

April 07, 2016

Mr. Paul Montney Georgia Pacific Corporation 133 Peachtree Street NE, 9<sup>th</sup> Floor Atlanta, GA 30303

Project 7311150004

Re: Work Plan to conduct a Phase II Environmental Site Assessment (ESA) at the Ashview Terrace Apartments Site at 9880-1020 Willard Drive, Ashwaubenon, Wisconsin (Wisconsin Department of Natural Resources [WDNR] Site 02-05-564043)

Dear Mr. Montney:

Amec Foster Wheeler, Environment & Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit this work plan to Georgia-Pacific, LLC (GP) to conduct a Phase II Environmental Site Assessment (ESA) at the Ashview Terrace Apartments (ATA) site (the Site, or ATA Site), located at 9880-1020 Willard Drive, in the city of Ashwaubenon, Brown County, Wisconsin. A site location map is provided as Figure 1. The Site encompasses approximately 3.4 acres (148,100 square feet [sf]), located north of Willard Drive and the Ashwaubenon High School (Figure 2). The Site is being investigated under the Wisconsin Department of Natural Resources (WDNR) Site # 02-05-564043.

The purpose of this Phase II ESA is to further investigate the nature and extent of polychlorinated biphenyls (PCBs) that have been detected at the ATA Site, potentially associated with paper sludge and/or other sources deposited as fill material at the Site.

This work is being conducted in response to a letter from the WDNR, dated August 10, 2015 that requires GP to conduct additional investigation at the Site. The WDNR requested that GP submit an investigation work plan for review and approval, completing the site investigation and submitting a report documenting the investigation results. Following submittal of the Site Investigation Report, the WDNR stipulated that a Remedial Actions Options report be submitted.

To date, only a limited site investigation with three shallow soil borings has been completed. Impacted soils at the ATA Site exceeded the WDNR Non-Industrial Direct Contact Residual Contaminant Levels (RCLs) for soil and the WDNR Groundwater Pathway RCL for groundwater. Since the referenced investigation was very limited and conducted primarily to determine if PCBs are present at levels of concern, an expanded investigation of the Site is deemed warranted by the WDNR to confirm nature and extent.



The scope of work (SOW) for this Phase II ESA will include the installation and sampling of up to 12 soil borings (four of which will be converted to and sampled as temporary monitoring wells) at the Site. The Site background and SOW for this investigation are presented in the following sections.

#### 1.0 BACKGROUND

# 1.1 Site Description

As discussed by OMNNI Associates (OMNNI) (2015), the Site is located at 980 – 1020 Willard Drive, in the city of Ashwaubenon, Wisconsin in the southeast quarter of the southeast quarter of Section 4, Township 23 North and Range 20 East. The Site is specifically identified as Brown County tax parcel VA-120-5. The Site is relatively flat with a slight slope to the southeast and is occupied by the Ashview Terrace Apartments complex including apartment buildings, paved drive, parking areas and green space. The surrounding area is a mix of commercial and residential development. The Site is bounded by a Target department store on the north, an animal hospital on the west, a daycare facility on the east and Willard Drive and the Ashwaubenon High School athletic fields on the south.

According to OMNNI (2015) the Site area is underlain by fill at the surface and glacial lake deposits consisting of clay, silt and sand to a depth of approximately 90 feet (ft) below ground surface (bgs). A description of fill and subsurface stratigraphy obtained from a limited number of shallow site borings is provided in Section 1.2.

In the 1930's a portion of the Site and land to the south (currently owned by the Ashwaubenon School District and the Village of Ashwaubenon), was used as a borrow pit (OMNNI, 2015). Aerial photos dating back to 1938 illustrate that the Site area contained an apparent borrow pit surrounded by agricultural fields at that time. The pit was evident on the ATA Site until at least 1960 (Figure 3). The pit was not apparent on the 1967 aerial photo. The pit on the School district/Village property was present at least through 1967 and was not evident in a 1974 aerial. Historical aerial imagery is provided in Attachment A. The borrow pit areas at both the ATA Site and the School District/Village property are reported to have accepted paper mill sludge/waste as fill. The School District/Village property was also reported to have received municipal waste. PCBs, possibly associated with paper mill sludge and/or other sources have been detected at levels above soil criteria at the ATA Site and School District/Village properties. Currently the School/Village property is being remediated under WDNR Site #02-05-559562 (Ashwaubenon School District/Klipstine Park Site). The only investigation that has been conducted on the ATA Site is a Phase I ESA and a Phase II investigation conducted by OMNNI in 2015 which included the installation and sampling of three shallow soil borings. These investigations are summarized below.



