Analysis of Brownfield Cleanup Alternatives

3113 Corunna Road, Flint, Michigan

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Report Prepared By:

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1.0 INTRODUCTION

The Genesee County Land Bank Authority (GCLBA) received EPA Multipurpose Grant funding to assist with assessment and cleanup of specific contaminants on properties within the Innovation District in Flint, Michigan. GCLBA received the subject site through involuntary transfer in December 2011. GCLBA's mission is to return formerly tax foreclosed properties to productive use with responsible owned. Since adding subject site to its inventory, GCLBA has worked with environmental consultants on Asbestos and Hazardous Materials Survey, Phase I and Phase II Environmental Site Assessments (ESAs). Conditions of the property, present contaminants, and potential for unknown contaminants below the structure slab pose barriers to reuse of the site. EPA grant funding is available to address hazardous materials such as asbestos and petroleum contamination. The Analysis of Brownfield Cleanup Alternatives (ABCA) is a required element of the United States Environmental Protection Agency (USEPA) USEPA Hazardous Substances Assessment Grant awarded to the GCLBA. In preparing the ABCA, the GCLBA considered environmental factors, various site characteristics, surrounding properties, land use restrictions, potential future uses, and cleanup goals.

2.0 BACKGROUND

The nearly half-acre property is located at the southeast intersection of Corunna and Stocker roads at 3113 Corunna Road. The site contains an approximately 3,500 square foot vacant one-story commercial structure built in 1930 and most recently used as a dry cleaner. The property has been vacant since 2010.

2.1 Site Location

The site consists of one (1) parcel located at 3113 Corunna Road in City of Flint, in Genesee County, Michigan (herein referred to as "the Site"). The locality is fully developed as residential (south and southeast) and small businesses (north, east, and west).

2.2 Site Ownership

GCLBA is the sole owner of the Property. The Property was acquired involuntarily through tax reversion on December 20, 2011.

2.3 Previous Site Uses

The site has a long history as a dry cleaner, with operations beginning in 1930 and continuing until 2010 under several different owners. The nearly 3,500 square foot building included former washing, tailoring, and office spaces. The property has been vacant since 2010.

3.0 SITE ASSESSMENT FINDINGS

The following subsections provide a summary of previous environmental investigations, areas of known contamination, an evaluation of exposure pathways, and an evaluation of known or potential exposures at the Subject Property.

3.1 Asbestos-Containing Materials

Asbestos-Containing Materials (ACMs)– an Asbestos & Hazardous Materials Survey (Hazardous Materials Survey) was completed on June 16, 2022, by Professional Service Industries, Inc. (PSI) an Intertek company as a part of the pre-demolition evaluation. Two ACMS were identified with more than 1%

asbestos including window glaze and floor tile. The following table presents a summary of the materials supporting asbestos greater than 1%, based on the results of the Polarized Light Microscopy (PLM) analyses for asbestos.

Material Description[1]	Material Location[2]	Estimated Quantity	F/NF[3]	% Asbestos & Type[4]	EPA NESHAP Category[5]	OSHA Class designation[6]
Window Glaze (Gray)	EA 2-4	6 windows	NF	5% Ch	Cat II NF	Class II
9" x 9" floor tile w/adhesive (black)	FS 2	450 SF	NF	3%Ch	Cat 1 NF	Class II

1Homogeneous materials/systems may contain an indefinite/indistinguishable number of layers that may not be visually identified by the inspector at the time of the survey.
2 **EA** = Exterior Area = Generally relating to sides of the principal structure on the site.
FS = Functional Space = A room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling, and the floor or roof deck above) designated by a person accredited to prepare
management plans, design asbestos abatement projects, or conduct asbestos response actions.
3 **F** = Friable; **NF** = Non-friable
4 **NAD** = No Asbestos Detected, **Ch** = Chrysotile, **Am** = Amosite, **Tr** = Tremolite, **Cr** = Crocidolite **PT** = Point Count Analysis
5 **NESHAP** Category - Regulated ACM (RACM), **Cat I NF**=Category I Non-Friable ACM, **Cat II NF**= Category II Non-Friable ACM
6 **OSHA/EPA Class Definitions:**
Class I Asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.
Class II Asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
Class III Asbestos work means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.
Class IV Asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II,
and III activities.

