**
03:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	7
Total Volume	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	13	0	0	13	19
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.000	.000	.375	.000	.000	.000	.000	.000	.000	.650	.000	.000	.650	.528

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N/S: Chapel Road/Tile Int'l Driveway
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City, State: Waltham, MA
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File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 2

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	**3**	0	0	**3**	**4**
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
04:30 PM	0	0	0	0	0	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	12
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.750

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Bikes by Direction

	Chapel Road (Closed) From North				Waverley Oaks Road From East				Tile International Driveway From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	7
Grand Total	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	12.5	0	0	0	0	0	0	0	87.5	0	0	

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Transportation Data Corporation

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N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
05:30 PM	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**	0	0	**3**	**3**
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.583

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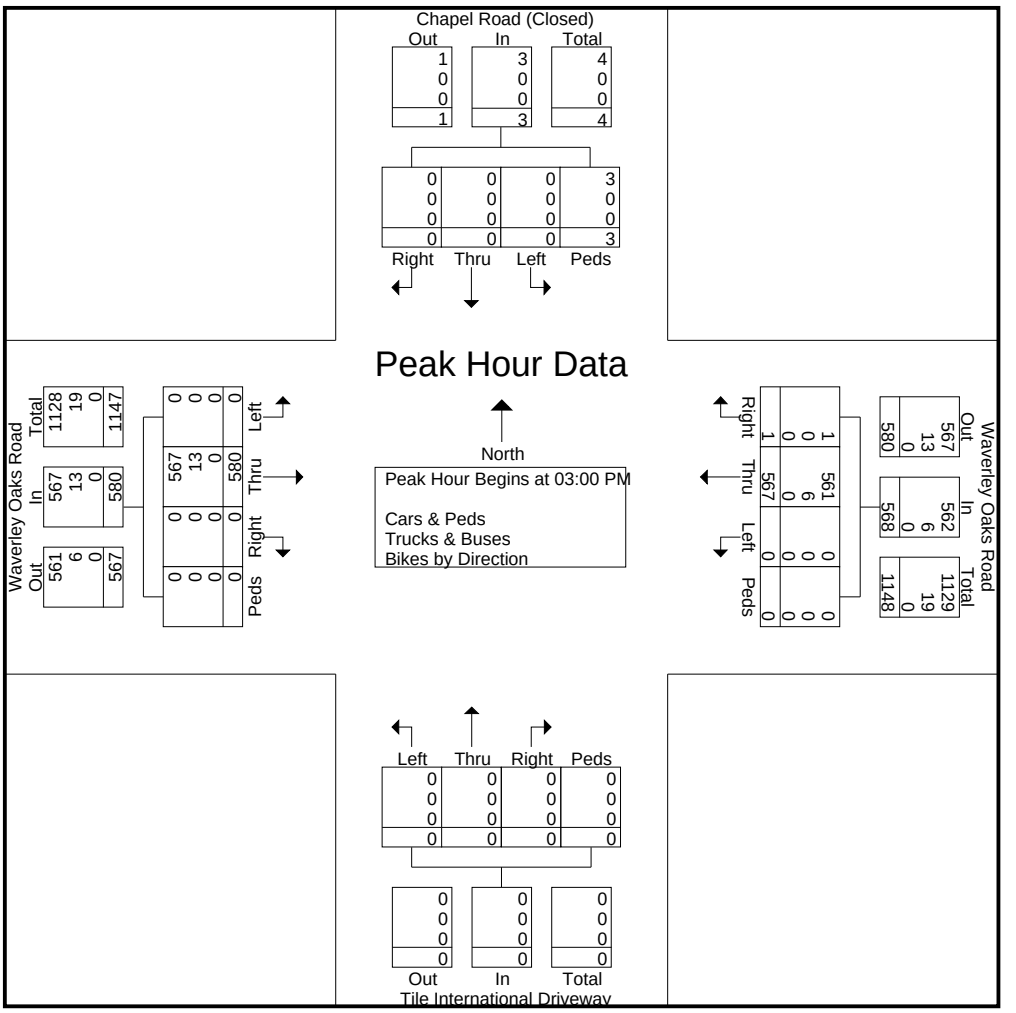
N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	**1**	**1**	0	135	0	0	135	0	0	0	0	0	0	**159**	0	0	**159**	295
03:15 PM	0	0	0	1	1	0	130	0	0	130	0	0	0	0	0	0	145	0	0	145	276
03:30 PM	0	0	0	1	1	**1**	149	0	0	150	0	0	0	0	0	0	131	0	0	131	282
03:45 PM	0	0	0	0	0	0	**153**	0	0	**153**	0	0	0	0	0	0	145	0	0	145	**298**
Total Volume	0	0	0	3	3	1	567	0	0	568	0	0	0	0	0	0	580	0	0	580	1151
% App. Total	0	0	0	100		0.2	99.8	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.750	.750	.250	.926	.000	.000	.928	.000	.000	.000	.000	.000	.000	.912	.000	.000	.912	.966
Cars & Peds	0	0	0	3	3	1	561	0	0	562	0	0	0	0	0	0	567	0	0	567	1132
% Cars & Peds	0	0	0	100	100	100	98.9	0	0	98.9	0	0	0	0	0	0	97.8	0	0	97.8	98.3
Trucks & Buses	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	13	0	0	13	19
% Trucks & Buses	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	2.2	0	0	2.2	1.7
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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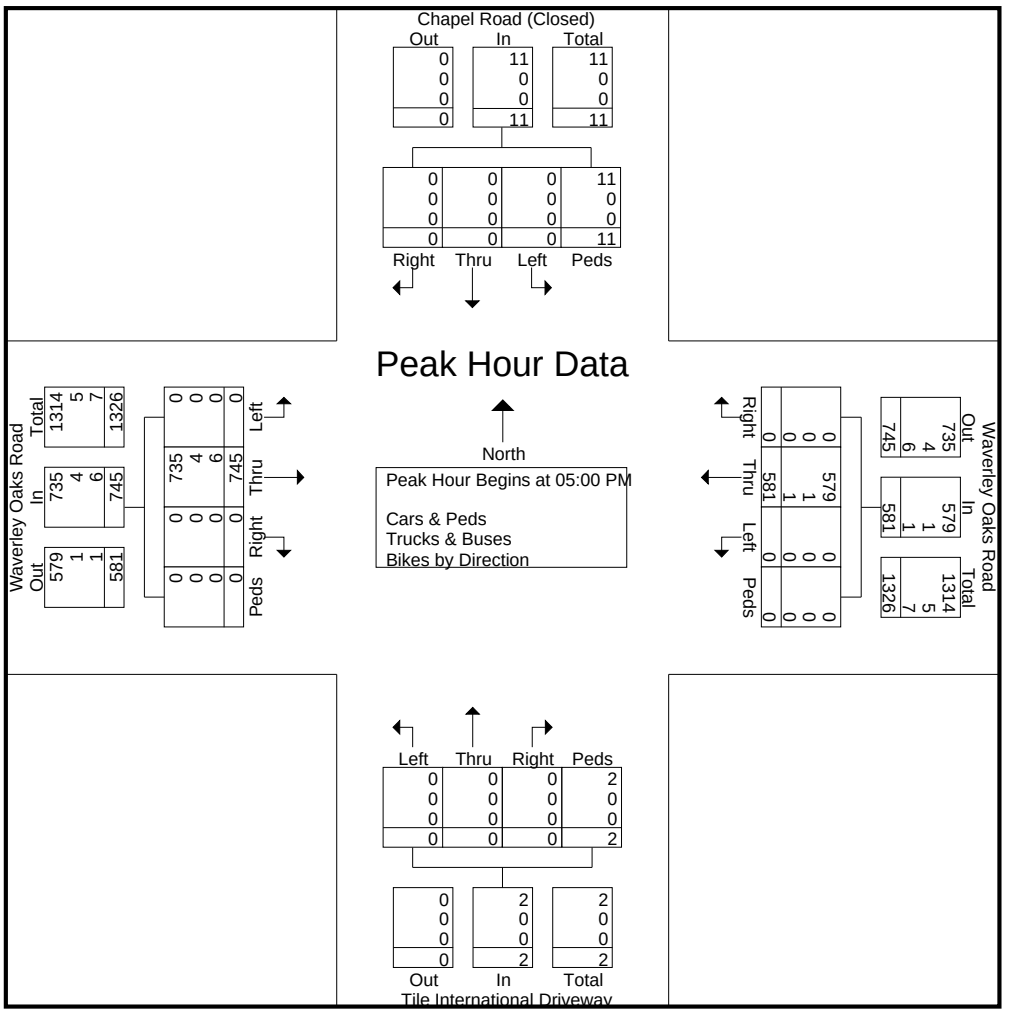
N/S: Chapel Road/Tile Int'l Driveway
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759BB
Site Code : 216023
Start Date : 9/28/2016
Page No : 2

	Chapel Road (Closed) From North					Waverley Oaks Road From East					Tile International Driveway From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	3	3	0	**162**	0	0	**162**	0	0	0	0	0	0	182	0	0	182	**347**
05:15 PM	0	0	0	1	1	0	150	0	0	150	0	0	0	**1**	**1**	0	169	0	0	169	321
05:30 PM	0	0	0	2	2	0	131	0	0	131	0	0	0	1	1	0	**200**	0	0	**200**	334
05:45 PM	0	0	0	**5**	**5**	0	138	0	0	138	0	0	0	0	0	0	194	0	0	194	337
Total Volume	0	0	0	11	11	0	581	0	0	581	0	0	0	2	2	0	745	0	0	745	1339
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	100	0	0		
PHF	.000	.000	.000	.550	.550	.000	.897	.000	.000	.897	.000	.000	.000	.500	.500	.000	.931	.000	.000	.931	.965
Cars & Peds	0	0	0	11	11	0	579	0	0	579	0	0	0	2	2	0	735	0	0	735	1327
% Cars & Peds	0	0	0	100	100	0	99.7	0	0	99.7	0	0	0	100	100	0	98.7	0	0	98.7	99.1
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.5	0	0	0.5	0.4
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.8	0	0	0.8	0.5



Transportation Data Corporation

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759C
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
06:00 AM	14	37	0	11	40	0	31	8	0	141
06:15 AM	24	52	0	24	55	0	38	13	1	207
06:30 AM	16	67	0	35	74	0	59	5	1	257
06:45 AM	20	113	0	42	77	0	63	11	2	328
Total	74	269	0	112	246	0	191	37	4	933
07:00 AM	18	121	0	51	84	0	74	16	2	366
07:15 AM	26	115	0	78	110	0	79	17	4	429
07:30 AM	31	117	0	88	123	0	68	24	1	452
07:45 AM	32	105	0	98	117	0	82	22	0	456
Total	107	458	0	315	434	0	303	79	7	1703
08:00 AM	46	103	0	93	134	0	66	28	1	471
08:15 AM	35	102	0	98	141	0	57	27	2	462
08:30 AM	37	102	0	79	146	0	65	26	0	455
08:45 AM	48	109	0	101	164	0	74	19	0	515
Total	166	416	0	371	585	0	262	100	3	1903
09:00 AM	38	79	0	66	135	0	53	22	1	394
09:15 AM	44	67	0	87	127	0	65	8	2	400
09:30 AM	36	64	0	63	118	0	40	20	2	343
09:45 AM	36	67	0	61	112	0	85	14	1	376
Total	154	277	0	277	492	0	243	64	6	1513
Grand Total	501	1420	0	1075	1757	0	999	280	20	6052
Apprch %	26.1	73.9	0	38	62	0	76.9	21.6	1.5	
Total %	8.3	23.5	0	17.8	29	0	16.5	4.6	0.3	
Cars & Peds	490	1381	0	1048	1703	0	960	264	20	5866
% Cars & Peds	97.8	97.3	0	97.5	96.9	0	96.1	94.3	100	96.9
Trucks & Buses	10	25	0	17	39	0	35	14	0	140
% Trucks & Buses	2	1.8	0	1.6	2.2	0	3.5	5	0	2.3
Bikes by Direction	1	14	0	10	15	0	4	2	0	46
% Bikes by Direction	0.2	1	0	0.9	0.9	0	0.4	0.7	0	0.8

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	46	103	0	149	93	134	0	227	66	**28**	1	**95**	471
08:15 AM	35	102	0	137	98	141	0	239	57	27	**2**	86	462
08:30 AM	37	102	0	139	79	146	0	225	65	26	0	91	455
08:45 AM	**48**	**109**	0	**157**	**101**	**164**	0	**265**	**74**	19	0	93	**515**
Total Volume	166	416	0	582	371	585	0	956	262	100	3	365	1903
% App. Total	28.5	71.5	0		38.8	61.2	0		71.8	27.4	0.8		
PHF	.865	.954	.000	.927	.918	.892	.000	.902	.885	.893	.375	.961	.924
Cars & Peds	165	402	0	567	359	572	0	931	249	94	3	346	1844
% Cars & Peds	99.4	96.6	0	97.4	96.8	97.8	0	97.4	95.0	94.0	100	94.8	96.9
Trucks & Buses	1	10	0	11	5	5	0	10	11	6	0	17	38
% Trucks & Buses	0.6	2.4	0	1.9	1.3	0.9	0	1.0	4.2	6.0	0	4.7	2.0
Bikes by Direction	0	4	0	4	7	8	0	15	2	0	0	2	21
% Bikes by Direction	0	1.0	0	0.7	1.9	1.4	0	1.6	0.8	0	0	0.5	1.1

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759C
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Cars & Peds

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
06:00 AM	14	37	0	11	40	0	31	7	0	140
06:15 AM	22	52	0	24	52	0	37	13	1	201
06:30 AM	16	64	0	31	68	0	57	5	1	242
06:45 AM	20	110	0	40	69	0	62	11	2	314
Total	72	263	0	106	229	0	187	36	4	897
07:00 AM	17	120	0	51	82	0	72	16	2	360
07:15 AM	25	112	0	75	107	0	77	16	4	416
07:30 AM	29	113	0	85	120	0	67	22	1	437
07:45 AM	31	104	0	97	113	0	80	21	0	446
Total	102	449	0	308	422	0	296	75	7	1659
08:00 AM	46	101	0	89	133	0	65	25	1	460
08:15 AM	34	102	0	95	136	0	53	27	2	449
08:30 AM	37	93	0	77	142	0	60	23	0	432
08:45 AM	48	106	0	98	161	0	71	19	0	503
Total	165	402	0	359	572	0	249	94	3	1844
09:00 AM	36	74	0	65	130	0	48	20	1	374
09:15 AM	44	66	0	87	124	0	63	7	2	393
09:30 AM	35	62	0	63	117	0	34	19	2	332
09:45 AM	36	65	0	60	109	0	83	13	1	367
Total	151	267	0	275	480	0	228	59	6	1466
Grand Total	490	1381	0	1048	1703	0	960	264	20	5866
Apprch %	26.2	73.8	0	38.1	61.9	0	77.2	21.2	1.6	
Total %	8.4	23.5	0	17.9	29	0	16.4	4.5	0.3	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	46	101	0	147	89	133	0	222	65	25	1	**91**	460
08:15 AM	34	102	0	136	95	136	0	231	53	**27**	**2**	82	449
08:30 AM	37	93	0	130	77	142	0	219	60	23	0	83	432
08:45 AM	**48**	**106**	0	**154**	**98**	**161**	0	**259**	**71**	19	0	90	**503**
Total Volume	165	402	0	567	359	572	0	931	249	94	3	346	1844
% App. Total	29.1	70.9	0		38.6	61.4	0		72	27.2	0.9		
PHF	.859	.948	.000	.920	.916	.888	.000	.899	.877	.870	.375	.951	.917

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759C
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Trucks & Buses

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
06:00 AM	0	0	0	0	0	0	0	1	0	1
06:15 AM	1	0	0	0	3	0	1	0	0	5
06:30 AM	0	0	0	3	6	0	1	0	0	10
06:45 AM	0	3	0	2	8	0	0	0	0	13
Total	1	3	0	5	17	0	2	1	0	29
07:00 AM	1	1	0	0	2	0	2	0	0	6
07:15 AM	1	2	0	2	0	0	2	1	0	8
07:30 AM	2	3	0	3	1	0	1	1	0	11
07:45 AM	1	0	0	1	2	0	2	1	0	7
Total	5	6	0	6	5	0	7	3	0	32
08:00 AM	0	0	0	1	0	0	0	3	0	4
08:15 AM	1	0	0	2	4	0	3	0	0	10
08:30 AM	0	8	0	0	1	0	5	3	0	17
08:45 AM	0	2	0	2	0	0	3	0	0	7
Total	1	10	0	5	5	0	11	6	0	38
09:00 AM	2	4	0	1	5	0	5	1	0	18
09:15 AM	0	0	0	0	3	0	2	1	0	6
09:30 AM	1	0	0	0	1	0	6	1	0	9
09:45 AM	0	2	0	0	3	0	2	1	0	8
Total	3	6	0	1	12	0	15	4	0	41
Grand Total	10	25	0	17	39	0	35	14	0	140
Apprch %	28.6	71.4	0	30.4	69.6	0	71.4	28.6	0	
Total %	7.1	17.9	0	12.1	27.9	0	25	10	0	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:15 AM													
08:15 AM	1	0	0	1	**2**	4	0	**6**	3	0	0	3	10
08:30 AM	0	**8**	0	**8**	0	1	0	1	**5**	**3**	0	**8**	17
08:45 AM	0	2	0	2	2	0	0	2	3	0	0	3	7
09:00 AM	**2**	4	0	6	1	**5**	0	6	5	1	0	6	**18**
Total Volume	3	14	0	17	5	10	0	15	16	4	0	20	52
% App. Total	17.6	82.4	0		33.3	66.7	0		80	20	0		
PHF	.375	.438	.000	.531	.625	.500	.000	.625	.800	.333	.000	.625	.722

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759C
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Bikes by Direction

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0
06:15 AM	1	0	0	0	0	0	0	0	0	1
06:30 AM	0	3	0	1	0	0	1	0	0	5
06:45 AM	0	0	0	0	0	0	1	0	0	1
Total	1	3	0	1	0	0	2	0	0	7
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	1	3	0	0	0	0	5
07:30 AM	0	1	0	0	2	0	0	1	0	4
07:45 AM	0	1	0	0	2	0	0	0	0	3
Total	0	3	0	1	7	0	0	1	0	12
08:00 AM	0	2	0	3	1	0	1	0	0	7
08:15 AM	0	0	0	1	1	0	1	0	0	3
08:30 AM	0	1	0	2	3	0	0	0	0	6
08:45 AM	0	1	0	1	3	0	0	0	0	5
Total	0	4	0	7	8	0	2	0	0	21
09:00 AM	0	1	0	0	0	0	0	1	0	2
09:15 AM	0	1	0	0	0	0	0	0	0	1
09:30 AM	0	2	0	0	0	0	0	0	0	2
09:45 AM	0	0	0	1	0	0	0	0	0	1
Total	0	4	0	1	0	0	0	1	0	6
Grand Total	1	14	0	10	15	0	4	2	0	46
Apprch %	6.7	93.3	0	40	60	0	66.7	33.3	0	
Total %	2.2	30.4	0	21.7	32.6	0	8.7	4.3	0	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	**2**	0	**2**	**3**	1	0	4	**1**	0	0	**1**	**7**
08:15 AM	0	0	0	0	1	1	0	2	1	0	0	1	3
08:30 AM	0	1	0	1	2	**3**	0	**5**	0	0	0	0	6
08:45 AM	0	1	0	1	1	3	0	4	0	0	0	0	5
Total Volume	0	4	0	4	7	8	0	15	2	0	0	2	21
% App. Total	0	100	0		46.7	53.3	0		100	0	0		
PHF	.000	.500	.000	.500	.583	.667	.000	.750	.500	.000	.000	.500	.750

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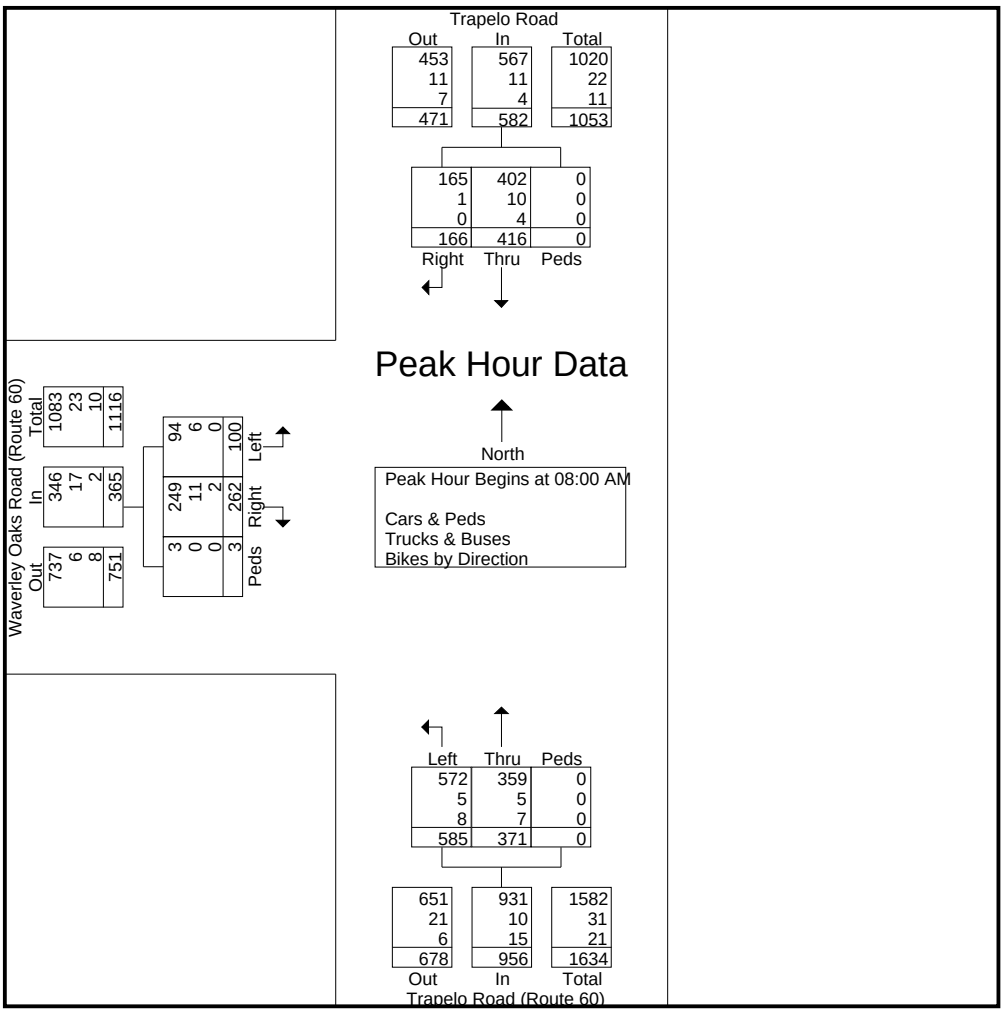
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759C
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	46	103	0	149	93	134	0	227	66	**28**	1	**95**	471
08:15 AM	35	102	0	137	98	141	0	239	57	27	**2**	86	462
08:30 AM	37	102	0	139	79	146	0	225	65	26	0	91	455
08:45 AM	**48**	**109**	0	**157**	**101**	**164**	0	**265**	**74**	19	0	93	**515**
Total Volume	166	416	0	582	371	585	0	956	262	100	3	365	1903
% App. Total	28.5	71.5	0		38.8	61.2	0		71.8	27.4	0.8		
PHF	.865	.954	.000	.927	.918	.892	.000	.902	.885	.893	.375	.961	.924
Cars & Peds	165	402	0	567	359	572	0	931	249	94	3	346	1844
% Cars & Peds	99.4	96.6	0	97.4	96.8	97.8	0	97.4	95.0	94.0	100	94.8	96.9
Trucks & Buses	1	10	0	11	5	5	0	10	11	6	0	17	38
% Trucks & Buses	0.6	2.4	0	1.9	1.3	0.9	0	1.0	4.2	6.0	0	4.7	2.0
Bikes by Direction	0	4	0	4	7	8	0	15	2	0	0	2	21
% Bikes by Direction	0	1.0	0	0.7	1.9	1.4	0	1.6	0.8	0	0	0.5	1.1



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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
01:00 PM	29	59	0	64	88	0	78	44	1	363
01:15 PM	17	61	0	65	72	0	92	22	2	331
01:30 PM	23	46	0	68	71	0	81	26	1	316
01:45 PM	22	54	0	47	82	0	80	26	0	311
Total	91	220	0	244	313	0	331	118	4	1321
02:00 PM	12	59	0	79	75	0	90	39	0	354
02:15 PM	20	61	0	71	82	0	86	29	0	349
02:30 PM	17	80	0	78	72	0	75	40	0	362
02:45 PM	16	75	0	77	89	0	77	37	1	372
Total	65	275	0	305	318	0	328	145	1	1437
03:00 PM	24	76	0	87	99	0	91	44	0	421
03:15 PM	21	71	0	87	107	0	99	48	1	434
03:30 PM	29	83	0	115	105	0	106	69	1	508
03:45 PM	14	83	0	99	130	0	108	34	1	469
Total	88	313	0	388	441	0	404	195	3	1832
04:00 PM	17	72	0	113	124	0	130	55	0	511
04:15 PM	19	83	0	108	122	0	110	58	0	500
04:30 PM	24	68	0	107	113	0	124	75	3	514
04:45 PM	16	81	0	116	117	0	136	71	5	542
Total	76	304	0	444	476	0	500	259	8	2067
05:00 PM	23	94	0	130	124	0	130	75	3	579
05:15 PM	35	76	0	138	135	0	150	68	0	602
05:30 PM	18	63	0	141	109	0	149	74	1	555
05:45 PM	28	95	0	156	126	0	133	87	2	627
Total	104	328	0	565	494	0	562	304	6	2363
Grand Total	424	1440	0	1946	2042	0	2125	1021	22	9020
Apprch %	22.7	77.3	0	48.8	51.2	0	67.1	32.2	0.7	
Total %	4.7	16	0	21.6	22.6	0	23.6	11.3	0.2	
Cars & Peds	416	1412	0	1897	2016	0	2080	999	22	8842
% Cars & Peds	98.1	98.1	0	97.5	98.7	0	97.9	97.8	100	98
Trucks & Buses	7	23	0	39	25	0	38	21	0	153
% Trucks & Buses	1.7	1.6	0	2	1.2	0	1.8	2.1	0	1.7
Bikes by Direction	1	5	0	10	1	0	7	1	0	25
% Bikes by Direction	0.2	0.3	0	0.5	0	0	0.3	0.1	0	0.3

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	24	76	0	100	87	99	0	186	91	44	0	135	421
03:15 PM	21	71	0	92	87	107	0	194	99	48	**1**	148	434
03:30 PM	**29**	**83**	0	**112**	**115**	105	0	220	106	**69**	1	**176**	**508**
03:45 PM	14	83	0	97	99	**130**	0	**229**	**108**	34	1	143	469
Total Volume	88	313	0	401	388	441	0	829	404	195	3	602	1832
% App. Total	21.9	78.1	0		46.8	53.2	0		67.1	32.4	0.5		
PHF	.759	.943	.000	.895	.843	.848	.000	.905	.935	.707	.750	.855	.902
Cars & Peds	86	301	0	387	378	435	0	813	389	191	3	583	1783
% Cars & Peds	97.7	96.2	0	96.5	97.4	98.6	0	98.1	96.3	97.9	100	96.8	97.3
Trucks & Buses	2	12	0	14	8	6	0	14	15	4	0	19	47
% Trucks & Buses	2.3	3.8	0	3.5	2.1	1.4	0	1.7	3.7	2.1	0	3.2	2.6
Bikes by Direction	0	0	0	0	2	0	0	2	0	0	0	0	2
% Bikes by Direction	0	0	0	0	0.5	0	0	0.2	0	0	0	0	0.1

Transportation Data Corporation

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	23	94	0	117	130	124	0	254	130	75	**3**	208	579
05:15 PM	**35**	76	0	111	138	**135**	0	273	**150**	68	0	218	602
05:30 PM	18	63	0	81	141	109	0	250	149	74	1	**224**	555
05:45 PM	28	**95**	0	**123**	**156**	126	0	**282**	133	**87**	2	222	**627**
Total Volume	104	328	0	432	565	494	0	1059	562	304	6	872	2363
% App. Total	24.1	75.9	0		53.4	46.6	0		64.4	34.9	0.7		
PHF	.743	.863	.000	.878	.905	.915	.000	.939	.937	.874	.500	.973	.942
Cars & Peds	103	322	0	425	555	491	0	1046	555	301	6	862	2333
% Cars & Peds	99.0	98.2	0	98.4	98.2	99.4	0	98.8	98.8	99.0	100	98.9	98.7
Trucks & Buses	0	1	0	1	2	2	0	4	2	2	0	4	9
% Trucks & Buses	0	0.3	0	0.2	0.4	0.4	0	0.4	0.4	0.7	0	0.5	0.4
Bikes by Direction	1	5	0	6	8	1	0	9	5	1	0	6	21
% Bikes by Direction	1.0	1.5	0	1.4	1.4	0.2	0	0.8	0.9	0.3	0	0.7	0.9

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Cars & Peds

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
01:00 PM	28	56	0	60	86	0	74	44	1	349
01:15 PM	17	58	0	60	72	0	90	22	2	321
01:30 PM	23	44	0	63	69	0	79	22	1	301
01:45 PM	21	53	0	42	82	0	77	24	0	299
Total	89	211	0	225	309	0	320	112	4	1270
02:00 PM	12	59	0	78	72	0	89	38	0	348
02:15 PM	20	61	0	68	79	0	86	28	0	342
02:30 PM	17	80	0	76	71	0	74	39	0	357
02:45 PM	16	74	0	77	87	0	76	33	1	364
Total	65	274	0	299	309	0	325	138	1	1411
03:00 PM	23	72	0	85	98	0	90	42	0	410
03:15 PM	21	70	0	83	107	0	97	46	1	425
03:30 PM	29	77	0	112	101	0	99	69	1	488
03:45 PM	13	82	0	98	129	0	103	34	1	460
Total	86	301	0	378	435	0	389	191	3	1783
04:00 PM	16	72	0	110	124	0	127	55	0	504
04:15 PM	18	83	0	107	121	0	108	56	0	493
04:30 PM	23	68	0	107	111	0	123	75	3	510
04:45 PM	16	81	0	116	116	0	133	71	5	538
Total	73	304	0	440	472	0	491	257	8	2045
05:00 PM	23	93	0	124	124	0	127	75	3	569
05:15 PM	35	74	0	137	135	0	149	68	0	598
05:30 PM	17	60	0	139	108	0	148	73	1	546
05:45 PM	28	95	0	155	124	0	131	85	2	620
Total	103	322	0	555	491	0	555	301	6	2333
Grand Total	416	1412	0	1897	2016	0	2080	999	22	8842
Apprch %	22.8	77.2	0	48.5	51.5	0	67.1	32.2	0.7	
Total %	4.7	16	0	21.5	22.8	0	23.5	11.3	0.2	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	23	72	0	95	85	98	0	183	90	42	0	132	410
03:15 PM	21	70	0	91	83	107	0	190	97	46	**1**	144	425
03:30 PM	**29**	77	0	**106**	**112**	101	0	213	99	**69**	1	**169**	**488**
03:45 PM	13	**82**	0	95	98	**129**	0	**227**	**103**	34	1	138	460
Total Volume	86	301	0	387	378	435	0	813	389	191	3	583	1783
% App. Total	22.2	77.8	0		46.5	53.5	0		66.7	32.8	0.5		
PHF	.741	.918	.000	.913	.844	.843	.000	.895	.944	.692	.750	.862	.913

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W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	23	93	0	116	124	124	0	248	127	75	**3**	205	569
05:15 PM	**35**	74	0	109	137	**135**	0	272	**149**	68	0	217	598
05:30 PM	17	60	0	77	139	108	0	247	148	73	1	**222**	546
05:45 PM	28	**95**	0	**123**	**155**	124	0	**279**	131	**85**	2	218	**620**
Total Volume	103	322	0	425	555	491	0	1046	555	301	6	862	2333
% App. Total	24.2	75.8	0		53.1	46.9	0		64.4	34.9	0.7		
PHF	.736	.847	.000	.864	.895	.909	.000	.937	.931	.885	.500	.971	.941

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Trucks & Buses

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
01:00 PM	1	3	0	4	2	0	4	0	0	14
01:15 PM	0	3	0	5	0	0	2	0	0	10
01:30 PM	0	2	0	5	2	0	2	4	0	15
01:45 PM	1	1	0	5	0	0	3	2	0	12
Total	2	9	0	19	4	0	11	6	0	51
02:00 PM	0	0	0	1	3	0	1	1	0	6
02:15 PM	0	0	0	3	3	0	0	1	0	7
02:30 PM	0	0	0	2	1	0	1	1	0	5
02:45 PM	0	1	0	0	2	0	1	4	0	8
Total	0	1	0	6	9	0	3	7	0	26
03:00 PM	1	4	0	2	1	0	1	2	0	11
03:15 PM	0	1	0	3	0	0	2	2	0	8
03:30 PM	0	6	0	3	4	0	7	0	0	20
03:45 PM	1	1	0	0	1	0	5	0	0	8
Total	2	12	0	8	6	0	15	4	0	47
04:00 PM	1	0	0	3	0	0	3	0	0	7
04:15 PM	1	0	0	1	1	0	1	2	0	6
04:30 PM	1	0	0	0	2	0	1	0	0	4
04:45 PM	0	0	0	0	1	0	2	0	0	3
Total	3	0	0	4	4	0	7	2	0	20
05:00 PM	0	0	0	1	0	0	1	0	0	2
05:15 PM	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	1	1	0	2
05:45 PM	0	0	0	1	2	0	0	1	0	4
Total	0	1	0	2	2	0	2	2	0	9
Grand Total	7	23	0	39	25	0	38	21	0	153
Apprch %	23.3	76.7	0	60.9	39.1	0	64.4	35.6	0	
Total %	4.6	15	0	25.5	16.3	0	24.8	13.7	0	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	**1**	**3**	0	**4**	4	**2**	0	6	**4**	0	0	4	14
01:15 PM	0	3	0	3	**5**	0	0	5	2	0	0	2	10
01:30 PM	0	2	0	2	5	2	0	**7**	2	**4**	0	**6**	**15**
01:45 PM	1	1	0	2	5	0	0	5	3	2	0	5	12
Total Volume	2	9	0	11	19	4	0	23	11	6	0	17	51
% App. Total	18.2	81.8	0		82.6	17.4	0		64.7	35.3	0		
PHF	.500	.750	.000	.688	.950	.500	.000	.821	.688	.375	.000	.708	.850

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**1**	0	0	**1**	**3**	0	0	**3**	**3**	0	0	**3**	**7**
04:15 PM	1	0	0	1	1	1	0	2	1	**2**	0	3	6
04:30 PM	1	0	0	1	0	**2**	0	2	1	0	0	1	4
04:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total Volume	3	0	0	3	4	4	0	8	7	2	0	9	20
% App. Total	100	0	0		50	50	0		77.8	22.2	0		
PHF	.750	.000	.000	.750	.333	.500	.000	.667	.583	.250	.000	.750	.714

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

Groups Printed- Bikes by Direction

	Trapelo Road From North			Trapelo Road (Route 60) From South			Waverley Oaks Road (Route 60) From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	1	0	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	2	0	0	0	0	0	2
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	2	0	0	2
05:00 PM	0	1	0	5	0	0	2	0	0	8
05:15 PM	0	1	0	1	0	0	1	0	0	3
05:30 PM	1	3	0	2	1	0	0	0	0	7
05:45 PM	0	0	0	0	0	0	2	1	0	3
Total	1	5	0	8	1	0	5	1	0	21
Grand Total	1	5	0	10	1	0	7	1	0	25
Apprch %	16.7	83.3	0	90.9	9.1	0	87.5	12.5	0	
Total %	4	20	0	40	4	0	28	4	0	

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	**1**
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	2	0	0	2	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.500

Transportation Data Corporation

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N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	1	0	1	**5**	0	0	**5**	**2**	0	0	2	**8**
05:15 PM	0	1	0	1	1	0	0	1	1	0	0	1	3
05:30 PM	**1**	**3**	0	**4**	2	**1**	0	3	0	0	0	0	7
05:45 PM	0	0	0	0	0	0	0	0	2	**1**	0	**3**	3
Total Volume	1	5	0	6	8	1	0	9	5	1	0	6	21
% App. Total	16.7	83.3	0		88.9	11.1	0		83.3	16.7	0		
PHF	.250	.417	.000	.375	.400	.250	.000	.450	.625	.250	.000	.500	.656

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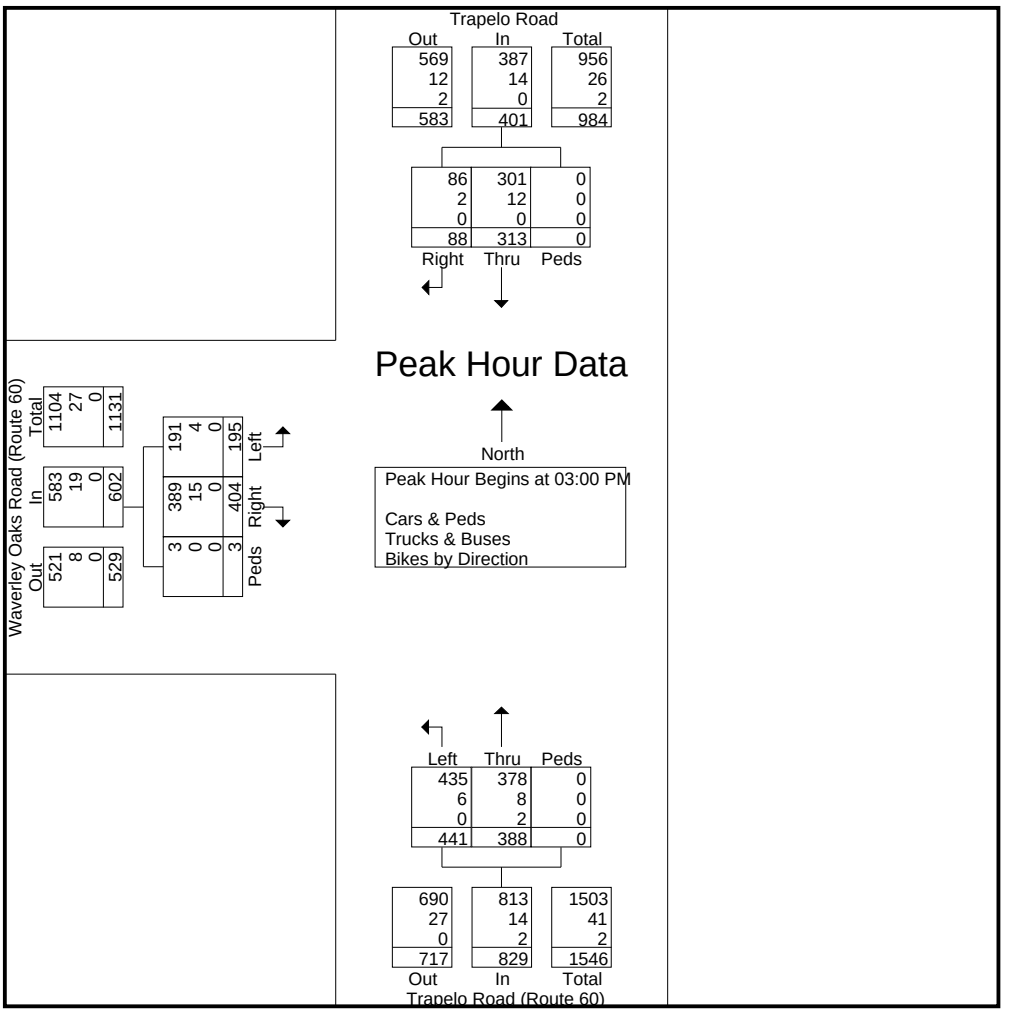
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:00 PM													
03:00 PM	24	76	0	100	87	99	0	186	91	44	0	135	421
03:15 PM	21	71	0	92	87	107	0	194	99	48	**1**	148	434
03:30 PM	**29**	**83**	0	**112**	**115**	105	0	220	106	**69**	1	**176**	**508**
03:45 PM	14	83	0	97	99	**130**	0	**229**	**108**	34	1	143	469
Total Volume	88	313	0	401	388	441	0	829	404	195	3	602	1832
% App. Total	21.9	78.1	0		46.8	53.2	0		67.1	32.4	0.5		
PHF	.759	.943	.000	.895	.843	.848	.000	.905	.935	.707	.750	.855	.902
Cars & Peds	86	301	0	387	378	435	0	813	389	191	3	583	1783
% Cars & Peds	97.7	96.2	0	96.5	97.4	98.6	0	98.1	96.3	97.9	100	96.8	97.3
Trucks & Buses	2	12	0	14	8	6	0	14	15	4	0	19	47
% Trucks & Buses	2.3	3.8	0	3.5	2.1	1.4	0	1.7	3.7	2.1	0	3.2	2.6
Bikes by Direction	0	0	0	0	2	0	0	2	0	0	0	0	2
% Bikes by Direction	0	0	0	0	0.5	0	0	0.2	0	0	0	0	0.1



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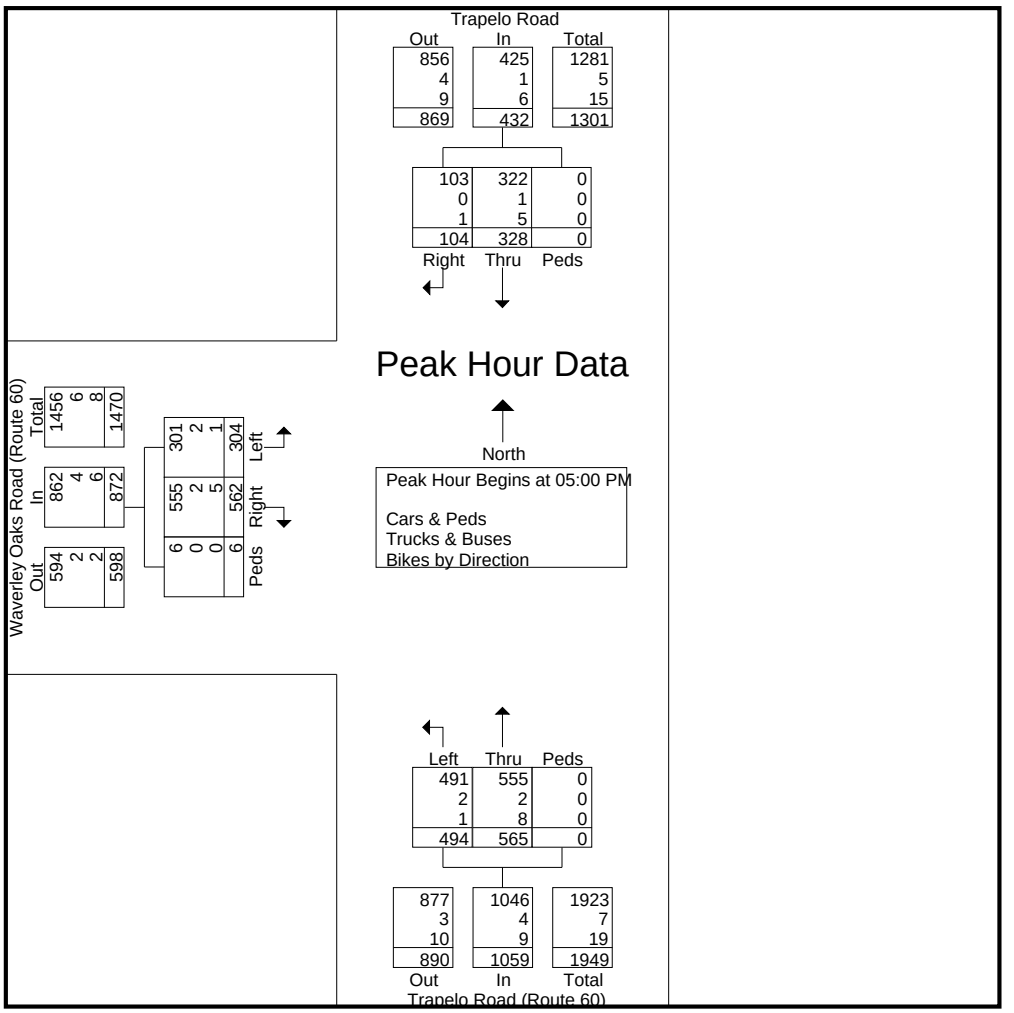
N/S: Trapelo Road/Route 60
W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759CC
Site Code : 216023
Start Date : 9/28/2016
Page No : 2

