WENCK File 1531-0013
January 2020

DRAFT Response Action Plan and Construction Contingency Plan Update

Shady Oak Properties
4312 Shady Oak Road
Minnetonka, Minnesota 55343

Prepared for:

Ron Clark Construction

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WENCK
Responsive partner.
Exceptional outcomes.

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1.0 Introduction

Wenck Associates, Inc. (Wenck) was authorized by Ron Clark Construction, to prepare this Response Action Plan (RAP) and Construction Contingency Plan (CCP) Update, collectively referred to as the "RAP/CCP Update", for the properties referred to as the Shady Oak Properties located at 4312 Shady Oak Road, Minnetonka, and 2 Shady Oak Road, Hopkins, Hennepin County, Minnesota (the Subject Property). The Subject Property consists of two parcels, Hennepin County tax parcels 23-117-22-42-0057 and 23-117-22-42-0056, totaling approximately 2.32 acres which contains an approximately 25,680-square-foot multi-tenant commercial/retail building with a paved parking lot, drive areas, and greenspace. The Subject Property is anticipated to undergo demolition of the existing multi-tenant commercial building followed by redevelopment of the Subject Property into a housing complex that includes one level of underground parking. The Subject Property location is depicted in **Figure 1**. A Detail Aerial is included as **Figure 2**. Development Plans are included in **Appendix A**.

A RAP/CCP was previously submitted to the MPCA in February 2017 and approved by the MPCA in March 2017. The 2017 RAP/CCP only included the 4312 Shady Oak Parcel. The 2 Shady Oak Road Parcel was added to the plans in 2019. The RAP/CCP Update is being completed to include the 2 Shady oak Road Parcel.

The Environmental assessments have identified impacted soil located within the upper 6-feet in the northeastern and central portions of the Subject Property. The soil contains tetrachloroethene (PCE) and polychlorinated biphenyls (PCBs) above their respective Minnesota Pollution Control Agency (MPCA) Soil Leaching Values (SLVs). The soil also contains Diesel Range Organics (DRO) in excess of 100 mg/kg, which is listed by the MPCA as criteria for the definition of unregulated fill. Soil vapor testing identified the presence of tetrachloroethene (PCE) exceeding 33x the Residential Intrusion Screening Value (ISVs) and trichloroethene (TCE) above the laboratory detection limits, but not above the MPCA 33X Residential ISV. Future redevelopment of the Property includes building design to accommodate potential vapor mitigation through underground parking. Groundwater testing identified low levels of DRO and VOCs in samples collected in two locations. The levels were well below any regulatory levels, and redevelopment plans do not extend to the depth of the observed groundwater table.

The purpose of this RAP/CCP Update is to provide a written protocol for Subject Property personnel to handle and manage environmentally impacted fill material identified on the Subject Property with exceedances of applicable SLVs and/or the MPCA unregulated fill standard. The RAP/CCP Update will be used as a guide to determine whether environmentally impacted soil can: 1) be reused on or off-site as un-restricted fill; 2) be reused on-site as restricted fill, or 3) requires off-site management at a permitted facility.

In addition, this document will provide field decision-making guidance to the Environmental Professional and other Subject Property personnel in the event that unanticipated contamination is encountered during implementation of the proposed Subject Property redevelopment activities. A copy of this RAP/CCP Update will be kept on-site in the project field superintendent's office, in order to be readily available during construction activities. It should be noted that this RAP/CCP Update is not used to determine whether the soils are geotechnically suitable to be reused on-site based on geotechnical assessment.

This RAP/CCP has been prepared for the exclusive use of the developers of the Subject Property including, Ron Clark Construction. Others wishing to rely on the findings of this report, not having a contractual relationship with Wenck, do so without permission and at their own risk.

2.0 Subject Property Description

2.1 SUBJECT PROPERTY DESCRIPTION

The Subject Property consists of 2.32 acres occupied by an approximately 25,680-square-foot multi-tenant commercial/retail building with a paved parking lot, drive areas, and greenspace. Access to the Subject Property is from Shady Oak Road and Oak Drive Lane. The Subject Property location is depicted in **Figure 1**. A Site Detail Map of the Subject Property is included as **Figure 2**.

The Subject Property is located within a mixed commercial and residential area. The Subject Property is anticipated to be redeveloped as multi-family housing that includes one level of underground parking and related improvements.

2.2 PHYSICAL SETTING

2.2.1 Topography

The Subject Property is generally level and is at an elevation of approximately 925 feet above mean sea level. Site surface drainage appears to be to the west towards an off-site pond. Historic development may have included grading or filling of the Subject Property to improve the location for construction and drainage.

2.2.2 Geology

Published references describe the surficial geology at the Subject Property as fine-grained sand to gravel of mixed provenance (Berthold, 2018).

Shallow bedrock in the vicinity of the Subject Property consists of the Platteville Formation composed of limestone and dolostone and Glenwood Formation composed of calcareous, sandy, and phosphatic shale (Retzler, 2018). Depth to bedrock is approximately 50 to 125 feet below ground surface (bgs) (Retzler, 2018).

Soil borings advanced on the Subject Property identified up to 15-feet of fill soils consisting of mainly dark brown to black silty sand with gravel in the west parking lot (on the 4312 Parcel) near the former septic system in GP-2. Fill was encountered to depths of approximately 2- to 6-feet below ground surface (bgs) throughout the rest of the Subject Property. In general, the fill was underlain by brown silty sand with gravel in the central portions of the Subject Property and the 2 Parcel, and sandy clays to the north and south of the 4312 Parcel. Boring logs from previously completed environmental assessments are included in **Appendix B**.

2.2.3 Hydrogeology

The general direction of regional groundwater flow in the area of the Subject Property is presumed to be to the east-southeast toward the Mississippi River (Kanivetsky, 1989). Local conditions may vary due to surface water features, perched groundwater conditions or artificially created drainage systems.

Groundwater was observed during soil boring activities at approximately 20- to 25-feet bgs to the north and south of the building, and at approximately 10- to 13-feet bgs to the west of the 4312 Parcel building, which was observed to be at a lower elevation.

3.0 Site Responsibility

3.1 PROJECT ORGANIZATION

3.1.1 Current Owner

City of Minnetonka
14600 Minnetonka Boulevard
Minnetonka, Minnesota

3.1.2 Property Developer/Future Building Owner

Contact 1:
Mr. Michael Roebuck, President
Ron Clark Construction
7500 West 78th Street
Edina, MN 55439
952.947.3022 Direct
952.947.3030 Fax
Email: mike@ronclark.com

3.1.3 Owner's Environmental Consultant

Contact 1:
Mr. Adam Zobel
Senior Environmental Project Manager
Wenck Associates, Inc.
1800 Pioneer Creek Center
P.O. Box 249
Maple Plain, Minnesota 55359
Office: (763) 479-5145
Email: azobel@wenck.com

3.1.4 Construction Contractor Information

Contact 1:
Mr. Michael Roebuck, President
Ron Clark Construction
7500 West 78th Street
Edina, MN 55439
952.947.3022 Direct
952.947.3030 Fax
Email: mike@ronclark.com

3.1.5 Regulatory Agency – Minnesota Pollution Control Agency

MPCA:
VIC and Voluntary Remediation Program
MPCA
520 Lafayette Avenue
St. Paul, MN 55155-4194
Phone: 651-296-6300

4.0 Prior Assessments

4.1 PREVIOUS ENVIRONMENTAL REPORTS

The following previous environmental reports prepared for the Subject Property or a larger site containing the Subject Property were reviewed:

- *Phase I Environmental Site Assessment, Ring Property, 4312-4342 Shady Oak Road, Minnetonka, Minnesota.* Prepared by Service Engineering Group for Hennepin County. September 21, 2007 (2007 Phase I ESA Report).
- *Phase I Environmental Site Assessment, Shady Oak Property, 4312 Shady Oak Road and 4292 Oak Drive Lane, Minnetonka, Minnesota.* Prepared by Wenck for the City of Minnetonka. November 6, 2014 (2014 Phase I ESA Report).
- *Phase II Environmental Site Assessment, Shady Oak Property, 4312 Shady Oak Road and 4292 Oak Drive Lane, Minnetonka, Minnesota.* Prepared by Wenck for the City of Minnetonka. November 13, 2014 (2014 Phase II ESA Report).
- *Phase I Environmental Site Assessment, Shady Oak Property, 4312 Shady Oak Road and 4292 Oak Drive Lane, Minnetonka, Minnesota.* Prepared by Wenck for the City of Minnetonka. June 27, 2016 (2016 Phase I ESA Report).
- *Environmental Site Assessment – Supplemental Site Assessment, Shady Oak Property, 4312 Shady Oak Road and 4292 Oak Drive Lane, Minnetonka, Minnesota.* Prepared by Wenck for the City of Minnetonka. June 27, 2016 (2016 Supplemental Soil Investigation Report).
- *Environmental Services – Sub-Slab Soil Vapor Sampling, 4312 Shady Oak Road, Minnetonka, Minnesota.* Prepared by Wenck for the City of Minnetonka. July 21, 2017 (2017 Sub-Slab Soil Vapor Sampling Letter).
- *Environmental Soil Screening, 4312 Shady Oak Road.* Prepared by Wenck for Ron Clark Construction. June 11, 2019 (2019 Environmental Soil Screening Memo).

Previous sample locations are shown on **Figure 3** and sample results are summarized on **Tables 1**, **2**, **3**, and **4**. Wenck environmental soil boring logs are shown in **Appendix B**.

4.1.1 2007 Phase I ESA Report

The 2007 Phase I ESA Report was completed on 4312 parcel and noted that the tenants at the 4312 parcel consisted of Knight Machining, Ammocraft Firearms Supply, Chalet Pizza, James Gang Hair, a woodworking shop, Shady Oak Vet, and Practical Systems HVAC. The Phase I notes that these tenants or like-industries, have occupied the 4312 parcel since at least the 1980's. Prior to that time, other light commercial or service industry tenants have periodically occupied the site including county offices, an antique store, restaurant, furniture store, hardware store, sheet metal workings, dentist office, and a drive-in dry cleaner. The 2007 report notes the cleaners was drop-off only as shown in a 1975 City Directory reviewed by Service Engineering Group.

The 2007 Report stated that there were no identified RECs. The 2007 Report does not mention the septic tank and cesspool system at the 4312 Parcel.

The dry-cleaner noted in City of Minnetonka files for the 2014 Wenck Phase I report is not the same dry-cleaner noted in the 2007 Phase I ESA Report and 1975 City Directory.

4.1.2 2014 Phase I ESA Report

The 2014 Phase I ESA Report was completed on the 4312 parcel and the west adjacent site (4292 Oak Drive Lane). The previous report's Subject Property consisted of one commercial/retail building with multiple tenant spaces, a single-family residence, a paved parking area on the west side of the commercial building, and greenspace. At the time the report was prepared, the Subject Property was owned by E H Ring Credit Shelter (4312 parcel) and EGR Premier Properties (4292 parcel).

According to the 2014 Phase I ESA Report, the tenants at the 4312 Parcel consisted of Ammo Craft (4314), Tara's Chalet Pizza (4316), Sewing and Alterations (4318), 3x3 Fit (4330), P3 Hair Design (4332), E-Cigs and Accessories (4334), Mission Animal Hospital (4338), Second Hand Hounds (4340 and 4334B), Mid-Tool (4316B), Electric City (4330B and 4332B), and Practical Systems – HVAC (4340B and 4342B).

The 2014 Phase I ESA Report identified the following RECs relative to the 4312 parcel and the west adjacent site:

- "The presence of historical machine shop and drycleaner tenants at the Subject Property that handled various oils and solvents and operated at the same time as the former septic and cesspool system is considered an REC.
- Heavy oil staining from a leaking compressor located in the northwest corner of the building in a vacant tenant space is considered an REC."

The 2014 Phase I ESA Report identified the following items that constituted a business environmental risk for the 4312 parcel and the west adjacent site:

- "There is a domestic well located at the Subject Property that is currently not in use on the 4292 parcel and two wells not in use on the 4312 parcel. According to the Minnesota Department of Health, a well must be in use, be under a maintenance permit, or be sealed by a licensed contractor.
- A former septic system may still be present on the Subject Property at the 4312 Parcel on the west of the building. Septic systems no longer in use should be abandoned/decommissioned in accordance with local regulations. A septic system was not observed on the 4292 Parcel; however, a septic system may also be present on the 4292 Parcel, based on the similar time of construction."

4.1.3 2014 Phase II ESA Report

The 2014 Phase II ESA Report was completed on the 4312 parcel and the west adjacent site (4292 Oak Drive Lane) and consisted of the advancement of five (5) soil borings to depths of 15 to 30 feet below ground surface (bgs) to assess current soil and groundwater conditions. Soil samples were collected from five of the borings and analyzed for diesel

range organics (DRO), volatile organic compounds (VOCs), and Resource Conservation and Recovery Act (RCRA) metals; four (4) samples for polynuclear aromatic hydrocarbons (PAHs); and one (1) soil samples for PCBs. Groundwater samples were collected from three borings and analyzed for DRO and VOCs. Two soil vapor samples were also collected and analyzed for VOCs using method TO-15. Additionally, Wenck collected three PCB wipe samples from areas where staining was observed in the basement of the 4312 Building noted in the 2014 Phase I ESA Report.

During the Phase II investigation, fill soils consisting of predominately brown to black silty sand with gravel were encountered to depths of approximately 5 feet bgs in the west parking lot area of the 4312 Building. The fill soil was generally underlain by brown silty sand with gravel. Groundwater was encountered in each boring drilled on the Subject Property at depths of approximately 10 to 20 feet bgs.

The soil investigation results from the 2014 Phase II ESA Report compared detected concentrations of RCRA metals, VOCs, PAHs and PCBs to the Minnesota Pollution Control Agency's Tier 1 Residential and Tier 2 Industrial Soil Reference Values (SRVs). Additionally, MPCA Tier 1 Soil Leaching Values (SLVs) were referenced to evaluate the potential risk to groundwater at the Subject Property from the soil-to-groundwater leaching pathway.

DRO was identified in three of the six soil samples collected at concentrations ranging from 494 mg/kg to 9.99 mg/kg. Various RCRA metals were detected in all of the samples collected and analyzed; however, detected concentrations of metals do not exceed the MPCA SLVs, Residential SRVs, or Industrial SRVs. VOCs were not identified in soil samples above their respective laboratory method reporting limits in any of the soil samples collected. In one of the two samples collected and analyzed for PCBS, total PCBs were detected at 0.265 mg/kg above the MPCA SLV of 0.1 mg/kg. Various PAHS were detected in the soil samples However; none, of the samples were identified to exceed the MPCA Residential or Industrial SRVs or MPCA SLVs for individual PAHs or the BaP equivalent concentrations calculated.

The groundwater analytical data collected during the 2014 Phase II ESA Report compared detected concentrations of VOCs to the Minnesota Department of Health's (MDH) and MPCA's Health Risk Limits (HRL) and MDH Health Based Values (HBVs) guidance values to assess potential human health risks from exposures to chemicals in groundwater. There are no established HRLs or HBVs for DRO and GRO.

The VOC tetrachloroethene (PCE), a common drycleaner solvent, was detected in two groundwater samples collected at the previous report's Subject Property at concentrations ranging from 1.81 ug/L to 1.23 ug/L. Both detections were below the MPCA HRL/MDH HBV of 5.0 ug/L. DRO was detected in all three temporary wells at 21.2 ug/L, 314 ug/L, and 267 ug/L.