Regulated ACM (RACM) and Category II Non-Friable ACM must be properly removed by a licensed asbestos abatement contractor prior to demolition that would disturb the material. Federal, State and Local regulations and guidelines should be strictly adhered to when removing the ACM. Category I Non-Friable ACM may often be left in place during demolition if not made friable by cutting, grinding or sanding. If there is a potential for the non-friable materials to be rendered friable by demolition activities, the materials must be removed prior to demolition by a certified asbestos removal contractor utilizing the appropriate engineering controls. If left in place, these materials cannot be recycled or used as clean fill.

HAZMATs

Three suspected HAZMAT categories were observed on the subject property as outlined in the table below which lists the component, container, or equipment that is suspected of containing hazardous or regulated substances, the suspected constituent of concern, and the approximate quantity. The items listed in the hazardous materials table can become hazardous during demolition.

Inspection Item	Constituent of Concern	Size/Quantity	Notes/Location
Light Ballasts	PCB	2	FS 3
Tires	Varied	4	FS 1-6
Florescent Light bulbs	Mercury	4	FS 3

PSI recommends disposing the hazardous materials identified on the site in accordance with applicable regulations. Any unknown containers present on the site need to be verified through testing followed by proper disposal in accordance with applicable regulations.

3.2 Phase I Environmental Site Assessment

Phase I Environmental Site Assessment - A Phase I Environmental Site Assessment (ESA) was completed on July 3, 2013 by AKT, Peerless. AKT performed the Phase I ESA in conformance with the scope and limitations of ASTM Standard E 1527-13. The assessment revealed four RECs:

1) the Site's former and continuous use as dry cleaners from 1930 to 2010, and record of an open release of solvent
2) adjacent use at 3116 Corunna Road operated as an auto repair garage during the 1930s
3) A nearby site to the east, 3101 Corunna Road, operated as a filling station and dry cleaner from the 1930s to the 1970s, including the use of multiple USTs
4) A nearby site to the northeast, 3102 Corunna Road, operated as an auto repair garage and filling station during the 1930s and 1940s, including the use of multiple USTs

Based on the findings, additional site investigation activities in the form of subsurface sampling has been recommended at the Site to verify the absence or presence of environmental impact from the identified RECs.

3.3 Phase II Environmental Site Assessment

On July 20, 2012 AKT Peerless performed a Limited Phase II Environmental Assessment as a component of due diligence to understand site conditions prior to demolition. The purpose of this Limited Phase II Investigation was to assess select recognized environmental conditions (RECs) identified in AKT Peerless *Phase I Environmental Site Assessment,* dated July 3, 2012. The select RECs investigated during this Limited Phase II Investigation included the four RECs noted in the Phase I summary above.

To assess potential impacts associated with the select RECs, AKT conducted subsurface investigation of the site that included (1) the advancement of 8 soil borings, (2) the collection of nine soil samples, (3) the collection of 4 quality control and collection samples.

The following samples were submitted for laboratory analyses:

- Two soil samples for VOCs, polynuclear aromatic hydrocarbons (PNAs), lead, cadmium, and chromium
- Seven soil samples for VOCs and PNAs
- Four QA/QC samples for VOCs

AKT Peerless conducted soil and groundwater sampling in areas most likely to be impacted by contaminants based on the past use of the subject property. The results of the investigation indicate the following:

- Chromium, n-butylbenzene, sec-butylbenzene, ethylbenzene, n-propylbenzene tetrachloroethylene, trichloroethylene 1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and vinyl chloride were detected in subsurface soils at the subject property at concentrations exceeding the MDEQ Part 201 Residential GCC. Contamination in soil was detected above DWP Criteria, GSIP Criteria, and SVIA Criteria.

Based on laboratory analytical results, the subject property meets the definition of a facility, as defined in Part 201 of the NREPA, Michigan Public Act (PA) 451, 1994, as amended.