	Trapelo Road From North				Trapelo Road (Route 60) From South				Waverley Oaks Road (Route 60) From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	23	94	0	117	130	124	0	254	130	75	**3**	208	579
05:15 PM	**35**	76	0	111	138	**135**	0	273	**150**	68	0	218	602
05:30 PM	18	63	0	81	141	109	0	250	149	74	1	**224**	555
05:45 PM	28	**95**	0	**123**	**156**	126	0	**282**	133	**87**	2	222	**627**
Total Volume	104	328	0	432	565	494	0	1059	562	304	6	872	2363
% App. Total	24.1	75.9	0		53.4	46.6	0		64.4	34.9	0.7		
PHF	.743	.863	.000	.878	.905	.915	.000	.939	.937	.874	.500	.973	.942
Cars & Peds	103	322	0	425	555	491	0	1046	555	301	6	862	2333
% Cars & Peds	99.0	98.2	0	98.4	98.2	99.4	0	98.8	98.8	99.0	100	98.9	98.7
Trucks & Buses	0	1	0	1	2	2	0	4	2	2	0	4	9
% Trucks & Buses	0	0.3	0	0.2	0.4	0.4	0	0.4	0.4	0.7	0	0.5	0.4
Bikes by Direction	1	5	0	6	8	1	0	9	5	1	0	6	21
% Bikes by Direction	1.0	1.5	0	1.4	1.4	0.2	0	0.8	0.9	0.3	0	0.7	0.9



Transportation Data Corporation

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759A
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	28	6	0	7	17	20	0	14	32	3	0	15	21	0	0	163
06:15 AM	1	34	22	0	9	31	12	0	17	26	6	1	13	39	0	0	211
06:30 AM	0	45	24	0	17	41	14	0	18	47	7	0	15	41	0	0	269
06:45 AM	2	64	30	0	28	39	25	0	29	74	6	0	25	49	0	0	371
Total	3	171	82	0	61	128	71	0	78	179	22	1	68	150	0	0	1014
07:00 AM	2	99	25	1	26	46	33	0	41	93	15	0	20	46	1	0	448
07:15 AM	3	109	35	0	33	51	34	0	33	128	11	0	13	44	2	0	496
07:30 AM	2	102	42	0	30	54	40	0	47	139	16	0	13	50	1	0	536
07:45 AM	1	105	45	0	26	58	48	0	53	150	25	1	18	64	0	1	595
Total	8	415	147	1	115	209	155	0	174	510	67	1	64	204	4	1	2075
08:00 AM	3	113	46	0	29	53	49	0	52	140	20	0	18	56	3	4	586
08:15 AM	1	91	37	0	31	45	40	0	62	142	13	0	20	54	2	4	542
08:30 AM	2	90	40	0	35	58	39	0	50	141	11	0	19	54	2	1	542
08:45 AM	2	93	38	0	22	50	39	1	71	130	14	0	16	71	2	0	549
Total	8	387	161	0	117	206	167	1	235	553	58	0	73	235	9	9	2219
09:00 AM	2	92	31	0	19	56	41	0	49	117	15	0	16	49	2	0	489
09:15 AM	0	103	26	0	21	66	44	0	28	107	12	1	14	50	1	0	473
09:30 AM	4	78	32	1	23	52	47	0	40	85	11	0	18	53	0	0	444
09:45 AM	0	56	22	0	21	42	28	0	29	69	8	0	17	52	1	0	345
Total	6	329	111	1	84	216	160	0	146	378	46	1	65	204	4	0	1751
Grand Total	25	1302	501	2	377	759	553	1	633	1620	193	3	270	793	17	10	7059
Apprch %	1.4	71.1	27.4	0.1	22.3	44.9	32.7	0.1	25.8	66.1	7.9	0.1	24.8	72.8	1.6	0.9	
Total %	0.4	18.4	7.1	0	5.3	10.8	7.8	0	9	22.9	2.7	0	3.8	11.2	0.2	0.1	
Cars & Peds	24	1282	484	2	361	724	537	1	612	1585	182	3	254	756	13	10	6830
% Cars & Peds	96	98.5	96.6	100	95.8	95.4	97.1	100	96.7	97.8	94.3	100	94.1	95.3	76.5	100	96.8
Trucks & Buses	1	16	15	0	12	28	15	0	20	27	9	0	16	33	4	0	196
% Trucks & Buses	4	1.2	3	0	3.2	3.7	2.7	0	3.2	1.7	4.7	0	5.9	4.2	23.5	0	2.8
Bikes by Direction	0	4	2	0	4	7	1	0	1	8	2	0	0	4	0	0	33
% Bikes by Direction	0	0.3	0.4	0	1.1	0.9	0.2	0	0.2	0.5	1	0	0	0.5	0	0	0.5

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	105	45	0	151	26	**58**	48	0	**132**	53	**150**	**25**	**1**	**229**	18	**64**	0	1	**83**	**595**
08:00 AM	**3**	**113**	**46**	0	**162**	29	53	**49**	0	131	52	140	20	0	212	18	56	**3**	**4**	81	586
08:15 AM	1	91	37	0	129	31	45	40	0	116	**62**	142	13	0	217	**20**	54	2	4	80	542
08:30 AM	2	90	40	0	132	**35**	58	39	0	132	50	141	11	0	202	19	54	2	1	76	542
Total Volume	7	399	168	0	574	121	214	176	0	511	217	573	69	1	860	75	228	7	10	320	2265
% App. Total	1.2	69.5	29.3	0		23.7	41.9	34.4	0		25.2	66.6	8	0.1		23.4	71.2	2.2	3.1		
PHF	.583	.883	.913	.000	.886	.864	.922	.898	.000	.968	.875	.955	.690	.250	.939	.938	.891	.583	.625	.964	.952
Cars & Peds	7	393	162	0	562	116	207	170	0	493	210	560	65	1	836	68	217	6	10	301	2192
% Cars & Peds	100	98.5	96.4	0	97.9	95.9	96.7	96.6	0	96.5	96.8	97.7	94.2	100	97.2	90.7	95.2	85.7	100	94.1	96.8
Trucks & Buses	0	3	5	0	8	1	2	5	0	8	7	10	3	0	20	7	7	1	0	15	51
% Trucks & Buses	0	0.8	3.0	0	1.4	0.8	0.9	2.8	0	1.6	3.2	1.7	4.3	0	2.3	9.3	3.1	14.3	0	4.7	2.3
Bikes by Direction	0	3	1	0	4	4	5	1	0	10	0	3	1	0	4	0	4	0	0	4	22
% Bikes by Direction	0	0.8	0.6	0	0.7	3.3	2.3	0.6	0	2.0	0	0.5	1.4	0	0.5	0	1.8	0	0	1.3	1.0

Transportation Data Corporation

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759A
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	27	6	0	7	17	20	0	14	31	3	0	15	20	0	0	160
06:15 AM	1	34	21	0	8	29	12	0	17	26	6	1	13	38	0	0	206
06:30 AM	0	44	23	0	16	36	13	0	17	45	6	0	15	40	0	0	255
06:45 AM	2	64	30	0	24	35	24	0	28	69	6	0	24	46	0	0	352
Total	3	169	80	0	55	117	69	0	76	171	21	1	67	144	0	0	973
07:00 AM	2	99	25	1	25	45	32	0	40	90	14	0	19	44	1	0	437
07:15 AM	2	107	35	0	33	50	34	0	33	128	10	0	13	40	1	0	486
07:30 AM	2	100	41	0	29	52	39	0	46	136	16	0	12	48	1	0	522
07:45 AM	1	105	43	0	25	56	44	0	52	148	23	1	17	63	0	1	579
Total	7	411	144	1	112	203	149	0	171	502	63	1	61	195	3	1	2024
08:00 AM	3	111	46	0	27	51	49	0	50	137	19	0	17	54	2	4	570
08:15 AM	1	89	35	0	30	44	38	0	60	137	12	0	17	52	2	4	521
08:30 AM	2	88	38	0	34	56	39	0	48	138	11	0	17	48	2	1	522
08:45 AM	2	92	38	0	21	48	37	1	69	129	13	0	15	69	1	0	535
Total	8	380	157	0	112	199	163	1	227	541	55	0	66	223	7	9	2148
09:00 AM	2	90	30	0	18	53	39	0	45	114	13	0	14	45	1	0	464
09:15 AM	0	101	23	0	21	62	44	0	28	105	12	1	13	48	1	0	459
09:30 AM	4	76	29	1	22	49	45	0	38	83	10	0	17	49	0	0	423
09:45 AM	0	55	21	0	21	41	28	0	27	69	8	0	16	52	1	0	339
Total	6	322	103	1	82	205	156	0	138	371	43	1	60	194	3	0	1685
Grand Total	24	1282	484	2	361	724	537	1	612	1585	182	3	254	756	13	10	6830
Apprch %	1.3	71.5	27	0.1	22.2	44.6	33.1	0.1	25.7	66.5	7.6	0.1	24.6	73.2	1.3	1	
Total %	0.4	18.8	7.1	0	5.3	10.6	7.9	0	9	23.2	2.7	0	3.7	11.1	0.2	0.1	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	100	41	0	143	29	52	39	0	120	46	136	16	0	198	12	48	1	0	61	522
07:45 AM	1	105	43	0	149	25	**56**	44	0	125	52	**148**	**23**	**1**	**224**	**17**	**63**	0	1	**81**	**579**
08:00 AM	**3**	**111**	**46**	0	**160**	27	51	**49**	0	**127**	50	137	19	0	206	17	54	**2**	**4**	77	570
08:15 AM	1	89	35	0	125	**30**	44	38	0	112	**60**	137	12	0	209	17	52	2	4	75	521
Total Volume	7	405	165	0	577	111	203	170	0	484	208	558	70	1	837	63	217	5	9	294	2192
% App. Total	1.2	70.2	28.6	0		22.9	41.9	35.1	0		24.9	66.7	8.4	0.1		21.4	73.8	1.7	3.1		
PHF	.583	.912	.897	.000	.902	.925	.906	.867	.000	.953	.867	.943	.761	.250	.934	.926	.861	.625	.563	.907	.946

Transportation Data Corporation

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759A
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Trucks & Buses

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3
06:15 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	4
06:30 AM	0	1	1	0	1	5	1	0	1	1	1	0	0	1	0	0	13
06:45 AM	0	0	0	0	4	4	1	0	0	3	0	0	1	3	0	0	16
Total	0	2	1	0	6	11	2	0	1	5	1	0	1	6	0	0	36
07:00 AM	0	0	0	0	1	1	1	0	1	3	1	0	1	2	0	0	11
07:15 AM	1	2	0	0	0	1	0	0	0	0	1	0	0	4	1	0	10
07:30 AM	0	1	1	0	1	1	1	0	1	2	0	0	1	2	0	0	11
07:45 AM	0	0	2	0	1	0	4	0	1	2	2	0	1	0	0	0	13
Total	1	3	3	0	3	3	6	0	3	7	4	0	3	8	1	0	45
08:00 AM	0	2	0	0	0	0	0	0	2	1	1	0	1	1	1	0	9
08:15 AM	0	0	2	0	0	1	1	0	2	4	0	0	3	1	0	0	14
08:30 AM	0	1	1	0	0	1	0	0	2	3	0	0	2	5	0	0	15
08:45 AM	0	1	0	0	1	1	2	0	2	1	1	0	1	2	1	0	13
Total	0	4	3	0	1	3	3	0	8	9	2	0	7	9	2	0	51
09:00 AM	0	2	1	0	1	3	2	0	4	2	1	0	2	4	1	0	23
09:15 AM	0	2	3	0	0	4	0	0	0	2	0	0	1	2	0	0	14
09:30 AM	0	2	3	0	1	3	2	0	2	2	1	0	1	4	0	0	21
09:45 AM	0	1	1	0	0	1	0	0	2	0	0	0	1	0	0	0	6
Total	0	7	8	0	2	11	4	0	8	6	2	0	5	10	1	0	64
Grand Total	1	16	15	0	12	28	15	0	20	27	9	0	16	33	4	0	196
Apprch %	3.1	50	46.9	0	21.8	50.9	27.3	0	35.7	48.2	16.1	0	30.2	62.3	7.5	0	
Total %	0.5	8.2	7.7	0	6.1	14.3	7.7	0	10.2	13.8	4.6	0	8.2	16.8	2	0	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:45 AM																					
08:45 AM	0	1	0	0	1	**1**	1	**2**	0	4	2	1	**1**	0	4	1	2	**1**	0	4	13
09:00 AM	0	**2**	1	0	3	1	3	2	0	**6**	**4**	**2**	1	0	**7**	**2**	**4**	1	0	**7**	**23**
09:15 AM	0	2	**3**	0	**5**	0	**4**	0	0	4	0	2	0	0	2	1	2	0	0	3	14
09:30 AM	0	2	3	0	5	1	3	2	0	6	2	2	1	0	5	1	4	0	0	5	21
Total Volume	0	7	7	0	14	3	11	6	0	20	8	7	3	0	18	5	12	2	0	19	71
% App. Total	0	50	50	0		15	55	30	0		44.4	38.9	16.7	0		26.3	63.2	10.5	0		
PHF	.000	.875	.583	.000	.700	.750	.688	.750	.000	.833	.500	.875	.750	.000	.643	.625	.750	.500	.000	.679	.772

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759A
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Bikes by Direction

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
Total	0	0	1	0	0	0	0	0	1	3	0	0	0	0	0	0	5
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
Total	0	1	0	0	0	3	0	0	0	1	0	0	0	1	0	0	6
08:00 AM	0	0	0	0	2	2	0	0	0	2	0	0	0	1	0	0	7
08:15 AM	0	2	0	0	1	0	1	0	0	1	1	0	0	1	0	0	7
08:30 AM	0	1	1	0	1	1	0	0	0	0	0	0	0	1	0	0	5
08:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	1	0	4	4	1	0	0	3	1	0	0	3	0	0	20
09:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Grand Total	0	4	2	0	4	7	1	0	1	8	2	0	0	4	0	0	33
Apprch %	0	66.7	33.3	0	33.3	58.3	8.3	0	9.1	72.7	18.2	0	0	100	0	0	
Total %	0	12.1	6.1	0	12.1	21.2	3	0	3	24.2	6.1	0	0	12.1	0	0	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	**2**	0	0	2	0	0	0	0	0	0	**1**	0	0	**1**	3
08:00 AM	0	0	0	0	0	**2**	2	0	0	**4**	0	**2**	0	0	**2**	0	1	0	0	1	**7**
08:15 AM	0	**2**	0	0	**2**	1	0	**1**	0	2	0	1	**1**	0	2	0	1	0	0	1	7
08:30 AM	0	1	**1**	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
Total Volume	0	3	1	0	4	4	5	1	0	10	0	3	1	0	4	0	4	0	0	4	22
% App. Total	0	75	25	0		40	50	10	0		0	75	25	0		0	100	0	0		
PHF	.000	.375	.250	.000	.500	.500	.625	.250	.000	.625	.000	.375	.250	.000	.500	.000	1.00	.000	.000	1.00	.786

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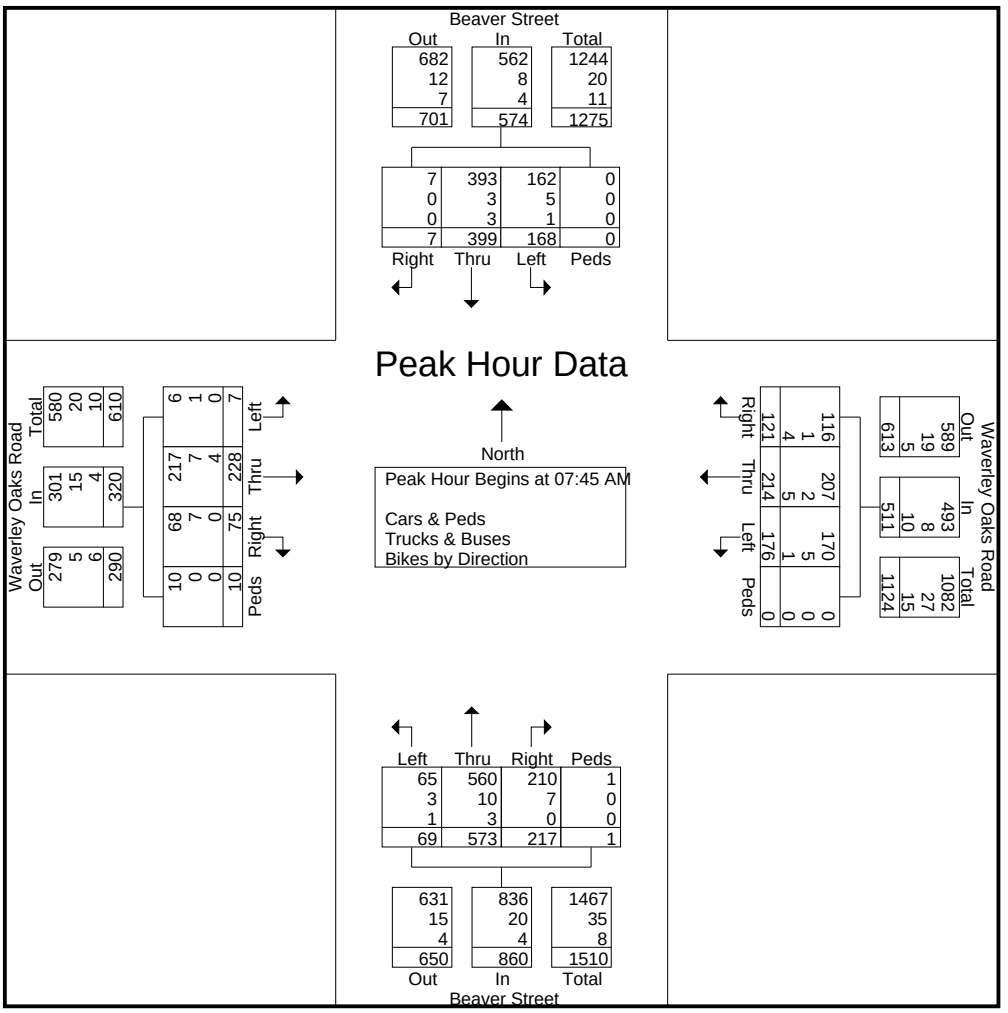
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759A
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	105	45	0	151	26	**58**	48	0	**132**	53	**150**	**25**	**1**	**229**	18	**64**	0	1	**83**	**595**
08:00 AM	**3**	**113**	**46**	0	**162**	29	53	**49**	0	131	52	140	20	0	212	18	56	**3**	**4**	81	586
08:15 AM	1	91	37	0	129	31	45	40	0	116	**62**	142	13	0	217	**20**	54	2	4	80	542
08:30 AM	2	90	40	0	132	**35**	58	39	0	132	50	141	11	0	202	19	54	2	1	76	542
Total Volume	7	399	168	0	574	121	214	176	0	511	217	573	69	1	860	75	228	7	10	320	2265
% App. Total	1.2	69.5	29.3	0		23.7	41.9	34.4	0		25.2	66.6	8	0.1		23.4	71.2	2.2	3.1		
PHF	.583	.883	.913	.000	.886	.864	.922	.898	.000	.968	.875	.955	.690	.250	.939	.938	.891	.583	.625	.964	.952
Cars & Peds	7	393	162	0	562	116	207	170	0	493	210	560	65	1	836	68	217	6	10	301	2192
% Cars & Peds	100	98.5	96.4	0	97.9	95.9	96.7	96.6	0	96.5	96.8	97.7	94.2	100	97.2	90.7	95.2	85.7	100	94.1	96.8
Trucks & Buses	0	3	5	0	8	1	2	5	0	8	7	10	3	0	20	7	7	1	0	15	51
% Trucks & Buses	0	0.8	3.0	0	1.4	0.8	0.9	2.8	0	1.6	3.2	1.7	4.3	0	2.3	9.3	3.1	14.3	0	4.7	2.3
Bikes by Direction	0	3	1	0	4	4	5	1	0	10	0	3	1	0	4	0	4	0	0	4	22
% Bikes by Direction	0	0.8	0.6	0	0.7	3.3	2.3	0.6	0	2.0	0	0.5	1.4	0	0.5	0	1.8	0	0	1.3	1.0



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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	1	55	28	0	41	40	33	0	34	70	11	0	11	35	2	0	361
01:15 PM	1	51	33	0	28	35	26	0	32	67	17	0	12	46	1	0	349
01:30 PM	2	51	27	2	33	43	26	0	29	67	11	0	12	48	0	0	351
01:45 PM	2	69	25	0	29	41	24	0	24	74	11	2	8	42	0	3	354
Total	6	226	113	2	131	159	109	0	119	278	50	2	43	171	3	3	1415
02:00 PM	1	78	34	0	32	34	28	0	29	98	7	0	13	41	2	1	398
02:15 PM	1	105	33	0	27	46	34	0	31	82	15	0	4	43	6	0	427
02:30 PM	3	75	27	0	25	37	31	0	37	75	13	1	9	36	4	0	373
02:45 PM	4	83	37	0	38	55	37	0	38	106	13	0	17	44	2	0	474
Total	9	341	131	0	122	172	130	0	135	361	48	1	43	164	14	1	1672
03:00 PM	2	85	41	0	35	59	43	0	38	102	11	0	14	56	2	0	488
03:15 PM	2	82	43	0	33	72	47	0	35	114	12	0	18	49	0	0	507
03:30 PM	3	100	33	0	34	88	49	0	38	100	16	1	11	46	4	0	523
03:45 PM	1	87	35	0	46	82	41	0	41	109	21	0	21	63	2	0	549
Total	8	354	152	0	148	301	180	0	152	425	60	1	64	214	8	0	2067
04:00 PM	3	113	39	0	37	80	52	0	36	111	23	0	16	49	0	0	559
04:15 PM	0	119	50	0	39	68	51	1	48	129	17	0	19	48	2	0	591
04:30 PM	4	117	48	0	43	72	59	0	44	136	20	0	22	56	1	0	622
04:45 PM	4	122	53	0	45	70	50	0	40	126	17	0	14	50	2	0	593
Total	11	471	190	0	164	290	212	1	168	502	77	0	71	203	5	0	2365
05:00 PM	3	122	43	0	35	79	59	0	31	121	31	0	24	47	4	0	599
05:15 PM	4	133	34	0	41	80	62	0	41	143	21	0	19	62	6	0	646
05:30 PM	3	108	45	1	36	66	49	2	37	142	17	1	19	48	4	0	578
05:45 PM	4	96	32	1	28	77	52	1	44	132	22	2	14	46	6	0	557
Total	14	459	154	2	140	302	222	3	153	538	91	3	76	203	20	0	2380
Grand Total	48	1851	740	4	705	1224	853	4	727	2104	326	7	297	955	50	4	9899
Apprch %	1.8	70	28	0.2	25.3	43.9	30.6	0.1	23	66.5	10.3	0.2	22.7	73.1	3.8	0.3	
Total %	0.5	18.7	7.5	0	7.1	12.4	8.6	0	7.3	21.3	3.3	0.1	3	9.6	0.5	0	
Cars & Peds	47	1819	722	4	696	1188	836	4	708	2077	318	7	292	927	48	4	9697
% Cars & Peds	97.9	98.3	97.6	100	98.7	97.1	98	100	97.4	98.7	97.5	100	98.3	97.1	96	100	98
Trucks & Buses	1	23	16	0	8	33	17	0	19	24	6	0	4	21	2	0	174
% Trucks & Buses	2.1	1.2	2.2	0	1.1	2.7	2	0	2.6	1.1	1.8	0	1.3	2.2	4	0	1.8
Bikes by Direction	0	9	2	0	1	3	0	0	0	3	2	0	1	7	0	0	28
% Bikes by Direction	0	0.5	0.3	0	0.1	0.2	0	0	0	0.1	0.6	0	0.3	0.7	0	0	0.3

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	2	85	41	0	128	35	59	43	0	137	38	102	11	0	151	14	56	2	0	72	488
03:15 PM	2	82	**43**	0	127	33	72	47	0	152	35	**114**	12	0	161	18	49	0	0	67	507
03:30 PM	**3**	**100**	33	0	**136**	34	**88**	**49**	0	**171**	38	100	16	**1**	155	11	46	**4**	0	61	523
03:45 PM	1	87	35	0	123	**46**	82	41	0	169	**41**	109	**21**	0	**171**	**21**	**63**	2	0	**86**	**549**
Total Volume	8	354	152	0	514	148	301	180	0	629	152	425	60	1	638	64	214	8	0	286	2067
% App. Total	1.6	68.9	29.6	0		23.5	47.9	28.6	0		23.8	66.6	9.4	0.2		22.4	74.8	2.8	0		
PHF	.667	.885	.884	.000	.945	.804	.855	.918	.000	.920	.927	.932	.714	.250	.933	.762	.849	.500	.000	.831	.941
Cars & Peds	8	351	147	0	506	148	290	180	0	618	150	422	59	1	632	62	207	8	0	277	2033
% Cars & Peds	100	99.2	96.7	0	98.4	100	96.3	100	0	98.3	98.7	99.3	98.3	100	99.1	96.9	96.7	100	0	96.9	98.4
Trucks & Buses	0	2	5	0	7	0	10	0	0	10	2	3	1	0	6	2	7	0	0	9	32
% Trucks & Buses	0	0.6	3.3	0	1.4	0	3.3	0	0	1.6	1.3	0.7	1.7	0	0.9	3.1	3.3	0	0	3.1	1.5
Bikes by Direction	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% Bikes by Direction	0	0.3	0	0	0.2	0	0.3	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**4**	117	48	0	169	43	72	59	0	174	**44**	136	20	0	200	22	56	1	0	79	622
04:45 PM	4	122	**53**	0	**179**	**45**	70	50	0	165	40	126	17	0	183	14	50	2	0	66	593
05:00 PM	3	122	43	0	168	35	79	59	0	173	31	121	**31**	0	183	**24**	47	4	0	75	599
05:15 PM	4	**133**	34	0	171	41	**80**	**62**	0	**183**	41	**143**	21	0	**205**	19	**62**	**6**	0	**87**	**646**
Total Volume	15	494	178	0	687	164	301	230	0	695	156	526	89	0	771	79	215	13	0	307	2460
% App. Total	2.2	71.9	25.9	0		23.6	43.3	33.1	0		20.2	68.2	11.5	0		25.7	70	4.2	0		
PHF	.938	.929	.840	.000	.959	.911	.941	.927	.000	.949	.886	.920	.718	.000	.940	.823	.867	.542	.000	.882	.952
Cars & Peds	15	484	176	0	675	163	298	223	0	684	153	522	89	0	764	79	209	13	0	301	2424
% Cars & Peds	100	98.0	98.9	0	98.3	99.4	99.0	97.0	0	98.4	98.1	99.2	100	0	99.1	100	97.2	100	0	98.0	98.5
Trucks & Buses	0	5	1	0	6	1	3	7	0	11	3	2	0	0	5	0	4	0	0	4	26
% Trucks & Buses	0	1.0	0.6	0	0.9	0.6	1.0	3.0	0	1.6	1.9	0.4	0	0	0.6	0	1.9	0	0	1.3	1.1
Bikes by Direction	0	5	1	0	6	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	10
% Bikes by Direction	0	1.0	0.6	0	0.9	0	0	0	0	0	0	0.4	0	0	0.3	0	0.9	0	0	0.7	0.4

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Page No : 1

Groups Printed- Cars & Peds

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	1	53	27	0	41	37	32	0	32	69	11	0	10	35	1	0	349
01:15 PM	1	51	32	0	26	35	25	0	31	66	17	0	12	46	1	0	343
01:30 PM	2	50	26	2	33	43	26	0	26	65	11	0	12	47	0	0	343
01:45 PM	2	68	23	0	29	40	23	0	23	73	10	2	8	38	0	3	342
Total	6	222	108	2	129	155	106	0	112	273	49	2	42	166	2	3	1377
02:00 PM	1	75	34	0	31	32	27	0	28	96	7	0	12	40	2	1	386
02:15 PM	1	101	32	0	26	42	30	0	30	76	14	0	4	42	6	0	404
02:30 PM	3	74	25	0	25	35	30	0	37	74	10	1	9	36	3	0	362
02:45 PM	4	79	37	0	37	53	36	0	35	105	12	0	17	44	2	0	461
Total	9	329	128	0	119	162	123	0	130	351	43	1	42	162	13	1	1613
03:00 PM	2	84	41	0	35	59	43	0	38	102	11	0	14	56	2	0	487
03:15 PM	2	81	42	0	33	70	47	0	34	111	12	0	18	48	0	0	498
03:30 PM	3	99	30	0	34	84	49	0	38	100	15	1	10	44	4	0	511
03:45 PM	1	87	34	0	46	77	41	0	40	109	21	0	20	59	2	0	537
Total	8	351	147	0	148	290	180	0	150	422	59	1	62	207	8	0	2033
04:00 PM	2	112	38	0	35	79	52	0	35	110	23	0	16	46	0	0	548
04:15 PM	0	118	50	0	39	66	51	1	47	126	17	0	19	47	2	0	583
04:30 PM	4	115	48	0	43	71	58	0	43	133	20	0	22	54	1	0	612
04:45 PM	4	120	53	0	44	68	48	0	40	126	17	0	14	48	2	0	584
Total	10	465	189	0	161	284	209	1	165	495	77	0	71	195	5	0	2327
05:00 PM	3	116	42	0	35	79	57	0	31	121	31	0	24	45	4	0	588
05:15 PM	4	133	33	0	41	80	60	0	39	142	21	0	19	62	6	0	640
05:30 PM	3	107	44	1	35	66	49	2	37	141	16	1	18	47	4	0	571
05:45 PM	4	96	31	1	28	72	52	1	44	132	22	2	14	43	6	0	548
Total	14	452	150	2	139	297	218	3	151	536	90	3	75	197	20	0	2347
Grand Total	47	1819	722	4	696	1188	836	4	708	2077	318	7	292	927	48	4	9697
Apprch %	1.8	70.2	27.9	0.2	25.6	43.6	30.7	0.1	22.8	66.8	10.2	0.2	23	72.9	3.8	0.3	
Total %	0.5	18.8	7.4	0	7.2	12.3	8.6	0	7.3	21.4	3.3	0.1	3	9.6	0.5	0	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	2	84	41	0	127	35	59	43	0	137	38	102	11	0	151	14	56	2	0	72	487
03:15 PM	2	81	**42**	0	125	33	70	47	0	150	34	**111**	12	0	157	18	48	0	0	66	498
03:30 PM	**3**	**99**	30	0	**132**	34	**84**	**49**	0	**167**	38	100	15	**1**	154	10	44	**4**	0	58	511
03:45 PM	1	87	34	0	122	**46**	77	41	0	164	**40**	109	**21**	0	**170**	**20**	**59**	2	0	**81**	**537**
Total Volume	8	351	147	0	506	148	290	180	0	618	150	422	59	1	632	62	207	8	0	277	2033
% App. Total	1.6	69.4	29.1	0		23.9	46.9	29.1	0		23.7	66.8	9.3	0.2		22.4	74.7	2.9	0		
PHF	.667	.886	.875	.000	.958	.804	.863	.918	.000	.925	.938	.950	.702	.250	.929	.775	.877	.500	.000	.855	.946

Transportation Data Corporation
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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**4**	115	48	0	167	43	71	58	0	172	**43**	133	20	0	196	22	54	1	0	77	612
04:45 PM	4	120	**53**	0	**177**	**44**	68	48	0	160	40	126	17	0	183	14	48	2	0	64	584
05:00 PM	3	116	42	0	161	35	79	57	0	171	31	121	**31**	0	183	**24**	45	4	0	73	588
05:15 PM	4	**133**	33	0	170	41	**80**	**60**	0	**181**	39	**142**	21	0	**202**	19	**62**	**6**	0	**87**	**640**
Total Volume	15	484	176	0	675	163	298	223	0	684	153	522	89	0	764	79	209	13	0	301	2424
% App. Total	2.2	71.7	26.1	0		23.8	43.6	32.6	0		20	68.3	11.6	0		26.2	69.4	4.3	0		
PHF	.938	.910	.830	.000	.953	.926	.931	.929	.000	.945	.890	.919	.718	.000	.946	.823	.843	.542	.000	.865	.947

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Trucks & Buses

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	2	1	0	0	3	1	0	2	1	0	0	1	0	1	0	12
01:15 PM	0	0	1	0	2	0	1	0	1	1	0	0	0	0	0	0	6
01:30 PM	0	1	1	0	0	0	0	0	3	2	0	0	0	1	0	0	8
01:45 PM	0	1	2	0	0	1	1	0	1	1	0	0	0	4	0	0	11
Total	0	4	5	0	2	4	3	0	7	5	0	0	1	5	1	0	37
02:00 PM	0	3	0	0	1	2	1	0	1	2	0	0	1	1	0	0	12
02:15 PM	0	4	1	0	1	4	4	0	1	5	1	0	0	1	0	0	22
02:30 PM	0	1	2	0	0	2	1	0	0	1	3	0	0	0	1	0	11
02:45 PM	0	3	0	0	1	2	1	0	3	1	1	0	0	0	0	0	12
Total	0	11	3	0	3	10	7	0	5	9	5	0	1	2	1	0	57
03:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:15 PM	0	0	1	0	0	1	0	0	1	3	0	0	0	1	0	0	7
03:30 PM	0	1	3	0	0	4	0	0	0	0	1	0	1	2	0	0	12
03:45 PM	0	0	1	0	0	5	0	0	1	0	0	0	1	4	0	0	12
Total	0	2	5	0	0	10	0	0	2	3	1	0	2	7	0	0	32
04:00 PM	1	1	1	0	1	1	0	0	1	1	0	0	0	3	0	0	10
04:15 PM	0	0	0	0	0	1	0	0	1	3	0	0	0	0	0	0	5
04:30 PM	0	1	0	0	0	1	1	0	1	2	0	0	0	2	0	0	8
04:45 PM	0	1	0	0	1	2	2	0	0	0	0	0	0	2	0	0	8
Total	1	3	1	0	2	5	3	0	3	6	0	0	0	7	0	0	31
05:00 PM	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	6
05:15 PM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	4
05:30 PM	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Total	0	3	2	0	1	4	4	0	2	1	0	0	0	0	0	0	17
Grand Total	1	23	16	0	8	33	17	0	19	24	6	0	4	21	2	0	174
Apprch %	2.5	57.5	40	0	13.8	56.9	29.3	0	38.8	49	12.2	0	14.8	77.8	7.4	0	
Total %	0.6	13.2	9.2	0	4.6	19	9.8	0	10.9	13.8	3.4	0	2.3	12.1	1.1	0	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	0	3	0	0	3	**1**	2	1	0	4	1	2	0	0	3	**1**	**1**	0	0	**2**	12
02:15 PM	0	**4**	1	0	**5**	1	**4**	**4**	0	**9**	1	**5**	1	0	**7**	0	1	0	0	1	**22**
02:30 PM	0	1	**2**	0	3	0	2	1	0	3	0	1	**3**	0	4	0	0	**1**	0	1	11
02:45 PM	0	3	0	0	3	1	2	1	0	4	**3**	1	1	0	5	0	0	0	0	0	12
Total Volume	0	11	3	0	14	3	10	7	0	20	5	9	5	0	19	1	2	1	0	4	57
% App. Total	0	78.6	21.4	0		15	50	35	0		26.3	47.4	26.3	0		25	50	25	0		
PHF	.000	.688	.375	.000	.700	.750	.625	.438	.000	.556	.417	.450	.417	.000	.679	.250	.500	.250	.000	.500	.648

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City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**1**	**1**	**1**	0	**3**	**1**	1	0	0	2	**1**	1	0	0	2	0	**3**	0	0	**3**	**10**
04:15 PM	0	0	0	0	0	0	1	0	0	1	1	**3**	0	0	**4**	0	0	0	0	0	5
04:30 PM	0	1	0	0	1	0	1	1	0	2	1	2	0	0	3	0	2	0	0	2	8
04:45 PM	0	1	0	0	1	1	**2**	**2**	0	**5**	0	0	0	0	0	0	2	0	0	2	8
Total Volume	1	3	1	0	5	2	5	3	0	10	3	6	0	0	9	0	7	0	0	7	31
% App. Total	20	60	20	0		20	50	30	0		33.3	66.7	0	0		0	100	0	0		
PHF	.250	.750	.250	.000	.417	.500	.625	.375	.000	.500	.750	.500	.000	.000	.563	.000	.583	.000	.000	.583	.775

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

Groups Printed- Bikes by Direction

	Beaver Street From North				Waverley Oaks Road From East				Beaver Street From South				Waverley Oaks Road From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3
04:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
04:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	3	0	0	1	1	0	0	0	1	0	0	0	1	0	0	7
05:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5
05:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
05:30 PM	0	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	4
05:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	5
Total	0	4	2	0	0	1	0	0	0	1	1	0	1	6	0	0	16
Grand Total	0	9	2	0	1	3	0	0	0	3	2	0	1	7	0	0	28
Apprch %	0	81.8	18.2	0	25	75	0	0	0	60	40	0	12.5	87.5	0	0	
Total %	0	32.1	7.1	0	3.6	10.7	0	0	0	10.7	7.1	0	3.6	25	0	0	

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	1	0	0	1	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	**2**
Total Volume	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
% App. Total	0	100	0	0		0	100	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.500	.000	.000	.500	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375

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N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	**5**
05:15 PM	0	0	**1**	0	1	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	2
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	**1**	0	1	**1**	1	0	0	2	4
05:45 PM	0	0	1	0	1	0	**1**	0	0	**1**	0	0	0	0	0	0	**3**	0	0	**3**	5
Total Volume	0	4	2	0	6	0	1	0	0	1	0	1	1	0	2	1	6	0	0	7	16
% App. Total	0	66.7	33.3	0		0	100	0	0		0	50	50	0		14.3	85.7	0	0		
PHF	.000	.333	.500	.000	.500	.000	.250	.000	.000	.250	.000	.250	.250	.000	.500	.250	.500	.000	.000	.583	.800

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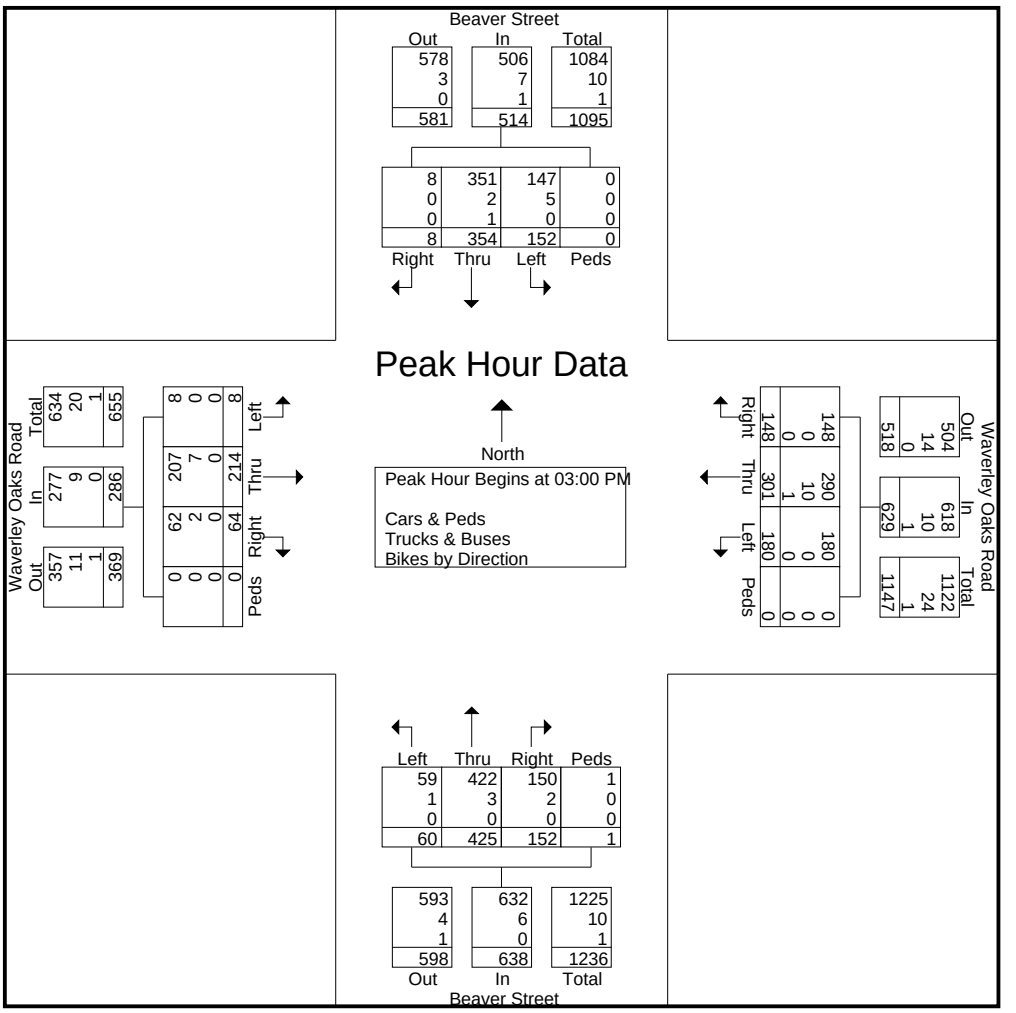
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016
Page No : 1