The soil vapor data collected during the 2014 Phase II ESA Report was compared to the MPCA's Intrusion Screening Values (ISVs) for Vapor Intrusion Risk. Various VOCs were detected above the method detection limits in the soil vapor samples collected from the Subject Property. PCE was detected at 130 ug/m^3 above 10x the 2014 Residential ISV, but below 10x the 2014 Industrial ISV. ***The elevated concentration of PCE at 130 ug/m^3 in SV-1 exceeds 33x the May 2019 published Residential ISV of 3.4 ug/m^3 (110 ug/m^3= 33x Residential ISV).*** Trichloroethene (TCE) was detected at 20 ug/m^3 equal to 10x the 2014 Residential ISV, but below 10x the Industrial ISV. ***The Residential ISV for TCE as of May 2019 is to 2.1 ug/m^3 and 33x Residential ISV = 70 ug/m^3***. The VOC

1,3-butadiene was detected above 10x the Residential ISV in both samples; however, the 2014 Phase II ESA Report concluded there was no potential source of 1,3-butadiene and the detection was not indicative of a release. None of the other detected VOCs exceed 33x the MPCA Residential or Industrial ISVs.

PCBs were detected in one of the wipe samples at a concentration of 25.1 ug/100 cm^2 from the oil stained concrete under the leaking compressor in the vacant storage space in the northwest corner of the basement of the building on the 4312 Parcel.

4.1.4 2016 Phase I ESA Report

The 2016 Phase I ESA Report was completed on the 4312 parcel and the west adjacent site (4292 Oak Drive Lane), which consisted of one commercial/retail building with multiple tenant spaces, a single-family residence, a paved parking area on the west side of the commercial building, and greenspace. Both structures were originally built in 1951. Two additions were completed on the commercial structure by 1964.

The building on the 4312 Parcel is two levels and the upper level tenant spaces are accessed from the east side of the building off Shady Oak Road and the lower level tenant spaces are accessed by a walkout basement level on the west side of the building. The current tenants on the upper level consist of Ammo Craft (4314), Chalet Pizza (4316) and Sewing and Alterations (4318); the remaining spaces on the upper level are vacant. The lower level tenant spaces are occupied by Mid-Tool (4316B), Electric City (4330B and 4332B), and Practical Systems – HVAC (4340B and 4342B).

Wenck reviewed building permits and records for the previous report's Subject Property at the City of Minnetonka. Dahl's Cleaners and Laundry were noted in the City file as a drycleaner tenant at the Subject Property at the 4312 Parcel building, and the file notes a dry-cleaning machine was installed in 1962.

Wenck also obtained hazardous waste files from Hennepin County Environmental. The records did not reveal any evidence of a release of hazardous materials at the Property or any major handling violations. Wenck reviewed records for Knight Machining, Inc., Mid-Tool, Liberty Tool, Practical Systems, Clean Flo Labs, and Shady Oak Veterinary Clinic.

Chemicals formerly used by Knight Machine included relatively small quantities of Stoddard Solvent, used oil, and metal working fluid. Waste generated by the Shady Oak Veterinary included used x-ray film, x-ray fixer, and bio-waste. Clean Flo labs reported to generate approximately 5-gallons per year of mixed lab chemicals. A letter for Mid-Tool from the MCPA noted that Mid-Tool does not generate any waste but uses cutting oil and Stoddard Solvent in their operations. The chemicals are reportedly consumed in the process or recycled back to the machines.

City files show that the commercial structure on the 4312 Parcel was originally constructed with a septic system consisting of a 10' wide x 40' long x 8' in height septic tank and four 675-gallon concrete cesspools.

Wenck observed a vent pipe on the west side of the building on the 4312 parcel. This pipe may be associated with a former fuel tank or the former septic system.

The previous report's Subject Property was identified on the following reviewed regulatory databases in the GeoSearch™ Radius Report: Resource Conservation & Recovery Act –

Generator Facilities (RCRAGR05), Federal Facility Registry System (FRSMN), and Hazardous Waste Generator Sites (HWGS) databases due to a hazardous waste generator licenses. Other nearby sites were noted in the GeoSearch report for various databases.

Wenck observed two wells on the 4312 parcel. One well is located under a stairwell in the Practical Systems space and the other well is located outside off the sidewalk north of the Ammo Craft tenant space. Wenck also observed a well in the basement of the residence at the 4292 parcel.

"This Phase I ESA has identified no *recognized environmental conditions* (RECs) relative to the Subject Property except for the following:

- The presence of historical machine shop and drycleaner tenants at the Subject Property that handled various oils and solvents and operated at the same time as the former septic and cesspool system is considered an REC.

- A Phase II Subsurface Investigation completed at the Subject Property identified DRO, VOCs and PCBs above MPCA and MDH established risk criteria in the soil, groundwater, concrete and soil vapor at the Subject Property. The identified release to multiple materials at the Subject Property is considered a REC.

This Phase I ESA has not identified any *controlled recognized environmental conditions* (CRECs) or *historical recognized environmental conditions* (HRECs) relative to the Subject Property.

Although not considered RECs, CRECs, or HRECs; this ESA has revealed the following items that constitute business environmental risks:

- There is a domestic well located at the Subject Property that is currently not in use on the 4292 Parcel and two wells not in use on the 4312 parcel. According to the Minnesota Department of Health, a well must be in use, be under a maintenance permit, or be sealed by a licensed contractor.

- A former septic system may still be present on the Subject Property at the 4312 Parcel on the west of the building. Septic systems no longer in use should be abandoned/decommissioned in accordance with local regulations. A septic system was not observed on the 4292 Parcel; however, a septic system may also be present on the 4292 Parcel, based on the similar time of construction."

4.1.5 2016 Supplemental Soil Investigation Report

The 2016 Supplemental Soil Investigation consisted of the advancement of eight (8) soil borings to depths of 31 feet below ground surface (bgs) to evaluate subsurface conditions in specific locations to provide good spatial coverage of the site, and to evaluate environmental conditions of the Subject Property. Soil samples were collected from all eight of the borings and analyzed for DRO, VOCs, and RCRA metals, PAHs, and PCBs.

During the Supplemental Soil Investigation, Wenck encountered approximately four feet of fill soils consisting of mainly dark brown to black silty sand with gravel on the Subject Property with approximately 10 feet of fill in boring SB-8 on the south side of the building. In general, the fill was underlain primarily by brown silty sand with gravel in borings SB-1 through SB-4 and brown to grey sandy clays in borings SB-5 through SB-8. Lenses of

organic clay ranging from one inch to two feet in thickness were noted in SB-6 through SB-8 from 9-15 feet below grade.

The soil investigation compared detected concentrations of DRO, VOCs, RCRA metals, PAHs and PCBs to the Minnesota Pollution Control Agency's Tier 1 Residential and Tier 2 Industrial SRVs. Additionally, MPCA Tier 1 SLVs were referenced to evaluate the potential risk to groundwater at the Subject Property from the soil-to-groundwater leaching pathway.

DRO was detected in all eight of the soil samples. Detections ranged from 0.425 mg/kg in sample SB-4 (2-3.5') to 215 mg/kg in sample SB-7 (2-3.5'). DRO was detected above 100 mg/kg in samples SB-3 (4.5-6') at 108 mg/kg, SB-6 (2-3.5') at 170 mg/kg, and SB-7 (2-3.5') at 215 mg/kg. There was no established guidance for DRO in the MPCA SLVs or SRVs. PCE was detected at 0.245 mg/kg in sample SB-3 (4.5-6'). No other VOCs were detected above their respective laboratory method reporting limits in any of the other seven soil samples collected and analyzed for VOCs. The detection of PCE exceeded the MPCA SLV but did not exceed the Residential SRV or Industrial SRV.