3.4 EPA site inspection report

Field staff collected surficial soil, sub-surface soil, and soil gas samples pursuant to and in general accordance with the SI Work Plan, dated September 17, 2020.

- EGLE field staff collected six surficial soil samples on October 20, 2020. This included samples from five locations and one duplicate. The samples were collected from locations in a circular pattern around the west and southern portions of the building where asphalt surface was not present, and in areas where sources had been or are present.
- Three soil borings were proposed using direct push technology and a high-density polyethylene (HDPE) lined Macro-Core sampler to confirm the subsurface soil profile.
- On October 19-20, 2020, staff from Geological Services Section of EGLE installed vapor points in seven borings. The Work Plan called for eight locations; however, access was not obtained at the proposed location of SG-02. This boring was proposed in the alley immediately east of the former Cotharin building.
- On November 5, 2020, EGLE Geological Services Section collected bottlevac samples

The five sources discovered during the Preliminary Assessment (PA) remain pertinent, including a total of four leaking underground storage tanks (LUST), in two separate areas; one above ground storage tank (AST); contaminated soil associated with the LUSTs; and drums/waste removed during a U.S. EPA removal action. This SI discovered another source, herein referred to as Source #6: UST residual waste liquid waste evacuated from the three USTs during removal that was stored on-site in several containers, which later ruptured during extreme winter temperatures, releasing waste onto the ground. See list below for description of all six sources. Note that all tanks referenced are no longer present, but issues remain with previous releases and/or leaks from the various tank.

Waste Characteristics

Source #1: Three USTs with Stoddard solvent

Quantity: 17.8 cubic yards volume (based on combined tank volume of 3,600 gallons, converted to cubic yards).

Hazardous substances present: Benzene, toluene, ethylbenzene, total xylenes, Cis-1,2-dichloroethene, trichloroethene, tetrachloroethene (PCE), 1,1,2,2- tetrachloroethane, and naphthalene.

Characteristics: No secondary containment; all three tanks contained holes/breaches when removed; the tanks were known to contain Stoddard solvent used in the dry-cleaning process.

Source #2: One UST with Stoddard Solvent

Quantity: 4.95 cubic yards volume

Hazardous substances present: Benzene, toluene, ethylbenzene, total xylenes, Cis-1,2-dichloroethene, trichloroethene, tetrachloroethene (PCE), 1,1,2,2- tetrachloroethane, and naphthalene. 7

Characteristics: Confirmed release; the UST reportedly last contained Stoddard solvent used in the dry-cleaning process.

Source #3: One above ground storage tank

Quantity: unknown; EGLE files do not have specific information. It is unclear if this AST is the one used to store the residual contents and precipitate from the former USTs.
Hazardous substances present: unknown; two soil samples were collected near the tank, but the results are not available in EGLE files.
Characteristics: the tank is shown as being located on the west side of the dry- cleaner building near the southwest corner. See Figure 2.

Contaminated Soils

Source #4: Contaminated soil from leaking USTs

Quantity: 2,133 cubic yards volume (based on 1995 soil feasibility study, including text that the soils were returned to the UST excavation).
Hazardous substances present: tetrachloroethylene, benzene, ethylbenzene, toluene, naphthalene, xylenes, cis-1,2-dichloroethylene, trichloroethylene, 1,2-dichloropropane, and 1,1,2,2-tetrachloroethane (based on lab data in EGLE file from soil samples collected in UST excavation).
Characteristics: no secondary containment; soils impacted from depths of approximately 8 to 14 feet deep.

Drums

Source #5: Drums/containers containing abandoned waste

Quantity: 250 gallons volume (based on volume of waste removed during the U.S. EPA emergency removal in 2015).
Hazardous substances present: mercury (elemental) (based on D009 waste stream designation in U.S. EPA Pollution Report #2 for 50 gallons; 200 gallons were designated as D001 waste or characterized by ignitability).
Characteristics: no secondary containment; some of the waste was found in drums and some in smaller containers.