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	2	85	41	0	128	35	59	43	0	137	38	102	11	0	151	14	56	2	0	72	488
03:15 PM	2	82	**43**	0	127	33	72	47	0	152	35	**114**	12	0	161	18	49	0	0	67	507
03:30 PM	**3**	**100**	33	0	**136**	34	**88**	**49**	0	**171**	38	100	16	**1**	155	11	46	**4**	0	61	523
03:45 PM	1	87	35	0	123	**46**	82	41	0	169	**41**	109	**21**	0	**171**	**21**	**63**	2	0	**86**	**549**
Total Volume	8	354	152	0	514	148	301	180	0	629	152	425	60	1	638	64	214	8	0	286	2067
% App. Total	1.6	68.9	29.6	0		23.5	47.9	28.6	0		23.8	66.6	9.4	0.2		22.4	74.8	2.8	0		
PHF	.667	.885	.884	.000	.945	.804	.855	.918	.000	.920	.927	.932	.714	.250	.933	.762	.849	.500	.000	.831	.941
Cars & Peds	8	351	147	0	506	148	290	180	0	618	150	422	59	1	632	62	207	8	0	277	2033
% Cars & Peds	100	99.2	96.7	0	98.4	100	96.3	100	0	98.3	98.7	99.3	98.3	100	99.1	96.9	96.7	100	0	96.9	98.4
Trucks & Buses	0	2	5	0	7	0	10	0	0	10	2	3	1	0	6	2	7	0	0	9	32
% Trucks & Buses	0	0.6	3.3	0	1.4	0	3.3	0	0	1.6	1.3	0.7	1.7	0	0.9	3.1	3.3	0	0	3.1	1.5
Bikes by Direction	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
% Bikes by Direction	0	0.3	0	0	0.2	0	0.3	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1



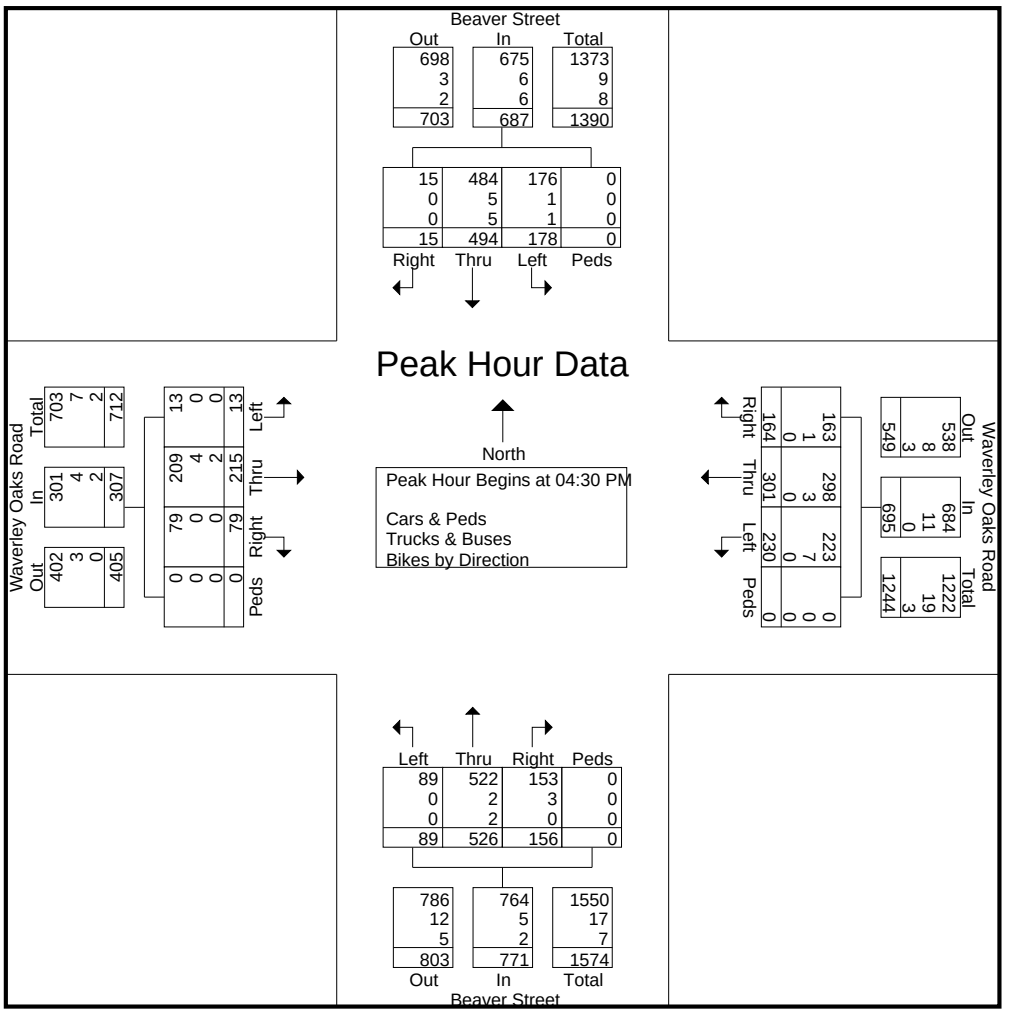
Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

N/S: Beaver Street
E/W: Waverley Oaks Road (Route 60)
City, State: Waltham, MA
Client: Bryant/T. Brayton

File Name : 04759AA
Site Code : 216023
Start Date : 9/28/2016
Page No : 2

	Beaver Street From North					Waverley Oaks Road From East					Beaver Street From South					Waverley Oaks Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**4**	117	48	0	169	43	72	59	0	174	**44**	136	20	0	200	22	56	1	0	79	622
04:45 PM	4	122	**53**	0	**179**	**45**	70	50	0	165	40	126	17	0	183	14	50	2	0	66	593
05:00 PM	3	122	43	0	168	35	79	59	0	173	31	121	**31**	0	183	**24**	47	4	0	75	599
05:15 PM	4	**133**	34	0	171	41	**80**	**62**	0	**183**	41	**143**	21	0	**205**	19	**62**	**6**	0	**87**	**646**
Total Volume	15	494	178	0	687	164	301	230	0	695	156	526	89	0	771	79	215	13	0	307	2460
% App. Total	2.2	71.9	25.9	0		23.6	43.3	33.1	0		20.2	68.2	11.5	0		25.7	70	4.2	0		
PHF	.938	.929	.840	.000	.959	.911	.941	.927	.000	.949	.886	.920	.718	.000	.940	.823	.867	.542	.000	.882	.952
Cars & Peds	15	484	176	0	675	163	298	223	0	684	153	522	89	0	764	79	209	13	0	301	2424
% Cars & Peds	100	98.0	98.9	0	98.3	99.4	99.0	97.0	0	98.4	98.1	99.2	100	0	99.1	100	97.2	100	0	98.0	98.5
Trucks & Buses	0	5	1	0	6	1	3	7	0	11	3	2	0	0	5	0	4	0	0	4	26
% Trucks & Buses	0	1.0	0.6	0	0.9	0.6	1.0	3.0	0	1.6	1.9	0.4	0	0	0.6	0	1.9	0	0	1.3	1.1
Bikes by Direction	0	5	1	0	6	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	10
% Bikes by Direction	0	1.0	0.6	0	0.9	0	0	0	0	0	0	0.4	0	0	0.3	0	0.9	0	0	0.7	0.4



APPENDIX B

Intersection Capacity Analysis

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NEL	NET	SWT	SWR
Vol, veh/h	0	0	0	450	512	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	79	90	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	570	569	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1139	569	569	0	-	0
Stage 1	569	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	223	522	1003	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	223	522	1003	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1003	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NEL	NET	SWT	SWR
Vol, veh/h	0	0	0	447	423	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	94	89	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	0	0	0	476	475	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	951	475	475	0	-	0
Stage 1	475	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	288	590	1087	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	590	1087	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	SBL	SBR	NEL	NET	SWT	SWR
Vol, veh/h	0	0	0	450	512	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	79	90	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	570	569	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1139	569	569	0	-	0
Stage 1	569	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	223	522	1003	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	223	522	1003	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SBLn1	SWT	SWR
Capacity (veh/h)	1003	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

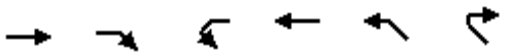
Movement	SBL	SBR	NEL	NET	SWT	SWR
Vol, veh/h	0	0	0	447	423	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	94	89	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	0	0	0	476	475	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	951	475	475	0	-	0
Stage 1	475	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	288	590	1087	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	590	1087	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SBLn1	SWT	SWR
Capacity (veh/h)	1087	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	458	107	434	315	79	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	11	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2055	0	1728	1863	1967	1794
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2055	0	1728	1863	1967	1794
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13					238
Link Speed (mph)	25			25	20	
Link Distance (ft)	191			204	209	
Travel Time (s)	5.2			5.6	7.1	
Peak Hour Factor	0.95	0.84	0.88	0.80	0.82	0.92
Heavy Vehicles (%)	1%	5%	1%	2%	4%	2%
Adj. Flow (vph)	482	127	493	394	96	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	609	0	493	394	96	329
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			11	26	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.85	0.85	1.04	1.00	0.85	0.85
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		1	2	3	3 1
Permitted Phases						
Detector Phase	6		1	2	3	3 1
Switch Phase						



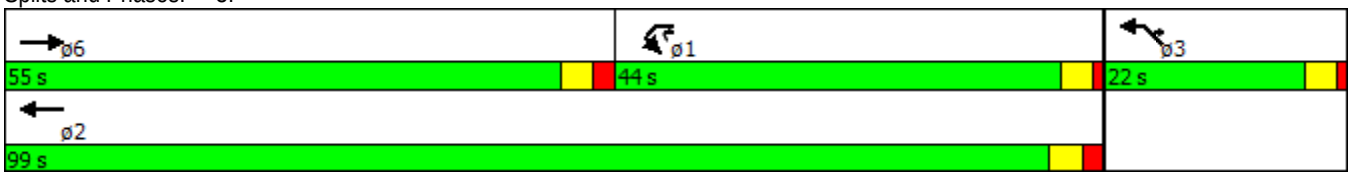
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Minimum Initial (s)	8.0		4.0	12.0	3.0	
Minimum Split (s)	22.0		8.0	17.0	19.0	
Total Split (s)	55.0		44.0	99.0	22.0	
Total Split (%)	45.5%		36.4%	81.8%	18.2%	
Maximum Green (s)	50.0		40.0	94.0	18.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		1.0	2.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		4.0	5.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0	2.5	2.0	
Recall Mode	None		None	Max	None	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	10.0				8.0	
Pedestrian Calls (#/hr)	5				0	
Act Effct Green (s)	38.4		51.7	94.0	9.9	65.5
Actuated g/C Ratio	0.34		0.46	0.83	0.09	0.58
v/c Ratio	0.86		0.62	0.25	0.56	0.29
Control Delay	46.6		30.4	2.6	62.0	4.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	46.6		30.4	2.6	62.0	4.8
LOS	D		C	A	E	A
Approach Delay	46.6			18.1	17.7	
Approach LOS	D			B	B	
90th %ile Green (s)	49.0		41.0	94.0	14.1	
90th %ile Term Code	Gap		Hold	MaxR	Gap	
70th %ile Green (s)	43.0		47.0	94.0	11.5	
70th %ile Term Code	Gap		Hold	MaxR	Gap	
50th %ile Green (s)	38.6		51.4	94.0	9.9	
50th %ile Term Code	Gap		Hold	MaxR	Gap	
30th %ile Green (s)	34.4		55.6	94.0	8.2	
30th %ile Term Code	Gap		Hold	MaxR	Gap	
10th %ile Green (s)	27.7		62.3	94.0	5.9	
10th %ile Term Code	Gap		Hold	MaxR	Gap	
Queue Length 50th (ft)	401		266	45	68	28
Queue Length 95th (ft)	501		#470	73	111	86
Internal Link Dist (ft)	111			124	129	
Turn Bay Length (ft)						
Base Capacity (vph)	917		790	1551	313	1253
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.66		0.62	0.25	0.31	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 121	
Actuated Cycle Length: 112.9	

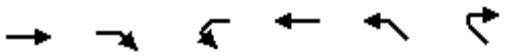
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	
90th %ile Actuated Cycle: 117.1	
70th %ile Actuated Cycle: 114.5	
50th %ile Actuated Cycle: 112.9	
30th %ile Actuated Cycle: 111.2	
10th %ile Actuated Cycle: 108.9	
Description: Waverley Oaks Road/Trapelo Road AM Peak	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3:



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	275	65	318	305	145	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	11	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2095	0	1694	1863	1948	1812
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2095	0	1694	1863	1948	1812
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	13					360
Link Speed (mph)	25			25	20	
Link Distance (ft)	191			204	209	
Travel Time (s)	5.2			5.6	7.1	
Peak Hour Factor	0.86	0.81	0.89	0.96	0.91	0.91
Heavy Vehicles (%)	0%	0%	3%	2%	5%	1%
Adj. Flow (vph)	320	80	357	318	159	360
Shared Lane Traffic (%)						
Lane Group Flow (vph)	400	0	357	318	159	360
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			11	26	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.85	0.85	1.04	1.00	0.85	0.85
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Prot	pt+ov
Protected Phases	6		1	2	3	3 1
Permitted Phases						
Detector Phase	6		1	2	3	3 1
Switch Phase						



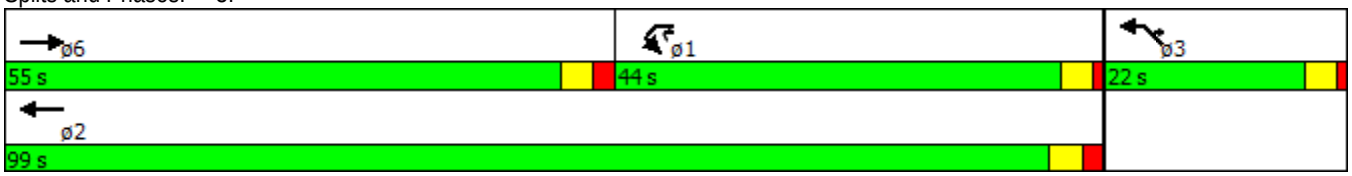
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Minimum Initial (s)	8.0		4.0	12.0	3.0	
Minimum Split (s)	22.0		8.0	17.0	19.0	
Total Split (s)	55.0		44.0	99.0	22.0	
Total Split (%)	45.5%		36.4%	81.8%	18.2%	
Maximum Green (s)	50.0		40.0	94.0	18.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		1.0	2.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		4.0	5.0	4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0	2.5	2.0	
Recall Mode	None		None	Max	None	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	10.0				8.0	
Pedestrian Calls (#/hr)	1				0	
Act Effct Green (s)	27.3		62.7	94.1	13.5	80.3
Actuated g/C Ratio	0.23		0.54	0.81	0.12	0.69
v/c Ratio	0.80		0.39	0.21	0.71	0.26
Control Delay	52.6		19.7	3.3	66.6	1.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	52.6		19.7	3.3	66.6	1.4
LOS	D		B	A	E	A
Approach Delay	52.6			11.9	21.4	
Approach LOS	D			B	C	
90th %ile Green (s)	37.3		52.7	94.0	18.0	
90th %ile Term Code	Gap		Hold	MaxR	Max	
70th %ile Green (s)	31.2		58.8	94.0	16.2	
70th %ile Term Code	Gap		Hold	MaxR	Gap	
50th %ile Green (s)	27.2		62.8	94.0	13.8	
50th %ile Term Code	Gap		Hold	MaxR	Gap	
30th %ile Green (s)	23.5		66.5	94.0	11.6	
30th %ile Term Code	Gap		Hold	MaxR	Gap	
10th %ile Green (s)	18.3		71.7	94.0	8.4	
10th %ile Term Code	Gap		Hold	MaxR	Gap	
Queue Length 50th (ft)	277		151	45	117	0
Queue Length 95th (ft)	343		281	82	189	35
Internal Link Dist (ft)	111			124	129	
Turn Bay Length (ft)						
Base Capacity (vph)	906		911	1503	300	1415
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.44		0.39	0.21	0.53	0.25

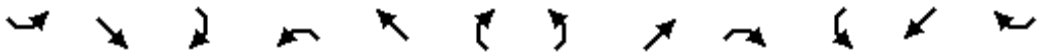
Intersection Summary	
Area Type:	Other
Cycle Length: 121	
Actuated Cycle Length: 116.6	

Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 54.9%	ICU Level of Service A
Analysis Period (min) 15	
90th %ile Actuated Cycle: 121	
70th %ile Actuated Cycle: 119.2	
50th %ile Actuated Cycle: 116.8	
30th %ile Actuated Cycle: 114.6	
10th %ile Actuated Cycle: 111.4	

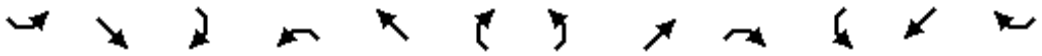
Description: Waverley Oaks Rd/Trapelo Rd PM Peak

Splits and Phases: 3:





Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	147	415	8	67	510	174	4	204	64	155	209	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	13	12	11	12	12	12	16
Storage Length (ft)	0		0	90		80	100		200	0		0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.996			0.961			0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1806	0	1646	3426	0	1444	3227	0	1736	1881	1777
Flt Permitted	0.950			0.950			0.950			0.339		
Satd. Flow (perm)	1770	1806	0	1646	3426	0	1444	3227	0	619	1881	1777
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			50			35				143
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		293			491			565			255	
Travel Time (s)		6.7			11.2			11.0			5.0	
Peak Hour Factor	0.82	0.95	0.67	0.67	0.85	0.82	0.50	0.80	0.80	0.81	0.90	0.87
Heavy Vehicles (%)	2%	1%	12%	6%	1%	2%	25%	4%	5%	4%	1%	3%
Adj. Flow (vph)	179	437	12	100	600	212	8	255	80	191	232	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	449	0	100	812	0	8	335	0	191	232	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	0.96	1.00	1.04	1.00	1.00	1.00	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		pm+pt	NA	Free
Protected Phases	3	6		7	2		1	8		5	4	

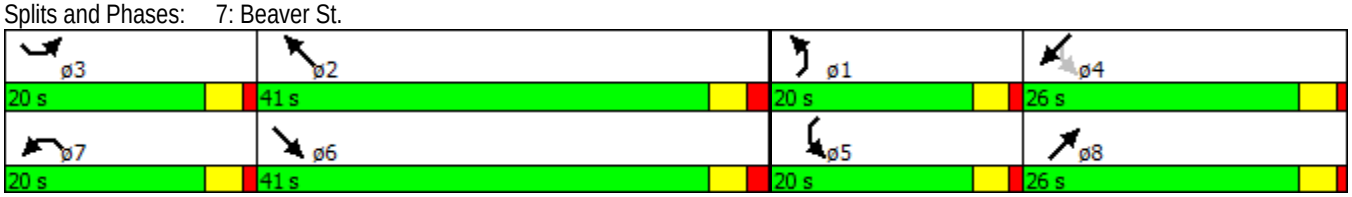


Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Permitted Phases										4		Free
Detector Phase	3	6		7	2		1	8		5	4	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	10.0	27.0		10.0	27.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	41.0		20.0	41.0		20.0	26.0		20.0	26.0	
Total Split (%)	18.7%	38.3%		18.7%	38.3%		18.7%	24.3%		18.7%	24.3%	
Maximum Green (s)	16.0	36.0		16.0	36.0		16.0	22.0		16.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		2.0	1.5		2.0	2.0	
Recall Mode	Max	Max		None	None		None	None		None	Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		1			1			1			0	
Act Effct Green (s)	16.4	37.0		9.9	27.9		6.2	13.6		29.8	28.1	87.4
Actuated g/C Ratio	0.19	0.42		0.11	0.32		0.07	0.16		0.34	0.32	1.00
v/c Ratio	0.54	0.59		0.54	0.72		0.08	0.63		0.52	0.38	0.07
Control Delay	42.9	26.6		50.3	29.1		46.0	37.7		27.5	26.9	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	42.9	26.6		50.3	29.1		46.0	37.7		27.5	26.9	0.1
LOS	D	C		D	C		D	D		C	C	A
Approach Delay		31.3			31.4			37.9			20.8	
Approach LOS		C			C			D			C	
90th %ile Green (s)	16.0	36.4		15.6	36.0		6.6	22.0		16.0	31.4	
90th %ile Term Code	MaxR	Hold		Gap	Max		Gap	Ped		Max	Hold	
70th %ile Green (s)	16.0	36.0		11.7	31.7		0.0	14.2		15.7	33.9	
70th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Gap		Gap	Hold	
50th %ile Green (s)	16.0	36.0		9.6	29.6		0.0	12.0		12.6	28.6	
50th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Gap		Gap	Hold	
30th %ile Green (s)	16.0	36.0		7.9	27.9		0.0	10.1		10.1	24.2	
30th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Gap		Gap	Hold	
10th %ile Green (s)	16.0	36.0		0.0	16.0		0.0	10.9		7.1	22.0	
10th %ile Term Code	MaxR	MaxR		Skip	Hold		Skip	Hold		Gap	MaxR	
Queue Length 50th (ft)	90	187		53	186		4	83		78	97	0
Queue Length 95th (ft)	174	389		84	281		12	122		127	200	0
Internal Link Dist (ft)		213			411			485			175	
Turn Bay Length (ft)				90			100					
Base Capacity (vph)	332	764		309	1475		270	858		420	604	1777
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.54	0.59		0.32	0.55		0.03	0.39		0.45	0.38	0.07

Intersection Summary

Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 87.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 29.9		Intersection LOS: C	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 107			
70th %ile Actuated Cycle: 94.6			
50th %ile Actuated Cycle: 87.2			
30th %ile Actuated Cycle: 81.1			
10th %ile Actuated Cycle: 67			
Description: Waverley Oaks Rd/Beaver St AM Peak			

Splits and Phases: 7: Beaver St.



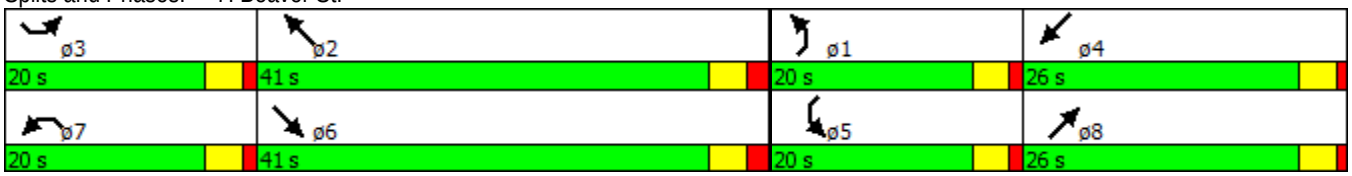
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	131	341	9	48	361	135	14	164	43	130	172	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	11	12	13	12	11	12	12	12	16
Storage Length (ft)	0		0	90		80	100		200	0		0
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Frt		0.995			0.960			0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1776	0	1586	3380	0	1687	3341	0	1719	1792	1794
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1776	0	1586	3380	0	1687	3341	0	1719	1792	1794
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			51			28				152
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		293			491			565			255	
Travel Time (s)		6.7			11.2			11.0			5.0	
Peak Hour Factor	0.89	0.81	0.56	0.80	0.85	0.89	1.00	1.00	1.00	0.88	0.78	0.80
Heavy Vehicles (%)	2%	3%	0%	10%	2%	4%	7%	1%	2%	5%	6%	2%
Adj. Flow (vph)	147	421	16	60	425	152	14	164	43	148	221	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	437	0	60	577	0	14	207	0	148	221	152
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.00	1.04	1.00	0.96	1.00	1.04	1.00	1.00	1.00	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Free
Protected Phases	3	6		7	2		1	8		5	4	

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Permitted Phases												Free
Detector Phase	3	6		7	2		1	8		5	4	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	8.0		6.0	8.0	
Minimum Split (s)	10.0	27.0		10.0	27.0		10.0	26.0		10.0	26.0	
Total Split (s)	20.0	41.0		20.0	41.0		20.0	26.0		20.0	26.0	
Total Split (%)	18.7%	38.3%		18.7%	38.3%		18.7%	24.3%		18.7%	24.3%	
Maximum Green (s)	16.0	36.0		16.0	36.0		16.0	22.0		16.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		2.0	1.5		2.0	2.0	
Recall Mode	Max	Max		None	None		None	None		Max	Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		0			1			1			0	
Act Effct Green (s)	16.2	36.4		8.1	25.9		6.2	10.9		16.2	29.3	86.4
Actuated g/C Ratio	0.19	0.42		0.09	0.30		0.07	0.13		0.19	0.34	1.00
v/c Ratio	0.44	0.58		0.41	0.55		0.12	0.47		0.46	0.36	0.08
Control Delay	38.7	25.2		47.7	25.3		43.9	34.1		39.3	25.6	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	38.7	25.2		47.7	25.3		43.9	34.1		39.3	25.6	0.1
LOS	D	C		D	C		D	C		D	C	A
Approach Delay		28.6			27.4			34.7			22.0	
Approach LOS		C			C			C			C	
90th %ile Green (s)	16.0	36.0		12.0	32.0		7.0	22.0		16.0	31.0	
90th %ile Term Code	MaxR	MaxR		Gap	Hold		Gap	Ped		MaxR	Hold	
70th %ile Green (s)	16.0	36.0		9.0	29.0		0.0	9.8		16.0	29.8	
70th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Gap		MaxR	Hold	
50th %ile Green (s)	16.0	36.0		7.6	27.6		0.0	8.5		16.0	28.5	
50th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Gap		MaxR	Hold	
30th %ile Green (s)	16.0	36.0		6.3	26.3		0.0	8.0		16.0	28.0	
30th %ile Term Code	MaxR	MaxR		Gap	Hold		Skip	Min		MaxR	Hold	
10th %ile Green (s)	16.0	36.0		0.0	16.0		0.0	8.0		16.0	28.0	
10th %ile Term Code	MaxR	MaxR		Skip	Hold		Skip	Min		MaxR	Hold	
Queue Length 50th (ft)	70	173		31	117		7	48		71	89	0
Queue Length 95th (ft)	153	309		68	188		29	85		153	156	0
Internal Link Dist (ft)		213			411			485			175	
Turn Bay Length (ft)				90			100					
Base Capacity (vph)	331	749		297	1454		316	881		322	607	1794
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.44	0.58		0.20	0.40		0.04	0.23		0.46	0.36	0.08

Intersection Summary

Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 86.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 103			
70th %ile Actuated Cycle: 87.8			
50th %ile Actuated Cycle: 85.1			
30th %ile Actuated Cycle: 83.3			
10th %ile Actuated Cycle: 73			

Splits and Phases: 7: Beaver St.



APPENDIX C

Crash Data Summary

Project: Traffic Impact Analysis
Waltham High School

Waltham, Massachusetts

BAI Project No. 216023

Person No.	
O	Operator
P	Passenger
U	Unknown

Crash Type	
A	Angle
BC	Bicycle
HO	Head-on
DEER	Deer
OBJ	Object
PED	Pedestrian
RE	Rear-End
SW	Side-swipe

Project: Traffic Impact Analysis
Waltham High School

Waltham, Massachusetts

BAI Project No. 216023

Summary of Crash Data for the Years 2013, 2014, 2015, 2016

Year	Property Damage Only	Injury	Fatal	Total
2013	11	6	0	17
2014	4	1	0	5
2015	8	3	0	11
2016	6	0	0	6

Project: Traffic Impact Analysis
Waltham High School

Waltham, Massachusetts

BAI Project No. 216023

Crash Data for the Years 2013, 2014, 2015, 2016

Crash No.	Report No.	Vehicle No.	Date	Direction of Travel*	Intersection/Crash Location	Person No.	No. of Injuries	Fatalities	Accident Type	Pavement Condition	Weather	Lighting	Military Time	Day
1	1300000046	1	1/14/2013	WEST	309 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O	0	0	OBJ	WET	CLOUDY	DAYLIGHT	0919	MONDAY
2	1300000152	1	2/11/2013	WEST	319 WAVERLEY OAKS ROAD AT CHAPEL ROAD	O	0	0	RE	SLUSH	RAIN	DAYLIGHT	0930	MONDAY
		2		WEST		O	0	0						
3	1300000225	1	3/5/2013	WEST	307 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O	0	0	RE	DRY	CLOUDY	DAYLIGHT	0840	TUESDAY
		2		WEST		O	0	0						
		3		WEST		O	0	0						
4	1300000235	1	3/7/2013	EAST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	1	0	A	WET	SNOW	DAYLIGHT	1603	THURSDAY
		2		EAST		O/P	0	0						
5	1300000297	1	3/21/2013	WEST	271 WAVERLEY OAKS ROAD, 400' SOUTHWEST OF CHAPEL ROAD	O	0	0	RE	DRY	CLOUDY	DAYLIGHT	1236	THURSDAY
		2		WEST		O	0	0						
6	1300000325	1	3/29/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O/3P	1	0	A	DRY	CLEAR	DAYLIGHT	1548	FRIDAY
		2		WEST		O	0	0						
7	1300000328	1	4/1/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	1	0	RE	DRY	CLEAR	DAYLIGHT	0913	MONDAY
		2		WEST		O	1	0						
8	1300000444	1	5/1/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O/2P	0	0	A	DRY	CLEAR	DAYLIGHT	1738	WEDNESDAY
		2		WEST		O	0	0						
9	1300000467	1	5/8/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	1	0	RE	DRY	CLOUDY	DAYLIGHT	1412	WEDNESDAY
		2		WEST		O	0	0						
10	1300000512	1	5/17/2013	SOUTH	502 WAVERLY OAKS ROAD,140' SOUTHWEST OF SHIRLEY ROAD	O	0	0	RE	DRY	CLEAR	DAYLIGHT	1644	FRIDAY
		2		SOUTH		O	0	0						
11	1300001051	1	10/2/2013	SOUTH	530 WAVERLEY OAKS ROAD, 400' SOUTH OF WAVERLEY OAKS ROAD AND TRAPELO ROAD	O	0	0	RE	DRY	CLEAR	DAYLIGHT	1532	WEDNESDAY
		2		SOUTH		O	0	0						
12	1300001056	1	10/4/2013	WEST	411 WAVERLEY OAKS ROAD, 400' EAST OF CHAPEL ROAD	O	1	0	RE	WET	CLOUDY	DAYLIGHT	1422	FRIDAY
		2		WEST		O	1	0						
		3		WEST		O	0	0						
13	1300001079	1	10/12/2013	WEST	360 WAVERLEY OAKS ROAD, 340' EAST OF CHAPEL ROAD	O	1	0	A	DRY	CLOUDY	DAYLIGHT	1213	SATURDAY
		2		WEST		O	0	0						
		3		EAST		O/P	1	0						
14	1300001128	1	10/27/2013	EAST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O/P	0	0	A	DRY	CLEAR	DARK-LIGHTED	1824	SUNDAY
		2		WEST		O/P	0	0						
15	1300001130	1	10/28/2013	WEST	307 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O/P	0	0	RE	DRY	CLEAR	DAYLIGHT	1343	MONDAY
		2		WEST		O	0	0						
16	1300001369	1	12/18/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	0	0	HO	WET	CLEAR	DAYLIGHT	1550	WEDNESDAY
		2		EAST		O/P	0	0						
17	1300001370	1	12/18/2013	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	0	0	RE	WET	CLEAR	DUSK	1622	WEDNESDAY
		2		WEST		O	0	0						
18	1400000282	1	3/19/2014	WEST	355 WAVERLEY OAKS ROAD, 220' EAST OF CHAPEL ROAD	O	0	0	RE	DRY	CLEAR	DAYLIGHT	0911	WEDNESDAY
		2		WEST		O	0	0						
		3		WEST		O	0	0						
19	1400000490	1	5/14/2014	SOUTH	271 WAVERLEY OAKS ROAD, 400' SOUTHWEST OF CHAPEL ROAD	O	0	0	RE	DRY	CLOUDY	DAYLIGHT	1019	WEDNESDAY
		2		SOUTH		O	0	0						
20	1400000575	1	6/6/2014	EAST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O/P	0	0	A	DRY	CLEAR	DAYLIGHT	0810	FRIDAY
		2		NORTH		O	0	0						
21	1400000975	1	10/9/2014	SOUTH	271 WAVERLEY OAKS ROAD, 600' NORTH OF BEAVER STREET	O	0	0	RE	DRY	CLEAR	DAYLIGHT	1719	THURSDAY
		2		SOUTH		O/P	0	0						
		3		SOUTH		O	0	0						

Project: Traffic Impact Analysis
Waltham High School

Waltham, Massachusetts

BAI Project No. 216023

Crash Data for the Years 2013, 2014, 2015, 2016

Crash No.	Report No.	Vehicle No.	Date	Direction of Travel*	Intersection/Crash Location	Person No.	No. of Injuries	Fatalities	Accident Type	Pavement Condition	Weather	Lighting	Military Time	Day
22	1400001227	1	12/12/2014	NORTH	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	1	0	A	DRY	CLEAR	DARK-LIGHTED	1747	FRIDAY
		2		EAST		O	0	0						
23	1500000034	1	1/9/2015	WEST	411 WAVERLEY OAKS ROAD, 400' EAST OF CHAPEL ROAD	O	0	0	RE	DRY	CLEAR	DAYLIGHT	1556	FRIDAY
		2		WEST		O/P	1	0						
24	1500000098	1	1/24/2015	WEST	510 WAVERLEY OAKS ROAD, 50' SOUTHWEST OF SHIRLEY ROAD	O/2P	0	0	OBJ	SNOW	SNOW	DAYLIGHT	0956	SATURDAY
25	1500000306	1	3/5/2015	WEST	411 WAVERLEY OAKS ROAD, 400' EAST OF CHAPEL ROAD	O	1	0	PED	DRY	CLEAR	DARK-LIGHTED	1825	THURSDAY
26	1500000358	1	3/24/2015	EAST	411 WAVERLEY OAKS ROAD, 400' EAST OF CHAPEL ROAD	O	0	0	DEER	DRY	CLEAR	DAWN	0610	TUESDAY
27	1500000578	1	6/1/2015	NORTH	271 WAVERLEY OAKS ROAD, 400' SOUTHWEST OF CHAPEL ROAD	O	0	0	RE	WET	CLOUDY	DAYLIGHT	1159	MONDAY
		2		NORTH		O	0	0						
		3		NORTH		O	0	0						
28	1500000769	1	7/19/2015	SOUTH	INTERSECTION OF WAVERLEY OAKS ROAD AND TRAPELO ROAD	O/P	1	0	OBJ	DRY	CLEAR	DAYLIGHT	1027	SUNDAY
29	1500000822	1	8/4/2015	WEST	319 WAVERLEY OAKS ROAD AT CHAPEL ROAD	O	0	0	SW	WET	CLEAR	DAYLIGHT	1643	TUESDAY
		2		WEST		O	0	0						
30	1500001255	1	12/2/2015	WEST	307 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O	0	0	RE	WET	RAIN	DAYLIGHT	1121	WEDNESDAY
		2		WEST		O	0	0						
31	1500001335	1	12/18/2015	WEST	307 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O	0	0	A	DRY	CLOUDY	DAYLIGHT	1710	FRIDAY
		2		EAST		O	0	0						
32	1500001336	1	12/16/2015	WEST	411 WAVERLEY OAKS ROAD, 400' EAST OF CHAPEL ROAD	O	0	0	OBJ	DRY	CLOUDY	DAYLIGHT	1243	WEDNESDAY
33	1500001377	1	12/29/2015	SOUTH	412 WAVERLEY OAKS ROAD, 400' WEST OF UPTON ROAD	O	0	0	A	WET	RAIN	DAYLIGHT	1249	TUESDAY
		2		WEST		O	0	0						
34	1600000087	1	1/26/2016	WEST	355 WAVERLEY OAKS ROAD, 220' EAST OF CHAPEL ROAD	O	0	0	RE	WET	CLOUDY	DAYLIGHT	0953	TUESDAY
		2		WEST		O	0	0						
		3		WEST		O	0	0						
35	1600000253	1	3/16/2016	PARKED	271 WAVERLEY OAKS ROAD, 600' NORTH OF BEAVER STREET	O	0	0	SW	DRY	CLOUDY	DAYLIGHT	1214	WEDNESDAY
		2		SOUTH		O	0	0						
36	1600000315	1	4/4/2016	WEST	307 WAVERLEY OAKS ROAD, 30' WEST OF CHAPEL ROAD	O	0	0	OBJ	SNOW	SNOW	DAYLIGHT	0904	MONDAY
37	1600000396	1	4/27/2016	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O/2P	0	0	A	DRY	CLEAR	DARK-LIGHTED	2108	WEDNESDAY
		2		SOUTH		O	0	0						
38	1600000570	1	6/20/2016	WEST	411 WAVERLEY OAKS ROAD, 100' EAST OF UPTON ROAD	O	0	0	A	DRY	CLEAR	DAYLIGHT	1626	MONDAY
		2		WEST		O	0	0						
39	1600000682	1	7/20/2016	EAST	PARKVIEW ROAD, 550' EAST OF CHAPEL ROAD	O	0	0	RE	DRY	CLEAR	DAYLIGHT	0922	WEDNESDAY
		2		EAST		O	0	0						
		3		EAST		O	0	0						
						TOTAL	13	0						

APPENDIX D

Speed Data

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Waverley Oaks Road (Route 60)
west of Chapel Road
City, State: Waltham, MA
Client: Bryant/T. Brayton

04759Aspeed
Site Code: 216023

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	Total
09/28/16	0	0	0	3	14	9	4	1	0	0	0	0	0	31
01:00	0	0	0	2	2	3	1	1	0	0	0	0	0	9
02:00	0	0	0	1	6	5	2	1	0	0	0	0	0	15
03:00	0	0	0	1	4	4	1	1	1	0	0	0	0	12
04:00	0	0	0	1	6	10	7	2	1	0	0	0	0	27
05:00	0	1	1	8	44	35	15	3	0	1	0	0	0	108
06:00	6	2	22	48	111	90	24	3	0	0	0	0	0	306
07:00	21	11	65	102	175	108	30	3	0	0	0	0	0	515
08:00	35	48	120	199	152	73	17	2	0	0	0	0	0	646
09:00	31	29	70	133	130	89	15	1	0	0	0	0	0	498
10:00	9	2	24	71	141	108	22	3	0	0	0	0	0	380
11:00	10	3	19	66	136	103	23	5	0	0	0	0	0	365
12 PM	14	18	36	73	168	107	18	7	1	0	0	0	0	442
13:00	17	10	21	99	132	111	24	3	0	0	0	0	0	417
14:00	15	1	22	81	188	116	33	4	1	0	0	0	0	461
15:00	24	2	20	102	222	135	34	2	2	0	1	0	0	544
16:00	40	16	41	119	223	150	18	1	2	1	0	0	0	611
17:00	36	8	45	155	286	102	9	1	0	0	0	0	0	642
18:00	28	5	26	117	233	81	25	1	0	0	0	1	0	517
19:00	8	2	19	60	123	92	23	3	0	0	0	0	0	330
20:00	4	1	6	33	106	73	21	1	1	0	0	0	0	246
21:00	1	0	1	17	89	51	12	2	0	0	0	0	0	173
22:00	1	0	3	15	47	42	18	2	0	0	0	0	0	128
23:00	1	1	0	7	18	27	13	1	0	0	0	0	0	68
Total	301	160	561	1513	2756	1724	409	54	9	2	1	1	0	7491
Percent	4.0%	2.1%	7.5%	20.2%	36.8%	23.0%	5.5%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	

Daily

15th Percentile :	25 MPH
50th Percentile :	32 MPH
85th Percentile :	38 MPH
95th Percentile :	41 MPH
Mean Speed(Average) :	32 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	4480
Percent in Pace :	59.8%
Number of Vehicles > 35 MPH :	2200
Percent of Vehicles > 35 MPH :	29.4%

Grand Total	301	160	561	1513	2756	1724	409	54	9	2	1	1	0	7491

Overall

15th Percentile :	25 MPH
50th Percentile :	32 MPH
85th Percentile :	38 MPH
95th Percentile :	41 MPH
Mean Speed(Average) :	32 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	4480
Percent in Pace :	59.8%
Number of Vehicles > 35 MPH :	2200
Percent of Vehicles > 35 MPH :	29.4%

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Waverley Oaks Road (Route 60)
west of Chapel Road
City, State: Waltham, MA
Client: Bryant/T. Brayton

04759Aspeed
Site Code: 216023

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	Total
09/28/16	0	0	0	3	6	8	19	0	1	0	0	0	0	37
01:00	0	0	0	1	7	7	2	0	1	0	0	0	0	18
02:00	1	0	0	0	5	4	0	0	0	0	0	0	0	10
03:00	0	0	0	0	2	4	2	0	0	1	0	0	0	9
04:00	0	0	1	1	7	9	11	2	0	0	0	0	0	31
05:00	0	0	1	0	7	23	25	3	2	0	1	0	0	62
06:00	10	0	3	5	46	119	47	7	1	1	1	0	0	240
07:00	23	2	11	35	123	216	66	7	0	0	0	0	0	483
08:00	31	3	15	77	175	170	33	2	0	0	0	0	0	506
09:00	23	3	27	112	163	140	29	3	0	0	0	0	0	500
10:00	15	0	7	41	103	139	51	6	0	0	0	0	0	362
11:00	5	0	9	21	106	181	58	5	1	0	0	0	0	386
12 PM	17	0	12	48	148	188	42	6	0	0	0	0	0	461
13:00	13	1	14	35	136	159	36	1	2	0	0	0	0	397
14:00	11	2	9	26	128	203	49	5	0	0	1	0	0	434
15:00	33	2	25	56	177	226	59	2	0	0	1	0	0	581
16:00	31	6	25	105	204	217	45	4	0	0	0	0	1	638
17:00	44	4	37	127	248	175	30	4	0	1	0	1	0	671
18:00	28	5	17	77	222	216	37	5	0	0	1	0	0	608
19:00	5	1	6	20	150	158	41	4	0	0	0	0	0	385
20:00	4	1	5	8	69	107	43	5	1	0	0	0	0	243
21:00	2	1	2	11	45	94	22	3	0	0	0	0	0	180
22:00	0	0	0	6	30	67	22	3	0	1	0	0	0	129
23:00	0	1	0	1	21	45	17	3	1	0	0	0	0	89
Total	296	32	226	816	2328	2875	786	80	10	4	5	1	1	7460
Percent	4.0%	0.4%	3.0%	10.9%	31.2%	38.5%	10.5%	1.1%	0.1%	0.1%	0.1%	0.0%	0.0%	

Daily

15th Percentile :	28 MPH
50th Percentile :	35 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	34 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5203
Percent in Pace :	69.7%
Number of Vehicles > 35 MPH :	3762
Percent of Vehicles > 35 MPH :	50.4%

Grand Total	296	32	226	816	2328	2875	786	80	10	4	5	1	1	7460

Overall

15th Percentile :	28 MPH
50th Percentile :	35 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH
Mean Speed(Average) :	34 MPH
10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5203
Percent in Pace :	69.7%
Number of Vehicles > 35 MPH :	3762
Percent of Vehicles > 35 MPH :	50.4%

Transportation Data Corporation
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tel (781) 587-0086 cell (781) 439-4999

Waverley Oaks Road (Route 60)
west of Chapel Road
City, State: Waltham, MA
Client: Bryant/T. Brayton