Five of the eight RCRA metals were detected in the eight samples collected with at least three metals identified in each sample. However, detected concentrations of metals did not exceed the MPCA SLVs, Residential SRVs, or Industrial SRVs.

Various PAHs were detected above the method reporting limit in six of the eight soil samples. None of the samples were identified to exceed the MPCA Residential or Industrial SRVs or MPCA SLVs for individual PAHs.

PCBs were not detected in any of the eight soil samples collected.

Groundwater was encountered in each boring drilled on the Subject Property. Groundwater was encountered at approximately 13 feet below ground surface in SB-2 through SB-4 located at a lower elevation on the west side of the building. Groundwater was encountered at approximately 25 feet below grade in borings SB-5 through SB-8 which were drilled on the west side of the building starting at a higher elevation. Groundwater was also encountered at 25 feet below grade in SB-1 which also appeared to be at slightly higher elevation.

4.1.6 2017 Sub-Slab Soil Vapor Sampling Letter

The 2017 Sub-Slab Soil Vapor Sampling consisted of collecting eight additional soil vapor samples on the 4312 parcel and two additional sub-slab vapor samples at the 4292 parcel during the "heating season" and "cooling season". The addition sampling was completed to define the extent and magnitude of VOCs in soil gas. The vapor samples were collected and analyzed for VOCs using method TO-15. The soil vapor data was compared to the MPCA's Intrusion Screening Values (ISVs) for Vapor Intrusion Risk.

Various VOCs were detected above method detection limits in the sub-slab and soil vapor probe samples for both sampling events; however, there was only one compound exceeding the 33x Residential ISV. For the first sampling event on March 30, 2017, PCE was detected above 33x the Residential ISV in every soil vapor sample (SV-2B and SV-3 through SV-7) at 650 ug/m³, 110 ug/m³, 690 ug/m³, 570 ug/m³, 430 ug/m³ and 430 ug/m³ respectively. During the May 11, 2017 sampling event, PCE was detected above laboratory reporting limits, but below 33x the Residential ISV. PCE was not detected above laboratory reporting limits in sub-slab samples SS-1 or SS-2.

4.1.7 2019 Environmental Soil Screening Memo

The 2019 Environmental Soil Screening consisted of completion of two soil borings on the southern portion of the Subject Property, 2 Parcel, to assess underground conditions at the Site. Soil samples were collected from all eight of the borings and analyzed for DRO, VOCs, RCRA metals, and PAHs.

During the Environmental Soil Screening, Wenck encountered up to 6 feet of fill soils consisting of mainly dark brown to black silty sand with gravel. In general, the fill was underlain primarily by brown silty sand or tan coarse sand. Sandy clay was observed in SB-2A at approximately 24 feet bgs and 30 feet bgs.

The soil investigation compared detected concentrations of VOCs, RCRA metals, and PAHs to the Minnesota Pollution Control Agency's Tier 1 Residential and Tier 2 Industrial SRVs. Additionally, MPCA Tier 1 SLVs were referenced to evaluate the potential risk to groundwater at the Subject Property from the soil-to-groundwater leaching pathway. There are no established MPCA SRVs or SLVs for DRO.

Low levels of DRO were identified in sample SB-1A (1.5-5.5) at 21.5 mg/kg and SB-2A (0-1.5) at 38.7 mg/kg. The DRO detections were well below the MPCA's unregulated soil reuse guidance of 100 mg/kg. Detected RCRA metals concentrations of barium, chromium, lead, and mercury did not exceed the MPCA SLVs, Residential SRVs, or Industrial SRVs. VOCs were not identified in the soil samples above their respective laboratory reporting limits. Low levels of PAHs were identified in the soil samples; however, no individual PAHs or benzo(a)pyrene equivalents were identified above their respective Industrial/Residential SRVs or Tier I SLVs.

5.0 Proposed Site Activities

5.1 ENVIRONMENTAL OVERSIGHT DURING REDEVELOPMENT

Proposed redevelopment at the Subject Property includes demolition of the existing building on the 4312 Parcel and excavation of soil primarily on the 4312 Parcel and the northern portion of the 2 Parcel. Soil will be excavated to establish final grade and install an underground parking garage which will extend under the entire footprint of the proposed building. Development plans are shown in **Appendix A**. Previously completed environmental assessments have identified soil impacts in the upper 6-feet of the central and northeastern portions of the 4312 Parcel that would classify the soil as regulated fill. The Response Action for soils at the Subject Property includes the excavation and management of impacted soils as characterized by the 2014 Phase II ESA Report, the 2016 Supplemental Soil Investigation Report, and the 2019 Environmental Soil Screening Memo, as well as the management of unanticipated environmental impacts encountered during implementation of the proposed redevelopment activities as characterized by on-Site observations and field screening. The identified impacted soil will be managed and reused on-Site as regulated fill, or disposed of off-site at a permitted facility. All characterization of unregulated/regulated fill and management decisions concerning regulated fill will follow the MPCA documents *Best Management Practices for the Off-Site Reuse of Unregulated Soil (February 2012)* and *Off-Site Use of Regulated Fill Policy (March 2012),* which are included in **Appendix C**.

5.2 BUILDNG DEMOLITION

Proposed redevelopment plans at the Subject Property include the demolition of the existing structure located on the 4312 Parcel, which is shown on **Figure 2**. An Asbestos and Regulated Materials Survey, completed by Wenck in October of 2014, identified the presence of asbestos containing materials (ACM), possible PCBs and Metal Containing Items, and other miscellaneous regulated materials in the 4312 building. All regulated materials will be abated and properly disposed of in accordance with Federal and State requirements by a licensed abatement contractor. The details of the materials and the procedures to be followed are contained in a separate document.

5.3 EXCAVATION OF IMPACTED SOIL

The proposed redevelopment at the Subject Property consists of construction of a multi-family housing structure with underground parking. The redevelopment will require the removal of up to 10- 12-feet of soil at the Site to accommodate soil correction and underground parking for the building and shallower soil corrections and grading for the surface parking and drive lanes.

Previously completed environmental investigations at the Subject Property identified impacted soil within the upper 6-feet in the central and northeastern portions of the 4312 Parcel, as shown in **Figure 4**. These impacts include PCE and PCB concentrations above the MPCA SLV, as well as DRO concentrations above the unregulated fill criteria of 100 mg/kg. These soils would be classified as regulated fill, and therefore could be managed and reused on-Site as regulated fill, or disposed of at a permitted facility. Previously completed investigations did not identify impacts in soil deeper than 6-feet below ground in the central

and northeastern portions of the Subject Property, or in any of the other samples collected from around the Subject Property. This soil would be suitable for reuse as clean or unregulated fill on the Subject Property or off-site as fill at another commercial development, provided unanticipated contamination is not encountered during implementation of the proposed Subject Property redevelopment activities.

Soils that have been determined to exceed the MPCA SLV, exceed the Residential SRV, and/or meet any of the criteria that the MPCA uses to define unregulated fill (i.e. contains debris, DRO/GRO concentrations above 100 mg/kg), and have been determined unusable for reuse on- or off-Site, will be disposed of as daily cover or direct disposal placement at a local MPCA approved landfill. Sampling of soils for disposal at the landfill will be completed in compliance with the selected landfill. It is anticipated that the landfill approval will be issued based on the historical soil sampling completed to date.

6.0 Development Response Action Plan

6.1 GENERAL

In evaluating soil cleanup goals, the following was considered: historical information; existing site conditions; proposed land use; the type, concentration and distribution of contaminants; and proposed or in-place safeguards to ensure protection of human health and the environment. This RAP/CCP presents the procedures for implementing any necessary Response Actions with respect to the impacts at the Subject Property.