Source #6: Drums/containers containing residual contents removed from the three USTs excavated in 1994.

Quantity: 3,815 gallons volume based on reported quantity.
Hazardous substances present: tetrachloroethylene, benzene, ethylbenzene, toluene, naphthalene, xylenes, cis-1,2-dichloroethylene, trichloroethylene, 1,2-dichloropropane, and 1,1,2,2-tetrachloroethane (based on lab data in EGLE file from soil samples collected in UST excavation).
Characteristics: Approximately 1,400-gallons of the liquid recovered were stored onsite in 26 55-gallon containers and a lined 20-yard roll off. No secondary containment.

EGLE and the U.S. EPA have documented releases or potential releases from four USTs and from containerized wastes with no secondary containment. Surficial and subsurface contaminated soils remain, and soil gas is migrating from the Site. No releases to groundwater, surface water/sediment, or air have been documented, but the potential exists.

The primary pathway of concern at this Site is the SsI component of the Soil Exposure and Subsurface Intrusion pathway. CERCLA hazardous substances attributable to the Site are present in soil and soil gas at elevated concentrations creating an area of subsurface contamination. The intended soil gas background sample location appears to have been impacted by VOC contamination from the Site. The

waste characteristics, such as toxicity of some of the hazardous substances present onsite is high and their degradation is low, so there is a higher potential to impact nearby targets. However, given the localized nature of the contaminants on the Site, the potential impacts to targets via the SsI exposure pathway appears to be relatively small. There are two residences and one business located adjacent to the area of subsurface contamination. The extent of impact has not been fully defined and warrants further investigation.

4.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

The United States Occupational Safety and Health Administration (OSHA) and the United States Environmental Protection Agency (USEPA) both have regulations that are applicable to this project. The OSHA Construction Industry Standard (29 CFR 1926.1101) covers employees engaged in demolition and construction activities likely to involve asbestos exposure. In Michigan, the Michigan Occupational Safety and Health Administration (MIOSHA) Asbestos Program enforces the federal standards. The EPA regulates asbestos application, removal, and disposal of ACMs, under the National Emission Standards for Hazardous Air Pollutants (NESHAP). The asbestos NESHAP protects the public and environment by minimizing the release of asbestos fibers during renovation and demolition activities. In Michigan the Air Quality Division (AQD) of the Michigan Department of Environment, Great Lakes and Energy (EGLE) has been delegated authority to implement the NESHAP program for asbestos. MIOSHA and EGLE are made aware of and provide oversight of asbestos removal projects by receiving and reviewing the "Notification of Intent to Renovate/Demolish" forms, which are required to be submitted a minimum of 10 working days prior to starting work. Other agencies promulgating regulations on asbestos include the Department of Transportation (DOT) – establishing regulations regarding the transport of asbestos. All cleanup work proposed at the property will comply with the above regulations and notification requirements. The proposed cleanup project will comply with all other applicable local, state, and federal regulations not specifically mentioned.

5.0 CLEANUP OBJECTIVES

3113 Corunna is a blighted and abandoned former dry cleaner. The site has been confirmed as a facility due to previous releases and presence of contaminants documented above. The locality is fully developed as residential (south and southeast) and small businesses (north, east, and west).

In addition to contaminants listed above, the site regulated ACM (RACM) and Category II Non-Friable ACM. The potential exists that there may be petroleum contamination beneath the slab of the structure. The project goal is to clean-up the damaged asbestos, abate the remaining RACMs prior to demolition, remove connected utilities, demolish the buildings, assess the area for sub-slab impacts, mark any areas of contaminated soil encountered during demolition, remove remaining debris around the buildings and return to grade. This project will rid the area of a public nuisance, remove the slab and test below it, formally mark any contaminants encountered as part of the demolition and abatement to provide clear identification for future property owners, and prepare the Property for future redevelopment.

As this site is part of a commercial district, it is envisioned that a new or expanded commercial endeavor would occupy the site, removing blight and increasing economic vitality.