04759Avolume
Site Code: 216023

Start	28-Sep-16	EB		WB		Combined		29-Sep	EB		WB		Combined	
Time	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		15	83	13	103	28	186		*	*	*	*	*	*
12:15		7	121	5	141	12	262		*	*	*	*	*	*
12:30		3	123	10	116	13	239		*	*	*	*	*	*
12:45		6	116	9	101	15	217		*	*	*	*	*	*
01:00		2	108	9	114	11	222		*	*	*	*	*	*
01:15		2	112	1	83	3	195		*	*	*	*	*	*
01:30		2	104	4	104	6	208		*	*	*	*	*	*
01:45		3	93	4	96	7	189		*	*	*	*	*	*
02:00		7	117	3	98	10	215		*	*	*	*	*	*
02:15		2	114	4	121	6	235		*	*	*	*	*	*
02:30		5	111	1	103	6	214		*	*	*	*	*	*
02:45		1	120	2	112	3	232		*	*	*	*	*	*
03:00		3	150	0	136	3	286		*	*	*	*	*	*
03:15		3	137	3	139	6	276		*	*	*	*	*	*
03:30		4	122	2	147	6	269		*	*	*	*	*	*
03:45		2	135	4	160	6	295		*	*	*	*	*	*
04:00		4	146	0	153	4	299		*	*	*	*	*	*
04:15		6	152	8	150	14	302		*	*	*	*	*	*
04:30		7	160	8	***172***	15	332		*	*	*	*	*	*
04:45		10	154	15	***164***	25	318		*	*	*	*	*	*
05:00		16	137	9	***181***	25	318		*	*	*	*	*	*
05:15		25	***167***	6	***174***	31	***341***		*	*	*	*	*	*
05:30		35	***164***	14	164	49	***328***		*	*	*	*	*	*
05:45		32	***175***	33	153	65	***328***		*	*	*	*	*	*
06:00		44	***158***	43	198	87	***356***		*	*	*	*	*	*
06:15		68	132	52	142	120	274		*	*	*	*	*	*
06:30		79	137	63	135	142	272		*	*	*	*	*	*
06:45		115	90	82	133	197	223		*	*	*	*	*	*
07:00		111	86	109	132	220	218		*	*	*	*	*	*
07:15		118	86	117	86	235	172		*	*	*	*	*	*
07:30		121	93	123	89	244	182		*	*	*	*	*	*
07:45		165	65	134	79	299	144		*	*	*	*	*	*
08:00		145	76	132	55	277	131		*	*	*	*	*	*
08:15		***154***	72	120	77	***274***	149		*	*	*	*	*	*
08:30		***157***	53	***132***	45	***289***	98		*	*	*	*	*	*
08:45		***190***	45	***122***	66	***312***	111		*	*	*	*	*	*
09:00		***149***	52	***136***	41	***285***	93		*	*	*	*	*	*
09:15		113	45	***136***	41	249	86		*	*	*	*	*	*
09:30		120	47	126	50	246	97		*	*	*	*	*	*
09:45		117	29	102	49	219	78		*	*	*	*	*	*
10:00		102	35	119	39	221	74		*	*	*	*	*	*
10:15		102	35	82	30	184	65		*	*	*	*	*	*
10:30		106	26	75	33	181	59		*	*	*	*	*	*
10:45		70	32	86	27	156	59		*	*	*	*	*	*
11:00		84	21	91	27	175	48		*	*	*	*	*	*
11:15		82	18	93	29	175	47		*	*	*	*	*	*
11:30		99	16	99	19	198	35		*	*	*	*	*	*
11:45		101	13	104	14	205	27		*	*	*	*	*	*
Total		2914	4583	2645	4821	5559	9404		0	0	0	0	0	0
Day Total		7497		7466		14963			0		0		0	
% Total		19.5%	30.6%	17.7%	32.2%				0.0%	0.0%	0.0%	0.0%		
Peak	-	08:15	05:15	08:30	04:30	08:15	05:15	-	-	-	-	-	-	-
Vol.	-	650	664	526	691	1160	1353	-	-	-	-	-	-	-
P.H.F.		0.855	0.949	0.967	0.954	0.929	0.950							

ADT	ADT 14,963	AADT 14,963

Transportation Data Corporation

Mario Perone, mperone1@verizon.net
tel (781) 587-0086 cell (781) 439-4999

Waverley Oaks Road (Route 60)
west of Chapel Road
City, State: Waltham, MA
Client: Bryant/T. Brayton

04759Avolume
Site Code: 216023

Start Time	28-Sep-16 Wed	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		15	83			13	103				
12:15		7	121			5	141				
12:30		3	123			10	116				
12:45		6	116	31	443	9	101	37	461	68	904
01:00		2	108			9	114				
01:15		2	112			1	83				
01:30		2	104			4	104				
01:45		3	93	9	417	4	96	18	397	27	814
02:00		7	117			3	98				
02:15		2	114			4	121				
02:30		5	111			1	103				
02:45		1	120	15	462	2	112	10	434	25	896
03:00		3	150			0	136				
03:15		3	137			3	139				
03:30		4	122			2	147				
03:45		2	135	12	544	4	160	9	582	21	1126
04:00		4	146			0	153				
04:15		6	152			8	150				
04:30		7	160			8	172				
04:45		10	154	27	612	15	164	31	639	58	1251
05:00		16	137			9	181				
05:15		25	167			6	174				
05:30		35	164			14	164				
05:45		32	175	108	643	33	153	62	672	170	1315
06:00		44	158			43	198				
06:15		68	132			52	142				
06:30		79	137			63	135				
06:45		115	90	306	517	82	133	240	608	546	1125
07:00		111	86			109	132				
07:15		118	86			117	86				
07:30		121	93			123	89				
07:45		165	65	515	330	134	79	483	386	998	716
08:00		145	76			132	55				
08:15		154	72			120	77				
08:30		157	53			132	45				
08:45		190	45	646	246	122	66	506	243	1152	489
09:00		149	52			136	41				
09:15		113	45			136	41				
09:30		120	47			126	50				
09:45		117	29	499	173	102	49	500	181	999	354
10:00		102	35			119	39				
10:15		102	35			82	30				
10:30		106	26			75	33				
10:45		70	32	380	128	86	27	362	129	742	257
11:00		84	21			91	27				
11:15		82	18			93	29				
11:30		99	16			99	19				
11:45		101	13	366	68	104	14	387	89	753	157
Total		2914	4583			2645	4821			5559	9404
Combined Total		7497				7466				14963	
Percentage	0.0%										
Total		2914	4583			2645	4821			5559	9404
Percent		38.9%	61.1%			35.4%	64.6%			37.2%	62.8%
ADT		ADT 14,963		AADT 14,963							

APPENDIX E

Supplemental Plans

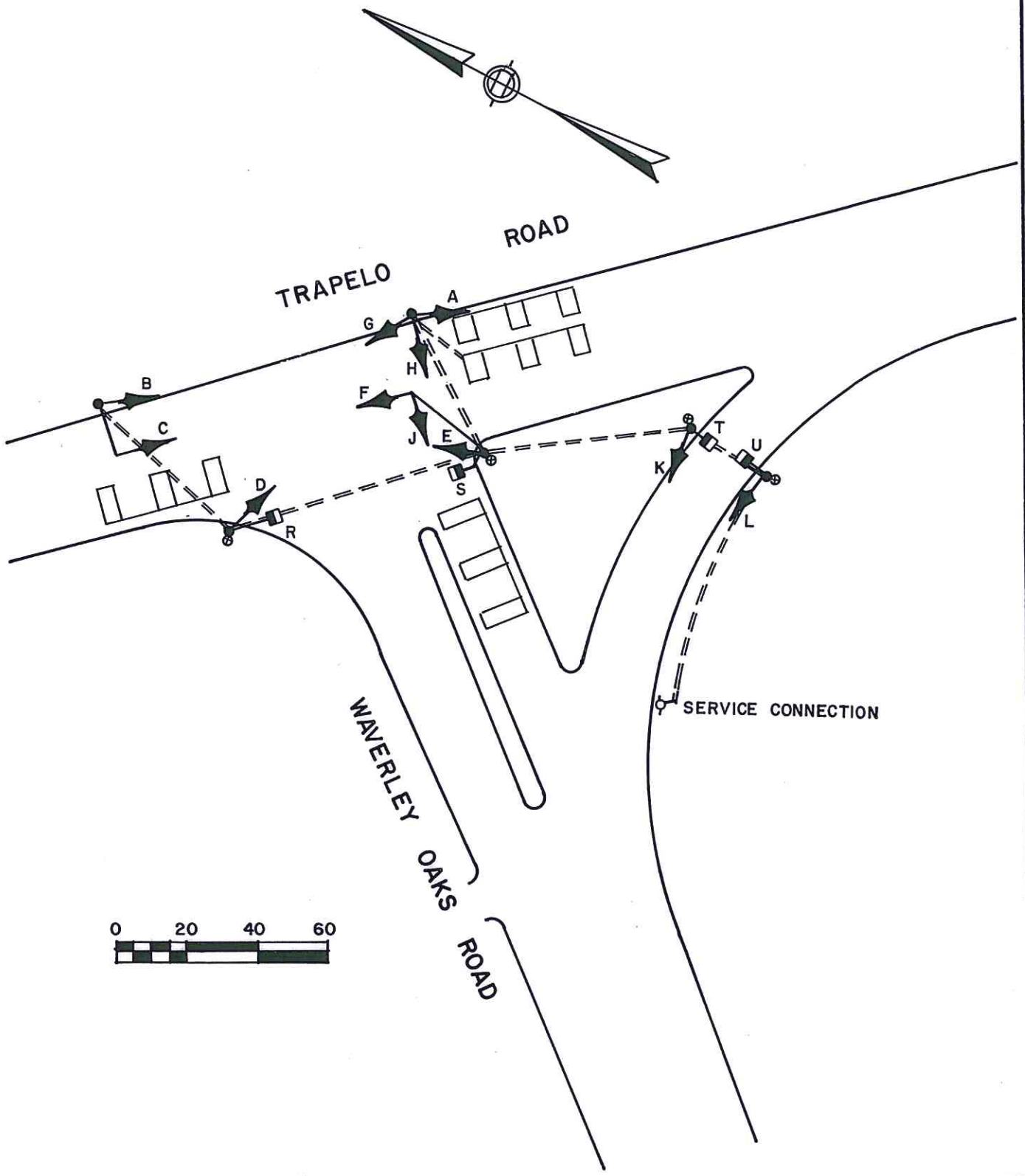
TRAFFIC SIGNAL PLAN

CITY OF WALTHAM
TRAFFIC COMMISSION

LOCATION: TRAPELO ROAD AT WAVERLEY OAKS ROAD

DATE APPROVED:

PERMIT NO. B-1342
DATE APPROVED: 8/12/75



CITY OF WALTHAM TRAFFIC COMMISSION

TRAFFIC SIGNAL SEQUENCE AND TIMING CHART

SIGNAL # T-1 REVISION # 1

INTERSECTION OF: TRAPELO RD. & WAVERLEY OAKS RD. SYSTEM NAME: NONE PREEMPT: NONE
MODE: PRE-TIMED [ ], FULLY-ACT [XX], SEMI-ACT [ ], PED. PB [XX] COORDINATION: WIRE [ ], TBCU [ ]

	PHASE NO.→		Ø 1			Ø 2			Ø 3			Ø 4							FLASH
STREET NAMES	DIR.	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12					
TRAPELO ROAD	WB	A, B, C	GV	GV	GV	GV	Y [4]	R	R	R	R	R	R	R					Y
TRAPELO ROAD	WB	D	GL	YL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL					Y
TRAPELO ROAD	EB	E, F, G	R	R	R	G	Y	R	R	R	R	R	R	R					Y
WAVERLEY OAKS ROAD	NB	H, J	R	R	R	R	R	R	GL	Y	R	GL	Y	R					R
WAVERLEY OAKS ROAD	NB	K, L	G	G [3]	G	G	G [3]	G	G	G [3]	R	R	R	R					Y
PED. XING WAVERLEY OAKS		R, S	DW	DW	DW	W/FDW	DW	DW	DW	DW	DW	DW	DW	DW					OUT
PED. XING WAVERLEY OAKS		T, U	DW	DW	DW	DW	DW	DW	DW	DW	DW	W/FDW	DW	DW					OUT
TIMING IN SECONDS																			
INITIAL INTERVAL			4			8			3										
VEHICLE EXTENSION			2			2.5			2										
MINIMUM GREEN																			
MAXIMUM GREEN NO. 1			40			50			16										
MAXIMUM GREEN NO. 2																			
OTHER INTERVAL				3	1	7/10	3	2		3	1	7/8	3	1					
RECALL				OFF			ON			OFF			OFF						

APPROVED BY TRAFFIC COMMISSION ON

CHANGES INSTALLED ON

PREPARED BY: JET date 1/25/90

ATTEST: .....CLERK

CHANGES INSTALLED BY:

NOTES: 1. Any phase not called will be skipped. Signal indications will not change if the assigned right of way does not change during the next phase called.
2. If a permissive turn phase follows a protected turn phase for the same approach then a green arrow must be cleared with a yellow arrow.
3. If phase 4 is next, G becomes Y.
4. If going from phase 2 to phase 1, Y becomes GV.

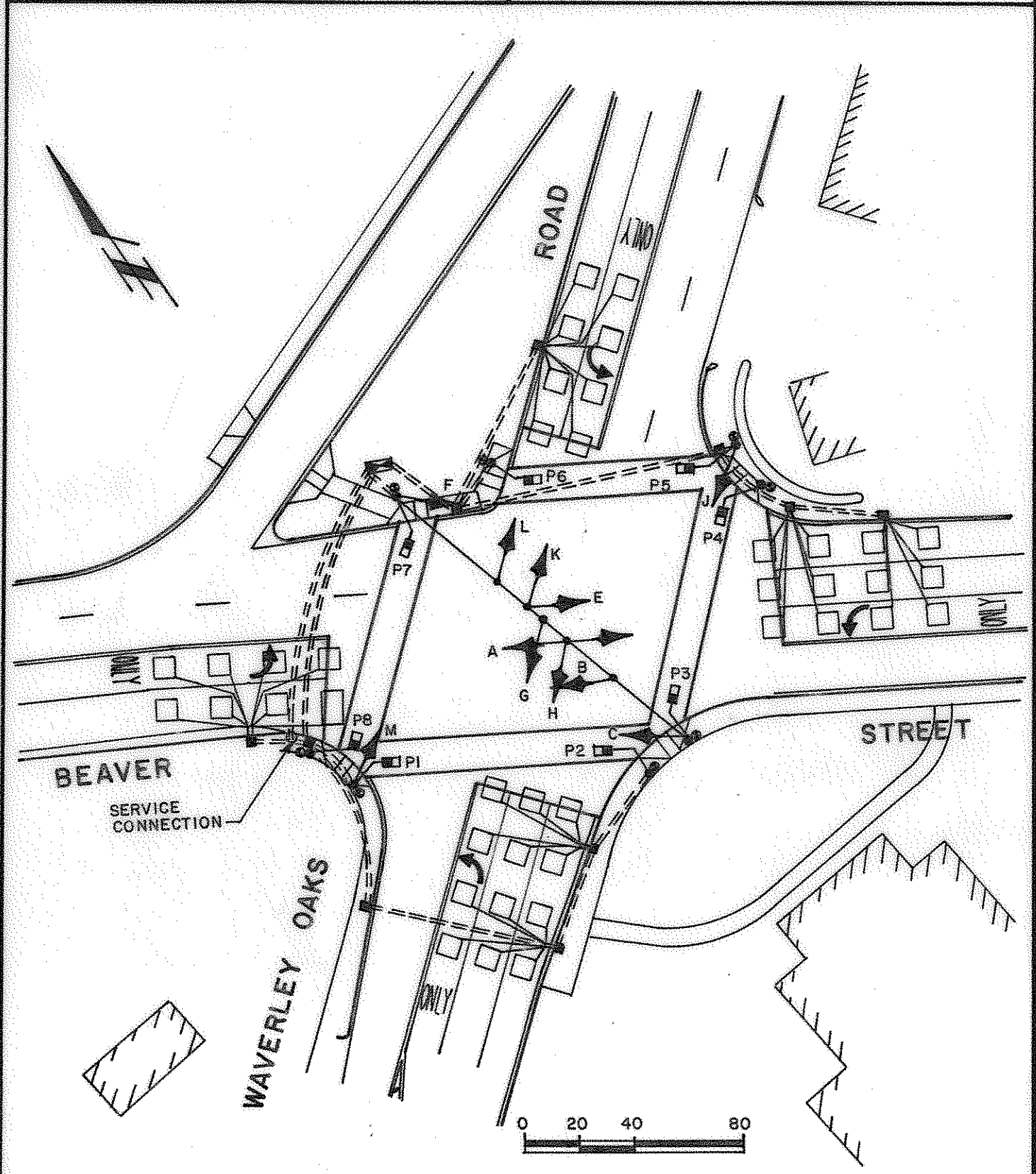
FILENAME: TRAWAV01

TRAFFIC SIGNAL PLAN

CITY OF WALTHAM
TRAFFIC COMMISSION

LOCATION: BEAVER STREET AT WAVERLEY OAKS ROAD

DATE APPROVED: TC 4/17/90



CITY OF WALTHAM TRAFFIC COMMISSION

SIGNAL # B-4

TRAFFIC SIGNAL SEQUENCE AND TIMING CHART

REVISION # 1

INTERSECTION OF: BEAVER STREET AT WAVERLEY OAKS ROAD (REVISED)
MODE: PRE-TIMED [ ], SEMI-ACT. [ ], FULLY-ACT. [XX], PED. PB. [ ], DUAL SEQ. [ ]
SYSTEM NAME: NONE PREEMPT: FIRE
COORDINATION: WIRE [ ] TBCU [ ]

draw heavy vertical lines between phases	PHASE NO. →		Φ 1			Φ 2			Φ 3			Φ 4							FLASH
STREET NAMES	DIR.	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12					
BEAVER STREET	E. BD.	A	G	Y	R	G/GL	Y/YL	R	R	R	R	R	R	R					Y
BEAVER STREET	E. BD.	B,C	G	Y	R	G	Y	R	R	R	R	R	R	R					Y
BEAVER STREET	W. BD.	D,E,M	G	Y	R	R	R	R	R	R	R	R	R	R					Y
WAVERLEY OAKS ROAD	S. BD.	J	R	R	R	R	R	R	G	Y	R	G/GL	Y/YL	R					R
WAVERLEY OAKS ROAD	S. BD.	K,L	R	R	R	R	R	R	G	Y	R	G	Y	R					R
WAVERLEY OAKS ROAD	N. BD.	F,G,H	R	R	R	R	R	R	G	Y	R	R	R	R					R
TIMING IN SECONDS																			
INITIAL INTERVAL			8			2			8			2							EMERGENCY ONLY
VEHICLE EXTENSION			2			2			2			2							
MINIMUM GREEN																			
MAXIMUM GREEN NO. 1			30			5			20			10							
MAXIMUM GREEN NO. 2			40			15			25			10							
OTHER INTERVALS				3	2		3	2		3	2		3	2					
RECALL																			

NOTE: 1. Any Phase not called will be skipped. Signal indications will not change if the assigned right of way does not change during the next Phase called.

2. South BD. Waverley Oaks Road Fire Calls Phase 4; East BD. Beaver Street Fire Calls Phase 2.

APPROVED BY TRAFFIC COMMISSION ON 4/17/90 date

ATTEST: Frank S. Lombardi CLERK

CHANGES INSTALLED ON 3/27/90 date

BY GWC

filename: TIMSEQ\BEAVWAVR.DWG

PREPARED BY LMW date 4/10/90

COPIES: TR. COMMISSION
WIRES DEPT
TRAFFIC ENG

2 Sec. To Short for Arrows

Phase Vehicle Basic Timing Data

Date 1/31/2008 Time 8:50:13

Others are Clearance

Intersection Name BEAVER ST & WAVERLY OAKS

Source Database

Phase	1	2	3	4	5	6	7	8
Minimum Green	2 6	8	2 6	8	2 6	8	2 6	8
Passage	1.5 2.0	2.0	1.5 3.0	2.0	1.5 2.0	2.0	1.5 2.0	2.0 1.5
Maximum 1	16 15	36	16	18 20	16	36	16	22
Maximum 2	16	32	16 20	18	16	32	16	22
Yellow Change	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0

Phase	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0
Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum 1	0	0	0	0	0	0	0	0
Maximum 2	0	0	0	0	0	0	0	0
Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

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Revised January 3, 2017
November 7, 2016
BAI #216023

TO: Erin Prestileo, P.E.
SMMA

FROM: Todd E. Brayton, P.E.

REFERENCE: Waltham High School
Former Fernald School Campus
Waltham, Massachusetts
Existing Traffic Conditions

This memorandum has been prepared at the request of Symmes Maini and McKee Associates, Inc. to summarize the existing traffic conditions in connection with its study of the proposed relocation of Waltham High School on Jack's Way to the former Fernald School campus on Chapel Road in Waltham, Massachusetts. The study analyzes the existing traffic that may be impacted by the proposed development of the site and discusses transportation impacts in the vicinity of the site.

Study Area

The project site is located within the southern portion of the former Fernald Campus which can be accessed by Chapel Road in Waltham, as shown in Figure No. 1.

General access will be off Waverley Oaks Road and will utilize an existing portion of Chapel Road for access to and from the site. Traffic volumes are high on Waverley Oaks Road, which is classified as an Urban Principal Arterial, as presented in the online Road Inventory Interactive Map, which is based on the Year-End 2014 Road Inventory File maintained by the Massachusetts Office of Transportation Planning. By definition, an arterial highway emphasizes a high level of mobility for through traffic while providing access to local roadways. Land use in the area is primarily residential and institutional.

Figure No. 1 Location Map

A secondary access may be developed off Trapelo Road, potentially using Cherry Lane. Cherry Lane is north of the proposed relocation site. Cherry Lane connects to Pine Street which intersects with Chapel Road.

Chapel Road and Waverley Oaks Road Intersection

Waverley Oaks Road at Chapel Road is a two-lane, two-way bituminous roadway, approximately 29 feet in width with one 13-foot northeast bound travel lane, one 14-foot southwest bound travel lane, and one-foot shoulders on both sides of the roadway. Waverley Oaks Road, west of Chapel Road, has bituminous sidewalk, utility poles, and granite curb on both sides of the roadway. Waverley Oaks Road, east of Chapel Road, has bituminous sidewalk and granite curb on the north side, and grass, granite curb, and utility poles on the south side of the roadway. The speed limit is posted at 35 mph on Waverley Oaks Road.

There are two roadways separated by a grassed island that connect Chapel Road with Waverley Oaks Road. On the north side of the island, the roadway is a two-lane, two-way bituminous roadway, approximately 18 feet in width. On the south side of the island, the roadway is a two-lane, two-way bituminous roadway, approximately 20 feet in width. Chapel Road to the northeast of its intersection with Waverley Oaks Road is a two-way bituminous roadway, approximately 28 feet in width that allows traffic to enter and exit the former Fernald School campus. There is a retaining wall on the east side and grass on the west side. The speed limit is not posted on Chapel Road in the vicinity of the intersection. Currently, Chapel Road is gated and does not allow access from Waverley Oaks Road.

Surrounding Intersections

The signalized intersection of Waverley Oaks Road and Trapelo Road is located to the northeast of the proposed school location. Waverley Oaks Road at its intersection with Trapelo Road is a two-lane, two-way bituminous roadway, approximately 46 feet in width consisting of one 20-foot southwest bound travel lane and one 16-foot northeast bound left turn lane, separated by a 6 foot grass median island with one-foot shoulders on both sides of the roadway and median. There is a channelized right turn lane for northeast bound traffic, which is approximately 18 feet wide with a one-foot left shoulder. The speed limit at the intersection is posted at 20 mph on Waverley Oaks Road. Waverley Oaks Road to the south of the intersection consists of a two-lane, two-way bituminous roadway, approximately 44 feet in width consisting of one 19-foot southwest bound travel lane, one 23-foot northeast bound travel lane, and one-foot shoulders on both sides of the roadway. There are concrete sidewalks, utility poles and granite curb on both sides of the roadway. The speed limit is posted at 35 mph on Waverley Oaks Road.

Trapelo Road to the west of its intersection with Waverley Oaks Road is a two-lane, two-way bituminous roadway, approximately 33 feet in width with one 16-foot eastbound travel lane, and one 17-foot westbound travel lane with no marked shoulders. Trapelo Road to the east of its intersection with Waverley Oaks Road is a three-lane, two-way bituminous roadway, approximately 35 feet in width with one 11-foot westbound left turn lane, one 12-foot westbound through travel lane, and one 12-foot eastbound travel lane with no marked shoulders. The speed limit is posted at 25 mph on Trapelo Road. There are concrete sidewalks, utility poles, and granite curb on the south side of the roadway. There is grass, guardrails, utility poles, and granite curb on the north side of the roadway.

The signalized intersection of Waverley Oaks Road and Beaver Street is located to the southwest of the proposed school location. To the north of the intersection Waverley Oaks Road is a three-lane, two-way bituminous roadway approximately 48 feet in width consisting of one 22-foot northeast bound travel lane, one 12-foot southwest bound left turn lane, one 12-foot southwest bound through lane and one-foot shoulders on both sides of the roadway. There is a channelized right turn lane for southwest bound traffic, which is approximately 19 feet wide with one-foot shoulders. To the south of the intersection Waverley Oaks Road is a four-lane, two-way bituminous roadway, approximately 60 feet in width consisting of one 20-foot southwest bound travel lane, one 11-foot northeast bound left turn lane, one 13-foot northeast bound shared through and right turn travel lane, one 14-foot northeast bound through travel lane, and one-foot shoulders on both sides of the roadway. There are bituminous sidewalks and granite curb on both sides of the roadway. The curb ramps and the walk through on the right turn channelizing island are concrete. There are utility poles on the south side of the roadway to the north of the intersection on Waverley Oaks Road. There are utility poles on both sides of the roadway to the south of the intersection on Waverley Oaks Road. The speed limit is posted at 35 mph on Waverley Oaks Road.

Beaver Street to the west of its intersection with Waverley Oaks Road is a four-lane, two-way bituminous roadway, approximately 53 feet in width with one 15-foot northwest bound travel lane, one 13-foot northwest bound travel lane, one 12-foot southeast bound left turn lane, one 11-foot

southeast bound shared through and right turn travel lane, and one-foot shoulders on both sides of the roadway. Beaver Street to the east of its intersection with Waverley Oaks Road is a four-lane, two-way bituminous roadway, approximately 52 feet in width with one 14-foot southeast bound travel lane, one 11-foot northwest bound left turn lane, one 12-foot northwest bound travel lane, one 13-foot northwest bound shared through and right turn travel lane, and one-foot shoulders on both sides of the roadway. The speed limit is not posted, however, there is a "thickly settled" warning sign with an advisory 30 mph warning sign. There are bituminous sidewalks and granite curb on the both sides of the roadway. There are utility poles on the south side of the roadway.

Data Collection

Traffic turning movement counts were conducted at the intersections of Waverley Oaks Road and Chapel Road, Waverley Oaks Road and Beaver Street, and Waverley Oaks Road and Trapelo Road, between the hours of 6:00 and 10:00 A.M. and 1:00 and 6:00 P.M. on September 28, 2016.

The A.M. peak hour and P.M. peak hour calculated in a previous traffic impact analysis for Waltham High School site were used to evaluate the impact of moving the school to the former Fernald School location. The calculated school A.M. peak hour is 7:00 to 8:00. The school P.M. peak hour is 2:00 to 3:00.

Pertinent field observations including location of existing utilities, posted speed limits, traffic control devices, etc. were made on October 3, 2016. Crash data for the period from January 1, 2013 through September 27, 2016 was obtained from the Waltham Police Department. In addition, traffic speed data using road tubes was acquired on Waverley Oaks Road in the vicinity of Chapel Road on September 28, 2016.

Existing Traffic Volumes

Existing traffic volumes for the study area were developed from traffic data obtained by Transportation Data Corporation (TDC).

The total 24-hour two-way traffic volume (from the road tube counts) on Waverley Oaks Road in the vicinity of Chapel Road is approximately 14,950 vehicles per day (vpd).

The school hours for the existing Waltham High School are from 7:30 A.M. to 2:00 P.M. The school A.M. peak hour, which as indicated previously occurred between 7:00 and 8:00, will be used for the analysis of the driveway and adjacent intersections. Waverley Oaks Road at Chapel Road has two-way traffic volume of 962 vehicles during this hour. The school P.M. peak hour was measured between 2:00 and 3:00. Waverley Oaks Road at Chapel Road has two-way traffic volume of 869 vehicles during this hour. There was no traffic on Chapel Road since it was gated and closed.

The two-way traffic volumes on Waverley Oaks Road and Trapelo Road were 382 vehicles and 1,314 vehicles respectively, during the school A.M. peak hour. The two-way traffic volumes on Waverley Oaks Road and Trapelo Road were 473 vehicles and 963 vehicles respectively, during the school P.M. peak hour.

The two-way traffic volumes on Waverley Oaks Road and Beaver Street were 751 vehicles and 1,321 vehicles respectively, during the school A.M. peak hour. The two-way traffic volumes on Waverley Oaks Road and Beaver Street were 645 vehicles and 1,025 vehicles respectively, during the school P.M. peak hour.

Capacity Analysis

Capacity analyses in this report focus on the peak hours of traffic volume for the high school because they represent the most critical periods for operations and have the highest capacity requirements. If traffic operates at acceptable levels of service during the peak hours, then it will operate at acceptable levels during the remaining hours of the day.

The intersection capacity analysis was prepared using the Highway Capacity Manual (HCM), 2010 edition, published by the Transportation Research Board. The analysis utilizes the concept of Level of Service. The term "level of service" is defined as a qualitative measure describing operational conditions within a traffic stream based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. There are six levels of service utilized for the analysis. They are given letter designations from A to F, with Level of Service A representing the most favorable operating conditions and Level of Service F the least. Level of Service F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay. The level of service criteria for both unsignalized and signalized intersections is shown in Table No. 1.

The computer software, Synchro8, was utilized to perform the capacity analysis for the study area.

Table No. 1
Level of Service Criteria
Source: Highway Capacity Manual, 2010

Level Of Service	Average Total Delay (Second/Vehicle)	
	Unsignalized Intersection	Signalized Intersection
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>15 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

Signalized intersection capacity analysis for the intersections of Waverley Oaks Road and Trapelo Road and Waverley Oaks Road and Beaver Street, was undertaken using the school A.M. and school P.M. peak hour traffic volumes under no-build conditions in 2016. A summary of the existing 2016 level of service for these intersections is shown in Table Nos. 2 and 3 for the school A.M. and school P.M. peak hour, respectively.

Table No. 2
School A.M. Peak Hour - Level of Service Summary
Signalized Intersections

Intersection/ Critical Movement	Level of Service (Delay-Second/Vehicle)
	No-Build (2016)
Waverley Oaks Road/Trapelo Road	
Overall Intersection	C (27.0)
Northeast Bound Approach	E (62.0)
Northeast Bound Right Lane	A (4.8)
Eastbound Approach	D (46.6)
Westbound Approach	A (2.6)
Westbound Left Lane	C (30.4)
Waverley Oaks Road/Beaver Street	
Overall Intersection	C (29.9)
Southwest Bound Approach	C (26.9)
Southwest Bound Left Lane	C (27.5)
Southwest Bound Right Lane	A (0.1)
Northeast Bound Approach	D (37.7)
Northeast Bound Left Lane	D (46.0)
Southeast Bound Approach	C (26.6)
Southeast Bound Left Lane	D (42.9)
Northwest Bound Approach	C (29.1)
Northwest Bound Left Lane	D (50.3)

Table No. 3
School P.M. Peak Hour - Level of Service Summary
Signalized Intersections

Intersection/ Critical Movement	Level of Service (Delay-Second/Vehicle)
	No-Build (2016)
Waverley Oaks Road/Trapelo Road	
Overall Intersection	C (25.2)
Northeast Bound Approach	E (66.6)
Northeast Bound Right Lane	A (1.4)
Eastbound Approach	D (52.6)
Westbound Approach	A (3.3)
Westbound Left Lane	B (19.7)
Waverley Oaks Road/Beaver Street	
Overall Intersection	C (27.2)
Southwest Bound Approach	C (25.6)
Southwest Bound Left Lane	D (39.3)
Southwest Bound Right Lane	A (0.1)
Northeast Bound Approach	C (34.1)
Northeast Bound Left Lane	D (43.9)
Southeast Bound Approach	C (25.2)
Southeast Bound Left Lane	D (38.7)
Northwest Bound Approach	C (25.3)
Northwest Bound Left Lane	D (47.7)

The signalized intersection capacity analysis shows that the intersection of Waverley Oaks Road and Trapelo Road operates at LOS C during the school A.M. peak hour and P.M. peak hour. The approaches/lanes operate at acceptable levels of service, with the exception of the northeast bound approach, which operates at LOS E during the A.M and P.M. peak hours.

The signalized intersection capacity analysis shows that the intersection of Waverley Oaks Road and Beaver Street operates at LOS C during the school A.M. peak hour and P.M. peak hour. Each of the approaches operates at an acceptable level of service.

Unsignalized intersection capacity analysis for the intersection of Waverley Oaks Road and Chapel Road was undertaken using the school A.M. and school P.M. peak hour traffic volumes under no-build conditions in 2016. A summary of the existing 2016 level of service for this intersection is shown in Table Nos. 4 and 5 for the school A.M. and school P.M. peak hour, respectively. Since there were no turning vehicles, into or out or Chapel Road, there is no delay associated with the existing intersection.

Table No. 4
School A.M. Peak Hour - Level of Service Summary
Unsignalized Intersections

Intersection/ Critical Movement	Level of Service (Delay-Second/Vehicle)
	No-Build (2016) A.M.
Waverley Oaks Road/Chapel Road	
Southeast bound Approach	A (0.0)
Northwest bound Approach	A (0.0)

Table No. 5
School P.M. Peak Hour - Level of Service Summary
Unsignalized Intersections

Intersection/ Critical Movement	Level of Service (Delay-Second/Vehicle)
	No-Build (2016) P.M.
Waverley Oaks Road/Chapel Road	
Southeast bound Approach	A (0.0)
Northwest bound Approach	A (0.0)

Safety Analysis

The geometric configurations of the intersections affected by traffic generated by the proposed improvements were examined with regard to safe stopping sight distance using principles presented in A Policy on Geometric Design of Highways and Streets, 2011, of the American Association of State Highway and Transportation Officials (AASHTO). AASHTO provides recommendations for necessary sight distance at intersections.

A design speed of 40 mph was utilized for Waverley Oaks Road in the vicinity of Chapel Road based on the observed 85th percentile speeds of 38 mph for the eastbound and 39 mph for the westbound traffic. The minimum safe stopping sight distance for roadways with a design speed of 40 mph is 305 feet, as required by AASHTO, Table 3-1. Stopping Sight Distance on Level Roadways, P. 3-4. The driveway will be evaluated for sight distance when the proposed driveway location is determined.

Crash History

Crash data for the study area was obtained from the Waltham Police Department for the period from January 1, 2013 through September 27, 2016. There were 39 crashes within the study area of the site, as shown in Table No. 6. Of the 39 crashes, two crashes occurred at the intersection of Chapel Road and Waverley Oaks Road. These crashes included one sideswipe crash and one rear-end crash. One of the crashes occurred on wet pavement, one with slush on pavement, and none of these crashes resulted in injury. In the data received, only one crash occurred at the intersection of Trapelo Road and Waverley Oaks Road and none occurred at the intersection of Beaver Street and Waverley Oaks Road. It is likely that the data received did not include all of the crashes at these locations.

Table No. 6
Summary of Crashes
Source: Waltham Police Department

Crash Location	January 1, 2013 through September 27, 2016
Intersection of Waverley Oaks Road and Chapel Road	2
Intersection of Waverley Oaks Road and Beaver Street	0
Waverley Oaks Road between Beaver Street and 307/309 Waverley Oaks Road Driveway	5
307/309 Waverley Oaks Road Driveway	6
Waverley Oaks Road between Chapel Road and 411 Waverley Oaks Road Southwest Driveway	3
411 Waverley Oaks Road Southwest Driveway	5
Waverley Oaks Road between 411Waverley Oaks Road Southwest and Northeast Driveway	2
411 Waverley Oaks Road Northeast Driveway	12
Waverley Oaks Road between 411 Waverley Oaks Road Northeast Driveway and Trapelo Road	3
Intersection of Waverley Oaks Road and Trapelo Road	1
TOTAL	39

There were five crashes on Waverley Oaks Road between Beaver Street and 307/309 Waverley Oaks driveway. These crashes included four rear-end crashes and one sideswipe crash. One of these crashes occurred on wet pavement and none of these crashes resulted in injury.

There were six crashes at the 307/309 Waverley Oaks Road driveway. These crashes included three rear-end crashes, one angle crash, and two involved hitting an object. Two of these crashes occurred on wet pavement, one with snow on the pavement, and none of these crashes resulted in injury.

There were three crashes on Waverley Oaks Road between Chapel Road and the 411 Waverley Oaks Road southwest driveway. These crashes included two rear-end crashes and one angle crash. One of these crashes occurred on wet pavement and one crash resulted in injury.

There were five crashes at the 411 Waverley Oaks Road southwest driveway. These crashes included two rear-end crashes, one crash involved hitting an object, one crash involved hitting a deer, and one crash involved hitting a pedestrian. One of these crashes occurred on wet pavement and three crashes resulted in injury.

There were two crashes on Waverley Oaks Road between the 411 Waverley Oaks Road southwest and northeast driveways. These crashes included one rear-end crash and one angle crash. One of these crashes occurred on wet pavement and none of these crashes resulted in injury.

There were twelve crashes at the 411 Waverley Oaks Road northeast driveway. These crashes included eight angle crashes, three rear-end crashes, and one head on crash. Three of these crashes occurred on wet pavement and five of these crashes resulted in injury.

There were three crashes on Waverley Oaks Road between the 411 Waverley Oaks Road northeast driveway and Trapelo Road. These crashes included two rear-end crashes and one crash involved hitting an object. One of these crashes occurred with snow on the pavement and none of these crashes resulted in injury.

There was one crash at the intersection of Waverley Oaks Road and Trapelo Road. It was a crash that involved hitting an object and resulted in an injury.

The traffic counts, intersection capacity analysis, crash data summary, speed data, and supplemental plans can be found in the appendices.

TEB:RB
Enclosures

APPENDIX K6

Wetland Resource Evaluation
Walter E. Fernald Developmental Center
200 Trapelo Road
October 3, 2016

PROJECT LOCATION

The project site includes portions of an approximately 150 acre parcel containing the Walter E. Fernald Developmental Center. The site is accessed from Trapelo Road and Waverly Oaks Road. It presently contains numerous buildings, most abandoned, roadways and infrastructure which supported the original facility. The project site is generally bounded by Clematis Brook to the south and west, Waverly Oaks Road to the south and east, the existing property boundary to the north and Pine Street to the east.

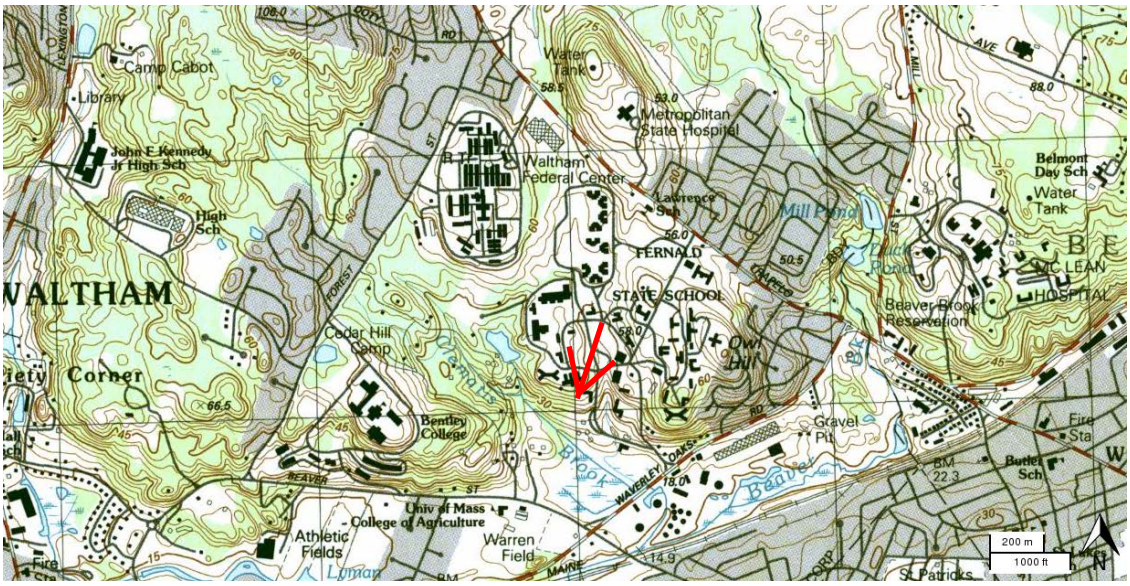


Fig. 1: USGS Topographic Quadrangle - Site Locus

DELINEATION METHODS

Rimmer Environmental Consulting (REC) conducted field inspections on September 28-29, 2016 to determine the location and extent of wetland resources subject to jurisdiction under the Mass. Wetlands Protection Act (MGL Ch. 131 s. 40) within the project area. Wetland resources were delineated in accordance with the procedures described in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00). Numbered sequences of flags were placed in the field to delineate the boundary between wetland and upland resources. The presence of 50% wetland vegetation as well as other indicators of wetland hydrology were used to identify wetland resources.

RESULTS

The site slopes steeply from northeast to southwest toward Clematis Brook and its associated wetlands. From the eastern project limit at Pine Street, there is a stream which flows through the site south to its confluence with Clematis Brook. The southeastern portion of the site also contains wetlands associated with Clematis Brook. The following is a description of each wetland resource:

Wetland A/B: This wetland system includes the stream described above that flows through the site from Pine Street southwest to Clematis Brook. It contains a well-defined, rocky channel and was observed to be flowing along approximately half of its length with the remaining portions of the channel dry. The banks average 2-4 feet in height and are well defined by scour and changes in slope. Much of the bank to this stream contains no associated vegetated wetland, but in some areas where the topography is less steep, there are scrub shrub wetlands dominated by small American elm (*Ulmus americana*), red maple (*Acer rubrum*) spicebush (*Lindera benzoin*), multiflora rose (*Rosa multiflora*) and poison ivy (*Toxicodendron radicans*).

Wetland flags A1-A50 and B1-B47 delineate the landward most limits of either Inland Bank resource or Bordering Vegetated Wetland, whichever is furthest from the channel. The channel was observed dry south of flag A28.

The stream is indicated on the USGS topographic map as an intermittent stream. USGS StreamStats indicates it contains a drainage area of approximately 0.37 square miles. It is therefore presumed that this stream is not regulated as a river under the 310 CMR 10.58, but rather as Inland Bank with associated Bordering Vegetated Wetland (BVW). A 100-foot buffer zone extends from the limits of the A/B series flags.

Wetlands C /D: This is the wetland along the southeastern portion of the site that extends from Clematis Brook. Flags C1-C50 include the wetlands northwest of the A/B series described above and flags D1-D25 delineate the wetlands to the southeast out to Waverly Oaks Road. It contains a similar vegetative community as the A/B series. The southeastern portion follows along the toe of an old railroad bed that passes through the site.

Wetland E: This is a narrow depression east of the D-series flags that contains a hydrologic connection to the D Series via an old culvert under the railroad bed. It contains primarily red maple, American elm, silky dogwood (*Cornus amomum*), glossy buckthorn (*Frangula alnus*), sensitive fern (*Onoclea sensibilis*) and poison ivy. This wetland was delineated by flags E1-E21 and is regulated as Bordering Vegetated Wetland due to its hydrologic connection to the D series.