The Response Actions will consist of the following activities:

- Excavation and management of soil in the impacted areas of the Subject Property, as identified by the 2014 Phase II ESA Report, the 2016 Supplemental Soil Investigation Report, and 2019 Environmental Soil Screening Memo. The impacted soil should either be reused on-site as regulated fill or be disposed of at an MPCA approved landfill. Non-impacted fill meeting MPCA BMPs may be reused off-site as unregulated fill.

- Field observation and field screening of all excavated soil to identify potential environmental impacts not observed during previously completed environmental investigations.

- Document, through limited sidewall and excavation bottom confirmation sampling, the soil conditions at the extent of the excavations on the Subject Property. If previously unknown areas of environmental impacts are discovered during site construction, laboratory confirmation sampling may be done to document site conditions. Confirmation sampling will follow the procedures detailed in Section 7 of this plan.

The MPCA document *Best Management Practices for the Off-Site Reuse of Unregulated Fill*, dated February 2012, defines unregulated fill as excess soil in which a release of contaminants has been identified at concentrations less than the MPCA's most conservative risk-based values. The criteria for unregulated fill are described as the following:

- Soil free from solid waste, debris, asbestos containing material, visual staining, and chemical odor;
- Organic vapors less than 10 ppm as measured by a PID;
- For petroleum impacted soil, less than 100 mg/kg DRO/GRO;
- For contaminants detected in soil, less than the MPCA's Residential SRVs and MPCA Tier 1 SLVs.

The identified sources of chemicals of concern at the Subject Property were primarily found at the surface or within the upper 6-feet of soil. These sources have been identified as a former septic system located west of the 4312 building, former machine shop and dry-cleaning operations in the 4312 building, and an existing leaking compressor located in the northwest corner of the 4312 building. Soil samples collected from near these sources identified impacts exceeding the MPCA established SLVs for PCE and PCB, as well as DRO impacts exceeding 100 mg/kg. The approximate extent and magnitude of the previously

identified impacted soil is shown on **Figure 3**. The exact depth of impact for each individual source will be determined by the redevelopment activities and on-site field observations.

Based on previous environmental assessments, Wenck recommends excavation and off-site disposal of all soils impacted with PCE and PCB above MPCA SLVs. This area is located to the west of the existing and proposed buildings, as shown on **Figure 4**. Impacted soil in this area should be removed to a depth of at least 4-feet below the proposed final grade of the structure and/or ground surface. Observations and confirmation sampling of the surrounding areas, specifically underneath the existing building, will be used to determine the depth and lateral extent of the impacted area. The soil will be disposed of at a MPCA approved landfill facility.

Previous environmental assessments have identified the upper 6-feet of soil in the northeastern portion of the Subject Property as containing DRO in concentrations above 100 mg/kg, which would classify the soil as regulated fill. Redevelopment plans call for the excavation of approximately 10- to 12-feet of soil in this area for construction and soil correction. Wenck recommends observation of activities and field screening of the soil in this area of redevelopment. Observations and confirmation sampling will be used to determine the lateral extent and depth of the impacted area. If the impacted soil is determined to be reusable on-site as regulated fill, based on criteria listed below in Section 6.2, then it shall be managed accordingly. If it is determined not to be reusable on-site, then it shall be removed and disposed of at an MPCA approved landfill facility.

The remaining soil on the Subject Property has not been previously identified as containing environmental impacts that would classify the soil as regulated. Wenck recommends observation of activities and field screening of the soil to identify any additional environmental impacts. If no impacts are observed, then the soil may be reused on or off-site as clean or unregulated fill during the redevelopment. If additional impacts are observed, as defined above in this section or the criteria listed below in Section 6.2, then management decisions similar to those made about the previously identified regulated fill must be made.

6.2 SOIL CHARACTERIZATION AND REUSE

During all Subject Property redevelopment activities, soil will be screened and visual observations will be made to determine if excavated soil meets the MPCA guidance criteria for unregulated fill, as defined by criteria laid out in *Best Management Practices for the Off-Site Reuse of Unregulated Fill,* and listed in **Section 6.1** of this RAP/CCP. If the soil is determined to be classified as regulated fill, then it will be either reused on-site as regulated fill in any of the ways described in this section, or removed and disposed of at a permitted landfill facility. Excess soil generated at the Subject Property shall be sampled in accordance with **Section 7** of this plan prior to leaving the site.

Response actions as described in **Section 6.1** will be implemented where certain field screening criteria are exceeded. Screening criteria will vary depending on the relationship between field observation and the physical proximity of the proposed redevelopment's features, as described below:

6.2.1 Utility Corridors

Utility corridors will be screened to ensure no areas of residual impacts. Soil screening will be conducted at a minimum of every 50 feet along the corridor, or every 10 lineal feet in

areas where impacts are detected. In general, field screening and visual observations will be used to segregate soil during utility work. Soils less than 10 ppm on a PID, and free from solid waste, debris, asbestos containing material, visual staining, and chemical odor will be suitable and containing no for backfill within the utility trench.

6.2.2 Parking and Driveway Areas

Any non-impacted soils that need to be removed in the parking lot areas due to geotechnical recommendations are proposed to be reused on-site or potentially reused off-site as unregulated fill. Laboratory data and visual observations will be used to identify unregulated fill. This includes soils less than 10 ppm on a PID, GRO/DRO laboratory concentrations less than 100 ppm, and below MPCA SLVs and Residential SRVs for non-petroleum impacts. In addition, soils for reuse beneath the parking lot will be free from debris. Soil in parking and driveway areas that has been previously identified as containing PCE and/or PCB above MPCA SLV levels or is identified during redevelopment activities to contain these contaminants will be removed to a depth of at least 4-feet below final grade.

6.2.3 Green Space Areas

A minimum of 4-feet of clean soil must exist below the final grade elevation, and laterally from the edge, in all green space areas. Clean soil must soils be less than 10 ppm on a PID, GRO/DRO laboratory concentrations less than 100 ppm, and be below MPCA SLVs and Residential SRVs for non-petroleum impacts. This will allow for a 4-foot buffer in all directions between any remaining impacts and all green space.

6.2.4 Building Backfill Material

A minimum of 4-feet of clean soil must exist around the finished redeveloped building. Therefore, any soil used as backfill material around the structure walls, or soil used as foundation for the parking garage must be classified as unregulated fill. If native soil is deemed geotechnically suitable to be left in place for the building foundation, it must be classified as unregulated if it is to be within 4-feet of the final building subgrade. Laboratory data and visual observations will be used to identify unregulated fill. This includes soils less than 10 ppm on a PID, GRO/DRO laboratory concentrations less than 100 ppm, and below MPCA SLVs and Residential SRVs for non-petroleum impacts.

6.3 VAPOR MITIGATION

The elevated concentration of PCE at 130 ug/m³ in SV-1 exceeds 33x the May 2019 published Residential ISV of 3.4 ug/m³ (110 ug/m³= 33x). Redevelopment plans include underground parking under the proposed building.

No vapor mitigation system is proposed. Underground parking will incorporate air handling units capable of removing automotive exhausts, which also provides protection from potential soil vapor intrusion and accumulation. The proposed building and construction area will include one level of underground parking. In addition, the excavation for construction of the underground parking will significantly remove the potential source areas related to the former drycleaner use.

As per the International Mechanical Code as adopted and amended by the State of Minnesota section 1346.0404.1, enclosed parking garages are to be ventilated at the rate of 0.75 cubic feet per minute per square foot of space. The construction of the proposed

building and the required ventilation systems for the underground parking structures will provide vapor mitigation measures for the rest of the structure.