5.1 Cleanup Alternatives

Three alternatives were considered for the Site which include:

- Alternative #1: No Action
- Alternative #2: Asbestos Hazard Mitigation
- Alternative #3: Remediation of Asbestos-Containing Materials prior to Demolition of Site Structures

5.1.1 Alternative # 1 – No Action Alternative

Effectiveness – The No Action alternative is not effective in controlling or preventing the exposure of ACM contamination at the Site.

Implementation – No Action is easy to implement since no actions will be conducted.

Cost - $0, but a No Action alternative would leave the Site in its existing condition making it undesirable for redevelopment, and difficult to obtain private interest for the redevelopment of the Site. Additionally, there will be costs to secure the building that will continue indefinitely.

Summary - The Site would be left in the current dilapidated state. The ACMs would still pose a health risk to legal and illegal visitors entering the buildings. Transfer of the property to other parties would require notification of the presence of asbestos-containing materials and existing RECs, and controls would be necessary to manage exposure to those entering the buildings. Under the No Action Alternative, if the Site remains unused for an extended period, the Site will continue to deteriorate, creating an attractive nuisance and increasing the risk to those entering the Site Building. It is additionally of note that vacant and abandoned buildings in Flint are often the target of arson. The No Action Alternative increases the risk of further fire damage to identified contaminants.

5.1.2 Alternative #2 – Asbestos Hazard Mitigation

Effectiveness – Because of the presence of ACMs, this method is a short-term fix to protect site entrants from potential exposure as the material identified as nonfriable is noted in severely damaged condition and is likely to become friable over time. In addition, if the structure were to be the target of arson, the non-friable material would be significantly damaged and become friable. For these reasons, abating only the friable material does not provide a long-term solution to preventing exposure.

Implementation – The implementation of this alternative will require that the structure is secured by means of sealing door and window entrances to prevent easy access to the interior and reduce exposure to weather and minimize further degradation of the building interior and deterioration of ACMs left in place. In addition, all debris on horizontal surfaces will be cleaned and all damaged friable ACMs removed where damaged and the surrounding material stabilized to minimize further deterioration. All the above work will need to be completed using Class I asbestos removal techniques in a negative pressure enclosure. This method will suffice as a short-term solution if demolition is delayed.

Cost - $3,700 for abatement; $17,750 for site security fencing)

Summary - The Hazard Mitigation alternative would leave some hazardous building materials and components in place and would pose a health risk if the barriers are damaged by the wind or vandalized.

5.1.3 Alternative #3 – Remediation of Asbestos Containing Materials and Demolition of Site Structures

Effectiveness – Removal of ACMs is an effective method for preventing exposure to and stopping further deterioration and exacerbation.

I*mplementation* - Removal and disposal of ACMs and building demolition are technically feasible and are common actions for reducing or eliminating the human health risks of exposure to hazardous building materials. Services and materials are readily available.
Cost – $108,350.
Summary - The ACM Remediation and Building Demolition alternative will properly manage the hazardous building materials and achieve the project goals of providing a Site ready for redevelopment. This alternative provides the safest environment for demolition due to complete removal of ACMs prior to demolition thereby preventing exposure to workers. The removal of the Site buildings, and marking any subsurface contaminants encountered, will provide the maximum flexibility for site redevelopment.

5.1.4 Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #3: Remediation of Asbestos Containing Materials and Demolition of Site Structures. Alternative #1: No Action cannot be recommended since it does not address Site risks or project objectives. Alternative #2: Hazard Mitigation of ACMs is a short-term solution and more difficult to implement considering the state of disrepair to the buildings and the costs to secure and maintain the Site indefinitely while leaving the property unusable until the building is demolished.