Wetland F: This is a second depression, elongated northwest to southeast is located immediately east of a small berm which separates it from the E series wetland. The wetland is bounded by steep slopes and the small berm making it hydrologically isolated from the other wetlands and waterbodies on site. Although there was no surface water at the time of inspection, water staining on the trees, mostly red maple, indicates sustained ponding to depths of 6-8 inches. This wetland may be large enough to meet the minimum ¼ acre feet of annual flooding to qualify as Isolated Land Subject to Flooding (ILSF) pursuant to 310 CMR 10.57.

Hydrologic calculations would be required to determine whether Wetland F provides this minimum flood storage volume. There is no associated 100-foot buffer zone to ILSF. It is possible that this wetland may provide some vernal pool habitat, though this could not be determined at the time of year the inspection was conducted.

Clematis Brook: The portion of Clematis Brook which passes southeast of the site is indicated as a perennial stream on the USGS topographic quadrangle included as Figure 1 above. It is therefore considered to be a river pursuant to 310 CMR 10.58. The boundary of Riverfront Area is the limit of mean annual high water (MAHW) and was determined by bankfull indicators as described in 310 CMR 10.58 including changes in slope and evidence of scour. Portions of the easterly bank to this brook where it passes near the site were delineated. In these areas, MAHW is well defined by changes in slope and was delineated as follows:

> Bank 1 - Bank 4: beginning near flag C28 and extending southeast to where the channel terminates in a large marsh/scrub shrub swamp. It is at this point where the flow discharges into braided channel with no single defined channel present. No further delineation of MAHW based on bankfull indicators could be made in this area as annual flooding extends throughout this area in multiple channels and presumably floods up to the wetland boundary described as the D-series above.
>
> Bank 100-Bank 113: extending northwest near flag C28 to where the channel enters the property at the northwestern property line.

The brook is located off-site, but portions of the 200 foot Riverfront Area measured from MAHW extend into the western portion of the project site. It was observed to be flowing in the areas delineated at the time of the delineation.

Bordering Land Subject to Flooding (BLSF): This resource includes the land subject to floodwaters rising from rivers, streams, ponds and lakes and is generally determined by reference to the most recent flood maps published by FEMA. At this location, FEMA indicates that the southeastern portion of the project area is within the 100-year flood plain up to elevation 51 NGVD88. It appears from Figure 2 below that the mapped floodplain encompasses most if not all of the D, E and F series wetlands. The portion of the mapped floodplain that extends beyond the limits of the flagged wetland would be regulated as BLSF pursuant to 310 CMR 10.57. There is no associated buffer zone to BLSF.

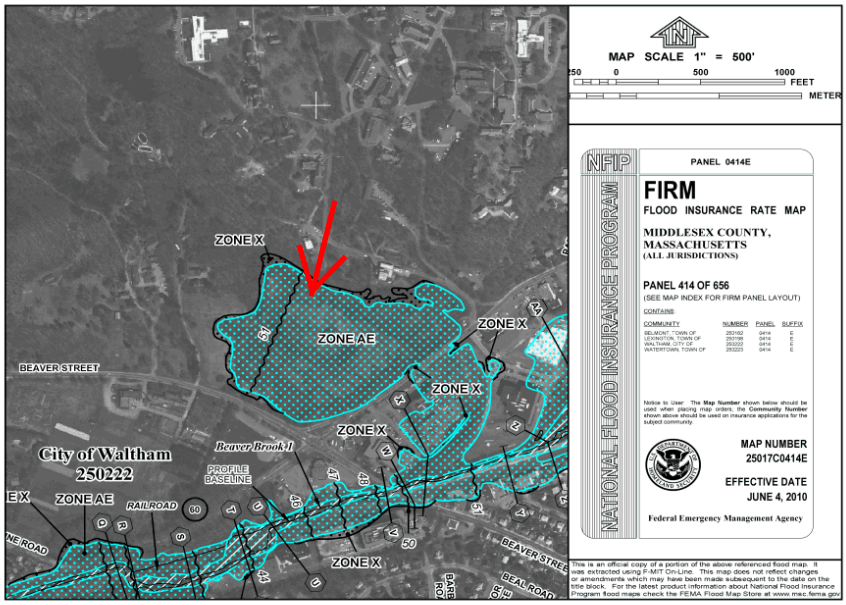


Figure 2: FEMA Flood Map

Other Resources

The project locations are not within Priority Habitat or Estimated Habitat of Rare Wetlands Wildlife and not within certified vernal pools as determined by reference to data provided by the Mass. Division of Fisheries and Wildlife – Natural Heritage and Endangered Species Program available on MassGIS.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☒ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☐ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: wet Transect number: C3 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
green ash/Fraxinus pensylvanica	63	100	Y	FACW*
Groundcover				
false nettle/Boehmeria cylindrica	20.5	50	Y	OBL*
rough goldenrod/Solidago rugosa	20.5	50	Y	FAC*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 3 Number of dominant non-wetland plants: 0
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☒ yes ☐ no

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color

Remarks

3. Other

Conclusion: Is soil hydric? ☐ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☒ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☒ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☒	☐
Wetland hydrology present: Hydric soil present	☐	☐
Other indicators of hydrology present:	☒	☐
Sample location is in a BVW	☒	☐

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☐ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: upl Transect number: C3 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Groundcover				
Burdock/Artium minus	20.5	33	Y	FACU
garlic mustard/Alliaria petiolata	20.5	33	Y	FACU
virginia creeper/Parthenocissus quinquefolia	10.5	16	N	FACU
pigweed/Chenopodium album	10.5	16	N	FACU

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 0 Number of dominant non-wetland plants: 2
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☐ yes ☒ no

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent MADEP; 3/95

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
C	0-8	10YR 4/5	

Remarks

3. Other fill

Conclusion: Is soil hydric? ☐ yes ☒ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☐ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☐	☒
Wetland hydrology present:	☐	☒
Hydric soil present		
Other indicators of hydrology present:	☐	☒
Sample location is in a BVW	☐	☒

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☒ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☐ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: wet Transect number: D18 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
American elm/Ulmus americana	20.5	100	Y	FACW*
shrub				
silky dogwood/Cornus amomum	20.5	100	Y	FACW*
groundcover				
tall blue lettuce/Lactuca biennis	20.5	100	Y	FAC*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 3 Number of dominant non-wetland plants: 0
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☒ yes ☐ no

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
O	8-0"	10YR 2/1	

Remarks

3. Other histic epidepdon

Conclusion: Is soil hydric? ☒ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☒ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☒ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☒ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☒	☐
Wetland hydrology present: Hydric soil present	☒	☐
Other indicators of hydrology present:	☒	☐
Sample location is in a BVW	☐	☐

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☒ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☐ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: upl Transect number: D18 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
sugar maple/Acer saccharum	20.5	20	Y	FACU
red oak/Quercus rubra	63	75	Y	FACU
Groundcover				
Asiatic bittersweet/Celastrus orbiculatus	10.5	100	U	UPL

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 0 Number of dominant non-wetland plants: 3
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☐ yes ☒ no

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
C	0-8	10YR 4/5	

Remarks

3. Other fill

Conclusion: Is soil hydric? ☐ yes ☒ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☐ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☐	☒
Wetland hydrology present:	☐	☒
Hydric soil present		
Other indicators of hydrology present:	☐	☒
Sample location is in a BVW	☐	☒

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☐ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: wet Transect number: E2 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
red maple/Acer rubrum	38	100	Y	FAC*
Sapling				
green ash/Fraxinus pensylvanica	38	100	Y	FACW*
shrub				
silky dogwood/Cornus amomum	20.5	100	Y	FACW*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 3 Number of dominant non-wetland plants: 0
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☒ yes ☐ no

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-6"	10YR 2/1	
B	6-10"	10YR 4/2	10YR 5/8

Remarks

3. Other refusal 10"

Conclusion: Is soil hydric? ☒ yes ☐ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☐ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☒ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☒ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☒	☐
Wetland hydrology present: Hydric soil present	☒	☐
Other indicators of hydrology present:	☒	☐
Sample location is in a BVW	☐	☐

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: City of Waltham Prepared by: Rimmer Environmental Project location: Fernald Site DEP File #: _____

Check all that apply:

- ☐ Vegetation alone presumed adequate BVW boundary: fill out section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation: Observation plot Number: upl Transect number: E2 Date of delineation: 9/29/16

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
red maple/Acer rubrum	85.5	100	Y	FAC*
Sapling				
white ash/Fraxinus americana	20.5	100	Y	FACU
groundcover				
asiatic bittersweet/Celastrus orbiculatus	10.5	22	Y	UPL
virginia creeper/Parthenocissus quinquefolia	38	78	Y	FACU

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
Number of dominant wetland indicator plants: 1 Number of dominant non-wetland plants: 3
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? ☐ yes ☒ no

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/date:
Map number:
Soil type mapped:
Hydric soil inclusions:

Are field observations consistent with soil survey? ☐ yes ☐ no
Remarks:

2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-4"	10YR 2/2	
B	4-12"	10YR 5/2	

Remarks

3. Other soil is fill material

Conclusion: Is soil hydric? ☐ yes ☒ no

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: _____

☐ Depth to free water in observation hole: _ _____

☐ Water marks: ___ _____

☐ Drift lines: _____

☐ Sediment deposits: _____

☐ Drainage patterns in BVW: _____

☐ Oxidized rhizospheres: _____

☐ Water-stained leaves: _____

☐ Recorded data(stream, lake, or tidal gauge; aerial photo, other):__

☐ Other: _____

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants ≥number of non-wetland indicator plants:	☐	☒
Wetland hydrology present: Hydric soil present	☐	☒
Other indicators of hydrology present:	☐	☒
Sample location is in a BVW	☐	☒

APPENDIX K7

Casey-Brenner, Colette

From: Finnegan, Lorraine <lfinnegan@smma.com>
Sent: Friday, March 10, 2017 9:51 AM
To: Mayor
Cc: Drew Echelson (drewechelson@walthampublicschools.org); Project, Mail
Subject: FW: Former Fernald School - Environmental (pnum: 16030)
Attachments: Fernald Phase II Report.pdf

Mayor
Please find attached the Phase II exploration testing and results for the Fernald Site.

The results are good news for the City, no new reportable conditions with respect to soil or groundwater were identified.

Please keep in mind that an Activity and Use Limitation (AUL) is recorded at the Middlesex Registry of Deeds for RTN 3-13467 for a 123 foot by 145 foot area beneath and to the south of the power plant. Any soil disturbance in this area will need to be conducted in accordance with the AUL. Additionally, if this area is to be re-developed for use as an office, store, residence, school or daycare, then further response actions would be required relative to existing soil contamination to allow for such uses.

Please let me know if you have any questions
Thanks
Lorraine

Lorraine B. Finnegan, AIA, LEED AP BD+C, MCPPO
Principal | Director of K-12 Studio | Project Manager

SMMA | Symmes Maini & McKee Associates
1000 Massachusetts Avenue, Cambridge, MA 02138
t: 617.520.9468 | m: 781.640.3756
lfinnegan@smma.com | Profile

LinkedIn | Twitter | Instagram

We Design Places.com

CDW CONSULTANTS, INC.
CIVIL & ENVIRONMENTAL ENGINEERS

March 7, 2017

Ms. Lorraine Finnegan
Symmes Maini & McKee Associates, Inc.
1000 Massachusetts Avenue
Cambridge, MA 02138

Re: Phase II Subsurface Investigation
Power Plant and Maintenance Buildings
Walter E. Fernald School, Waltham, Massachusetts

Dear Ms. Finnegan:

CDW Consultants, Inc. (CDW) is pleased to provide you with this summary of soil and groundwater sampling and analyses at certain portions of the above referenced property (herein after, "the Site"). The Site consists of areas located adjacent to the former power plant (Building #26) and the former maintenance building (Building #124), both located on the southern portion of the Walter E. Fernald School property.

Summary of Previous Releases

Power Plant Building

The power plant was shut down in April 2014. A stream runs north to south along the western side of the power plant building. Several releases of fuel oil are documented for the former power plant building and are summarized below.

Release Tracking Number (RTN) 3-10367 was assigned by the Massachusetts Department of Environmental Protection (MassDEP) to a release of approximately 300 gallons of #6 fuel oil from the spill box to the ground surface after routine filling of the underground storage tanks (USTs) located to the west of power plant (Building #26) on December 29, 1993. Fuel oil flowed over the nearby retaining wall into the brook west of the power plant resulting in free phase floating oil and stained debris in several standing pools as far as 300 feet downgradient/south of the power plant. Sorbent booms and a containment barrier were placed in the brook to prevent further migration of the oil. Approximately 150 gallons of separate phase oil was removed from the brook using a vacuum truck, and petroleum contaminated debris was removed from the brook. The MassDEP Searchable Site Website indicates that a Class C-1 Response Action Outcome (RAO) Statement, documenting that a condition of No Substantial Hazard and a Temporary Solution had been achieved for the RTN 3-10367, was submitted to MassDEP on June 28, 2002, but this report was not available for review on the Searchable Site Website. A June 25, 2002 Phase III – Remedial Action Plan/Class C RAO for RTN 3-31467 states that RTN 3-10367 "is addressed by this Phase II Comprehensive Site Assessment."

RTN 3-13467 was assigned to a release of #6 fuel on February 20, 1996 after oil was observed in the vicinity of the concrete retaining wall and within the adjacent stream to the west of the power plant (Building #26). Absorbent pads and booms were deployed at the base of the retaining wall and in the stream. The three #6 fuel oil USTs located to the west of Building #26 were replaced between July and December 1996. Approximately 1,000 cubic yards of soil and 15,000 gallons of groundwater were removed from the Site. Following these remedial activities, a non-aqueous phase #6 fuel oil at a thickness of greater that 0.5 inches was observed within two monitoring wells within the basement of Building #26 in 1998. Separate phase product was still present in monitoring wells at a thickness greater than 0.5 inches as of March 2002. Quarterly groundwater gauging was conducted in 7 monitoring wells between August 2003 and May 2007; no measurable non-aqueous phase liquid (NAPL) was identified in any of the wells between January 2006 and May 2007. Based on the results of soil and groundwater sampling data and a Stage I Environmental Screening, a Class A-3 RAO Statement was submitted to MassDEP for RTN 3-13467 on March 21, 2008. The report documented that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-13467 utilizing a Method 1 Risk Characterization relying on an Activity and Use Limitation (AUL) to limit future use of a 123 foot by 145 foot area beneath and to the south of Building #36. The AUL prohibits use of this area as an office, store, residence, school, or child day care; the cultivation of fruits and vegetables destined for human consumption and recreational activities such as baseball, swimming, fishing, and hiking; and leisure activities such as picnicking, sunbathing, and entertaining. The AUL also prohibits the relocation of contaminated soils within the AUL area without a Licensed Site Professional (LSP) Opinion and requires that any subsurface activity which may result in direct contact with, disturbance, or relocation of contaminated soil between 2 and 15 feet be conducted under a Soil Management Plan.

RTN 3-11878 was assigned to a release of approximately 30 gallons of #6 fuel oil during filling of one of the three USTs on November 21, 1997. This release occurred to the paved area west of the power plant (Building #26) and the adjacent stream. Absorbent booms were initially placed on the ground and across the stream at several locations to contain the oil and absorbent materials were utilized to capture the oil from the pavement and along the brook. Impacted sediment was also removed from the brook. A Class A-1 RAO Statement was submitted to MassDEP on January 23, 1995 indicating that RTN 3-11878 had been remediated to background conditions.

RTN 3-15149 was assigned on May 30, 1997 as the result of a photoionization detector (PID) reading over 100 ppm during headspace analysis of a sample collected from the bottom of a tank excavation during removal of a 1,000-gallon gasoline UST located to the north of the power plant (Building #26). Based on laboratory results for soil samples collected from the extent of the tank grave, a Class B-1 RAO Statement was submitted to MassDEP on June 30, 1997. The Statement established that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-15149 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved.

RTN 3-15442 was assigned for a release of approximately 100 gallons of #6 fuel oil when the fuel line from a fuel delivery truck became disconnected during fuel oil delivery to the USTs west of the power plant on August 19, 1997. Approximately 50 gallons of the released oil migrated down a concrete retaining wall into the dry drainage stream bed located west of the power plant. Initially absorbent materials were placed on the driveway and absorbent booms were placed downstream of the impacted portion of the stream bed and in the driveway to prevent additional fuel oil migration into the stream.

Approximately 15 cubic yards of soil were excavated from the stream bed and from beneath the driveway and disposed of off-site. A Class A-2 RAO Statement was submitted to MassDEP on October 24, 1997. The Statement indicated that a condition of No Significant Risk and a Permanent Solution had been achieved for RTN 3-15442 utilizing a Method 2 Risk Characterization, but that background conditions were not achieved.

Maintenance Building

RTN 3-10725 was assigned on March 22, 1994 when MassDEP was notified of a threat of release due to failed UST tank tightness tests for two 4,000-gallon gasoline tanks located to the east of the "farm & grounds building" (Building #124). The tanks were subsequently removed and approximately 120 cubic yards of impacted soil was disposed of off-site. Based on the results of post-remedial soil and groundwater sampling, a Class A-2 RAO Statement was submitted to MassDEP on June 21, 2000. The Statement indicated that a condition of No Significant Risk and a Permanent Solution had been achieved for the RTN 3-10725 utilizing a Method 1 Risk Characterization, but that background conditions were not achieved.

Summary of Geotechnical Investigation

On Friday October 28, 2016, CDW observed geotechnical borings by others. During that investigation, evidence of petroleum contamination was observed in soil from two soil borings. Boring number 11 was located near the southwestern corner of the former power plant building. Boring number 6 was located along the entrance driveway of the campus adjacent to and east of the former maintenance facility.

Soil samples were collected for laboratory analysis from depths where petroleum contamination appeared to be present. A soil sample was collected from a depth of 14 to 16 feet in Boring 11 (B11-S8). A soil sample was collected from 2 to 4 feet in Boring 6 (B6-S2). The samples were analyzed by New England ChromaChem for Extractable Petroleum Hydrocarbons (EPH) and Volatile Petroleum Hydrocarbons (VPH). The soil sample from B6-S2 reported detectable concentrations of EPH below applicable Massachusetts Contingency Plan (MCP) Reportable Concentrations (RCs). Sample B-11/S-8 reported all three EPH fractions at concentrations above applicable MCP RCs (RCS-1).

Based on these findings, further assessment was warranted to evaluate the nature and extent of the identified contamination, as well as the potential risks to public health, safety, welfare, and/or to the environment.

Soil and Groundwater Classifications

The results of laboratory soil and groundwater analyses were compared with RCs to identify any reporting conditions.

The selection of a soil classification of RCS-1, as defined in the MCP, 310 CMR 40.0361(1)(a), for the comparison of RCs, is applicable to the Site because the sampling locations are located within the property boundaries of a school and within 500 feet of a residence.

The selection of a groundwater classification of RCGW-2, as defined in the MCP, 310 CMR 40.0362, for the purpose of identifying RCs is applicable because groundwater at the Site is not located in a current or potential drinking water source area. A Priority Resource Map is included as Figure 5.

January and February 2017 Subsurface Investigation

Soil Borings and Monitoring Well Installation

On January 31 and February 1, 2017, CDW advanced eight soil borings (CDW-B1 through CDW-B8) at the Site. The soil borings were advanced using a direct push 6610DT drill rig, to evaluate subsurface soils and groundwater in areas surrounding the two geotechnical borings. Soil samples were collected continuously in all borings in acetate sleeves and classified on-site. CDW's subcontractor, Technical Drilling Services, Inc. of Sterling, MA completed the advancement of the soil borings and installation of monitoring wells.

The boring locations were chosen to assess the areas around geotechnical borings B-11 and B-6 where petroleum compounds were detected in October 2016. Borings CDW-B1 through CDW -B4 were placed around boring B-11 at the former power plant. CDW-B4 was placed on the opposite side of the stream to determine if any migration of oil had occurred. Borings CDW-B5 through CDW-B8 were placed symmetrically around boring B-6 at the former maintenance facility.

Two-inch diameter monitoring wells were installed to a depth of 15 feet in boring CDW-B1 and to 10 feet in CDW-B2. Borings CDW-B3 and CDW-B4 were advanced to 10 feet without refusal. Borings CDW-B5, CDW-B6, and CDW-B8 encountered refusal at 9 feet and boring CDW-B7 encountered refusal at 10 feet. Two-inch diameter monitoring wells were installed in CDW-B7 and CDW-B8. The wells were constructed with various lengths (between 4 and 10 feet) of two-inch diameter slotted PVC well screen and a solid PVC riser. Uniformly graded sand was placed around the well screen up to two feet above the screen. Two feet of bentonite grout was placed above the sand, followed by native fill to grade. A protective roadway box was installed at grade. Figure 2 presents the locations of the soil borings and monitoring wells.

Soils encountered during drilling consisted primarily of tan and gray sand with some gravel. Some fill materials consisting of coal and ash were observed in the 3-5 foot depth in two samples at the former power plant and one sample at the former maintenance building. Some clay was observed around 8 feet in some of the borings. Refusal was encountered in all four of the borings completed at the former maintenance facility. Bedrock was not observed during drilling. Appendix C presents the soil boring logs.

CDW developed two newly installed wells (CDW-B1MW and CDW-B2MW) and three existing wells (CMW-2, B-11, and MW-1) at the power plant with disposable bailers after installation. Well MW-4 at the maintenance garage was also developed. Wells CDW-B7MW and CDW-B8MW were dry upon installation and could not be developed.

Soil Sampling and Field Screening

Soil samples were field screened for total organic volatiles (TOVs) using the headspace method. A PID equipped with a 10.6 eV lamp calibrated to isobutylene was used. The soil headspace readings ranged from non-detect to 14.5 parts per million by volume (PPMV). The highest PID reading was detected in boring CDW-B1MW at a depth of 11-12 feet. The results of soil screening are summarized in Table 1.

One soil sample from each boring was submitted to ESS Laboratories for analyses for EPH including target polycyclic aromatic hydrocarbons (PAHs). The results detected EPH fractions in 5 of the 8 samples and PAHs in 3 of the 8 samples analyzed. The highest concentrations of EPH were found in the 11-13 foot sample at boring CDW-B1MW. One PAH, benzo(a)pyrene in CDW-B2 exceeded applicable Reportable Concentrations (RCs). Low concentrations of EPH fractions were detected in only one of the samples collected from the maintenance building. The results of EPH and PAH soil analyses are included in Table 2.

One sample, CDW-B7, was analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260. The results showed only acetone detected at a concentration well below the applicable RC. The results of VOC analyses are included in Table 3.

Two composite soil samples were analyzed for MCP14 Metals. One sample from the top foot of each of the four borings at the former power plant was composited, and one sample from the top foot of the four borings at the former maintenance garage was composited. The results showed several metals detected at concentrations typical of natural soils. None of the concentrations exceeded applicable RCs. The composite sample from the former power plant was also analyzed for polychlorinated biphenyls (PCBs). No PCBs were detected. The results of metals and PCB analyses are included in Table 4.

Groundwater Sampling and Analyses

On February 7, 2017, CDW personnel collected groundwater samples from the 2 newly installed monitoring wells (CDW-B1MW and CDW-B2MW) and 3 existing monitoring wells (MW-4, B-11, and MW-1). Two of the wells (CDW-B7MW and CDW-B8MW were dry and could not be sampled. Sampling was conducted using a peristaltic pump. Depth to groundwater at the power plant ranged from 2.24 to 10.21 below ground surface (BGS). Groundwater at the maintenance building was measured at 6.09 feet BGS. All five samples were submitted to ESS Laboratories for analysis for EPH including target PAHs. Two of the samples were also analyzed for VPH including target VOCs, VOCs by EPA Method 8260, and dissolved MCP 14 Metals.

The results showed EPH and several PAHs detected in two of the wells (CDWB-2MW and B-11) at the former power plant. Dissolved barium and zinc were also detected in groundwater; dissolved barium was present in MW-4, the well sampled to the east of the maintenance building, and dissolved barium and zinc were present in CDW-B1MW, the well sampled to the west of the power plant. None of the detected concentrations of any of the contaminants exceeded applicable Reportable Concentrations for GW-2 classified groundwater. No VPH or VOCs were detected in any of the samples.

Groundwater Elevation and Flow Survey

On February 7, 2017, all accessible monitoring wells were gauged for depth to groundwater and the presence of NAPL using an oil/water probe. NAPL was not detected in any of the wells.

On February 28, 2017, the relative elevations of the top of all new and existing monitoring well casings at the power plant building were surveyed relative to a post column located near the smoke stack. The data

Groundwater appears to flow to the southwest, parallel with and towards the adjacent brook. Groundwater gauging and elevation data is included in Table 1. A groundwater contour map is included as Figure 4.

Evaluation of Regulatory Obligations

Power Plant Building

Concentrations of all three EPH fractions exceeded applicable RCs in boring B-11 during the October 2016 geotechnical investigation. These concentrations (16,500 mg/kg for C9-C18 Aliphatics and 5,430 mg/kg for C19-C36 Aliphatics) were comparable to those collected in October 1996. Individual concentrations of EPH remaining in place after regulatory closure of RTN 3-13467 in March 2008 (October 1996 data) were 10,000 mg/kg and 15,000 mg/kg for C9-C18 Aliphatics and C19-C36 Aliphatics. Recent sampling for PAHs showed that one PAH (benzo(a)pyrene) was detected above the MCP RC in CDW-B2MW. Coal was visually observed in this sample. In accordance with 310 CMR 40.0317(9), releases of oil and/or hazardous material related to coal, coal ash or wood ash, excluding wood ash resulting from the combustion of lumber or wood products that have been treated with chemical preservatives are exempt from reporting. The detected concentrations of EPH, several PAHs and two dissolved metals in groundwater were all below applicable MCP RCs. Therefore, it is the opinion of CDW that no new reportable conditions with respect to soil or groundwater were identified, and that the conditions of EPH encountered are consistent with the Response Action Outcome Statement for RTN 3-13467 that was filed in 2008.

Maintenance Building

The detected concentrations of EPH in two soil samples collected at the maintenance building were below applicable MCP RCs and are consistent with concentrations detected previously in that area. The detected concentrations of one dissolved metal in groundwater was below applicable MCP RCs. Therefore, it is the opinion of CDW that no new reportable conditions with respect to soil or groundwater were identified at the maintenance building, and that the conditions of EPH encountered are consistent with the Response Action Outcome Statement for RTN 3-10725 that was filed in June 2000.

Conclusions & Recommendations

Based on the results of the recent subsurface investigation including soil and groundwater analyses, CDW provides the following observations and recommendations:

Observations

- On October 28, 2016, CDW observed geotechnical borings by others. During that investigation, evidence of petroleum contamination was observed in soil from two soil borings. Soil samples were collected for laboratory analysis from depths where petroleum contamination appeared to be present. The soil sample from B6-S2, to the east of the maintenance building, reported detectable concentrations of EPH below applicable Massachusetts Contingency Plan (MCP) Reportable Concentrations (RCs). Sample B-11/S-8, collected to the southwest of the power plant, reported all three EPH fractions at concentrations above applicable MCP RCs (RCS-1).

- In January and February 2017, CDW advanced eight soil borings and completed four of the borings as monitoring wells to determine the extent of contamination identified and whether a new reportable condition exists related to the October 2016 laboratory results. Four of the wells were completed at the former power plant and four were completed at the former maintenance building. Two of the borings at each building were converted to 2-inch diameter monitoring wells. Analyses of soil for EPH and PAHs showed the highest concentrations in borings completed near geotechnical boring at the former power plant. Metals were detected at background concentrations and PCBs were not detected. None of the detected concentrations of EPH, VOCs, or metals exceeded applicable Reportable Concentrations. The detected concentration of the PAH benzo(a)pyrene in soil was determined to be exempt from reporting due to the presence of coal.

- Groundwater sampling was completed in February 2017 which included two new wells and three existing wells. All five wells were sampled for EPH and PAHs. Two wells were sampled for VPH, VOCs, and dissolved metals. The results showed EPH and several PAHs detected in two of the 5 wells, barium detected in both wells sampled for metals and zinc detected in one well. None of the detected concentrations exceeded applicable RCs.

- Groundwater was measured at approximately 6 feet BGS in one well at the maintenance garage and between approximately 2 and 10 feet in the wells at the power plant building. Groundwater was determined to be flowing in a southwesterly direction parallel with and towards the adjacent brook.

- The power plant building is listed as having several MassDEP RTNs for releases of fuel oil. All of the releases have achieved regulatory closure under the MCP. An AUL is in place for RTN 3-13467 due to soils with residual concentrations of EPH. The EPH concentrations found in the October 2016 geotechnical boring B-11 and January 2017 borings are similar in magnitude to those documented as left in place under RTN 3-13467.

- The maintenance building is listed as a MassDEP disposal site under RTN 3-10725 which achieved regulatory closure under the MCP in June 2000. The EPH concentrations found in the October 2016 geotechnical boring B-6 and January 2017 borings are similar in magnitude to those documented under RTN 3-10725.

Recommendations

- The concentrations of recently detected petroleum in soil are similar in magnitude and location to those detected previously. Therefore, there are no new MCP reporting obligations relative to the detected petroleum.

- An AUL is recorded at the Middlesex Registry of Deeds for RTN 3-13467 at the power plant. Therefore, in accordance with 310 CMR 40.1067, a Release Abatement Measure (RAM) is required to be filed with MassDEP to manage any soil that will be generated for off-site disposal or recycling, if the volume of soil exceeds 100 cubic yards for oil contaminated soil.

- In accordance with the existing AUL, if the area of the AUL (a 123 foot by 145 foot area beneath and to the south of the power plant) is expected to be re-developed for use as an office, store, residence, school or daycare, then further response actions would be required relative to existing soil contamination. Modifications to or termination of the AUL may be applicable based on those response actions.

- In accordance with the Obligations and Conditions of the AUL, a Soil Management Plan (SMP) and Health and Safety Plan (HASP) are required prior to earthwork at the Site.

CDW is pleased to assist you on this project and hope this information sufficiently addresses your concerns at this time. Please do not hesitate to contact me if you have any questions.

Very truly yours,
CDW CONSULTANTS, INC.

Brian J. Miller, LSP
Project Manager

CDW CONSULTANTS, INC.

Lauren Konetzny, LSP
Project Manager

Attachment A: Figure 1 – Site Location Map
Figure 2 - Sampling Locations Former Power Plant
Figure 3- Sampling Locations Former Maintenance Building
Figure 4 - Groundwater Contour Map Former Power Plant
Figure 5 – Priority Resource Map

Attachment B: Table 1 - Groundwater Gauging and Elevation Data
Table 2 – Soil Analyses Results - EPH and PAHs
Table 3 – Soil Analyses Results - VPH and VOCs
Table 4 – Soil Analyses Results - Metals and PCBs
Table 5 – Groundwater Analyses Results – EPH, PAHS, Dissolved Metals

Attachment C: Soil Boring Logs and Well Construction Diagrams

Attachment D: Laboratory Reports and Chain of Custody Records

ATTACHMENT A

FIGURES

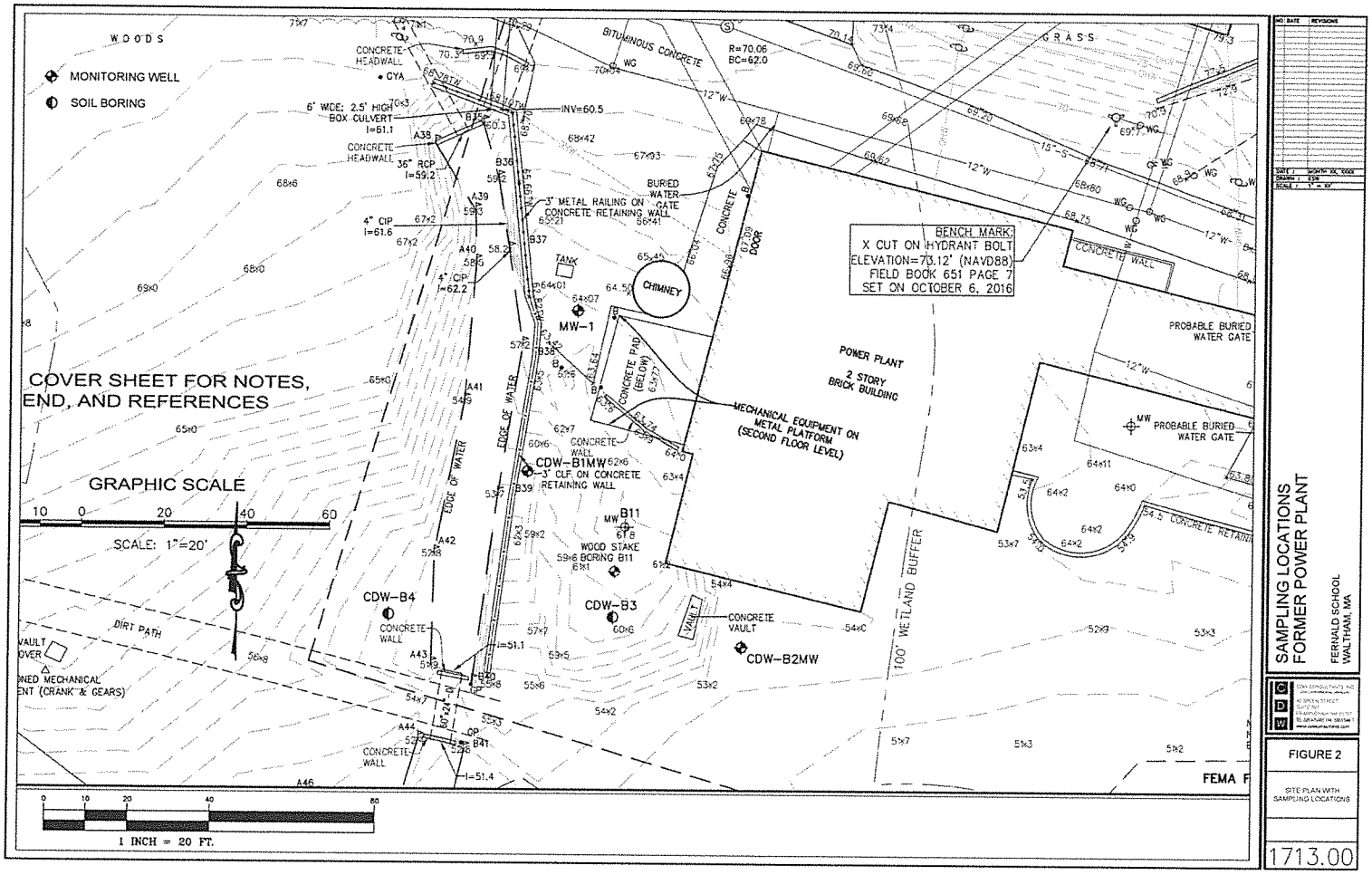
CDW CONSULTANTS, INC.

POWER PLANT & MAINTENANCE BUILDING
FORMER FERNALD SCHOOL
200 TRAPELO ROAD
WALTHAM, MASSACHUSETTS

Figure 1 - Locus Map

SOURCE: MASSGIS

SCALE: 1 inch = 2,083 feet

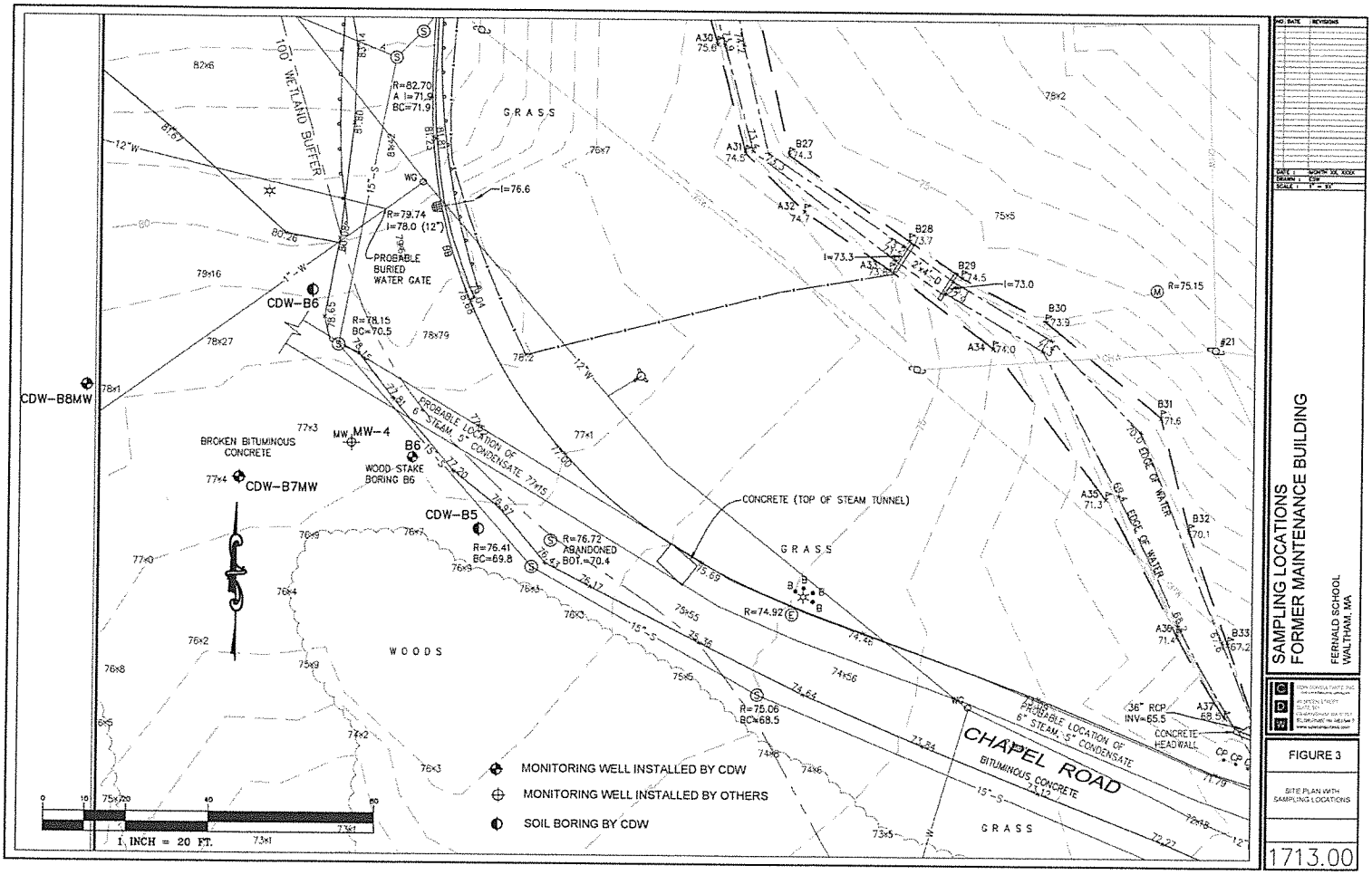


SAMPLING LOCATIONS
FORMER POWER PLANT
FERNALD SCHOOL
WALTHAM, MA

FIGURE 2

SITE PLAN WITH SAMPLING LOCATIONS

1713.00



NO. DATE REVISIONS

DATE 1 MONTH XX, XXXX
DRAWN J. CW
SCALE 1" = XX'

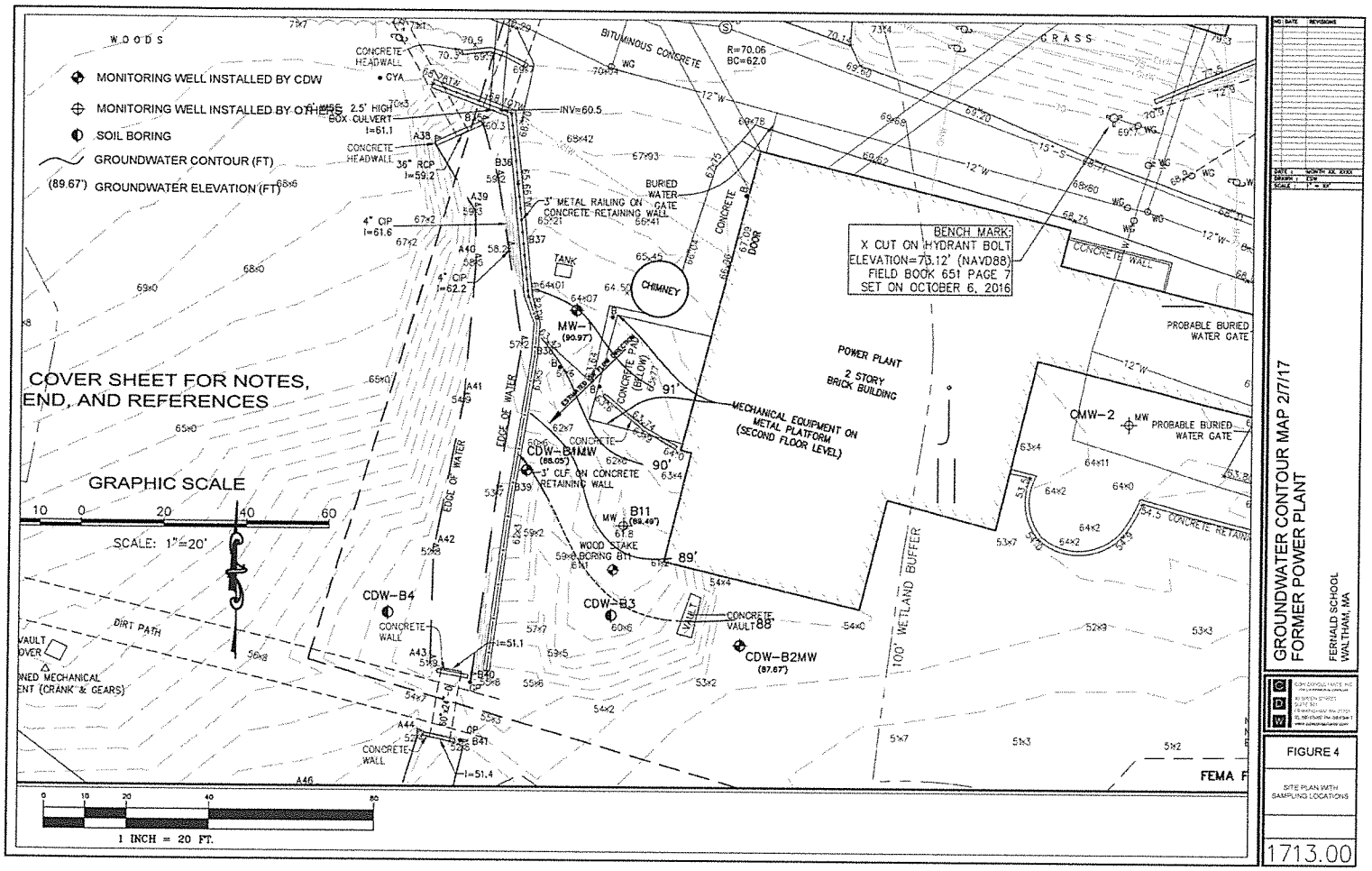
SAMPLING LOCATIONS
FORMER MAINTENANCE BUILDING

FERNALD SCHOOL
WALTHAM, MA

FIGURE 3

SITE PLAN WITH SAMPLING LOCATIONS

1713.00



GROUNDWATER CONTOUR MAP 2/7/17
FORMER POWER PLANT
FERNALD SCHOOL
WALTHAM, MA

FIGURE 4

SITE PLAN WITH SAMPLING LOCATIONS

1713.00

FIGURE 5
PRIORITY
RESOURCE MAP

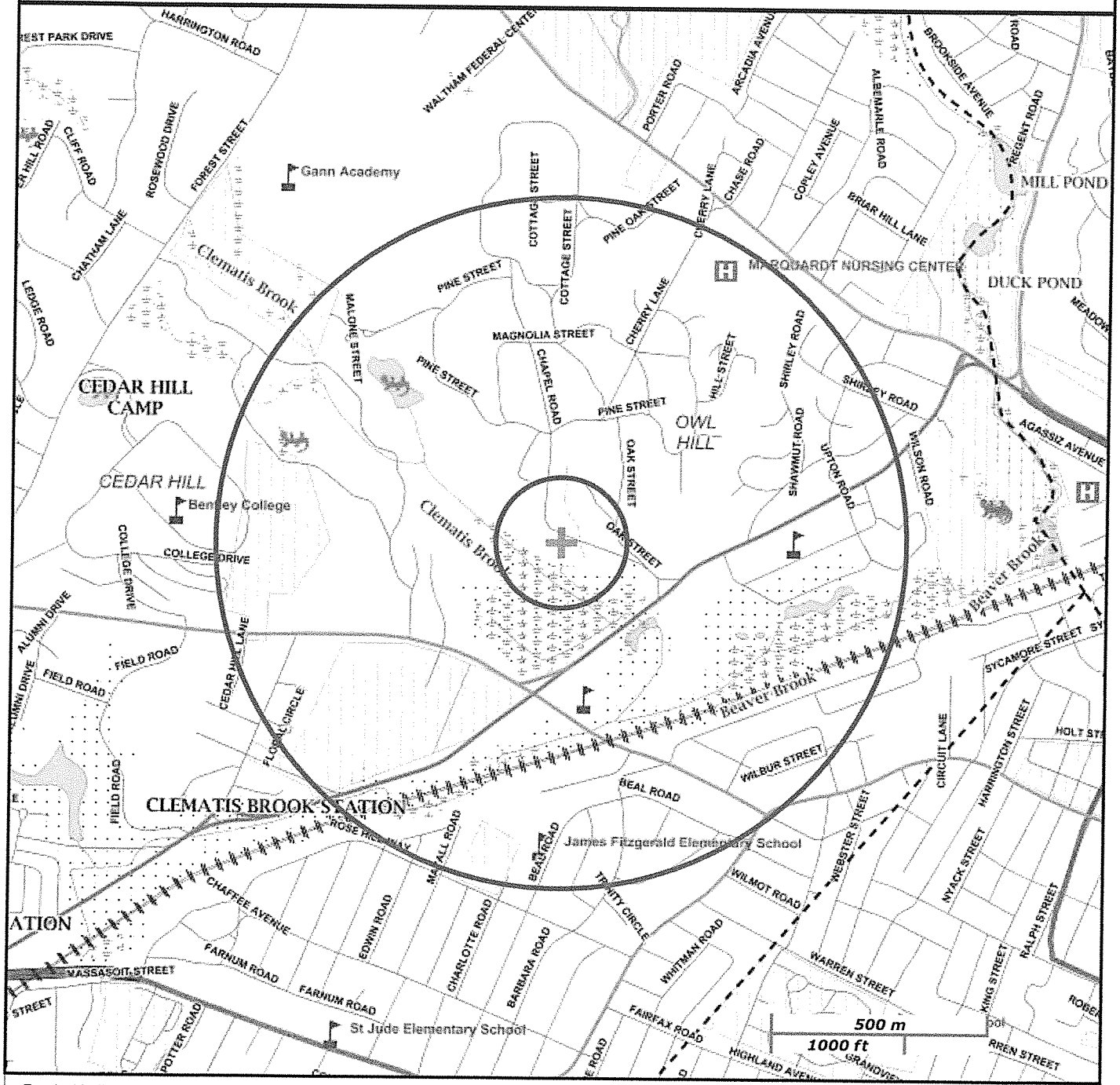
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
FERNALD CENTER
CHAPEL ROAD WALTHAM, MA
3-000013467
NAD83 UTM Meters:
4695101mN , 318161mE (Zone: 19)
March 7, 2017