6.4 OFF-SITE TRANSPORTATION AND DISPOSAL

An application for a Special Waste Profile will be submitted to the selected landfill for off-site disposal of impacted soils that may be encountered during redevelopment. The excavated material will be transported under manifest directly to an MPCA-permitted landfill facility. Depending on the disposal facility selected and the nature of the material, the material may be used for daily cover, disposed directly in a landfill, or used as a substrate for the creation of specialty soil mixtures (i.e., an appropriate re-use of unregulated fill in accordance with the MPCA's guidance document entitled, *Best Management Practices for the Off-Subject Property Reuse of Unregulated Fill*.) This decision will be based on the facility's permit, and may also be subject to local approvals. It is anticipated that impacted soil will be hauled directly to the landfill for efficiency. However, if soil needs to be stockpile pending analytical results, stockpiles will be placed on poly and covered with poly at the end of each day. The assessment, handling and disposal procedures for unanticipated wastes will be discussed in detail in **Section 7.0**.

6.5 SITE RESTORATION ACTIVITIES

Upon completion of excavation activities, the Subject Property will be developed, and a subgrade parking garage will be constructed. In the event backfill is needed from an off-site source, the contractor shall supply information about the source of the borrow material prior to Wenck approving the backhaul. If the backfill is from a native, clean aggregate source such as a borrow pit, sampling activities will not be required. If the backfill is from another developed property, previous environmental reports for the site will be reviewed to determine if the soil meets beneficial reuse criteria.

Import (cubic yards)	Number of Samples
0 – 500	1 per 100 cubic yards
501 – 1,000	1 per 250 cubic yards
1,001 or more	1 per 500 cubic yards

If the site is potentially impacted, soils samples will be collected based on volume according to the above table and may be analyzed for the following dependent on the observations and historical data available:

- Volatile organic compounds (VOCs) by EPA method 8620
- PAHs by EPA method 8270
- DRO (Wisconsin method)
- Total RCRA metals by EPA method 7471/6010
- PCBs

6.6 REMEDIAL ENGINEERING CONTROLS

No remedial engineering controls are recommended.

6.7 GENERAL FIELD PROCEDURES

During the Response Actions, at a minimum the following field procedures will occur:

- The Field Technician (FT) will maintain a daily field log which will contain the following information:
    - Date
    - Time
    - Temperature
    - Wind direction
    - Name of personnel on-site including contractors, regulatory officials, owner representatives, etc.
    - Status of project
    - Monitoring results from Wenck

- At a minimum, Level D protection will be required of all on-Subject Property personnel. Level D protection will include the following:
    - Steel-toed safety boots or shoes
    - Safety glasses
    - Hard hat
    - Work gloves
    - Nitrile gloves (sample collection only)

- Wenck on-site personnel will provide, be familiar with, and follow the Wenck Health and Safety Plan. Site contractors will be responsible for their own health and safety plans.
- Visible dust emissions must be minimized during the excavation work. Ingestion, inhalation and exposed skin contact of airborne particulate matter must be minimized.
- Contractor shall have properly trained and certified personnel with forty-hour Hazardous Waste Operations Site Worker (40 CFR 1910.120) certifications.
- Wenck will perform verification sample collection and submit samples to an approved laboratory as outlined in Section 7 of this plan. Documentation of the remedial activities will be completed by Wenck and submitted to the MPCA at the conclusion of the project.

7.0 Construction Contingency Plan

7.1 GENERAL

This RAP/CCP has been prepared to address the handling of contaminated soil, ACM, as well as any unanticipated wastes encountered during the implementation of the proposed demolition and subsurface construction-related activities. A list of potential waste types is discussed in greater detail below. If encountered, these materials must be managed consistent with statutes, rules, regulations and guidance from applicable federal, state and local agencies governing the excavation, management, sampling, storage, transportation and disposal of this material.

In the event that an unanticipated waste or contaminated soil is encountered, Wenck will conduct a hazard assessment/evaluation to determine health and safety requirements (i.e., assessment of monitoring activities, personal protective equipment [PPE] requirements, etc.). If necessary, upon completion of the field assessment the Subject Property Health and Safety Plan (SHSP) will be modified within 24-hours. Safety requirements will then be communicated to all contractors involved in handling the unanticipated waste or contaminated soils.

7.2 SUBJECT PROPERTY CONTROL

During excavation of the fill material, Wenck will have a field technician (FT) on-site to oversee the handling and management of excavated soil. Wenck will be on-call during excavation of native materials. If during these activities contaminated media is encountered the FT will provide on-site hazard evaluation of the encountered wastes or contaminated soil and coordinate communication of any findings, recommended actions, or change in status with the parties listed in Section 3.1. While on-site, the FT will maintain all appropriate documentation concerning the project (i.e., chain-of-custody documentation, lab testing results, disposal manifests, etc.) The FT shall have, at a minimum, a 40-Hour Hazardous Site Worker Operator (HAZWOPER) Certification including any and all 8-hour refreshers.

If previously undocumented wastes or contaminated soil is encountered during Project work, an exclusion zone will be designated on-Subject Property around the area of concern. The zone will be physically delineated by the FT with flagging, caution tape, or fencing, as appropriate.

The FT will direct the construction contractor to provide appropriate personnel or subcontractors to perform work within the exclusion zone. All personnel allowed entry into the exclusion zone shall be properly trained and certified. Prior to conducting the work the contractor will be required to provide copies of personnel 40-Hour HAZWOPER certifications as well as a copy of the contractor's Health and Safety Plan prior to conducting work. Only personnel who have proof of up-to-date certification (i.e., HAZWOPER) will be allowed to enter the exclusion zone.

Public access to the Subject Property will be restricted, and any compromised perimeter fencing that may allow unauthorized access will be promptly repaired. In the event that an exclusion zone is needed, the FT will direct further response actions in conjunction with MPCA oversight.

7.3 RECOGNITION OF POTENTIAL WASTE AND/OR CONTAMINATED SOILS

The following occurrences may be signs that hazardous materials have been encountered at the Subject Property during the subsurface activities:

- Strong or unusual chemical odors of solvents, petroleum, etc. from the excavation;
- Encountering suspected industrial waste such as tars, sludges, semi-solids, powders, resins, or liquids in the excavation;
- Encountering suspected ACM material;
- Discolored soils in or from the excavation;
- Drums and/or containers (labeled or unlabeled), buried metal objects such as cans, jars, or tanks in the excavation;
- Persons who suddenly become ill.

If any of the above occurs, indicating that a hazardous substance may have been encountered, activities will be suspended pending further evaluation. As mentioned above, the Wenck FT will assess the situation using the available field instrumentation, personal protective equipment, and his/her own knowledge and experience to determine the nature of the material and whether it should be segregated for special handling. The FT will then ensure that Subject Property personnel follow the instructions provided.

7.4 SUBJECT PROPERTY HAZARD EVALUATION ACTIVITIES

7.4.1 Chemical Vapor Hazards

Based on investigation findings, it is possible that low concentrations of chemical vapors may be generated during invasive earthwork activities at the Subject Property. The concentrations are not expected to pose a health risk to on-Subject Property workers or downwind personnel. Should the FT discover evidence of a potential vapor hazard (PID readings over 10 ppm in the breathing zone), Subject Property activities will be temporarily discontinued. The area in question will be secured and evaluated. Work will continue only after the hazard has been thoroughly evaluated and mitigation and air monitoring plans have been generated.

7.4.2 Particulate Hazards

Particulate matter may be made airborne during excavation activities. **Inhalation** is the most rapid route of exposure to the body by immediately introducing substances to the respiratory tissue and bloodstream. Health hazards to on-site workers could also exist from **ingestion** and through **dermal contact** with compounds. Ingestion of substances should be minimized by forbidding eating, drinking, smoking, and any other hand-to-mouth activities on-Subject Property. Hands and face should be washed after leaving the Subject Property and prior to any eating, drinking or smoking. Dermal contact will be minimized by hand washing, wearing proper protective clothing, and by using gloves during sampling activities.