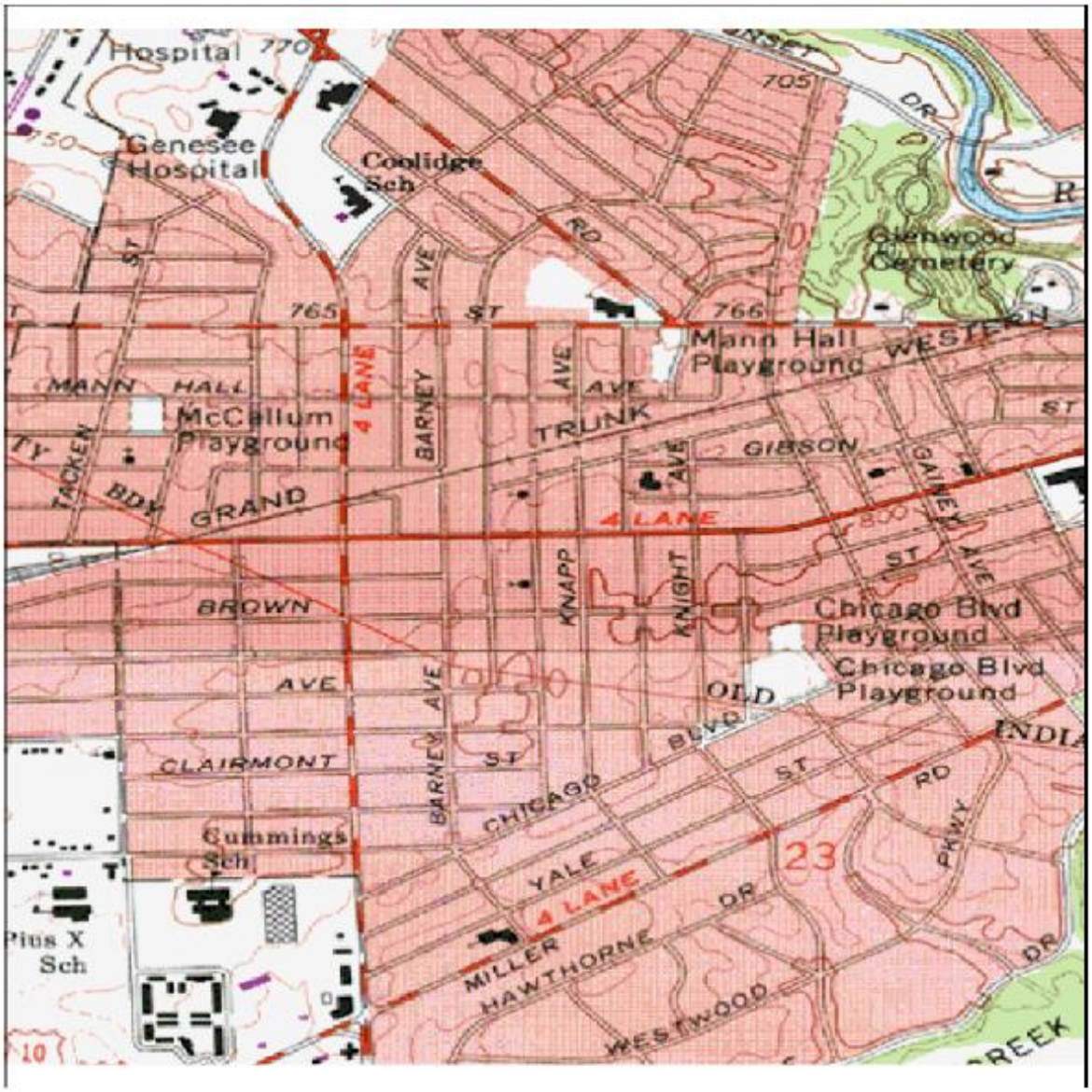
Figures

Site Location Map

Topo : 0.75 Mile Radius

3113 CORUNNA RD, FLINT, MI 48503

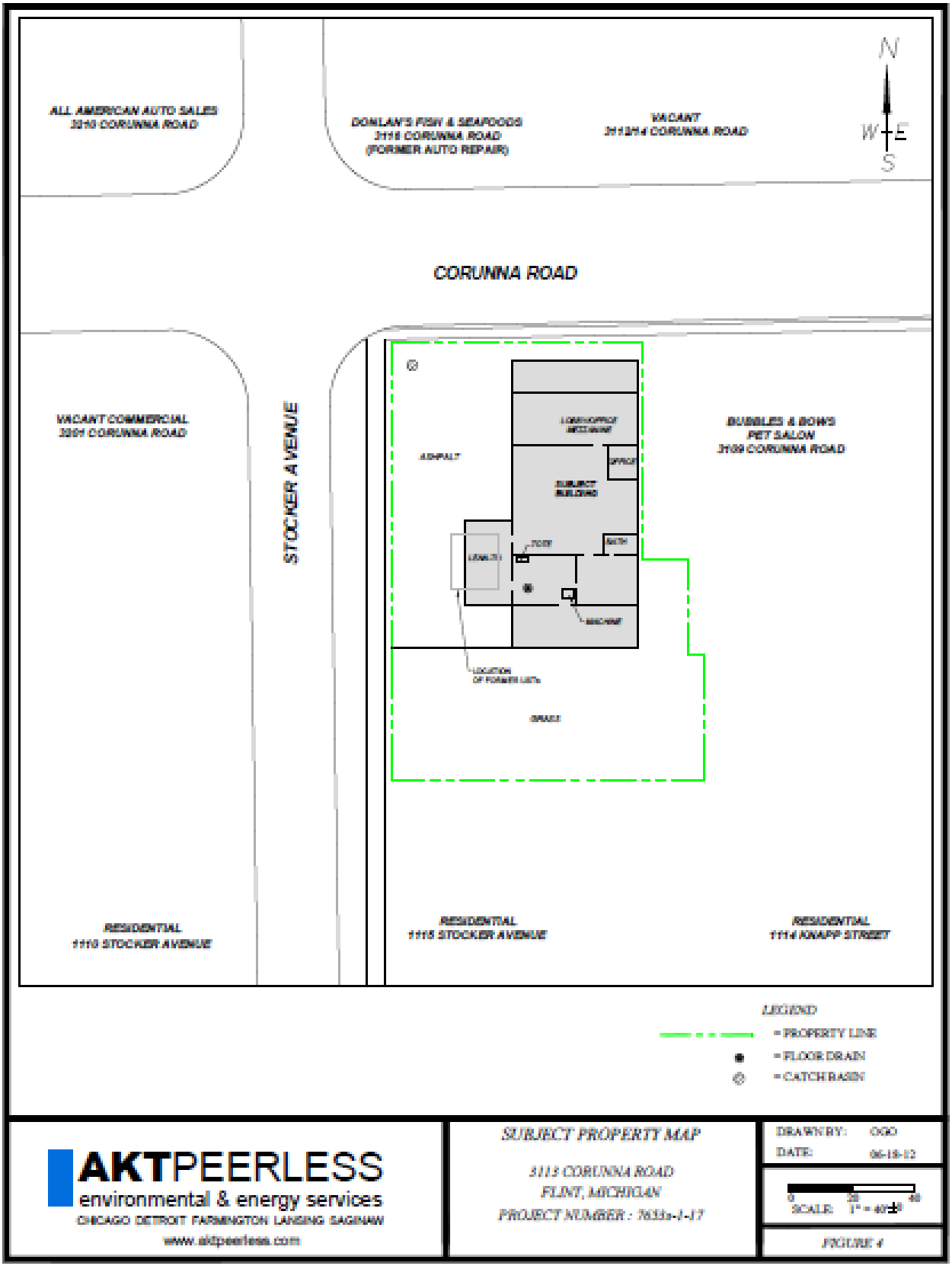
FIRSTSEARCH



SOURCE: SCANNED USGS TOPOGRAPHIC QUADRANGLES
SCANNED BY MAPTECH AND USGS
DISTRIBUTED AUGUST, 2006.

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

0 495 990 1,980 2,970 3,960 Feet



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CHICAGO DETROIT FARMINGTON LANSING SAGINAW
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SUBJECT PROPERTY MAP

3113 CORUNNA ROAD
FLINT, MICHIGAN
PROJECT NUMBER : 7833a-1-13

DRAWN BY: OGO
DATE: 06-18-12

0 20 40
SCALE: 1" = 40'

FIGURE 4