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

ATTACHMENT B

TABLES

Table 1
Groundwater Gauging and Elevation Data
Fernald School, Waltham, MA
February 7, 2017

Power Plant			
Well ID	Well Elevation	Depth to Water	Groundwater Elevation
B-11	99.04	9.55	89.49
MW-1	98.93	7.96	90.97
CDW-B1MW	98.26	10.21	88.05
CDW-B2MW	89.91	2.24	87.67
Brook at Bridge	87.93	–	87.93
Brook at Headwall	94.88	–	94.88

NOTES:

1. < = Not detected above the lab reporting limits shown
2. NT = Not tested. ND = Not Detected, NA = Not Applicable
3. Bold = Above Applicable MCP RCs
4. Brook Elevation Data Collected on February 28, 2017

Table 2
Soil Analyses Results - EPH and PAHs
Fernald School, Waltham, MA

		Power Plant					Maintenance Building				
Sample Designation	MCP Reportable	B-11/S-8 (14-16')	CDW-B1 (11-13')	CDW-B2 (1-3')	CDW-B3 (2-4')	CDW-B4 (3-5')	B-6/S-2 (2-4')	CDW-B5 (5-7')	CDW-B6 (5-7')	CDW-B7 (5-7')	CDW-B8 (5-7')
Sample Date	Concentrations S-1	10/28/2016	01/31/2017	01/31/2017	01/31/2017	01/31/2017	42671	01/31/2017	01/31/2017	02/01/2017	02/01/2017
Total Organic Vapors (ppmv)		NT	14.5	0.1	0	0.9	NT	0	0	0.1	0
EPH (mg/kg)											
C9-C18 Aliphatics	1,000	**16,500**	304	20.7	<16.6	<17.6	<105	<16	<15.6	<17.2	<16.5
C19-C36 Aliphatics	3,000	**5,430**	716	30.5	60.7	<17.6	<74	<16	28.2	<17.2	<16.5
C11-C22 Aromatics	1,000	**3,790**	417	126	61.4	19.6	118	<16	24.9	<17.2	<16.5
2-Methylnaphthalene	0.7	**16.7**	<0.23	0.25	<0.22	<0.23	<0.2	<0.21	<0.21	<0.23	<0.22
Acenaphthene	4	<0.2	<0.46	<0.49	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Naphthalene	4	8.27	<0.46	<0.49	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Phenanthrene	10	<0.2	<0.46	1.32	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Acenaphthylene	1	<0.2	<0.23	<0.24	<0.22	<0.23	<0.2	<0.21	<0.21	<0.23	<0.22
Anthracene	1,000	<0.2	<0.46	<0.49	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Benzo(a)anthracene	7	<0.2	<0.46	2.72	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Benzo(a)pyrene	2	<0.2	<0.46	**2.52**	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Benzo(b)fluoranthene	7	<0.2	<0.46	3.66	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Benzo(g,h,i)perylene	1,000	<0.2	<0.46	1.83	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Benzo(k)fluoranthene	70	<0.2	<0.46	1.37	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Chrysene	70	<0.2	<0.46	3.06	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Dibenzo(a,h)Anthracene	0.7	<0.2	<0.23	0.48	<0.22	<0.23	<0.2	<0.21	<0.21	<0.23	<0.22
Fluoranthene	1,000	<0.2	<0.46	3.71	0.45	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Fluorene	1,000	<0.2	<0.46	<0.49	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Indeno(1,2,3-cd)Pyrene	7	<0.2	<0.46	2.03	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44
Pyrene	1,000	<0.2	0.60	3.50	<0.44	<0.47	<0.2	<0.43	<0.42	<0.46	<0.44

NOTES:
1. < = Not detected above the lab reporting limits shown
2. NT = Not tested, ND = Not Detected, NA = Not Applicable
3. Bold = Above Applicable MCP RCs

Table 3
Soil Analyses Results - VPH and VOCs
Fernald School, Waltham, MA

		Power Plant	Maintenance Building	
Sample Designation Sample Date	MCP Reportable Concentrations S-1	B-11/S-8 (14-16') 10/28/2016	B-6/S-2 (2-4') 10/28/2016	CDW-B7 (5-7') 02/01/2017
Total Organic Vapors (ppmv)		NT	NT	0.1
VPH (mg/kg)				
C5-C8 Aliphatics	100	13.1	<5	NT
C9-C12 Aliphatics	1,000	888	<5	NT
C9-C10 Aromatics	100	12.7	<5	NT
VOCs (mg/kg)				
1,1,1,2-Tetrachloroethane	0.1	NT	NT	<0.0054
1,1,1-Trichloroethane	30	NT	NT	<0.0054
1,1,2,2-Tetrachloroethane	0.005	NT	NT	<0.0022
1,1,2-Trichloroethane	0.1	NT	NT	<0.0054
1,1-Dichloroethane	0.4	NT	NT	<0.0054
1,1-Dichloroethene	3	NT	NT	<0.0054
1,1-Dichloropropene	NA	NT	NT	<0.0054
1,2,3-Trichlorobenzene	NA	NT	NT	<0.0054
1,2,3-Trichloropropane	100	NT	NT	<0.0054
1,2,4-Trichlorobenzene	2	NT	NT	<0.0054
1,2,4-Trimethylbenzene	1,000	NT	NT	<0.0054
1,2-Dibromo-3-Chloropropane	10	NT	NT	<0.0054
1,2-Dibromoethane	0.1	NT	NT	<0.0054
1,2-Dichlorobenzene	9	NT	NT	<0.0054
1,2-Dichloroethane	0.1	NT	NT	<0.0054
1,2-Dichloropropane	0.1	NT	NT	<0.0054
1,3,5-Trimethylbenzene	10	NT	NT	<0.0054
1,3-Dichlorobenzene	3	NT	NT	<0.0054
1,3-Dichloropropane	500	NT	NT	<0.0054
1,4-Dichlorobenzene	0.7	NT	NT	<0.0054
1,4-Dioxane	0.2	NT	NT	<0.109
2,2-Dichloropropane	NA	NT	NT	<0.0054
2-Butanone	4	NT	NT	<0.0109
2-Chlorotoluene	100	NT	NT	<0.0054
2-Hexanone	100	NT	NT	<0.0109
4-Chlorotoluene	NA	NT	NT	<0.0054
4-Isopropyltoluene	100	NT	NT	<0.0054
4-Methyl-2-Pentanone	0.4	NT	NT	<0.0109
Acetone	6	NT	NT	0.0148
Benzene	2	<0.05	<0.05	<0.0054
Bromobenzene	100	NT	NT	<0.0054
Bromochloromethane	NA	NT	NT	<0.0054
Bromodichloromethane	0.1	NT	NT	<0.0054
Bromoform	0.1	NT	NT	<0.0054
Bromomethane	0.5	NT	NT	<0.0109
Carbon Disulfide	100	NT	NT	<0.0054
Carbon Tetrachloride	5	NT	NT	<0.0054
Chlorobenzene	1	NT	NT	<0.0054
Chloroethane	100	NT	NT	<0.0109
Chloroform	0.2	NT	NT	<0.0054
Chloromethane	100	NT	NT	<0.0109
cis-1,2-Dichloroethene	0.1	NT	NT	<0.0054
cis-1,3-Dichloropropene	0.01	NT	NT	<0.0054
Dibromochloromethane	0.005	NT	NT	<0.0022

Table 4
Soil Analyses Results - Metals and PCBs
Fernald School, Waltham, MA

		Power Plant	**Maintenance Building**
Sample Designation Sample Date	MCP Reportable Concentrations S-1	Comp B1 to B4 (0-1') 01/31/2017	Comp B5 to B8 (0-1') 02/01/2017
Total Organic Vapors (ppmv)		0.1	0
Total Metals (mg/kg)			
Antimony	20	<0.5	<0.43
Arsenic	20	<2.51	2.61
Barium	1,000	19.4	20.5
Beryllium	90	0.45	0.43
Cadmium	70	<0.5	<0.43
Chromium	100	7.09	6.50
Lead	200	23.1	20.1
Mercury	20	0.050	0.092
Nickel	600	6.16	5.70
Selenium	400	<0.5	<0.43
Silver	100	<0.5	<0.43
Thallium	8	<0.5	<0.43
Vanadium	400	14.9	16.4
Zinc	1,000	34.3	29.9
PCBs (mg/kg)			
Aroclor 1016	1	<0.055	NT
Aroclor 1221	1	<0.055	NT
Aroclor 1232	1	<0.055	NT
Aroclor 1242	1	<0.055	NT
Aroclor 1248	1	<0.055	NT
Aroclor 1254	1	<0.055	NT
Aroclor 1260	1	<0.055	NT
Aroclor 1262	1	<0.055	NT
Aroclor 1268	1	<0.055	NT

NOTES:

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3. Bold = Above Applicable MCP RCs

Table 3
Soil Analyses Results - VPH and VOCs
Fernald School, Waltham, MA

		Power Plant	Maintenance Building	
Sample Designation	MCP Reportable	B-11/S-8 (14-16')	B-6/S-2 (2-4')	CDW-B7 (5-7')
Sample Date	Concentrations S-1	10/28/2016	10/28/2016	02/01/2017
Dibromomethane	500	NT	NT	<0.0054
Dichlorodifluoromethane	1,000	NT	NT	<0.0109
Diethyl Ether	100	NT	NT	<0.0054
Di-isopropyl ether	100	NT	NT	<0.0054
Ethyl tertiary-butyl ether	NA	NT	NT	<0.0054
Ethylbenzene	40	<0.726	<0.05	<0.0054
Hexachlorobutadiene	30	NT	NT	<0.0054
Isopropylbenzene	1,000	NT	NT	<0.0054
Methyl tert-Butyl Ether	0.1	<0.05	<0.05	<0.0054
Methylene Chloride	0.1	NT	NT	<0.0109
Naphthalene	4	**7.55**	**<0.05**	<0.0054
n-Butylbenzene	100	NT	NT	<0.0054
n-Propylbenzene	100	NT	NT	<0.0054
sec-Butylbenzene	100	NT	NT	<0.0054
Styrene	3	NT	NT	<0.0054
tert-Butylbenzene	100	NT	NT	<0.0054
Tertiary-amyl methyl ether	NA	NT	NT	<0.0054
Tetrachloroethene	1	NT	NT	<0.0054
Tetrahydrofuran	500	NT	NT	<0.0054
Toluene	30	<0.05	<0.05	<0.0054
trans-1,2-Dichloroethene	1	NT	NT	<0.0054
trans-1,3-Dichloropropene	0.01	NT	NT	<0.0054
Trichloroethene	0.3	NT	NT	<0.0054
Trichlorofluoromethane	1,000	NT	NT	<0.0054
Vinyl Chloride	0.7	NT	NT	<0.0109
Xylene O	100	1,1	<0.05	<0.0054
Xylene P,M	100	0.946	<0.05	<0.0109
Xylenes (Total)	100	2.05	<0.05	<0.0109

NOTES:
1. < = Not detected above the lab reporting limits shown
2. NT = Not tested. ND = Not Detected, NA = Not Applicable
3. Bold = Above Applicable MCP RCs

Table 5
Groundwater Analyses Results - EPH, PAHs, Dissolved Metals
Fernald School, Waltham, MA

		Power Plant				Maintenance Building
Sample Designation Sample Date	MCP Reportable Concentrations GW-2	CDW-B2MW 2/7/2017	CDW-B1MW 2/7/2017	B-11 2/7/2017	MW-1 2/7/2017	MW-4 2/7/2017
EPH (ug/l)						
C9-C18 Aliphatics	5,000	<93	<105	<94	<93	<106
C19-C36 Aliphatics	50,000	209	<105	105	<93	<106
C11-C22 Aromatics	5,000	<93.5	<105	<94.3	<93.5	<106
PAHs (ug/l)						
2-Methylnaphthalene	2,000	<0.47	<0.53	<0.47	<0.47	<0.53
Acenaphthene	6,000	0.70	<0.21	0.35	<0.19	<0.21
Naphthalene	700	<0.47	<0.53	<0.47	<0.47	<0.53
Phenanthrene	10,000	1.91	<0.53	2.36	<0.47	<0.53
Acenaphthylene	40	0.25	<0.21	<0.19	<0.19	<0.21
Anthracene	30	0.62	<0.21	0.62	<0.19	<0.21
Benzo(a)anthracene	1,000	4.21	<0.21	0.92	<0.19	<0.21
Benzo(a)pyrene	500	4.54	<0.11	0.83	<0.09	<0.11
Benzo(b)fluoranthene	400	7.70	<0.21	0.99	<0.19	<0.21
Benzo(g,h,i)perylene	20	3.99	<0.21	0.53	<0.19	<0.21
Benzo(k)fluoranthene	100	2.08	<0.21	0.34	<0.19	<0.21
Chrysene	70	4.90	<0.21	0.95	<0.19	<0.21
Dibenzo(a,h)Anthracene	40	1.10	<0.21	<0.19	<0.19	<0.21
Fluoranthene	200	6.72	<0.21	2.07	<0.19	<0.21
Fluorene	40	<0.19	<0.21	0.40	<0.19	<0.21
Indeno(1,2,3-cd)Pyrene	100	4.12	<0.21	0.55	<0.19	<0.21
Pyrene	20	5.94	<0.21	1.79	<0.19	<0.21
Dissolved Metals						
Barium	50,000	NT	28	NT	NT	32.4
Zinc	900	NT	29.3	NT	NT	<25

NOTES:
1. < = Not detected above the lab reporting limits shown
2. NT = Not tested. ND = Not Detected, NA = Not Applicable
3. Bold = Above Applicable MCP RCs

ATTACHMENT C

BORING LOGS AND WELL COONSTRUCTION DIAGRAMS

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B1MW**
Total Depth:	15 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	30"			
					0	tan fine SAND, little medium sand, trace coarse sand with pebbles; dry	
-1							
-2							
-3					0	See Above	
-4						See Above	
-5	S2		5'-10'	36"			
-6					0	tan fine SAND, little medium sand, trace coarse sand	
-7							
-8							
					0		
-9						gray angular gravel; wet	
-10	S3		10'-15'	36"		See Above	
-11						See Above	
					14.5		
-12						gray silty fine SAND, little gravel, trace clay; moist to wet	
-13							
-14					0.8	gray silty fine SAND, little gravel, trace clay with 1" brown medium sand seam; wet	
-15						**End of Boring at 15 feet, No Refusal**	
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements

Date	Time	Depth to Groundwater	Measuring Point

Summary

Overburden:	SAND, TILL
Rock:	NA
Well Depth:	15'
Boring:	15'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B2MW**
Total Depth:	15 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	24"		tan medium to fine SAND, dry with pebbles; wet at 2 ft	
-1							
					0.1		
-2							
-3						coal layer from 3-3.5ft	
					0		
-4						gravel layer from 4 to 5 ft	
-5	S2		5'-10'	36"			
-6					0	tan to brown medium to coarse SAND, w/ pebbles and angular gravel; wet	
-7							
-8						brown silt	
					0		
-9						gray fine SAND, some silt, little gravel, trace clay	
-10						**End of Boring at 10 feet, No Refusal**	
-11							
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements

Date	Time	Depth to Groundwater	Measuring Point

Summary

Overburden:	SAND, TILL
Rock:	NA
Well Depth:	10'
Boring:	10'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B3**
Total Depth:	15 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	36"			
					0	tan fine SAND, little medium sand, trace coarse sand with pebbles; dry	
-1							
-2							
-3					0	See Above; wet	
-4						gray broken rock and gravel	
-5	S2		5'-10'	36"			
-6					0	tan to brown sandy silt, w/ gravel pieces	
-7							
-8						See Above	
					0		
-9							
-10						**End of Boring at 10 feet, No Refusal**	
-11							
-12							
-13							
-14							
			15'				
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements				Summary	
Date	Time	Depth to Groundwater	Measuring Point	Overburden:	SAND, SILT
				Rock:	NA
				Well Depth:	NA
				Boring:	10'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B4**
Total Depth:	10 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	36"		tan to brown sand and gravel FILL; dry	
-1					0		
-2							
-3						black coal with ash; moist to wet	
-4					0.9		
-5	S2		5'-10'	48"		orange SILT, little fine sand, trace gravel; wet	
-6					0	tan to gray fine SAND, some silt, little gravel, trace clay; moist to wet	
-7							
-8					0	tan to gray fine SAND, some silt, little gravel, trace coarse sand with clay; wet	
-9							
-10						**End of Boring at 10 feet; No Refusal**	
-11							
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements

Date	Time	Depth to Groundwater	Measuring Point

Summary

Overburden:	SAND, TILL
Rock:	NA
Well Depth:	NA
Boring:	10'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B5**
Total Depth:	9 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	24"		tan to brown medium to fine SAND; dry	
					0		
-1							
-2							
					0	tan to gray fine SAND, with gravel, silt, broken rock; dry	
-3							
-4							
-5	S2		5'-9'	30"			
-6					0	gray fine SAND, with gravel, silt, broken rock	
-7						See Above	
-8					0		
						Broken rock in tip	
-9						**End of Boring at 9 feet; Boring Refusal**	
-10							
						Note: Refusals at 4ft, 7ft, 8ft	
-11							
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements			
Date	Time	Depth to Groundwater	Measuring Point

Summary	
Overburden:	SAND, TILL
Rock:	NA
Well Depth:	NA
Boring:	9'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B6**
Total Depth:	9 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	1/31/2017	Completed:	1/31/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	36"			
					0		
-1						brown fine SAND, trace silt with gravel	
-2						gray medium to fine SAND, little gravel; dry	
					0		
-3						black coal with some ash	
-4						gray fine SAND, little gravel, trace silt; dry	
-5	S2		5'-9'	36"			
					0		
-6						gray fine SAND, little gravel, trace silt, and coarse sand; moist to wet	
-7							
-8					0	See Above	
-9						**End of Boring at 9 feet, Refusal**	
-10							
-11						*Note: Additional Refusals at 6ft, 7ft, 5 ft*	
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements

Date	Time	Depth to Groundwater	Measuring Point

Summary

Overburden:	SAND, TILL
Rock:	NA
Well Depth:	9'
Boring:	9'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B7MW**
Total Depth:	10 ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	2/1/2017	Completed:	2/1/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample				PID Hdspace (ppmv)	Sample Description	Well Diagram
	Type & Num.	Blows per 6 Inches	Depth Range	Recovery			
0	S1		0'-5'	30"		tan to brown fine SAND, little silt, trace gravel; dry	
					0		
-1							
						See Above	
-2							
-3					0.8		
-4						coal layer (appears as black fine sand)	
-5	S2		5'-10'	36"		gray fine SAND, some silt moist to wet	
-6					0.1		
						See Above	
-7							
-8						gray fine SAND, some silt, little gravel, trace clay	
					0.3		
-9						See Above	
-10						**End of Boring at 10 feet, Refusal**	
-11							
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements				Summary	
Date	Time	Depth to Groundwater	Measuring Point	Overburden:	SAND, TILL
				Rock:	NA
				Well Depth:	10'
				Boring:	10'

TEST BORING LOG

CDW Consultants, Inc.

Project No.:	1713	Client:	SMMA	BORING ID:	**CDW-B8MW**
Total Depth:	9ft	Location:	200 Trapelo Rd, Waltham	Logged By:	AMS
Date Started:	2/1/2017	Completed:	2/1/2017	Contractor:	TDS
Casing ID:		Ground El.		Sheet #:	1
Remarks:	6610 DT Geoprobe				

Depth (Feet)	Sample Type & Num.	Sample Blows per 6 Inches	Sample Depth Range	Sample Recovery	PID Hdspace (ppmv)	Sample Description	Well Diagram
0	S1		0'-5'	36"			
					0	brown silty fine SAND, little coarse sand trace gravel; dry	
-1							
-2							
-3					0	See Above	
-4						brown silty fine SAND, little medium sand, trace gravel	
-5	S2		5'-9'	36"			
-6					0	gray silty SAND, little gravel, trace coarse sand; moist to wet	
-7						gray silty SAND, little gravel, trace coarse sand and clay moist to wet	
-8					0		
						broken rock	
-9						**End of Boring at 9 feet, Refusal**	
-10							
-11							
-12							
-13							
-14							
-15							
-16							
-17							
-18							
-19							
-20							

Groundwater Measurements

Date	Time	Depth to Groundwater	Measuring Point

Summary

Overburden:	SAND, TILL
Rock:	NA
Well Depth:	9'
Boring:	9'

ATTACHMENT D

LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS

CERTIFICATE OF ANALYSIS

Lauren Konetzny
CDW Consultants, Inc.
40 Speen Street Suite 301
Framingham, MA 01701

RE: Fernald School (N/A)
ESS Laboratory Work Order Number: 1702041

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 9:49 am, Feb 10, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

SAMPLE RECEIPT

The following samples were received on February 02, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Low Level VOA vials were frozen by ESS Laboratory on February 2, 2017 at 17:42.

Lab Number	Sample Name	Matrix	Analysis
1702041-01	CDW-B1 (11-13')	Soil	EPH8270, MADEP-EPH
1702041-02	CDW-B2 (1-3')	Soil	EPH8270, MADEP-EPH
1702041-03	CDW-B3 (2-4')	Soil	EPH8270, MADEP-EPH
1702041-04	CDW-B4 (3-5')	Soil	EPH8270, MADEP-EPH
1702041-05	Comp B1 to B4 (0-1')	Soil	6010C, 6020A, 7471B, 8082A
1702041-06	CDW-B5 (5-7')	Soil	EPH8270, MADEP-EPH
1702041-07	CDW-B6 (5-7')	Soil	EPH8270, MADEP-EPH
1702041-08	CDW-B7 (5-7')	Soil	8260B Low, EPH8270, MADEP-EPH
1702041-09	CDW-B8 (5-7')	Soil	EPH8270, MADEP-EPH
1702041-10	Comp B5 to B8 (0-1')	Soil	6010C, 6020A, 7471B

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

C7B0051-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
1,4-Dioxane (24% @ 20%), 2-Hexanone (21% @ 20%), 4-Methyl-2-Pentanone (22% @ 20%), Acetone (24% @ 20%), Bromoform (22% @ 20%), cis-1,3-Dichloropropene (21% @ 20%), Tetrachloroethene (27% @ 20%), trans-1,3-Dichloropropene (22% @ 20%)

CB70321-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
1,4-Dioxane (21% @ 20%), Acetone (26% @ 25%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1702041-01 through 1702041-10**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	( ) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
( ) 8270 SVOC CAM II B	( ) 7010 Metals CAM III C	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	(X) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	Yes (X) No ( )*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Date: February 10, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1 (11-13')
Date Sampled: 01/31/17 09:30
Percent Solids: 89
Initial Volume: 24.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-01
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	**304** (17.4)		MADEP-EPH		1	ZLC	02/03/17 19:28	C7B0029	CB70307
C19-C36 Aliphatics1	**716** (17.4)		MADEP-EPH		1	ZLC	02/03/17 19:28	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	**417** (17.4)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
C11-C22 Aromatics1,2	**417** (17.4)		EPH8270			VSC	02/03/17 21:59		[CALC]
2-Methylnaphthalene	ND (0.23)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Acenaphthene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Naphthalene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Phenanthrene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Acenaphthylene	ND (0.23)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Anthracene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Benzo(a)anthracene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Benzo(a)pyrene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Chrysene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.23)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Fluoranthene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Fluorene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307
Pyrene	**0.60** (0.46)		EPH8270		1	VSC	02/03/17 21:59	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*70 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*75 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*76 %*		*40-140*
Surrogate: O-Terphenyl	*63 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B2 (1-3')
Date Sampled: 01/31/17 13:05
Percent Solids: 85
Initial Volume: 24.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-02
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	**20.7** (18.2)		MADEP-EPH		1	ZLC	02/03/17 20:15	C7B0029	CB70307
C19-C36 Aliphatics1	**30.5** (18.2)		MADEP-EPH		1	ZLC	02/03/17 20:15	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	**152** (18.2)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
C11-C22 Aromatics1,2	**126** (18.2)		EPH8270			VSC	02/03/17 22:33		[CALC]
2-Methylnaphthalene	**0.25** (0.24)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Acenaphthene	ND (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Naphthalene	ND (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Phenanthrene	**1.32** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Acenaphthylene	ND (0.24)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Anthracene	ND (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Benzo(a)anthracene	**2.72** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Benzo(a)pyrene	**2.52** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Benzo(b)fluoranthene	**3.66** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Benzo(g,h,i)perylene	**1.83** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Benzo(k)fluoranthene	**1.37** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Chrysene	**3.06** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Dibenzo(a,h)Anthracene	**0.48** (0.24)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Fluoranthene	**3.71** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Fluorene	ND (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	**2.03** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307
Pyrene	**3.50** (0.49)		EPH8270		1	VSC	02/03/17 22:33	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*66 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*106 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*104 %*		*40-140*
Surrogate: O-Terphenyl	*78 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B3 (2-4')
Date Sampled: 01/31/17 11:10
Percent Solids: 88
Initial Volume: 25.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-03
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (16.6)		MADEP-EPH		1	ZLC	02/03/17 21:02	C7B0029	CB70307
C19-C36 Aliphatics1	**60.7** (16.6)		MADEP-EPH		1	ZLC	02/03/17 21:02	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	**61.9** (16.6)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
C11-C22 Aromatics1,2	**61.4** (16.6)		EPH8270			VSC	02/03/17 23:07		[CALC]
2-Methylnaphthalene	ND (0.22)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Acenaphthene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Naphthalene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Phenanthrene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Acenaphthylene	ND (0.22)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Anthracene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Benzo(a)anthracene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Benzo(a)pyrene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Chrysene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.22)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Fluoranthene	**0.45** (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Fluorene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307
Pyrene	ND (0.44)		EPH8270		1	VSC	02/03/17 23:07	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*62 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*81 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*89 %*		*40-140*
Surrogate: O-Terphenyl	*68 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B4 (3-5')
Date Sampled: 01/31/17 10:20
Percent Solids: 88
Initial Volume: 24.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-04
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (17.6)		MADEP-EPH		1	ZLC	02/03/17 21:50	C7B0029	CB70307
C19-C36 Aliphatics1	ND (17.6)		MADEP-EPH		1	ZLC	02/03/17 21:50	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	**19.6** (17.6)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
C11-C22 Aromatics1,2	**19.6** (17.6)		EPH8270			VSC	02/03/17 23:42		[CALC]
2-Methylnaphthalene	ND (0.23)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Acenaphthene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Naphthalene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Phenanthrene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Acenaphthylene	ND (0.23)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Anthracene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Benzo(a)anthracene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Benzo(a)pyrene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Chrysene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.23)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Fluoranthene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Fluorene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307
Pyrene	ND (0.47)		EPH8270		1	VSC	02/03/17 23:42	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*60 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*88 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*91 %*		*40-140*
Surrogate: O-Terphenyl	*69 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: Comp B1 to B4 (0-1')
Date Sampled: 01/31/17 13:05
Percent Solids: 92

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.50)		6020A		20	NAR	02/08/17 9:54	2.17	100	CB70233
Arsenic	ND (2.51)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Barium	**19.4** (2.51)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Beryllium	**0.45** (0.11)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Cadmium	ND (0.50)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Chromium	**7.09** (1.00)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Lead	**23.1** (5.02)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Mercury	**0.050** (0.035)		7471B		1	MJV	02/03/17 14:00	0.61	40	CB70234
Nickel	**6.16** (2.51)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Selenium	ND (0.50)		6020A		20	NAR	02/08/17 9:54	2.17	100	CB70233
Silver	ND (0.50)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Thallium	ND (0.50)		6020A		20	NAR	02/08/17 9:54	2.17	100	CB70233
Vanadium	**14.9** (1.00)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233
Zinc	**34.3** (2.51)		6010C		1	KJK	02/03/17 16:13	2.17	100	CB70233

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: Comp B1 to B4 (0-1')
Date Sampled: 01/31/17 13:05
Percent Solids: 92
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 2/7/17 14:15
Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1221	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1232	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1242	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1248	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1254	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1260	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1262	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607
Aroclor 1268	ND (0.0550)		8082A		1	02/08/17 10:52		CB70607

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*53 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B5 (5-7')
Date Sampled: 01/31/17 14:10
Percent Solids: 96
Initial Volume: 24.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-06
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (16.0)		MADEP-EPH		1	ZLC	02/03/17 22:37	C7B0029	CB70307
C19-C36 Aliphatics1	ND (16.0)		MADEP-EPH		1	ZLC	02/03/17 22:37	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	ND (16.0)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
C11-C22 Aromatics1,2	ND (16.0)		EPH8270			VSC	02/04/17 0:16		[CALC]
2-Methylnaphthalene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Acenaphthene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Naphthalene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Phenanthrene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Acenaphthylene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Anthracene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Benzo(a)anthracene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Benzo(a)pyrene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Chrysene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Fluoranthene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Fluorene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307
Pyrene	ND (0.43)		EPH8270		1	VSC	02/04/17 0:16	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*68 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*91 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*89 %*		*40-140*
Surrogate: O-Terphenyl	*80 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B6 (5-7')
Date Sampled: 01/31/17 15:00
Percent Solids: 93
Initial Volume: 25.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-07
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (15.6)		MADEP-EPH		1	ZLC	02/03/17 23:24	C7B0029	CB70307
C19-C36 Aliphatics1	**28.2** (15.6)		MADEP-EPH		1	ZLC	02/03/17 23:24	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	**24.9** (15.6)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
C11-C22 Aromatics1,2	**24.9** (15.6)		EPH8270			VSC	02/04/17 0:50		[CALC]
2-Methylnaphthalene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Acenaphthene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Naphthalene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Phenanthrene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Acenaphthylene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Anthracene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Benzo(a)anthracene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Benzo(a)pyrene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Chrysene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.21)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Fluoranthene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Fluorene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307
Pyrene	ND (0.42)		EPH8270		1	VSC	02/04/17 0:50	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*56 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*95 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*90 %*		*40-140*
Surrogate: O-Terphenyl	*72 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B7 (5-7')
Date Sampled: 02/01/17 08:45
Percent Solids: 87
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1,1-Trichloroethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1,2,2-Tetrachloroethane	ND (0.0022)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1,2-Trichloroethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1-Dichloroethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1-Dichloroethene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,1-Dichloropropene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2,3-Trichlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2,3-Trichloropropane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2,4-Trichlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2,4-Trimethylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2-Dibromo-3-Chloropropane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2-Dibromoethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2-Dichlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2-Dichloroethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,2-Dichloropropane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,3,5-Trimethylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,3-Dichlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,3-Dichloropropane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,4-Dichlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
1,4-Dioxane	ND (0.109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
2,2-Dichloropropane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
2-Butanone	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
2-Chlorotoluene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
2-Hexanone	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
4-Chlorotoluene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
4-Isopropyltoluene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
4-Methyl-2-Pentanone	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Acetone	**0.0148** (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Benzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Bromobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Bromochloromethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B7 (5-7')
Date Sampled: 02/01/17 08:45
Percent Solids: 87
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Bromoform	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Bromomethane	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Carbon Disulfide	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Carbon Tetrachloride	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Chlorobenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Chloroethane	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Chloroform	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Chloromethane	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
cis-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
cis-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Dibromochloromethane	ND (0.0022)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Dibromomethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Dichlorodifluoromethane	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Diethyl Ether	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Di-isopropyl ether	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Ethyl tertiary-butyl ether	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Ethylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Hexachlorobutadiene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Isopropylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Methyl tert-Butyl Ether	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Methylene Chloride	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Naphthalene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
n-Butylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
n-Propylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
sec-Butylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Styrene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
tert-Butylbenzene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Tertiary-amyl methyl ether	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Tetrachloroethene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Tetrahydrofuran	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Toluene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B7 (5-7')
Date Sampled: 02/01/17 08:45
Percent Solids: 87
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
trans-1,2-Dichloroethene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
trans-1,3-Dichloropropene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Trichloroethene	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Trichlorofluoromethane	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Vinyl Chloride	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Xylene O	ND (0.0054)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Xylene P,M	ND (0.0109)		8260B Low		1	02/03/17 16:19	C7B0051	CB70321
Xylenes (Total)	ND (0.0109)		8260B Low		1	02/03/17 16:19		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*91 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*91 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B7 (5-7')
Date Sampled: 02/01/17 08:45
Percent Solids: 87
Initial Volume: 25.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-08
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (17.2)		MADEP-EPH		1	ZLC	02/04/17 0:12	C7B0029	CB70307
C19-C36 Aliphatics1	ND (17.2)		MADEP-EPH		1	ZLC	02/04/17 0:12	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	ND (17.2)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
C11-C22 Aromatics1,2	ND (17.2)		EPH8270			VSC	02/04/17 1:24		[CALC]
2-Methylnaphthalene	ND (0.23)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Acenaphthene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Naphthalene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Phenanthrene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Acenaphthylene	ND (0.23)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Anthracene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Benzo(a)anthracene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Benzo(a)pyrene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Chrysene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.23)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Fluoranthene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Fluorene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307
Pyrene	ND (0.46)		EPH8270		1	VSC	02/04/17 1:24	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*60 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*94 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*91 %*		*40-140*
Surrogate: O-Terphenyl	*73 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B8 (5-7')
Date Sampled: 02/01/17 09:55
Percent Solids: 93
Initial Volume: 24.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-09
Sample Matrix: Soil
Units: mg/kg dry

Prepared: 2/3/17 13:45

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (16.5)		MADEP-EPH		1	ZLC	02/04/17 2:34	C7B0029	CB70307
C19-C36 Aliphatics1	ND (16.5)		MADEP-EPH		1	ZLC	02/04/17 2:34	C7B0029	CB70307
C11-C22 Unadjusted Aromatics1	ND (16.5)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
C11-C22 Aromatics1,2	ND (16.5)		EPH8270			VSC	02/04/17 3:06		[CALC]
2-Methylnaphthalene	ND (0.22)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Acenaphthene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Naphthalene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Phenanthrene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Acenaphthylene	ND (0.22)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Anthracene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Benzo(a)anthracene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Benzo(a)pyrene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Benzo(b)fluoranthene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Benzo(g,h,i)perylene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Benzo(k)fluoranthene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Chrysene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Dibenzo(a,h)Anthracene	ND (0.22)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Fluoranthene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Fluorene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Indeno(1,2,3-cd)Pyrene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307
Pyrene	ND (0.44)		EPH8270		1	VSC	02/04/17 3:06	C7B0057	CB70307

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*67 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*90 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*89 %*		*40-140*
Surrogate: O-Terphenyl	*78 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: Comp B5 to B8 (0-1')
Date Sampled: 02/01/17 10:15
Percent Solids: 93

ESS Laboratory Work Order: 1702041
ESS Laboratory Sample ID: 1702041-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.43)		6020A		20	NAR	02/08/17 9:59	2.49	100	CB70233
Arsenic	**2.61** (2.16)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Barium	**20.5** (2.16)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Beryllium	**0.43** (0.10)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Cadmium	ND (0.43)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Chromium	**6.50** (0.87)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Lead	**20.1** (4.33)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Mercury	**0.092** (0.030)		7471B		1	MJV	02/03/17 14:02	0.7	40	CB70234
Nickel	**5.70** (2.16)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Selenium	ND (0.43)		6020A		20	NAR	02/08/17 9:59	2.49	100	CB70233
Silver	ND (0.43)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Thallium	ND (0.43)		6020A		20	NAR	02/08/17 9:59	2.49	100	CB70233
Vanadium	**16.4** (0.87)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233
Zinc	**29.9** (2.16)		6010C		1	KJK	02/03/17 16:17	2.49	100	CB70233

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CB70233 - 3005A										
Blank										
Antimony	ND	0.50	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	0.50	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	0.50	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	121	21.6	mg/kg wet	100.0		121	19-257			
Arsenic	155	8.62	mg/kg wet	161.0		96	80-120			
Barium	357	8.62	mg/kg wet	351.0		102	80-120			
Beryllium	83.8	0.38	mg/kg wet	89.40		94	80-120			
Cadmium	165	1.72	mg/kg wet	190.0		87	80-120			
Chromium	80.1	3.45	mg/kg wet	87.90		91	80-120			
Lead	132	17.2	mg/kg wet	138.0		95	80-120			
Nickel	116	8.62	mg/kg wet	127.0		92	80-120			
Selenium	314	21.6	mg/kg wet	305.0		103	80-120			
Silver	52.2	1.72	mg/kg wet	58.00		90	80-120			
Thallium	87.9	21.6	mg/kg wet	89.80		98	80-120			
Vanadium	76.3	3.45	mg/kg wet	81.60		94	80-120			
Zinc	155	8.62	mg/kg wet	173.0		90	80-120			
LCS Dup										
Antimony	130	22.7	mg/kg wet	100.0		130	19-257	7	30	
Arsenic	158	9.09	mg/kg wet	161.0		98	80-120	2	20	
Barium	396	9.09	mg/kg wet	351.0		113	80-120	10	20	
Beryllium	83.8	0.40	mg/kg wet	89.40		94	80-120	0.07	20	
Cadmium	172	1.82	mg/kg wet	190.0		90	80-120	4	20	
Chromium	82.6	3.64	mg/kg wet	87.90		94	80-120	3	20	
Lead	134	18.2	mg/kg wet	138.0		97	80-120	2	20	
Nickel	121	9.09	mg/kg wet	127.0		95	80-120	4	20	
Selenium	328	22.7	mg/kg wet	305.0		107	80-120	4	30	
Silver	54.6	1.82	mg/kg wet	58.00		94	80-120	4	20	
Thallium	91.5	22.7	mg/kg wet	89.80		102	80-120	4	30	
Vanadium	79.0	3.64	mg/kg wet	81.60		97	80-120	4	20	
Zinc	163	9.09	mg/kg wet	173.0		94	80-120	5	20	
Batch CB70234 - 7471B										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CB70234 - 7471B										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	12.7	1.43	mg/kg wet	15.90		80	80-120			
LCS Dup										
Mercury	12.8	1.57	mg/kg wet	15.90		81	80-120	1	20	
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0020	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0100	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0100	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0100	mg/kg wet							
Acetone	ND	0.0100	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Dibromochloromethane	ND	0.0020	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0100	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Xylenes (Total)	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0434*		mg/kg wet	*0.05000*		*87*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0466*		mg/kg wet	*0.05000*		*93*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0451*		mg/kg wet	*0.05000*		*90*	*70-130*			
Surrogate: Toluene-d8	*0.0495*		mg/kg wet	*0.05000*		*99*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,1-Trichloroethane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
1,1,2,2-Tetrachloroethane	0.0443	0.0020	mg/kg wet	0.05000		89	70-130			