7.5 WASTE EVALUATION

In general, excavated, graded and/or augured soils from within the Project area will be continuously inspected for the presence of:

- Demolition debris,

- General refuse,
- Free product (chemical Dense Non-Aqueous Phase Liquid [DNAPL], oil residues, sludge, etc.),
- Underground Storage Tanks (USTs),
- Barreled wastes,
- Electrical transformers,
- Creosote timbers,
- Car batteries,
- Oil filters,
- Waste tires,
- Soils containing visible ash or clinkers,
- Stained soils and/or soils exhibiting strong or unusual odors,
- Asbestos-containing materials (ACM), or
- Any other unusual fill material.

If the above items are identified during excavation, the material will be segregated based on waste type. Additional segregation and screening procedures are discussed below.

7.5.1 Demolition Debris

Demolition debris (if encountered) will be segregated from soils and stored in an area designated by the FT separately from soil that appears un-impacted. Demolition debris will be appropriately characterized and subsequently disposed at a permitted demolition solid waste disposal facility if necessary. If ACM or asbestos-containing waste materials (ACWM) is observed, work will be discontinued, and an appropriately certified inspector will be sent to the Subject Property to sample the material. If ACM or ACWM is identified, a licensed asbestos removal contractor will be hired to remove the material from the Subject Property. All work including but not limited to; notification, air monitoring, waste handling and disposal will be conducted per 40 CFR Part 61, Subpart M.

7.5.2 Refuse

Excavated materials may include a mixture of decomposable organic materials (wood, paper, vegetation, etc.) and inorganic material such as concrete, glass, plastic, metal, etc. Excavated refuse materials mixed with soil will be segregated and placed in a designated area for testing followed by off-site disposal. Wenck in consultation with the MPCA, will determine appropriate testing requirements for disposal purposes.

7.5.3 Free Product

If free-product is encountered, work will cease until appropriate collection measures can be assembled on the Subject Property and the MPCA representative notified. Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements.

7.5.4 Underground Storage Tanks

If unknown underground storage tanks (UST) are encountered, following determination of whether any product remains, an MPCA-certified UST contractor will remove the tanks. Residual products will be removed from the tank(s) and transported off-site for proper disposal. The tank(s), if of iron construction, will be hauled to a scrap facility to be recycled.

Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements.

7.5.5 Barreled Wastes

DOT approved over-pack drums will be used to contain buried barreled wastes if they are discovered. Wenck, in consultation with the MPCA, will determine appropriate testing requirements for disposal purposes. After approval from the MPCA, testing of the materials will be conducted for disposal purposes. Wenck will retain appropriate documentation for future reference. The contents of the drum will be sampled and characterized for disposal in accordance with appropriate state and federal requirements.

7.5.6 Electrical Transformers

If buried electrical transformers are encountered, it should be immediately determined whether they are still connected and energized. They should be sampled for the presence of PCBs and handled according to Toxic Substance Control Act (TSCA) and applicable MPCA regulations. It should be ascertained whether they need to be drained prior to transport and handled according to Minnesota Department of Transportation (MNDOT) regulations. If leakage is observed surrounding the transformers, soil sampling should be conducted according to MPCA guidance.

7.5.7 Creosote Timbers

Materials such as treated railroad ties or wooden pavers will be removed from the subsurface and managed appropriately (i.e., recycled or disposed of off-site). Wenck in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements. Wenck will retain appropriate documentation for future reference.

7.5.8 Batteries

Batteries (if encountered) will be segregated from soils and placed in a corrosion-resistant box. Any recovered batteries will be collected by an approved vendor and hauled off-Subject Property for recycling. Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements. Wenck will retain appropriate documentation for future reference.

7.5.9 Oil Filters

Oil filters will be segregated from the soil and placed in a steel 55-gallon drum. When a sufficient number of filters have accumulated, they will be picked up by an approved vendor and hauled off-Subject Property for recycling. Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements. Wenck will retain appropriate documentation for future reference.

7.5.10 Waste Tires

Waste tires will be segregated from the soil and placed in a covered roll-off container. When a sufficient number of tires have accumulated, they will be collected by an approved vendor and hauled off-Subject Property for recycling. Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements. Wenck will retain appropriate documentation for future reference.

7.5.11 Ash or Clinkers

If encountered, ash material containing clinkers will segregated from the excavated materials. Such material will be appropriately characterized to ensure that it meets appropriate landfill approval. Wenck, in consultation with the MPCA and the receiving landfill, will determine appropriate testing requirements for disposal purposes. Following appropriate sampling and analytical testing, the materials will be hauled off Subject Property for proper disposal. Wenck, in consultation with the MPCA, will determine appropriate handling, testing and disposal requirements. Wenck will retain appropriate documentation for future reference.

7.5.12 Stained Soils or Soil Exhibiting Strong or Unusual Odors

Soils revealing petroleum or unusual staining or odors will be segregated from the excavated materials. The materials will be placed in stockpiles and screened using the field screening procedures in Section7.6 below. Wenck, in consultation with the MPCA and the receiving landfill, will determine appropriate testing requirements for disposal purposes. Following appropriate sampling and analytical testing, the materials will be hauled off-site for proper disposal. Wenck will retain appropriate documentation for future reference.

7.6 FIELD SCREENING AND SAMPLING OF CONTAMINATED SOIL

The following presents a general overview of the collection of soil samples for field screening and analytical testing. Field screening and soil sampling activities associated with petroleum-related impacts will follow the procedures outlined in the MPCA Guidance Documents.

7.6.1 Soil Segregation and Sampling

Undocumented soil exhibiting contamination will be segregated and stockpiled based on the waste characteristic or type. The FT will determine and secure a staging area for placement of contaminated soil. The FT will prepare the area by placing a 10-mil plastic on the ground and constructing a 1-foot high soil berm around the perimeter. The plastic will extend beyond the perimeter berm to prevent runoff from and run-on to the staging area. At the end of the day, and prior to leaving the Subject Property, the stockpile(s) will be covered with 10-mil plastic sheeting and properly secured. The cover will extend beyond the perimeter soil berm and will be maintained as necessary.

Previously unidentified impacted soil will be sampled at the following rates for disposal:

Table 7-1: General Soil Stockpile Sampling Rates

Stockpile Size (cubic yards)	Number of Samples
0 – 500	1 per 100 cubic yards
501 – 1,000	1 per 250 cubic yards
1,001 or more	1 per 500 cubic yards

Note: Sampling frequency will be determined in cooperation with landfill and MPCA representatives

7.7 GENERAL SOIL SAMPLING PROCEDURES

Prior to collecting soil samples, each sample container label will be completed in the field using a waterproof permanent marker. Labels will include the following information:

- Subject Property name
- Sample identification code
- Project number
- Date/time
- Sampler's initials
- Preservation added (if any)
- Analysis to be performed

To minimize the possibility of cross-contamination a new pair of disposable (i.e., nitrile or latex) gloves will be used for each sample collected. When using a sampling tool (i.e., spade or coring device), wash the tool with a detergent solution (e.g. Liquinox®, Alconox® or equivalent), rinse it, and then dry it before each use.

Samples collected for laboratory analyses will be immediately placed in their appropriate lab-provided containers (with preservatives if applicable), placed on ice and shipped to the laboratory for analysis. When sampling excavation stockpiles, sidewalls or floors, the FT will remove at least one foot of exposed soil prior to collecting the sample to ensure the collection of a fresh sample. Samples previously used for soil screening or soil classification for analytical samples will not be used for laboratory analysis.

Laboratory-provided trip blanks will be sent with all sample coolers containing volatiles samples.