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
1,1,2-Trichloroethane	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
1,1-Dichloroethane	0.0402	0.0050	mg/kg wet	0.05000		80	70-130			
1,1-Dichloroethene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
1,1-Dichloropropene	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
1,2,3-Trichlorobenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
1,2,3-Trichloropropane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
1,2,4-Trichlorobenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trimethylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromo-3-Chloropropane	0.0426	0.0050	mg/kg wet	0.05000		85	70-130			
1,2-Dibromoethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dichlorobenzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
1,2-Dichloroethane	0.0409	0.0050	mg/kg wet	0.05000		82	70-130			
1,2-Dichloropropane	0.0399	0.0050	mg/kg wet	0.05000		80	70-130			
1,3,5-Trimethylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichlorobenzene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
1,3-Dichloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,4-Dichlorobenzene	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
1,4-Dioxane	0.760	0.100	mg/kg wet	1.000		76	70-130			
2,2-Dichloropropane	0.0411	0.0050	mg/kg wet	0.05000		82	70-130			
2-Butanone	0.202	0.0100	mg/kg wet	0.2500		81	70-130			
2-Chlorotoluene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
2-Hexanone	0.202	0.0100	mg/kg wet	0.2500		81	70-130			
4-Chlorotoluene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
4-Isopropyltoluene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
4-Methyl-2-Pentanone	0.191	0.0100	mg/kg wet	0.2500		76	70-130			
Acetone	0.179	0.0100	mg/kg wet	0.2500		71	70-130			
Benzene	0.0408	0.0050	mg/kg wet	0.05000		82	70-130			
Bromobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Bromochloromethane	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Bromodichloromethane	0.0422	0.0050	mg/kg wet	0.05000		84	70-130			
Bromoform	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
Bromomethane	0.0440	0.0100	mg/kg wet	0.05000		88	70-130			
Carbon Disulfide	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Carbon Tetrachloride	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
Chlorobenzene	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
Chloroethane	0.0405	0.0100	mg/kg wet	0.05000		81	70-130			
Chloroform	0.0407	0.0050	mg/kg wet	0.05000		81	70-130			
Chloromethane	0.0388	0.0100	mg/kg wet	0.05000		78	70-130			
cis-1,2-Dichloroethene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130			
cis-1,3-Dichloropropene	0.0402	0.0050	mg/kg wet	0.05000		80	70-130			
Dibromochloromethane	0.0402	0.0020	mg/kg wet	0.05000		80	70-130			
Dibromomethane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
Dichlorodifluoromethane	0.0396	0.0100	mg/kg wet	0.05000		79	70-130			
Diethyl Ether	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Di-isopropyl ether	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
Ethyl tertiary-butyl ether	0.0421	0.0050	mg/kg wet	0.05000		84	70-130			
Ethylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130			
Hexachlorobutadiene	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Isopropylbenzene	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Methyl tert-Butyl Ether	0.0424	0.0050	mg/kg wet	0.05000		85	70-130			
Methylene Chloride	0.0400	0.0100	mg/kg wet	0.05000		80	70-130			
Naphthalene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
n-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
n-Propylbenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
sec-Butylbenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Styrene	0.0410	0.0050	mg/kg wet	0.05000		82	70-130			
tert-Butylbenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
Tertiary-amyl methyl ether	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
Tetrachloroethene	0.0358	0.0050	mg/kg wet	0.05000		72	70-130			
Tetrahydrofuran	0.0397	0.0050	mg/kg wet	0.05000		79	70-130			
Toluene	0.0416	0.0050	mg/kg wet	0.05000		83	70-130			
trans-1,2-Dichloroethene	0.0363	0.0050	mg/kg wet	0.05000		73	70-130			
trans-1,3-Dichloropropene	0.0375	0.0050	mg/kg wet	0.05000		75	70-130			
Trichloroethene	0.0401	0.0050	mg/kg wet	0.05000		80	70-130			
Trichlorofluoromethane	0.0349	0.0050	mg/kg wet	0.05000		70	70-130			
Vinyl Chloride	0.0407	0.0100	mg/kg wet	0.05000		81	70-130			
Xylene O	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
Xylene P,M	0.0895	0.0100	mg/kg wet	0.1000		89	70-130			
Xylenes (Total)	0.134	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0430*		mg/kg wet	*0.05000*		*86*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0468*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0447*		mg/kg wet	*0.05000*		*89*	*70-130*			
Surrogate: Toluene-d8	*0.0480*		mg/kg wet	*0.05000*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	9	25	
1,1,1-Trichloroethane	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
1,1,2,2-Tetrachloroethane	0.0512	0.0020	mg/kg wet	0.05000		102	70-130	14	25	
1,1,2-Trichloroethane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	11	25	
1,1-Dichloroethane	0.0427	0.0050	mg/kg wet	0.05000		85	70-130	6	25	
1,1-Dichloroethene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	6	25	
1,1-Dichloropropene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
1,2,3-Trichlorobenzene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130	11	25	
1,2,3-Trichloropropane	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	15	25	
1,2,4-Trichlorobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	10	25	
1,2,4-Trimethylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
1,2-Dibromo-3-Chloropropane	0.0533	0.0050	mg/kg wet	0.05000		107	70-130	22	25	
1,2-Dibromoethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	12	25	
1,2-Dichlorobenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
1,2-Dichloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	9	25	
1,2-Dichloropropane	0.0431	0.0050	mg/kg wet	0.05000		86	70-130	8	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
1,3,5-Trimethylbenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
1,3-Dichlorobenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	6	25	
1,3-Dichloropropane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	11	25	
1,4-Dichlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	9	25	
1,4-Dioxane	0.936	0.100	mg/kg wet	1.000		94	70-130	21	20	D+
2,2-Dichloropropane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
2-Butanone	0.238	0.0100	mg/kg wet	0.2500		95	70-130	16	25	
2-Chlorotoluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
2-Hexanone	0.250	0.0100	mg/kg wet	0.2500		100	70-130	21	25	
4-Chlorotoluene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
4-Isopropyltoluene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
4-Methyl-2-Pentanone	0.230	0.0100	mg/kg wet	0.2500		92	70-130	19	25	
Acetone	0.231	0.0100	mg/kg wet	0.2500		92	70-130	26	25	D+
Benzene	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	6	25	
Bromobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
Bromochloromethane	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	9	25	
Bromodichloromethane	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Bromoform	0.0425	0.0050	mg/kg wet	0.05000		85	70-130	11	25	
Bromomethane	0.0461	0.0100	mg/kg wet	0.05000		92	70-130	5	25	
Carbon Disulfide	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	5	25	
Carbon Tetrachloride	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Chlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
Chloroethane	0.0429	0.0100	mg/kg wet	0.05000		86	70-130	6	25	
Chloroform	0.0435	0.0050	mg/kg wet	0.05000		87	70-130	7	25	
Chloromethane	0.0410	0.0100	mg/kg wet	0.05000		82	70-130	6	25	
cis-1,2-Dichloroethene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
cis-1,3-Dichloropropene	0.0436	0.0050	mg/kg wet	0.05000		87	70-130	8	25	
Dibromochloromethane	0.0441	0.0020	mg/kg wet	0.05000		88	70-130	9	25	
Dibromomethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	9	25	
Dichlorodifluoromethane	0.0412	0.0100	mg/kg wet	0.05000		82	70-130	4	25	
Diethyl Ether	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	12	25	
Di-isopropyl ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	9	25	
Ethyl tertiary-butyl ether	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	10	25	
Ethylbenzene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	7	25	
Hexachlorobutadiene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	8	25	
Isopropylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Methyl tert-Butyl Ether	0.0481	0.0050	mg/kg wet	0.05000		96	70-130	12	25	
Methylene Chloride	0.0430	0.0100	mg/kg wet	0.05000		86	70-130	7	25	
Naphthalene	0.0513	0.0050	mg/kg wet	0.05000		103	70-130	17	25	
n-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	7	25	
n-Propylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	6	25	
sec-Butylbenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	6	25	
Styrene	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	8	25	
tert-Butylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
Tertiary-amyl methyl ether	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	12	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CB70321 - 5035										
Tetrachloroethene	0.0384	0.0050	mg/kg wet	0.05000		77	70-130	7	25	
Tetrahydrofuran	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	21	25	
Toluene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
trans-1,2-Dichloroethene	0.0389	0.0050	mg/kg wet	0.05000		78	70-130	7	25	
trans-1,3-Dichloropropene	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	11	25	
Trichloroethene	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	6	25	
Trichlorofluoromethane	0.0366	0.0050	mg/kg wet	0.05000		73	70-130	5	25	
Vinyl Chloride	0.0427	0.0100	mg/kg wet	0.05000		85	70-130	5	25	
Xylene O	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Xylene P,M	0.0957	0.0100	mg/kg wet	0.1000		96	70-130	7	25	
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0434*		mg/kg wet	*0.05000*		*87*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0469*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0447*		mg/kg wet	*0.05000*		*89*	*70-130*			
Surrogate: Toluene-d8	*0.0480*		mg/kg wet	*0.05000*		*96*	*70-130*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CB70607 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0233*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0193*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
LCS										
Aroclor 1016	0.429	0.0500	mg/kg wet	0.5000		86	40-140			
Aroclor 1260	0.431	0.0500	mg/kg wet	0.5000		86	40-140			
Surrogate: Decachlorobiphenyl	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
LCS Dup										
Aroclor 1016	0.449	0.0500	mg/kg wet	0.5000		90	40-140	5	30	
Aroclor 1260	0.455	0.0500	mg/kg wet	0.5000		91	40-140	6	30	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CB70607 - 3540										
Surrogate: Decachlorobiphenyl	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0252*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0224*		mg/kg wet	*0.02500*		*90*	*30-150*			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB70307 - 3546										
Blank										
C19-C36 Aliphatics1	ND	15.0	mg/kg wet							
C9-C18 Aliphatics1	ND	15.0	mg/kg wet							
Decane (C10)	ND	0.5	mg/kg wet							
Docosane (C22)	ND	0.5	mg/kg wet							
Dodecane (C12)	ND	0.5	mg/kg wet							
Eicosane (C20)	ND	0.5	mg/kg wet							
Hexacosane (C26)	ND	0.5	mg/kg wet							
Hexadecane (C16)	ND	0.5	mg/kg wet							
Hexatriacontane (C36)	ND	0.5	mg/kg wet							
Nonadecane (C19)	ND	0.5	mg/kg wet							
Nonane (C9)	ND	0.5	mg/kg wet							
Octacosane (C28)	ND	0.5	mg/kg wet							
Octadecane (C18)	ND	0.5	mg/kg wet							
Tetracosane (C24)	ND	0.5	mg/kg wet							
Tetradecane (C14)	ND	0.5	mg/kg wet							
Triacontane (C30)	ND	0.5	mg/kg wet							
Surrogate: 1-Chlorooctadecane	*1.45*		mg/kg wet	*2.000*		*73*	*40-140*			
Blank										
2-Methylnaphthalene	ND	0.20	mg/kg wet							
Acenaphthene	ND	0.40	mg/kg wet							
Acenaphthylene	ND	0.20	mg/kg wet							
Anthracene	ND	0.40	mg/kg wet							
Benzo(a)anthracene	ND	0.40	mg/kg wet							
Benzo(a)pyrene	ND	0.40	mg/kg wet							
Benzo(b)fluoranthene	ND	0.40	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.40	mg/kg wet							
Benzo(k)fluoranthene	ND	0.40	mg/kg wet							
C11-C22 Aromatics1,2	ND	15.0	mg/kg wet							
C11-C22 Unadjusted Aromatics1	ND	15.0	mg/kg wet							
Chrysene	ND	0.40	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.20	mg/kg wet							
Fluoranthene	ND	0.40	mg/kg wet							
Fluorene	ND	0.40	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.40	mg/kg wet							
Naphthalene	ND	0.40	mg/kg wet							

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MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB70307 - 3546										
Phenanthrene	ND	0.40	mg/kg wet							
Pyrene	ND	0.40	mg/kg wet							
Surrogate: 2-Bromonaphthalene	*1.33*		mg/kg wet	*2.000*		*66*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*1.71*		mg/kg wet	*2.000*		*85*	*40-140*			
Surrogate: O-Terphenyl	*1.74*		mg/kg wet	*2.000*		*87*	*40-140*			
LCS										
C19-C36 Aliphatics1	13.1	15.0	mg/kg wet	16.00		82	40-140			
C9-C18 Aliphatics1	7.9	15.0	mg/kg wet	12.00		66	40-140			
Decane (C10)	0.9	0.5	mg/kg wet	2.000		47	40-140			
Docosane (C22)	1.6	0.5	mg/kg wet	2.000		80	40-140			
Dodecane (C12)	1.0	0.5	mg/kg wet	2.000		50	40-140			
Eicosane (C20)	1.5	0.5	mg/kg wet	2.000		75	40-140			
Hexacosane (C26)	1.5	0.5	mg/kg wet	2.000		75	40-140			
Hexadecane (C16)	1.3	0.5	mg/kg wet	2.000		66	40-140			
Hexatriacontane (C36)	1.4	0.5	mg/kg wet	2.000		72	40-140			
Nonadecane (C19)	1.5	0.5	mg/kg wet	2.000		75	40-140			
Nonane (C9)	0.8	0.5	mg/kg wet	2.000		38	30-140			
Octacosane (C28)	1.5	0.5	mg/kg wet	2.000		73	40-140			
Octadecane (C18)	1.4	0.5	mg/kg wet	2.000		71	40-140			
Tetracosane (C24)	1.5	0.5	mg/kg wet	2.000		76	40-140			
Tetradecane (C14)	1.1	0.5	mg/kg wet	2.000		57	40-140			
Triacontane (C30)	1.4	0.5	mg/kg wet	2.000		71	40-140			
Surrogate: 1-Chlorooctadecane	*1.51*		mg/kg wet	*2.000*		*75*	*40-140*			
LCS										
2-Methylnaphthalene	1.31	0.20	mg/kg wet	2.000		66	40-140			
Acenaphthene	1.44	0.40	mg/kg wet	2.000		72	40-140			
Acenaphthylene	1.48	0.20	mg/kg wet	2.000		74	40-140			
Anthracene	1.54	0.40	mg/kg wet	2.000		77	40-140			
Benzo(a)anthracene	1.69	0.40	mg/kg wet	2.000		85	40-140			
Benzo(a)pyrene	1.71	0.40	mg/kg wet	2.000		85	40-140			
Benzo(b)fluoranthene	1.50	0.40	mg/kg wet	2.000		75	40-140			
Benzo(g,h,i)perylene	1.68	0.40	mg/kg wet	2.000		84	40-140			
Benzo(k)fluoranthene	1.73	0.40	mg/kg wet	2.000		86	40-140			
C11-C22 Aromatics1,2	6.14	15.0	mg/kg wet							
C11-C22 Unadjusted Aromatics1	32.6	15.0	mg/kg wet	34.00		96	40-140			
Chrysene	1.69	0.40	mg/kg wet	2.000		84	40-140			
Dibenzo(a,h)Anthracene	1.48	0.20	mg/kg wet	2.000		74	40-140			
Fluoranthene	1.54	0.40	mg/kg wet	2.000		77	40-140			
Fluorene	1.55	0.40	mg/kg wet	2.000		77	40-140			
Indeno(1,2,3-cd)Pyrene	1.70	0.40	mg/kg wet	2.000		85	40-140			
Naphthalene	1.36	0.40	mg/kg wet	2.000		68	40-140			
Phenanthrene	1.50	0.40	mg/kg wet	2.000		75	40-140			
Pyrene	1.62	0.40	mg/kg wet	2.000		81	40-140			
Surrogate: 2-Bromonaphthalene	*1.64*		mg/kg wet	*2.000*		*82*	*40-140*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB70307 - 3546										
Surrogate: 2-Fluorobiphenyl	*1.87*		mg/kg wet	*2.000*		*94*	*40-140*			
Surrogate: O-Terphenyl	*1.78*		mg/kg wet	*2.000*		*89*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	13.8	15.0	mg/kg wet	16.00		86	40-140	5	25	
C9-C18 Aliphatics1	8.2	15.0	mg/kg wet	12.00		69	40-140	4	25	
Decane (C10)	1.0	0.5	mg/kg wet	2.000		48	40-140	2	25	
Docosane (C22)	1.7	0.5	mg/kg wet	2.000		85	40-140	6	25	
Dodecane (C12)	1.0	0.5	mg/kg wet	2.000		52	40-140	3	25	
Eicosane (C20)	1.6	0.5	mg/kg wet	2.000		79	40-140	6	25	
Hexacosane (C26)	1.6	0.5	mg/kg wet	2.000		79	40-140	5	25	
Hexadecane (C16)	1.4	0.5	mg/kg wet	2.000		69	40-140	4	25	
Hexatriacontane (C36)	1.5	0.5	mg/kg wet	2.000		76	40-140	6	25	
Nonadecane (C19)	1.6	0.5	mg/kg wet	2.000		79	40-140	5	25	
Nonane (C9)	0.8	0.5	mg/kg wet	2.000		39	30-140	4	25	
Octacosane (C28)	1.5	0.5	mg/kg wet	2.000		76	40-140	5	25	
Octadecane (C18)	1.5	0.5	mg/kg wet	2.000		75	40-140	5	25	
Tetracosane (C24)	1.6	0.5	mg/kg wet	2.000		80	40-140	6	25	
Tetradecane (C14)	1.2	0.5	mg/kg wet	2.000		58	40-140	0.3	25	
Triacontane (C30)	1.5	0.5	mg/kg wet	2.000		76	40-140	6	25	
Surrogate: 1-Chlorooctadecane	*1.56*		mg/kg wet	*2.000*		*78*	*40-140*			
LCS Dup										
2-Methylnaphthalene	1.34	0.20	mg/kg wet	2.000		67	40-140	3	30	
Acenaphthene	1.50	0.40	mg/kg wet	2.000		75	40-140	4	30	
Acenaphthylene	1.52	0.20	mg/kg wet	2.000		76	40-140	3	30	
Anthracene	1.65	0.40	mg/kg wet	2.000		83	40-140	7	30	
Benzo(a)anthracene	1.81	0.40	mg/kg wet	2.000		90	40-140	7	30	
Benzo(a)pyrene	1.80	0.40	mg/kg wet	2.000		90	40-140	5	30	
Benzo(b)fluoranthene	1.61	0.40	mg/kg wet	2.000		80	40-140	7	30	
Benzo(g,h,i)perylene	1.73	0.40	mg/kg wet	2.000		86	40-140	3	30	
Benzo(k)fluoranthene	1.79	0.40	mg/kg wet	2.000		89	40-140	3	30	
C11-C22 Aromatics1,2	6.96	15.0	mg/kg wet							
C11-C22 Unadjusted Aromatics1	34.8	15.0	mg/kg wet	34.00		102	40-140	6	25	
Chrysene	1.79	0.40	mg/kg wet	2.000		89	40-140	6	30	
Dibenzo(a,h)Anthracene	1.52	0.20	mg/kg wet	2.000		76	40-140	3	30	
Fluoranthene	1.67	0.40	mg/kg wet	2.000		83	40-140	8	30	
Fluorene	1.60	0.40	mg/kg wet	2.000		80	40-140	3	30	
Indeno(1,2,3-cd)Pyrene	1.79	0.40	mg/kg wet	2.000		90	40-140	5	30	
Naphthalene	1.41	0.40	mg/kg wet	2.000		71	40-140	4	30	
Phenanthrene	1.60	0.40	mg/kg wet	2.000		80	40-140	6	30	
Pyrene	1.72	0.40	mg/kg wet	2.000		86	40-140	6	30	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB70307 - 3546										
Surrogate: 2-Bromonaphthalene	*1.86*		mg/kg wet	*2.000*		*93*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*2.19*		mg/kg wet	*2.000*		*110*	*40-140*			
Surrogate: O-Terphenyl	*1.82*		mg/kg wet	*2.000*		*91*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

Notes and Definitions

U	Analyte included in the analysis, but not detected
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702041

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: CDW Consultants, Inc. - TB/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1702041
Date Received: 2/2/2017
Project Due Date: 2/9/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 0.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? (Yes) / No / NA
13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 2/2/17 Time: 1742 By: JL

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? ____ Date: ____ Time: ____ By: ____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	102218	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	102217	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	102216	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	102215	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	102214	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	102213	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	102212	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	102211	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	102219	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
08	102337	Yes	NA	Yes	VOA Vial - Other	Other	
08	102338	Yes	NA	Yes	VOA Vial - Other	Other	
09	102210	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	102209	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? (Yes) / No

Completed By: ____ Date & Time: 2/2/17 1656
Reviewed By: ____ Date & Time: 2/2/17 1742
Delivered By: ____ 2/2/17 1742

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1702041

Turn Time 5 DAY Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ✓MA MCP ○RGP

Reporting Limits S-1/GW-1/GW-2/GW-3 RCS-1

Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
CDM CONSULTANTS, INC.		FARNHAM SCHOOL

Contact Person	Address
LAUREN KONETZNY	40 SPEEN ST SUITE 301

City	State	Zip Code	PO #
FRAMINGHAM	MA	01701	

Telephone Number	FAX Number	Email Address
508-875-2657		LKONETZNY@CDMCONSULTANTS.COM

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: MA DEP EPH	MCP 14 METALS	VOCs 8260
1	1/31/17	930	~~SVOC~~ G	Soil	CDW-B1 (11-13')	X		
2	"	1305	G	"	CDW-B2 (1-3')	X		
3	"	1140	G	"	CDW-B3 (2-4')	X		
4	"	1020	G	"	CDW-B4 (3-5')	X		
5	"	1315	Comp	"	Comp B1 to B4 ~~(11-13')~~ (0-1')		X	
6	"	1410	G	"	CDW-B5 (5-7')	X		
7	"	1500	G	"	CDW-B6 5-7')	X		
8	2/1/17	845	G	"	CDW-B7 (5-7')	X		X
9	"	955	G	"	CDW-B8 (5-7')	X		
10	"	1015	Comp	"	Comp B5 to B8 ~~(11-13')~~ (0-1')		X	

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: ✓

Seals Intact:

Cooler Temperature: 0.8 °C

Sampled by :

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
2/2/17	2/2/17 10:59	2/2/17 16:05	2/2/17 1647
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Lauren Konetzny
CDW Consultants, Inc.
40 Speen Street Suite 301
Framingham, MA 01701

RE: Fernald School (N/A)
ESS Laboratory Work Order Number: 1702237

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:37 pm, Feb 21, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

SAMPLE RECEIPT

The following samples were received on February 10, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Lab Number	Sample Name	Matrix	Analysis
1702237-01	MW-4	Ground Water	6010C, 7010, 7470A, 8260B, EPH8270, EPH8270SIM, MADEP-EPH, MADEP-VPH
1702237-02	CDW-B2MW	Ground Water	EPH8270, EPH8270SIM, MADEP-EPH
1702237-03	CDW-B1MW	Ground Water	6010C, 7010, 7470A, 8260B, EPH8270, EPH8270SIM, MADEP-EPH, MADEP-VPH
1702237-04	B-11	Ground Water	EPH8270, EPH8270SIM, MADEP-EPH
1702237-05	MW-1	Ground Water	EPH8270, EPH8270SIM, MADEP-EPH

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

PROJECT NARRATIVE

8260B Volatile Organic Compounds
CB71317-BS1 **Blank Spike recovery is above upper control limit (B+).**
Bromomethane (137% @ 70-130%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1702237-01 through 1702237-05**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

(X) 8260 VOC CAM II A	(X) 7470/7471 Hg CAM III B	(X) MassDEP VPH CAM IV A	( ) 8081 Pesticides CAM V B	( ) 7196 Hex Cr CAM VI B	( ) MassDEP APH CAM IX A
( ) 8270 SVOC CAM II B	(X) 7010 Metals CAM III C	(X) MassDEP EPH CAM IV B	( ) 8151 Herbicides CAM V C	( ) 8330 Explosives CAM VIII A	( ) TO-15 VOC CAM IX B
(X) 6010 Metals CAM III A	( ) 6020 Metals CAM III D	( ) 8082 PCB CAM V A	( ) 6860 Perchlorate CAM VIII B	( ) 9014 Total Cyanide/PAC CAM VI A	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes (X) No ( )
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	Yes (X) No ( )
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	Yes (X) No ( )
D	Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (X) No ( )
E	a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	Yes (X) No ( )
	b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes ( ) No ( )
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	Yes (X) No ( )

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?	Yes (X) No ( )*
	***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*	
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (X)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes (X) No ( )*

****All negative responses must be addressed in an attached laboratory narrative.***

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Date: February 21, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (2.5)		7010		1	KJK	02/15/17 6:49	50	25	CB71337
Arsenic	ND (2.5)		7010		1	KJK	02/15/17 0:29	50	25	CB71337
Barium	**32.4** (25.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Beryllium	ND (0.5)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Cadmium	ND (2.5)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Chromium	ND (10.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Lead	ND (10.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Mercury	ND (0.20)		7470A		1	MJV	02/14/17 10:58	20	40	CB71339
Nickel	ND (25.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Selenium	ND (5.0)		7010		1	KJK	02/15/17 3:38	50	25	CB71337
Silver	ND (5.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Thallium	ND (1.0)		7010		1	KJK	02/14/17 21:04	50	25	CB71337
Vanadium	ND (10.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337
Zinc	ND (25.0)		6010C		1	KJK	02/18/17 17:43	50	25	CB71337

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1,1-Trichloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1,2-Trichloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1-Dichloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,1-Dichloropropene	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2,3-Trichloropropane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2-Dibromoethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2-Dichloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,2-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,3-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,3-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,4-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
1,4-Dioxane - Screen	ND (500)		8260B		1	02/13/17 14:15	C7B0166	CB71317
2,2-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
2-Butanone	ND (10.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
2-Chlorotoluene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
2-Hexanone	ND (10.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
4-Chlorotoluene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
4-Isopropyltoluene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Acetone	ND (10.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Benzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Bromobenzene	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Bromochloromethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Bromoform	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Bromomethane	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Carbon Disulfide	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Carbon Tetrachloride	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Chlorobenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Chloroethane	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Chloroform	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Chloromethane	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Dibromochloromethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Dibromomethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Dichlorodifluoromethane	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Diethyl Ether	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Di-isopropyl ether	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Ethylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Hexachlorobutadiene	ND (0.6)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Hexachloroethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Isopropylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Methylene Chloride	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Naphthalene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
n-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
n-Propylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
sec-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Styrene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
tert-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Tetrachloroethene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Tetrahydrofuran	ND (5.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Trichloroethene	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Trichlorofluoromethane	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Vinyl Chloride	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Xylene O	ND (1.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Xylene P,M	ND (2.0)		8260B		1	02/13/17 14:15	C7B0166	CB71317
Xylenes (Total)	ND (2.0)		8260B		1	02/13/17 14:15		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*113 %*		*70-130*
Surrogate: Dibromofluoromethane	*109 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A
Initial Volume: 940
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L

Prepared: 2/11/17 10:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (106)		MADEP-EPH		1	DPS	02/13/17 15:33	C7B0160	CB71014
C19-C36 Aliphatics1	ND (106)		MADEP-EPH		1	DPS	02/13/17 15:33	C7B0160	CB71014
C11-C22 Unadjusted Aromatics1	ND (106)		EPH8270		1	VSC	02/13/17 13:58	C7B0154	CB71014
C11-C22 Aromatics1,2	ND (106)		EPH8270			VSC	02/13/17 14:19		[CALC]
2-Methylnaphthalene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Acenaphthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Naphthalene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Phenanthrene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Acenaphthylene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Benzo(a)anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Benzo(a)pyrene	ND (0.11)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Benzo(b)fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Benzo(g,h,i)perylene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Benzo(k)fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Chrysene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Dibenzo(a,h)Anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Fluorene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Indeno(1,2,3-cd)Pyrene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Pyrene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 14:19	C7B0156	CB71014
Preservative:	**pH <= 2**		MADEP-EPH			DPS			CB71014

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*67 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*98 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*94 %*		*40-140*
Surrogate: O-Terphenyl	*79 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-4
Date Sampled: 02/07/17 08:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

MADEP-VPH Volatile Petroleum Hydrocarbon

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
C9-C10 Aromatics	ND (100)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
C5-C8 Aliphatics1,2	ND (150)		MADEP-VPH		1	02/14/17 14:35		[CALC]
C9-C12 Aliphatics2,3	ND (150)		MADEP-VPH		1	02/14/17 14:35		[CALC]
Benzene	ND (1.5)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Ethylbenzene	ND (5.0)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Methyl tert-Butyl Ether	ND (1.5)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Naphthalene	ND (5.0)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Toluene	ND (5.0)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Xylene O	ND (5.0)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Xylene P,M	ND (10.0)		MADEP-VPH		1	02/14/17 14:35	C7B0185	CB71437
Preservative:	**pH <= 2**		MADEP-VPH					CB71437

	%Recovery	Qualifier	Limits
Surrogate: 2,5-Dibromotoluene - FID	*76 %*		*70-130*
Surrogate: 2,5-Dibromotoluene - PID	*73 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B2MW
Date Sampled: 02/07/17 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-02
Sample Matrix: Ground Water
Units: ug/L

Prepared: 2/11/17 10:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	DPS	02/13/17 16:21	C7B0160	CB71014
C19-C36 Aliphatics1	**209** (93)		MADEP-EPH		1	DPS	02/13/17 16:21	C7B0160	CB71014
C11-C22 Unadjusted Aromatics1	**123** (93.5)		EPH8270		1	VSC	02/13/17 14:33	C7B0154	CB71014
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	02/13/17 15:08		[CALC]
2-Methylnaphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Acenaphthene	**0.70** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Naphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Phenanthrene	**1.91** (0.47)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Acenaphthylene	**0.25** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Anthracene	**0.62** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Benzo(a)anthracene	**4.21** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Benzo(a)pyrene	**4.54** (0.09)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Benzo(b)fluoranthene	**7.70** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Benzo(g,h,i)perylene	**3.99** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Benzo(k)fluoranthene	**2.08** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Chrysene	**4.90** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Dibenzo(a,h)Anthracene	**1.10** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Fluoranthene	**6.72** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Fluorene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Indeno(1,2,3-cd)Pyrene	**4.12** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Pyrene	**5.94** (0.19)		EPH8270SIM		1	VSC	02/13/17 15:08	C7B0156	CB71014
Preservative:	**pH <= 2**		MADEP-EPH			DPS			CB71014

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*72 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*100 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*96 %*		*40-140*
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (2.5)		7010		1	KJK	02/15/17 6:54	100	50	CB71337
Arsenic	ND (2.5)		7010		1	KJK	02/15/17 0:34	100	50	CB71337
Barium	**28.0** (25.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Beryllium	ND (0.5)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Cadmium	ND (2.5)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Chromium	ND (10.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Lead	ND (10.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Mercury	ND (0.20)		7470A		1	MJV	02/14/17 10:56	20	40	CB71339
Nickel	ND (25.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Selenium	ND (5.0)		7010		1	KJK	02/15/17 4:07	100	50	CB71337
Silver	ND (5.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Thallium	ND (1.0)		7010		1	KJK	02/14/17 21:09	100	50	CB71337
Vanadium	ND (10.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337
Zinc	**29.3** (25.0)		6010C		1	KJK	02/18/17 17:47	100	50	CB71337

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1,1-Trichloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1,2-Trichloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1-Dichloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,1-Dichloropropene	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2,3-Trichloropropane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2-Dibromoethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2-Dichloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,2-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,3-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,3-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,4-Dichlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
1,4-Dioxane - Screen	ND (500)		8260B		1	02/13/17 14:41	C7B0166	CB71317
2,2-Dichloropropane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
2-Butanone	ND (10.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
2-Chlorotoluene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
2-Hexanone	ND (10.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
4-Chlorotoluene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
4-Isopropyltoluene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Acetone	ND (10.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Benzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Bromobenzene	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Bromochloromethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromodichloromethane	ND (0.6)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Bromoform	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Bromomethane	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Carbon Disulfide	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Carbon Tetrachloride	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Chlorobenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Chloroethane	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Chloroform	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Chloromethane	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Dibromochloromethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Dibromomethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Dichlorodifluoromethane	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Diethyl Ether	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Di-isopropyl ether	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Ethylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Hexachlorobutadiene	ND (0.6)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Hexachloroethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Isopropylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Methylene Chloride	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Naphthalene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
n-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
n-Propylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
sec-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Styrene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
tert-Butylbenzene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Tetrachloroethene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Tetrahydrofuran	ND (5.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Trichloroethene	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Trichlorofluoromethane	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Vinyl Chloride	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Xylene O	ND (1.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Xylene P,M	ND (2.0)		8260B		1	02/13/17 14:41	C7B0166	CB71317
Xylenes (Total)	ND (2.0)		8260B		1	02/13/17 14:41		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*117 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*116 %*		*70-130*
Surrogate: Dibromofluoromethane	*110 %*		*70-130*
Surrogate: Toluene-d8	*105 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A
Initial Volume: 950
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L

Prepared: 2/11/17 10:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (105)		MADEP-EPH		1	DPS	02/13/17 17:09	C7B0160	CB71014
C19-C36 Aliphatics1	ND (105)		MADEP-EPH		1	DPS	02/13/17 17:09	C7B0160	CB71014
C11-C22 Unadjusted Aromatics1	ND (105)		EPH8270		1	VSC	02/13/17 15:07	C7B0154	CB71014
C11-C22 Aromatics1,2	ND (105)		EPH8270			VSC	02/13/17 15:58		[CALC]
2-Methylnaphthalene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Acenaphthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Naphthalene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Phenanthrene	ND (0.53)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Acenaphthylene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Benzo(a)anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Benzo(a)pyrene	ND (0.11)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Benzo(b)fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Benzo(g,h,i)perylene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Benzo(k)fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Chrysene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Dibenzo(a,h)Anthracene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Fluoranthene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Fluorene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Indeno(1,2,3-cd)Pyrene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Pyrene	ND (0.21)		EPH8270SIM		1	VSC	02/13/17 15:58	C7B0156	CB71014
Preservative:	**pH <= 2**		MADEP-EPH			DPS			CB71014

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*56 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*103 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*100 %*		*40-140*
Surrogate: O-Terphenyl	*73 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: CDW-B1MW
Date Sampled: 02/07/17 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: GEM

MADEP-VPH Volatile Petroleum Hydrocarbon

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
C9-C10 Aromatics	ND (100)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
C5-C8 Aliphatics1,2	ND (150)		MADEP-VPH		1	02/14/17 15:10		[CALC]
C9-C12 Aliphatics2,3	ND (150)		MADEP-VPH		1	02/14/17 15:10		[CALC]
Benzene	ND (1.5)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Ethylbenzene	ND (5.0)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Methyl tert-Butyl Ether	ND (1.5)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Naphthalene	ND (5.0)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Toluene	ND (5.0)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Xylene O	ND (5.0)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Xylene P,M	ND (10.0)		MADEP-VPH		1	02/14/17 15:10	C7B0185	CB71437
Preservative:	**pH <= 2**		MADEP-VPH					CB71437

	%Recovery	Qualifier	Limits
Surrogate: 2,5-Dibromotoluene - FID	*84 %*		*70-130*
Surrogate: 2,5-Dibromotoluene - PID	*82 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: B-11
Date Sampled: 02/07/17 12:00
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-04
Sample Matrix: Ground Water
Units: ug/L

Prepared: 2/11/17 10:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (94)		MADEP-EPH		1	DPS	02/13/17 17:56	C7B0160	CB71014
C19-C36 Aliphatics1	**105** (94)		MADEP-EPH		1	DPS	02/13/17 17:56	C7B0160	CB71014
C11-C22 Unadjusted Aromatics1	ND (94.3)		EPH8270		1	VSC	02/13/17 15:41	C7B0154	CB71014
C11-C22 Aromatics1,2	ND (94.3)		EPH8270			VSC	02/13/17 16:48		[CALC]
2-Methylnaphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Acenaphthene	**0.35** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Naphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Phenanthrene	**2.36** (0.47)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Acenaphthylene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Anthracene	**0.62** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Benzo(a)anthracene	**0.92** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Benzo(a)pyrene	**0.83** (0.09)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Benzo(b)fluoranthene	**0.99** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Benzo(g,h,i)perylene	**0.53** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Benzo(k)fluoranthene	**0.34** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Chrysene	**0.95** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Dibenzo(a,h)Anthracene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Fluoranthene	**2.07** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Fluorene	**0.40** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Indeno(1,2,3-cd)Pyrene	**0.55** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Pyrene	**1.79** (0.19)		EPH8270SIM		1	VSC	02/13/17 16:48	C7B0156	CB71014
Preservative:	**pH <= 2**		MADEP-EPH			DPS			CB71014

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*64 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*100 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*96 %*		*40-140*
Surrogate: O-Terphenyl	*79 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School
Client Sample ID: MW-1
Date Sampled: 02/07/17 13:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1702237
ESS Laboratory Sample ID: 1702237-05
Sample Matrix: Ground Water
Units: ug/L

Prepared: 2/11/17 10:50

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
C9-C18 Aliphatics1	ND (93)		MADEP-EPH		1	DPS	02/13/17 18:43	C7B0160	CB71014
C19-C36 Aliphatics1	ND (93)		MADEP-EPH		1	DPS	02/13/17 18:43	C7B0160	CB71014
C11-C22 Unadjusted Aromatics1	ND (93.5)		EPH8270		1	VSC	02/13/17 16:15	C7B0154	CB71014
C11-C22 Aromatics1,2	ND (93.5)		EPH8270			VSC	02/13/17 17:38		[CALC]
2-Methylnaphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Acenaphthene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Naphthalene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Phenanthrene	ND (0.47)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Acenaphthylene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Anthracene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Benzo(a)anthracene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Benzo(a)pyrene	ND (0.09)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Benzo(b)fluoranthene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Benzo(g,h,i)perylene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Benzo(k)fluoranthene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Chrysene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Dibenzo(a,h)Anthracene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Fluoranthene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Fluorene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Indeno(1,2,3-cd)Pyrene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Pyrene	ND (0.19)		EPH8270SIM		1	VSC	02/13/17 17:38	C7B0156	CB71014
Preservative:	**pH <= 2**		MADEP-EPH			DPS			CB71014

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	*62 %*		*40-140*
Surrogate: 2-Bromonaphthalene	*104 %*		*40-140*
Surrogate: 2-Fluorobiphenyl	*100 %*		*40-140*
Surrogate: O-Terphenyl	*82 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CB71337 - 3005A										
Blank										
Antimony	ND	2.5	ug/L							
Arsenic	ND	2.5	ug/L							
Barium	ND	25.0	ug/L							
Beryllium	ND	0.5	ug/L							
Cadmium	ND	2.5	ug/L							
Chromium	ND	10.0	ug/L							
Lead	ND	10.0	ug/L							
Nickel	ND	25.0	ug/L							
Selenium	ND	5.0	ug/L							
Silver	ND	5.0	ug/L							
Thallium	ND	1.0	ug/L							
Vanadium	ND	10.0	ug/L							
Zinc	ND	25.0	ug/L							
LCS										
Antimony	228	62.5	ug/L	250.0		91	80-120			
Arsenic	258	62.5	ug/L	250.0		103	80-120			
Barium	257	25.0	ug/L	250.0		103	80-120			
Beryllium	25.2	0.5	ug/L	25.00		101	80-120			
Cadmium	125	2.5	ug/L	125.0		100	80-120			
Chromium	256	10.0	ug/L	250.0		102	80-120			
Lead	261	10.0	ug/L	250.0		104	80-120			
Nickel	266	25.0	ug/L	250.0		107	80-120			
Selenium	487	125	ug/L	500.0		97	80-120			
Silver	128	5.0	ug/L	125.0		103	80-120			
Thallium	267	25.0	ug/L	250.0		107	80-120			
Vanadium	255	10.0	ug/L	250.0		102	80-120			
Zinc	284	25.0	ug/L	250.0		113	80-120			
LCS Dup										
Antimony	238	62.5	ug/L	250.0		95	80-120	4	20	
Arsenic	259	62.5	ug/L	250.0		104	80-120	0.3	20	
Barium	258	25.0	ug/L	250.0		103	80-120	0.2	20	
Beryllium	25.3	0.5	ug/L	25.00		101	80-120	0.1	20	
Cadmium	126	2.5	ug/L	125.0		101	80-120	1	20	
Chromium	257	10.0	ug/L	250.0		103	80-120	0.3	20	
Lead	262	10.0	ug/L	250.0		105	80-120	0.3	20	
Nickel	269	25.0	ug/L	250.0		107	80-120	0.9	20	
Selenium	499	125	ug/L	500.0		100	80-120	2	20	
Silver	128	5.0	ug/L	125.0		103	80-120	0.07	20	
Thallium	272	25.0	ug/L	250.0		109	80-120	2	20	
Vanadium	257	10.0	ug/L	250.0		103	80-120	0.7	20	
Zinc	270	25.0	ug/L	250.0		108	80-120	5	20	
Batch CB71339 - 245.1/7470A										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CB71339 - 245.1/7470A										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	6.09	0.20	ug/L	6.000		101	80-120			
LCS Dup										
Mercury	6.10	0.20	ug/L	6.000		102	80-120	0.2	20	
8260B Volatile Organic Compounds										
Batch CB71317 - 5030B										
LCS										
1,1,1,2-Tetrachloroethane	8.8		ug/L	10.00		88	70-130			
1,1,1-Trichloroethane	10.2		ug/L	10.00		102	70-130			
1,1,2,2-Tetrachloroethane	9.0		ug/L	10.00		90	70-130			
1,1,2-Trichloroethane	8.6		ug/L	10.00		86	70-130			
1,1-Dichloroethane	9.8		ug/L	10.00		98	70-130			
1,1-Dichloroethene	9.8		ug/L	10.00		98	70-130			
1,1-Dichloropropene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2,3-Trichloropropane	8.7		ug/L	10.00		87	70-130			
1,2,4-Trichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,2,4-Trimethylbenzene	9.5		ug/L	10.00		95	70-130			
1,2-Dibromo-3-Chloropropane	10.0		ug/L	10.00		100	70-130			
1,2-Dibromoethane	9.7		ug/L	10.00		97	70-130			
1,2-Dichlorobenzene	9.8		ug/L	10.00		98	70-130			
1,2-Dichloroethane	9.8		ug/L	10.00		98	70-130			
1,2-Dichloropropane	8.6		ug/L	10.00		86	70-130			
1,3,5-Trimethylbenzene	9.5		ug/L	10.00		95	70-130			
1,3-Dichlorobenzene	9.6		ug/L	10.00		96	70-130			
1,3-Dichloropropane	9.0		ug/L	10.00		90	70-130			
1,4-Dichlorobenzene	9.9		ug/L	10.00		99	70-130			
1,4-Dioxane - Screen	213		ug/L	200.0		107	0-332			
2,2-Dichloropropane	10.3		ug/L	10.00		103	70-130			
2-Butanone	45.9		ug/L	50.00		92	70-130			
2-Chlorotoluene	9.4		ug/L	10.00		94	70-130			
2-Hexanone	47.7		ug/L	50.00		95	70-130			
4-Chlorotoluene	9.6		ug/L	10.00		96	70-130			
4-Isopropyltoluene	10.4		ug/L	10.00		104	70-130			
4-Methyl-2-Pentanone	45.4		ug/L	50.00		91	70-130			
Acetone	44.0		ug/L	50.00		88	70-130			
Benzene	9.3		ug/L	10.00		93	70-130			
Bromobenzene	10.4		ug/L	10.00		104	70-130			
Bromochloromethane	9.7		ug/L	10.00		97	70-130			
Bromodichloromethane	9.2		ug/L	10.00		92	70-130			
Bromoform	9.5		ug/L	10.00		95	70-130			
Bromomethane	13.7		ug/L	10.00		137	70-130			B+

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Client Name: CDW Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CB71317 - 5030B										
Carbon Disulfide	9.4		ug/L	10.00		94	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
Chlorobenzene	9.3		ug/L	10.00		93	70-130			
Chloroethane	8.6		ug/L	10.00		86	70-130			
Chloroform	9.7		ug/L	10.00		97	70-130			
Chloromethane	10.0		ug/L	10.00		100	70-130			
cis-1,2-Dichloroethene	10.6		ug/L	10.00		106	70-130			
cis-1,3-Dichloropropene	9.6		ug/L	10.00		96	70-130			
Dibromochloromethane	9.2		ug/L	10.00		92	70-130			
Dibromomethane	9.8		ug/L	10.00		98	70-130			
Dichlorodifluoromethane	10.3		ug/L	10.00		103	70-130			
Diethyl Ether	9.5		ug/L	10.00		95	70-130			
Di-isopropyl ether	8.2		ug/L	10.00		82	70-130			
Ethyl tertiary-butyl ether	8.5		ug/L	10.00		85	70-130			
Ethylbenzene	9.6		ug/L	10.00		96	70-130			
Hexachlorobutadiene	10.5		ug/L	10.00		105	70-130			
Hexachloroethane	9.9		ug/L	10.00		99	70-130			
Isopropylbenzene	9.3		ug/L	10.00		93	70-130			
Methyl tert-Butyl Ether	9.0		ug/L	10.00		90	70-130			
Methylene Chloride	9.6		ug/L	10.00		96	70-130			
Naphthalene	9.1		ug/L	10.00		91	70-130			
n-Butylbenzene	10.4		ug/L	10.00		104	70-130			
n-Propylbenzene	9.8		ug/L	10.00		98	70-130			
sec-Butylbenzene	9.8		ug/L	10.00		98	70-130			
Styrene	9.8		ug/L	10.00		98	70-130			
tert-Butylbenzene	9.8		ug/L	10.00		98	70-130			
Tertiary-amyl methyl ether	8.1		ug/L	10.00		81	70-130			
Tetrachloroethene	7.7		ug/L	10.00		77	70-130			
Tetrahydrofuran	10.4		ug/L	10.00		104	70-130			
Toluene	9.6		ug/L	10.00		96	70-130			
trans-1,2-Dichloroethene	8.8		ug/L	10.00		88	70-130			
trans-1,3-Dichloropropene	8.7		ug/L	10.00		87	70-130			
Trichloroethene	11.1		ug/L	10.00		111	70-130			
Trichlorofluoromethane	9.7		ug/L	10.00		97	70-130			
Vinyl Chloride	10.3		ug/L	10.00		103	70-130			
Xylene O	9.9		ug/L	10.00		99	70-130			
Xylene P,M	18.1		ug/L	20.00		90	70-130			
Xylenes (Total)	28.0		ug/L							
Surrogate: 1,2-Dichloroethane-d4	*28.8*		ug/L	*25.00*		*115*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*26.7*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.6*		ug/L	*25.00*		*102*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	8.7		ug/L	10.00		87	70-130	2	25	
1,1,1-Trichloroethane	10.3		ug/L	10.00		103	70-130	2	25	

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Client Name: CDW Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CB71317 - 5030B										
1,1,2,2-Tetrachloroethane	8.7		ug/L	10.00		87	70-130	4	25	
1,1,2-Trichloroethane	8.6		ug/L	10.00		86	70-130	0.2	25	
1,1-Dichloroethane	9.6		ug/L	10.00		96	70-130	1	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	4	25	
1,1-Dichloropropene	10.1		ug/L	10.00		101	70-130	0.9	25	
1,2,3-Trichlorobenzene	9.9		ug/L	10.00		99	70-130	13	25	
1,2,3-Trichloropropane	8.7		ug/L	10.00		87	70-130	0.5	25	
1,2,4-Trichlorobenzene	9.8		ug/L	10.00		98	70-130	10	25	
1,2,4-Trimethylbenzene	9.1		ug/L	10.00		91	70-130	4	25	
1,2-Dibromo-3-Chloropropane	9.6		ug/L	10.00		96	70-130	4	25	
1,2-Dibromoethane	9.5		ug/L	10.00		95	70-130	2	25	
1,2-Dichlorobenzene	9.5		ug/L	10.00		95	70-130	3	25	
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130	3	25	
1,2-Dichloropropane	8.6		ug/L	10.00		86	70-130	0.1	25	
1,3,5-Trimethylbenzene	9.0		ug/L	10.00		90	70-130	5	25	
1,3-Dichlorobenzene	9.2		ug/L	10.00		92	70-130	5	25	
1,3-Dichloropropane	9.3		ug/L	10.00		93	70-130	4	25	
1,4-Dichlorobenzene	9.7		ug/L	10.00		97	70-130	2	25	
1,4-Dioxane - Screen	193		ug/L	200.0		96	0-332	10	200	
2,2-Dichloropropane	10.4		ug/L	10.00		104	70-130	1	25	
2-Butanone	48.4		ug/L	50.00		97	70-130	5	25	
2-Chlorotoluene	8.9		ug/L	10.00		89	70-130	5	25	
2-Hexanone	43.5		ug/L	50.00		87	70-130	9	25	
4-Chlorotoluene	9.3		ug/L	10.00		93	70-130	4	25	
4-Isopropyltoluene	9.4		ug/L	10.00		94	70-130	9	25	
4-Methyl-2-Pentanone	43.3		ug/L	50.00		87	70-130	5	25	
Acetone	42.4		ug/L	50.00		85	70-130	4	25	
Benzene	9.0		ug/L	10.00		90	70-130	3	25	
Bromobenzene	9.5		ug/L	10.00		95	70-130	10	25	
Bromochloromethane	10.2		ug/L	10.00		102	70-130	5	25	
Bromodichloromethane	8.9		ug/L	10.00		89	70-130	3	25	
Bromoform	9.6		ug/L	10.00		96	70-130	0.2	25	
Bromomethane	12.3		ug/L	10.00		123	70-130	11	25	
Carbon Disulfide	9.4		ug/L	10.00		94	70-130	0.3	25	
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130	0.4	25	
Chlorobenzene	9.1		ug/L	10.00		91	70-130	2	25	
Chloroethane	9.6		ug/L	10.00		96	70-130	10	25	
Chloroform	10.0		ug/L	10.00		100	70-130	3	25	
Chloromethane	9.4		ug/L	10.00		94	70-130	6	25	
cis-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130	3	25	
cis-1,3-Dichloropropene	9.1		ug/L	10.00		91	70-130	5	25	
Dibromochloromethane	9.1		ug/L	10.00		91	70-130	2	25	
Dibromomethane	10.1		ug/L	10.00		101	70-130	3	25	
Dichlorodifluoromethane	10.2		ug/L	10.00		102	70-130	2	25	
Diethyl Ether	9.4		ug/L	10.00		94	70-130	1	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CB71317 - 5030B										
Di-isopropyl ether	8.2		ug/L	10.00		82	70-130	0.1	25	
Ethyl tertiary-butyl ether	8.6		ug/L	10.00		86	70-130	2	25	
Ethylbenzene	9.6		ug/L	10.00		96	70-130	0.4	25	
Hexachlorobutadiene	10.5		ug/L	10.00		105	70-130	0.7	25	
Hexachloroethane	8.8		ug/L	10.00		88	70-130	12	25	
Isopropylbenzene	8.7		ug/L	10.00		87	70-130	6	25	
Methyl tert-Butyl Ether	8.8		ug/L	10.00		88	70-130	2	25	
Methylene Chloride	9.5		ug/L	10.00		95	70-130	2	25	
Naphthalene	8.4		ug/L	10.00		84	70-130	8	25	
n-Butylbenzene	9.7		ug/L	10.00		97	70-130	7	25	
n-Propylbenzene	9.4		ug/L	10.00		94	70-130	4	25	
sec-Butylbenzene	9.2		ug/L	10.00		92	70-130	5	25	
Styrene	9.1		ug/L	10.00		91	70-130	7	25	
tert-Butylbenzene	9.4		ug/L	10.00		94	70-130	4	25	
Tertiary-amyl methyl ether	8.0		ug/L	10.00		80	70-130	2	25	
Tetrachloroethene	7.8		ug/L	10.00		78	70-130	1	25	
Tetrahydrofuran	8.5		ug/L	10.00		85	70-130	20	25	
Toluene	9.2		ug/L	10.00		92	70-130	4	25	
trans-1,2-Dichloroethene	8.7		ug/L	10.00		87	70-130	0.3	25	
trans-1,3-Dichloropropene	8.6		ug/L	10.00		86	70-130	1	25	
Trichloroethene	10.6		ug/L	10.00		106	70-130	5	25	
Trichlorofluoromethane	9.5		ug/L	10.00		95	70-130	2	25	
Vinyl Chloride	10.1		ug/L	10.00		101	70-130	2	25	
Xylene O	9.6		ug/L	10.00		96	70-130	2	25	
Xylene P,M	18.5		ug/L	20.00		92	70-130	2	25	
Xylenes (Total)	28.2		ug/L							
Surrogate: 1,2-Dichloroethane-d4	*28.6*		ug/L	*25.00*		*115*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.7*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*26.8*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.9*		ug/L	*25.00*		*104*	*70-130*			
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB71014 - 3510C										
Blank										
C19-C36 Aliphatics1	ND	100	ug/L							
C9-C18 Aliphatics1	ND	100	ug/L							
Decane (C10)	ND	5	ug/L							
Docosane (C22)	ND	5	ug/L							
Dodecane (C12)	ND	5	ug/L							
Eicosane (C20)	ND	5	ug/L							
Hexacosane (C26)	ND	5	ug/L							
Hexadecane (C16)	ND	5	ug/L							
Hexatriacontane (C36)	ND	5	ug/L							
Nonadecane (C19)	ND	5	ug/L							
Nonane (C9)	ND	5	ug/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB71014 - 3510C										
Octacosane (C28)	ND	5	ug/L							
Octadecane (C18)	ND	5	ug/L							
Tetracosane (C24)	ND	5	ug/L							
Tetradecane (C14)	ND	5	ug/L							
Triacontane (C30)	ND	5	ug/L							
Surrogate: 1-Chlorooctadecane	*37.3*		ug/L	*50.00*		*75*	*40-140*			
Blank										
C11-C22 Aromatics1,2	ND	100	ug/L							
C11-C22 Unadjusted Aromatics1	ND	100	ug/L							
Surrogate: 2-Bromonaphthalene	*48.5*		ug/L	*50.00*		*97*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*47.3*		ug/L	*50.00*		*95*	*40-140*			
Surrogate: O-Terphenyl	*41.4*		ug/L	*50.00*		*83*	*40-140*			
Blank										
2-Methylnaphthalene	ND	0.50	ug/L							
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.20	ug/L							
Benzo(a)pyrene	ND	0.10	ug/L							
Benzo(b)fluoranthene	ND	0.20	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.20	ug/L							
C11-C22 Aromatics1,2	ND	0.50	ug/L							
Chrysene	ND	0.20	ug/L							
Dibenzo(a,h)Anthracene	ND	0.20	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.20	ug/L							
Naphthalene	ND	0.50	ug/L							
Phenanthrene	ND	0.50	ug/L							
Pyrene	ND	0.20	ug/L							
LCS										
C19-C36 Aliphatics1	356	100	ug/L	400.0		89	40-140			
C9-C18 Aliphatics1	243	100	ug/L	300.0		81	40-140			
Decane (C10)	34	5	ug/L	50.00		68	40-140			
Docosane (C22)	46	5	ug/L	50.00		91	40-140			
Dodecane (C12)	38	5	ug/L	50.00		76	40-140			
Eicosane (C20)	46	5	ug/L	50.00		91	40-140			
Hexacosane (C26)	45	5	ug/L	50.00		89	40-140			
Hexadecane (C16)	44	5	ug/L	50.00		88	40-140			
Hexatriacontane (C36)	43	5	ug/L	50.00		86	40-140			
Nonadecane (C19)	46	5	ug/L	50.00		92	40-140			
Nonane (C9)	27	5	ug/L	50.00		55	30-140			
Octacosane (C28)	44	5	ug/L	50.00		87	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB71014 - 3510C										
Octadecane (C18)	44	5	ug/L	50.00		89	40-140			
Tetracosane (C24)	45	5	ug/L	50.00		91	40-140			
Tetradecane (C14)	41	5	ug/L	50.00		82	40-140			
Triacontane (C30)	43	5	ug/L	50.00		86	40-140			
Surrogate: 1-Chlorooctadecane	*42.9*		ug/L	*50.00*		*86*	*40-140*			
LCS										
C11-C22 Aromatics1,2	666	100	ug/L							
C11-C22 Unadjusted Aromatics1	666	100	ug/L	850.0		78	40-140			
Surrogate: 2-Bromonaphthalene	*46.6*		ug/L	*50.00*		*93*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*46.1*		ug/L	*50.00*		*92*	*40-140*			
Surrogate: O-Terphenyl	*46.8*		ug/L	*50.00*		*94*	*40-140*			
LCS										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS										
2-Methylnaphthalene	2.33	0.50	ug/L	5.000		47	40-140			
Acenaphthene	3.00	0.20	ug/L	5.000		60	40-140			
Acenaphthylene	3.04	0.20	ug/L	5.000		61	40-140			
Anthracene	3.09	0.20	ug/L	5.000		62	40-140			
Benzo(a)anthracene	2.88	0.20	ug/L	5.000		58	40-140			
Benzo(a)pyrene	3.21	0.10	ug/L	5.000		64	40-140			
Benzo(b)fluoranthene	3.08	0.20	ug/L	5.000		62	40-140			
Benzo(g,h,i)perylene	3.18	0.20	ug/L	5.000		64	40-140			
Benzo(k)fluoranthene	3.40	0.20	ug/L	5.000		68	40-140			
C11-C22 Aromatics1,2	ND	0.50	ug/L							
Chrysene	3.18	0.20	ug/L	5.000		64	40-140			
Dibenzo(a,h)Anthracene	3.48	0.20	ug/L	5.000		70	40-140			
Fluoranthene	3.11	0.20	ug/L	5.000		62	40-140			
Fluorene	3.13	0.20	ug/L	5.000		63	40-140			
Indeno(1,2,3-cd)Pyrene	3.49	0.20	ug/L	5.000		70	40-140			
Naphthalene	2.75	0.50	ug/L	5.000		55	40-140			
Phenanthrene	2.97	0.50	ug/L	5.000		59	40-140			
Pyrene	2.91	0.20	ug/L	5.000		58	40-140			
LCS Dup										
C19-C36 Aliphatics1	333	100	ug/L	400.0		83	40-140	7	25	
C9-C18 Aliphatics1	216	100	ug/L	300.0		72	40-140	12	25	
Decane (C10)	29	5	ug/L	50.00		58	40-140	17	25	
Docosane (C22)	43	5	ug/L	50.00		85	40-140	6	25	
Dodecane (C12)	33	5	ug/L	50.00		66	40-140	15	25	
Eicosane (C20)	43	5	ug/L	50.00		86	40-140	6	25	
Hexacosane (C26)	42	5	ug/L	50.00		84	40-140	6	25	
Hexadecane (C16)	41	5	ug/L	50.00		81	40-140	8	25	
Hexatriacontane (C36)	40	5	ug/L	50.00		80	40-140	7	25	
Nonadecane (C19)	43	5	ug/L	50.00		86	40-140	7	25	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-EPH Extractable Petroleum Hydrocarbons										
Batch CB71014 - 3510C										
Nonane (C9)	23	5	ug/L	50.00		46	30-140	17	25	
Octacosane (C28)	41	5	ug/L	50.00		82	40-140	6	25	
Octadecane (C18)	41	5	ug/L	50.00		83	40-140	7	25	
Tetracosane (C24)	43	5	ug/L	50.00		85	40-140	6	25	
Tetradecane (C14)	37	5	ug/L	50.00		73	40-140	11	25	
Triacontane (C30)	41	5	ug/L	50.00		81	40-140	6	25	
Surrogate: 1-Chlorooctadecane	*39.4*		ug/L	*50.00*		*79*	*40-140*			
LCS Dup										
C11-C22 Aromatics1,2	618	100	ug/L							
C11-C22 Unadjusted Aromatics1	618	100	ug/L	850.0		73	40-140	7	25	
Surrogate: 2-Bromonaphthalene	*48.8*		ug/L	*50.00*		*98*	*40-140*			
Surrogate: 2-Fluorobiphenyl	*47.8*		ug/L	*50.00*		*96*	*40-140*			
Surrogate: O-Terphenyl	*43.2*		ug/L	*50.00*		*86*	*40-140*			
LCS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	
LCS Dup										
2-Methylnaphthalene	2.66	0.50	ug/L	5.000		53	40-140	13	20	
Acenaphthene	3.36	0.20	ug/L	5.000		67	40-140	11	20	
Acenaphthylene	3.38	0.20	ug/L	5.000		68	40-140	10	20	
Anthracene	3.46	0.20	ug/L	5.000		69	40-140	11	20	
Benzo(a)anthracene	3.08	0.20	ug/L	5.000		62	40-140	7	20	
Benzo(a)pyrene	3.43	0.10	ug/L	5.000		69	40-140	7	20	
Benzo(b)fluoranthene	3.23	0.20	ug/L	5.000		65	40-140	5	20	
Benzo(g,h,i)perylene	3.36	0.20	ug/L	5.000		67	40-140	6	20	
Benzo(k)fluoranthene	3.61	0.20	ug/L	5.000		72	40-140	6	20	
C11-C22 Aromatics1,2	ND	0.50	ug/L							
Chrysene	3.41	0.20	ug/L	5.000		68	40-140	7	20	
Dibenzo(a,h)Anthracene	3.70	0.20	ug/L	5.000		74	40-140	6	20	
Fluoranthene	3.47	0.20	ug/L	5.000		69	40-140	11	20	
Fluorene	3.45	0.20	ug/L	5.000		69	40-140	10	20	
Indeno(1,2,3-cd)Pyrene	3.66	0.20	ug/L	5.000		73	40-140	5	20	
Naphthalene	3.10	0.50	ug/L	5.000		62	40-140	12	20	
Phenanthrene	3.30	0.50	ug/L	5.000		66	40-140	11	20	
Pyrene	3.20	0.20	ug/L	5.000		64	40-140	9	20	
MADEP-VPH Volatile Petroleum Hydrocarbon										
Batch CB71437 - 5030B										
Blank										
1,2,4-Trimethylbenzene	ND	5.0	ug/L							
2,2,4-Trimethylpentane	ND	5.0	ug/L							
2-Methylpentane	ND	5.0	ug/L							
Benzene	ND	1.5	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-VPH Volatile Petroleum Hydrocarbon										
Batch CB71437 - [CALC]										
C5-C8 Aliphatics1,2	ND	150	ug/L							
C5-C8 Unadjusted Aliphatics	ND	150	ug/L							
C9-C10 Aromatics	ND	100	ug/L							
C9-C12 Aliphatics2,3	ND	150	ug/L							
C9-C12 Unadjusted Aliphatics	ND	150	ug/L							
Ethylbenzene	ND	5.0	ug/L							
Methyl tert-Butyl Ether	ND	1.5	ug/L							
Naphthalene	ND	5.0	ug/L							
n-Butylcyclohexane	ND	5.0	ug/L							
n-Decane	ND	5.0	ug/L							
Nonane (C9)	ND	5.0	ug/L							
Pentane	ND	5.0	ug/L							
Toluene	ND	5.0	ug/L							
Xylene O	ND	5.0	ug/L							
Xylene P,M	ND	10.0	ug/L							
Surrogate: 2,5-Dibromotoluene - FID	*39.7*		ug/L	*50.00*		*79*	*70-130*			
Surrogate: 2,5-Dibromotoluene - PID	*38.9*		ug/L	*50.00*		*78*	*70-130*			
LCS										
1,2,4-Trimethylbenzene	91.3		ug/L	100.0		91	70-130			
2,2,4-Trimethylpentane	155		ug/L	150.0		103	70-130			
2-Methylpentane	168		ug/L	150.0		112	70-130			
Benzene	47.7		ug/L	50.00		95	70-130			
C5-C8 Aliphatics1,2	125		ug/L							
C5-C8 Unadjusted Aliphatics	453		ug/L	400.0		113	70-130			
C9-C10 Aromatics	89.8		ug/L	100.0		90	70-130			
C9-C12 Aliphatics2,3	ND		ug/L							
C9-C12 Unadjusted Aliphatics	267		ug/L	300.0		89	70-130			
Ethylbenzene	49.9		ug/L	50.00		100	70-130			
Methyl tert-Butyl Ether	137		ug/L	150.0		91	70-130			
Naphthalene	82.0		ug/L	100.0		82	70-130			
n-Butylcyclohexane	86.1		ug/L	100.0		86	70-130			
n-Decane	99.5		ug/L	100.0		99	70-130			
Nonane (C9)	89.5		ug/L	100.0		90	30-130			
Pentane	127		ug/L	100.0		127	70-130			
Toluene	144		ug/L	150.0		96	70-130			
Xylene O	95.6		ug/L	100.0		96	70-130			
Xylene P,M	192		ug/L	200.0		96	70-130			
Surrogate: 2,5-Dibromotoluene - FID	*42.3*		ug/L	*50.00*		*85*	*70-130*			
Surrogate: 2,5-Dibromotoluene - PID	*42.5*		ug/L	*50.00*		*85*	*70-130*			
LCS Dup										
1,2,4-Trimethylbenzene	89.0		ug/L	100.0		89	70-130	3	25	
2,2,4-Trimethylpentane	145		ug/L	150.0		97	70-130	7	25	
2-Methylpentane	160		ug/L	150.0		107	70-130	5	25	
Benzene	46.7		ug/L	50.00		93	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
MADEP-VPH Volatile Petroleum Hydrocarbon										
Batch CB71437 - [CALC]										
C5-C8 Aliphatics1,2	104		ug/L							
C5-C8 Unadjusted Aliphatics	429		ug/L	400.0		107	70-130	5	25	
C9-C10 Aromatics	87.5		ug/L	100.0		88	70-130	3	25	
C9-C12 Aliphatics2,3	ND		ug/L							
C9-C12 Unadjusted Aliphatics	219		ug/L	300.0		73	70-130	20	25	
Ethylbenzene	48.6		ug/L	50.00		97	70-130	3	25	
Methyl tert-Butyl Ether	138		ug/L	150.0		92	70-130	1	25	
Naphthalene	93.2		ug/L	100.0		93	70-130	13	25	
n-Butylcyclohexane	71.7		ug/L	100.0		72	70-130	18	25	
n-Decane	86.0		ug/L	100.0		86	70-130	15	25	
Nonane (C9)	73.7		ug/L	100.0		74	30-130	19	25	
Pentane	122		ug/L	100.0		122	70-130	4	25	
Toluene	141		ug/L	150.0		94	70-130	2	25	
Xylene O	93.5		ug/L	100.0		94	70-130	2	25	
Xylene P,M	187		ug/L	200.0		94	70-130	3	25	
Surrogate: 2,5-Dibromotoluene - FID	*44.7*		ug/L	*50.00*		*89*	*70-130*			
Surrogate: 2,5-Dibromotoluene - PID	*43.6*		ug/L	*50.00*		*87*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

Notes and Definitions

Z-06	pH <= 2
U	Analyte included in the analysis, but not detected
D	Diluted.
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: CDW Consultants, Inc.
Client Project ID: Fernald School

ESS Laboratory Work Order: 1702237

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: CDW Consultants, Inc. - TB/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1702237
Date Received: 2/10/2017
Project Due Date: 2/17/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 4.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / (NA)

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	103892	Yes	NA	Yes	1L Amber - HCl	HCl	
01	103894	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
01	103901	Yes	No	Yes	VOA Vial - HCl	HCl	
01	103902	Yes	No	Yes	VOA Vial - HCl	HCl	
01	103903	Yes	No	Yes	VOA Vial - HCl	HCl	
01	103904	Yes	No	Yes	VOA Vial - HCl	HCl	
01	103905	Yes	No	Yes	VOA Vial - HCl	HCl	
01	103906	Yes	No	Yes	VOA Vial - HCl	HCl	
02	103891	Yes	NA	Yes	1L Amber - HCl	HCl	
03	103890	Yes	NA	Yes	1L Amber - HCl	HCl	
03	103893	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	103895	Yes	No	Yes	VOA Vial - HCl	HCl	
03	103896	Yes	No	Yes	VOA Vial - HCl	HCl	
03	103897	Yes	No	Yes	VOA Vial - HCl	HCl	
03	103898	Yes	No	Yes	VOA Vial - HCl	HCl	
03	103899	Yes	No	Yes	VOA Vial - HCl	HCl	
03	103900	Yes	No	Yes	VOA Vial - HCl	HCl	
04	103889	Yes	NA	Yes	1L Amber - HCl	HCl	
05	103888	Yes	NA	Yes	1L Amber - HCl	HCl	

2nd Review
Are barcode labels on correct containers? (Yes) / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: CDW Consultants, Inc. - TB/ML

ESS Project ID: 1702237
Date Received: 2/10/2017

Completed By: _____ Date & Time: 2/10/17 1958

Reviewed By: _____ Date & Time: 2/10/17 2005

Delivered By: _____ 2/10/17 2005

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1702237

Turn Time 5 DAY Rush

Regulatory State MASSACHUSETTS

Reporting Limits RCS-1

Is this project for any of the following?: ○CT RCP ⊘MA MCP ○RGP

Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
CDM CONSULTANTS, INC.	1713	FERNALD SCHOOL

Contact Person	Address
LAUREN KONETZNY	40 SPEEN ST

City	State	Zip Code	PO #
FRAMINGHAM	MA	01702	

Telephone Number	FAX Number	Email Address
508-875-2657		LKONETZNY@CDMCONSULTANTS.COM

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: MA DEP EPH	MADEP VPH	VOC 8260	MCP 14 METALS
1	2/7/17	8:15	G	GW	MW-4	X	X	X	X
2		9:40	"	"	CDM-B2MW	X			
3		10:45	"	"	CDM-B1MW	X	X	X	X
4		12:00	"	"	B-11	X			
5		13:00	"	"	MW-1	X			

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG ✓ ✓ P

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*

Number of Containers per Sample: 1 5 3 1

Laboratory Use Only

Cooler Present:
Seals Intact:
Cooler Temperature: 4.5 °C

Sampled by: ALAN SUNDQUIST

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
2/7/17 16:00	2/10/17 13:55	2/10/17 17:05	2/10/17 1949
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

NEW ENGLAND CHROMACHEM
ENVIRONMENTAL TESTING AND ANALYSIS

6 Nichols Street
Salem, MA 01970
978-744-6600

Invoice

Date	Invoice #
11/18/2016	12432

Sold To: CDW CONSULTANTS, INC.
Mr. William J Betters
40 Speen Street Suite 301
Framingham, MA 01701

Ship To: CDW CONSULTANTS, INC.
Mr. William J Betters
40 Speen Street Suite 301
Framingham, MA 01701

P.O. #	Terms

Qty	Item	Description	Unit Price	Total Amount
2	EPH	Extractable Petroleum Hydrocarbons	145.00	290.00
2	VPH	Volatile Petroleum Hydrocarbons	90.00	180.00
		NEC ID: 611232-611233		
			Total Amount Due	$470.00

1.5% Service Charge on invoices over 30 days

611232 - 611233

Chain of Custody Record

Client & Contact Name: CPW Consultants

Project Name & Number: Fernald School Proj 1616

Collected by: B. Bellers

Sample Information | **Analyses Required**

Sample ID	No. of Containers	Type of Container	Preservations	Sample Matrix (L/S)	Grab or Composite	Date & Time Sampled	VOC's by Method:	TPH by Method 8100	PCB's by Method:	Pesticides by 8081	Metals:	EPH	VPH	Other:	NEC ID #
B-6, S2	1	G	1	S	G	10/28/16						X	X		611232
B-4, S8	1	G	1	S	G	10/28/16						X	X		611233

Relinquished by:	Date	Time	
	11/14/16	8:30	EDF
Relinquished by:	Date	Time	

Preservations: 1 = Chilled at 4 degrees C 2 = Preserved at pH <2 with HCl (VOC's) 3 = Preserved at pH<2 with HNO_3 (Metals)
4 = Preserved at pH between 5 & 9 (PCB's Method 608) 5 = Preserved at pH <2 with HCl or H_2SO_4 (FOG Method 1664)
6 = Lab to preserve 7= CH_3OH (solid VOC's) 8= Ascorbic Acid 9= Na_2S2O_3 (Sodium Thiosulfate) 10= NH4Cl (Ammonium Chloride)

New England ChromaChem, Inc
6 Nichols Street
Salem, MA 01970
(978) 744-6600

New England ChromaChem, Inc.
6 Nichols Street
Salem, MA 01970
Laboratory Certification Number: MA-072

Analytical Report Package

Prepared For: CDW CONSULTANTS, INC
Mr. William Betters
40 Speen St. Suite 301
Framingham, MA 01701

Date Received: 11/18/2016

Project ID/Location
1616 Fernald School

NEC ID#'s:

611232	611233				

This Analytical Report Package Includes:

- MA DEP MCP Response Action Analytical Report Certification Form
- Sample Receipt Report attesting to the validity of the information on the Chain of Custody
- Case Narrative in support of the Analytical Report Certification Form
- Copy of the original Chain of Custody, cross referencing laboratory and field identifications
- Analytical Data Reports

Please contact us if you have any questions or if you require any further information on the analyses performed.

Bruce Bornstein
Quality Control Coordinator

New England ChromaChem, Inc.
6 Nichols Street
Salem, MA 01970
Laboratory Certification Number: MA-072

Client: *CDW CONSULTANTS, INC* *Project Name:* *1616 Fernald School*

NEC Sample ID:

611232	611233				

Sample Receipt Information Report

Date Received: 11/18/16 ***Received By:*** Evan D'Avolio

Sample Temperature Upon Receipt: 4 ° C

Sample Preservations: *Verified Preserved for Analytical Methods Requested*

Sample Condition: *Acceptable for Analytical Methods Requested*

Custody Seals: *Absent*

For container type, and cross listing of field and laboratory ID's,
Please see Chain of Custody included with this report

Percent Solid (if applicable)

Laboratory ID	*Percent Solid*
611232	87%
611233	93%

Laboratory ID	*Percent Solid*

Reviewed & Signed Electronically By: Bruce Bornstein ***Date:*** **11/22/16**
Quality Control Coordinator

New England ChromaChem, Inc.
6 Nichols Street
Salem, MA 01970
Laboratory Certification Number: MA-072

Date Received: ***11/18/16***

Client: *CDW CONSULTANTS, INC* *Project Name:* 1616 Fernald School

NEC Sample ID#'s:

611232	611233				

Case Narrative

Method Blanks: No Detectable Analytes were observed in any of the Method Blanks performed for this project.

Reviewed & Signed Electronically By: Bruce Bornstein ***Date:*** **11/22/16**
Quality Control Coordinator

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Chromachem, Inc. Project #: 1616

Project Location: Fernald School RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s): 611232-611233

Matrices: Groundwater/Surface Water [ ] Soil/Sediment [X] Drinking Water [ ] Air [ ] Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A [ ]	7470/7471 Hg CAM III B [ ]	MassDEP VPH CAM IV A [X]	8081 Pesticides CAM V B [ ]	7196 Hex Cr CAM VI B [ ]	MassDEP APH CAM ix A [ ]
8270 SVOC CAM II B [ ]	7010 Metals CAM III C [ ]	MassDEP EPH CAM IV B [X]	8151 Herbicides CAM V C [ ]	8330 Explosives CAM VIII A [ ]	TO-15 VOC CAM IX B [ ]
6010 Metals CAM III A [ ]	6020 Metals CAM III D [ ]	8082 PCB CAM V A [ ]	9014 Total Cyanide/PAC CAM VI A [ ]	6860 Perchlorate CAM VIII B [ ]	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly p reserved (including temperature) in th e field o r laboratory, and prepared/analyzed within method holding times?	[X] Yes No [ ]
B	Were the analytical method(s) and all associated QC re quirements specified in the selected CAM protocol(s) followed?	[X] Yes No [ ]
C	Were all required corrective actions and analytical response actions specified in the select ed CAM protocol(s) implemented for all identified performance standard non-conformances?	[X] Yes No [ ]
D	Does the lab oratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the A cquisition and Reporting of Analytical Data"?	[X] Yes No [ ]
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods ony: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	[X] Yes No [ ] [ ] Yes No [ ]
F	Were all a pplicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	[X] Yes No [ ]

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	[X] Yes No[1] [ ]

***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved	[X] Yes No1 [ ]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	[X] Yes No1 [ ]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of pe rjury that, based upon my personal inquiry of th ose responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Bruce A. Bornstein **Position:** Laboratory Director

Printed Name: Bruce A. Bornstein **Date:** 11/22/16

New England ChromaChem
6 Nichols Street
Salem, MA 01970

MA DEP EPH Laboratory Control Sample Report

Laboratory Control Sample

Laboratory ID: P111816
Acquired On: 11/18/16

Target Compounds	% Recovery
Naphthalene	96
Acenaphthylene	93
Acenaphthene	91
Fluorene	105
Anthracene	84
Phenanthrene	85
Carbazole	78
Fluoranthene	103
Pyrene	77
Benzo-a-anthracene	80
Chrysene	103
Benzo(k)fluoranthene	95
Benzo(b)fluoranthene	73
Benzo(a)pyrene	84
Dibenzo(a,h)anthracene	72
Indeno(1,2,3-cd)pyrene	99
Benzo(g,h,i)perylene	101

Laboratory Control Sample Duplicate

Laboratory ID: P1118162
Acquired On: 11/18/16

Target Compounds	% Recovery
Naphthalene	100
Acenaphthylene	75
Acenaphthene	99
Fluorene	90
Anthracene	89
Phenanthrene	83
Carbazole	84
Fluoranthene	76
Pyrene	93
Benzo-a-anthracene	101
Chrysene	91
Benzo(k)fluoranthene	72
Benzo(b)fluoranthene	93
Benzo(a)pyrene	92
Dibenzo(a,h)anthracene	104
Indeno(1,2,3-cd)pyrene	88
Benzo(g,h,i)perylene	84

Electronically signed and approved by: Mr. Bruce A. Bornstein, Lab Director Date: 11/22/16

New England ChromaChem
6 Nichols Street
Salem, MA 01970

MA DEP EPH Method Blank Report

Lab ID: B111816
Date Extracted: 11/18/16
Date Analyzed: 11/18/16

Range/Target Analyte		RL	Units	Results
Unadjusted C11-C22 Aromatics[1]		0.1	mg/L	ND
Diesel PAH Analytes	Naphthalene	0.002	mg/L	ND
	2-Methylnaphthalene	0.002	mg/L	ND
	Phenanthrene	0.002	mg/L	ND
	Acenaphthene	0.002	mg/L	ND
Other Target PAH Analytes	Acenaphthalene	0.002	mg/L	ND
	Anthracene	0.002	mg/L	ND
	Benzo(A)Anthracene	0.002	mg/L	ND
	Benzo(A)Pyrene	0.002	mg/L	ND
	Benzo(B)Fluoranthene	0.002	mg/L	ND
	Benzo(G,H,I)Perylene	0.002	mg/L	ND
	Benzo(K)Fluoranthene	0.002	mg/L	ND
	Chrysene	0.002	mg/L	ND
	Dibenzo(A,H)Anthracene	0.002	mg/L	ND
	Fluoranthene	0.002	mg/L	ND
	Fluorene	0.002	mg/L	ND
	Indeno(1,2,3-cd)Pyrene	0.002	mg/L	ND
	Pyrene	0.002	mg/L	ND
C_9-C_{18} Aliphatic Hydrocarbons[1]		0.5	mg/L	ND
C_{19}-C_{36} Aliphatic Hydrocarbons[1]		2	mg/L	ND
C_{11}-C_{22} Aromatic Hydrocarbons[1,2]		0.1	mg/L	ND

Electronically signed and approved by: Mr. Bruce A. Bornstein, Lab Director Date: 11/22/16

New England ChromaChem
6 Nichols Street
Salem, MA 01970

MA DEP VPH QA/QC DATA

Laboratory Blank ID:	B111816
Date Acquired:	11/18/16
Target Compounds	Results
MTBE	ND
Benzene	ND
Toluene	ND
Ethylbenzene	ND
M&P Xylene	ND
O-Xylene	ND
1,2,4-Trimethylbenzene	ND
Naphthalene	ND

Laboratory LCS ID:	S111816
Date Acquired:	11/18/16
Target Compounds	% Recovery
MTBE	96
Benzene	87
Toluene	97
Ethylbenzene	92
M&P Xylene	98
O-Xylene	95
1,2,4-Trimethylbenzene	112
Naphthalene	83

Laboratory LCS Duplicate ID:	S1118162
Date Acquired:	11/18/16
Target Compounds	
MTBE	87
Benzene	81
Toluene	92
Ethylbenzene	86
M&P Xylene	90
O-Xylene	86
1,2,4-Trimethylbenzene	99
Naphthalene	94

This report has been reviewed and electronically signed by:
Analyst: Mr. Evan D'Avolio
Laboratory Director: Mr. Bruce Bornstein

Date: 11/21/16

New England ChromaChem, Inc.

MA DEP EPH Analytical Report

SAMPLE INFORMATION		Miscellaneous Sample Information	
Matrix	☐ Aqueous ☒ Soil ☐ Sediment ☐ Other:	Project:	1616
Containers	☒ Satisfactory ☐ Broken ☐ Leaking	Location:	Fernald School
Aqueous Preservatives	☐ N/A ☒ pH < 2 ☐ pH > 2 Comment:		
Temperature	☒ Received on ice ☒ Received at 4° C ☐ Other		

EPH ANALYTICAL RESULTS							
Method for Ranges: MA DEP EPH			Client:	CDW CONSULTANTS, INC.			
Method for Ti: Solid			Client ID:	B-6, S2	B-11, S8		
			Lab ID:	611232	611233		
			Date Collected:	10/28/16	10/28/16		
EPH Surrogates			Date Thawed:	N/A	N/A		
Aliphatic: chloro-octadecane (COD)			Date Received:	11/18/16	11/18/16		
Aromatic: ortho-terphenyl (OTP)			Date Extracted:	11/18/16	11/18/16		
EPH Fractionation Surrogates			Date Analyzed:	11/18/16	11/18/16		
1. 2-Fluorobiphenyl			Time Analyzed:	14:10	15:12		
2. 2-Bromonaphthalene			Dilution Factor:	1	1		
			% Solid(soil) :	87%	93%		
Range/Target Analyte		RL(mg/Kg)	Units				
Unadjusted C11-C22 Aromatics[1]		20	mg/Kg	118	3810		
Diesel PAH Analytes	Naphthalene	0.200	mg/Kg	ND	8.27		
	2-Methylnaphthalene	0.200	mg/Kg	ND	16.7		
	Phenanthrene	0.200	mg/Kg	ND	ND		
	Acenaphthene	0.200	mg/Kg	ND	ND		
Other Target PAH Analytes	Acenaphthylene	0.200	mg/Kg	ND	ND		
	Anthracene	0.200	mg/Kg	ND	ND		
	Benzo(A)Anthracene	0.200	mg/Kg	ND	ND		
	Benzo(A)Pyrene	0.200	mg/Kg	ND	ND		
	Benzo(B)Fluoranthene	0.200	mg/Kg	ND	ND		
	Benzo(G,H,I)Perylene	0.200	mg/Kg	ND	ND		
	Benzo(K)Fluoranthene	0.200	mg/Kg	ND	ND		
	Chrysene	0.200	mg/Kg	ND	ND		
	Dibenzo(A,H)Anthracene	0.200	mg/Kg	ND	ND		
	Fluoranthene	0.200	mg/Kg	ND	ND		
	Fluorene	0.200	mg/Kg	ND	ND		
	Indeno(1,2,3-cd)Pyrene	0.200	mg/Kg	ND	ND		
	Pyrene	0.200	mg/Kg	ND	ND		
C_9-C_{18} Aliphatic Hydrocarbons[1]		20	mg/Kg	105	16500		
C_{19}-C_{36} Aliphatic Hydrocarbons[1]		20	mg/Kg	74.0	5430		
C_{11}-C_{22} Aromatic Hydrocarbons[1,2]		20	mg/Kg	118	3790		
Aliphatic Surrogate % Recovery				72%	66%		
Aromatic Surrogate % Recovery				67%	81%		
Sample Surrogate Acceptance Range				40-140%	40-140%	40-140%	40-140%
Fractionation Surrogate (1) % Recovery				70%	75%		
Fractionation Surrogate (2) % Recovery				74%	68%		
Fractionation Surrogate Acceptance Range				40-140%	40-140%	40-140%	40-140%

[1]Hydocarbon Range data exclude area counts of any surrogate(s) and/or internal standards eluting in that range

[2]C_{11}-C_{22} Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes

MA does not offer certification for this method.

Electronically signed and approved by: Mr. Bruce A. Bornstein, Lab Director DATE: 11/22/16

New England ChromaChem, Inc.

MA DEP VPH Analytical Report

SAMPLE INFORMATION			Miscellaneous Sample Information	
Matrix	☐ Aqueous ☒ Soil ☐ Sediment ☐ Other:		Project #	1616
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		Location:	Fernald School
Sample Preservatives	Aqueous (acid preserved)	☐ N/A ☐ pH < 2 ☐ pH > 2 Comment:		
	Aqueous (TSP preserved)	☒ N/A ☐ pH ≤ 11 ☐ pH > 11 Comment:		ml MeOH
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers		☒ 1:1+25%
		☒ **Samples received in MeOH** ☒ **Covering soil/sediment** ☐ **Not covering soil/sediment**		☐ Other
Temperature	☒ Received on ice ☒ Received at 4° C ± 2° C ☐ Other: _____ °C			

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH 03-1

Method for Target Analytes: MA DEP VPH

VPH Surrogate Standards:

PID: 1,2- Dichlorobenzene- D4

FID: Bromofluorobenzene

			Client:	CDW CONSULTANTS, INC.			
			Client ID:	B-6, S2	B-11, S8		
			Lab ID:	611232	611233		
			Date Collected:	10/28/16	10/28/16		
			Date Received:	11/18/16	11/18/16		
			Date Preserved: [4]	10/28/16	10/28/16		
			Date Analyzed:	11/18/16	11/18/16		
			Dilution Factor:	1	1		
			% Solid:	87%	93%		
	Elut. Range	RL (mg/Kg)	Units				
Unadjusted C_5-C_8 Aliphatics[1]	N/A	5	mg/Kg	ND	**13.1**		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	5	mg/Kg	ND	**888**		
Benzene	C5-C8 Aliph	0.050	mg/Kg	ND	ND		
Ethylbenzene	C9-C12 Aliph	0.050	mg/Kg	ND	**0.726**		
Methyl-tert-butyl ether	C5-C8 Aliph	0.050	mg/Kg	ND	ND		
Naphthalene	N/A	0.050	mg/Kg	ND	**7.55**		
Toluene	C5-C8 Aliph	0.050	mg/Kg	ND	ND		
M&P Xylene	C9-C12 Aliph	0.050	mg/Kg	ND	**1.10**		
O-Xylene	C9-C12 Aliph	0.050	mg/Kg	ND	**0.946**		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	5	mg/Kg	ND	**13.1**		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	5	mg/Kg	ND	**888**		
C_9-C_{10} Aromatic Hydrocarbons[1]	N/A	5	mg/Kg	ND	**12.7**		
BFB Surrogate % Recovery				102	91		
1,4-DCB-d_4 Surrogate % Recovery				107	93		
Surrogate Acceptance Range				70-130%	70-130%		

[1]Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

[2]C_5-C_8 Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

[3]C_9-C_{12} Aliphatic Hydrocarbons exclude concentrations of Target Analytes AND C_9-C_{10} Aromatic Hydrocarbons eluting in that range

[4]Only applies to samples collected in air-tight containers

MA does not offer certification for this method.

Electronically signed and approved by: Mr. Bruce A. Bornstein, Lab Director DATE: 11/22/16