7.7.1 Stockpile Sampling Parameters

Soil stockpile sample parameters will be determined after consulting with the MPCA. In general, sample parameters will depend on field screening results and type of waste.

7.7.2 Excavation Sampling

Sample collection will take place prior to the placement of any necessary engineered fill as part of future grading activities, confirmation samples will be collected to characterize materials left in place.

Excavation floor sampling in will be collected at the following rates:

Table 7-2: Excavation Floor Sampling Rates

Area of Floor (sq ft)	Number of Samples
<500	2
500-<1,000	3
1,000-<1,500	4
1,500-<2,500	5
2,500-<4,000	6
4,000-<6,000	7

Area of Floor (sq ft)	Number of Samples
6,000-<8,500	8
8,500-<10,890 (0.25 acres)	9
>10,890	30-foot grid

Where sidewalls are present in the excavation area, sidewall samples will be collected as soon as possible to not delay Project activities. Samples will be collected at an interval of one per 45 lineal feet of sidewall, biased toward the depth intervals where impacts have been noted during field investigation activities. Confirmation samples will be quickly collected from the excavation sidewalls and floor and placed in plastic baggies for temporary storage. After samples are collected, the construction activities will be continued. Immediately upon collection of the confirmation samples, Wenck, in consultation with the MPCA, will determine appropriate testing requirements based on the type of waste encountered. After determining sampling parameters, the samples will be immediately placed into appropriate lab-provided containers, labeled and placed on ice for transport to the laboratory performing the analytical testing.

It should be noted that only the material required to be handled as part of the construction activities will be removed from the excavation. Excavation sampling will be conducted merely to document what material was left in place and not to document successful removal of all impacted material.

All floor and sidewall confirmation sample locations and will be quickly surveyed using a hand-held GPS device the location of the trench will also be quickly survey to provide general location information. Excavation depths will be estimated.

7.8 DISPOSITION REQUIREMENTS

Waste generated during the project that has been determined to not meet the reuse scenarios discussed above will be appropriately profiled and disposed in a permitted landfill within thirty days of receiving landfill disposal approval.

7.9 GENERAL FIELD DOCUMENTATION PROCEDURES

General field documentation procedures include:

- The FT will maintain a daily field log which will contain the following information: date, time, temperature, wind direction, name of personnel on-Subject Property (contractors, regulatory officials, etc.) status of project, and monitoring results from the Contractor and Wenck.
- Photo-documentation of the field work.
- The FT will maintain all disposal documentation generated during the field activities.
- Organization and proper handling of any other necessary documentation generated during the field activities.

7.10 EXCAVATION BACKFILL MATERIAL

It is the responsibility of the contractor to provide clean backfill material. Clean backfill may be used in areas where waste has been encountered and removed from the construction area.

8.0 Implementation Reporting

Upon completion of the Subject Property grading and utility activities (i.e., all soil work) related to the construction project, an implementation report summarizing the RAP/CCP activities, and any laboratory analytical testing results necessary to document Subject Property conditions, will be submitted to the MPCA for review.

9.0 Standard of Care and Signature

The standard of care for all professional services performed by Wenck Associates, Inc. (Wenck) and presented within this report is the care, skill, and diligence used by members of the consulting services profession practicing under similar circumstances at the same time and in the same locality. Wenck makes no warranties, express or implied, with respect to this report or otherwise, in connection with Wenck's services.

Report Prepared by:	Report Reviewed by:
Rachel Kieser Environmental Scientist	Adam P Zobel Principal

10.0 References

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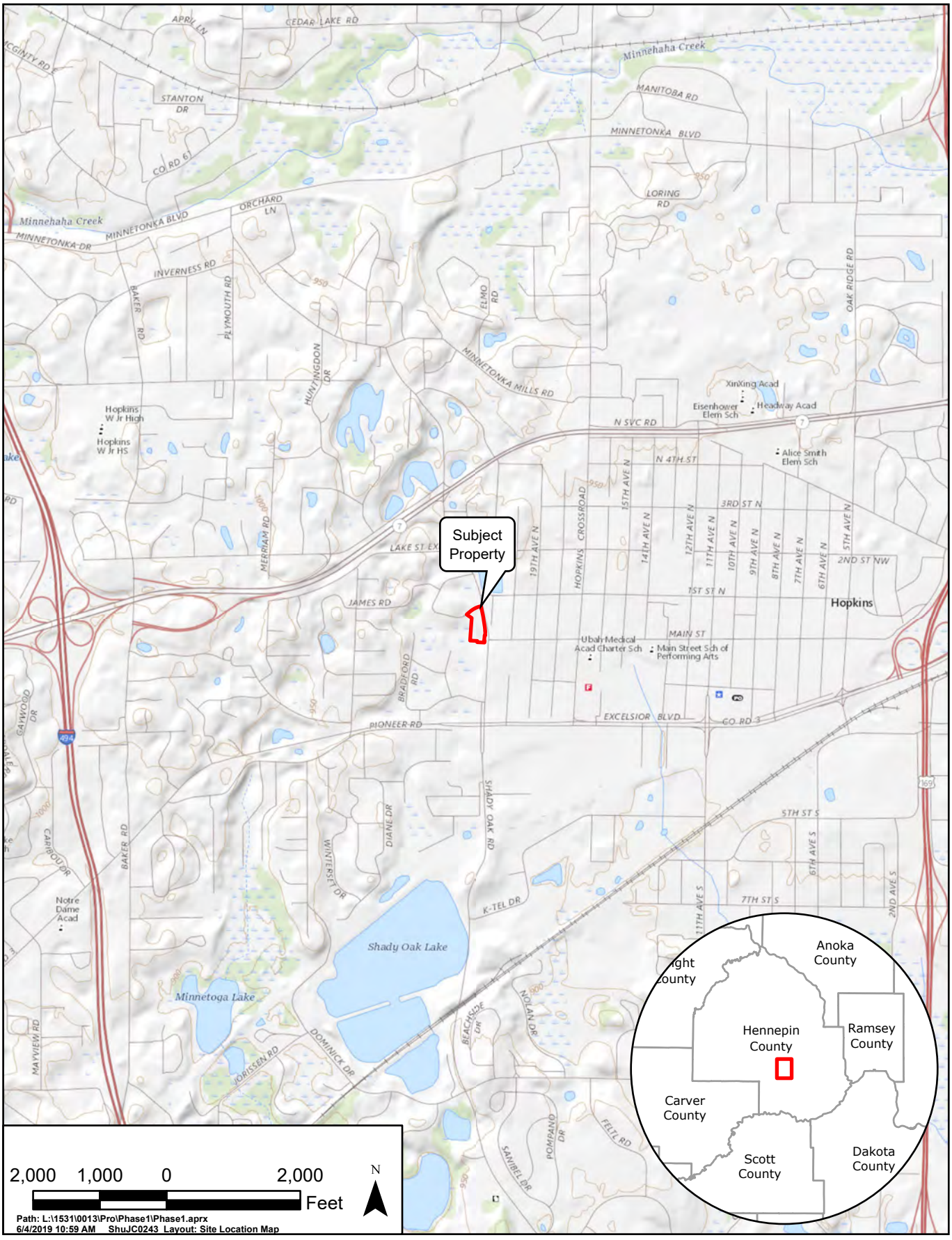
Minnesota Pollution Control Agency, *Best Management Practices for the Off-Site Reuse of Unregulated Fill*, Document c-rem1-01, February 2012

Other materials referenced in this report are cited in the text and included in the appendices.

Figures

1. Site Location Map
2. Site Detail Map
3. Investigation Sample Locations
4. Identified Impacted Soil Area



RON CLARK CONSTRUCTION

Site Location Map

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Figure 1

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Site Detail Map		Figure 2

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Sample Location Map

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Figure 3

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Identified Impacted Soil Area

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Figure 4