### 1.2 Phase I ESA

Through verbal communication with Mr. Robert Klauk of the WDNR (10/21/15) a Phase I ESA was conducted for the Site when the current owner of the Apartment complex and Site purchased the property approximately six years ago (2009). The referenced Phase I ESA is not available for review and was not found in a search of the WDNR files by Amec Foster Wheeler on 11/10/15. The WDNR was told by the Site owner that environmental concerns were not identified in this document.

# 1.3 Phase II Subsurface Investigation

In February 2015, OMNNI installed a total of three soil borings (B-1 through B-3) to a depth of 5.5 ft below ground surface (bgs) and collected soil samples from 1 to 2 ft and 3 to 4 ft bgs for analysis of PCBs. Boring B-1 was completed in the southeastern corner of the property and borings B-2 and B-3 were conducted on the east-central and west-central portions of the property, respectively. The soil boring locations are depicted in Figure 4. OMNNI performed this investigation for the WDNR. The investigation results are presented in the "Phase II Subsurface Investigation at the Perry Property, 988-1020 Willard Dr., Parcel VA-120-5, Ashwaubenon, Brown County, WI report (OMNNI, February 2015").

Fill was identified in boring B-1 to a depth of 3 ft bgs and in boring B-3 to 3.5 ft bgs. Fill was not identified in boring B-2 below 1 ft of topsoil. Soil analytical results indicated that soil from 1 to 2 ft bgs at B-1 contains PCBs above the Groundwater Pathway Residual Contaminant Level (RCL) and soil from 1 to 2 ft and 3 to 4 ft bgs at B-3 contained PCBs at levels above the Non-Industrial Direct Contact RCL and the Groundwater Pathway RCL.

According to OMNNI, groundwater is expected to be encountered from 4 to 8 ft bgs and the groundwater flow direction is expected to be to the southeast towards the Fox River. Groundwater was not intercepted in any of the three borings completed as part of the 2015 Phase II Subsurface Investigation.

# 2.0 SCOPE OF WORK

This section presents the proposed SOW for the Phase II ESA at the ATA Site.

# 2.1 Health and Safety

A site-specific Health and Safety Plan (HSP) will be completed for investigation work at the Site in order to ensure that all necessary health and safety policies and procedures are followed in the field to ensure a safe work environment. It is assumed that all investigative work will be conducted using "Level D" personal protective equipment (PPE).



# 2.2 Utility Clearance

Prior to mobilization to the Site, the Wisconsin Diggers Hotline One Call (1-[800]-242-8511) will be contacted for utility clearance and the Site will also be cleared by a private utility locator. In addition, Amec Foster Wheeler representatives will check with the Site owner to determine the possible presence of underground utilities in the vicinity of the proposed boring locations. Amec Foster Wheeler will document all information obtained from the public and private locates as well as from the site owner. All this data will be used determine whether the proposed boring/temp well locations are cited at locations that are clear of utilities.

# 2.3 Soil and Groundwater Investigation

The soil and groundwater investigation will include; installation and sampling of up to 12 shallow soil borings using push-probe drilling techniques and groundwater sampling from four of the referenced borings.

### Soil Borings

A series of up to 12 shallow soil borings (SB16-01 through SB16-12) are proposed to be installed at the ATA Site within the area of the former borrow pit confines as defined by available aerial photo coverage (Figure 5). The boring locations are set out in an approximate grid pattern across the area with interruptions and off-sets dependent on the locations of buildings and/or other obstructions and former pit boundaries. Borings are therefore located in the limited green space surrounding the apartment buildings and in paved drive and parking areas.

# **Drilling and Soil Sampling Methods**

The soil borings will be completed to a depth of up to 8 ft bgs to investigate potential contamination from the ground surface through the water table smear zone (4 to 8 ft bgs) and to facilitate advancing the borings through fill and into native material so that fill thickness and characteristics can be known. If the bottom of the fill has not been intercepted by a depth of 8 ft, the borings will continue to be advanced until the bottom of the fill is identified. Previous borings conducted at the ATA Site have shown fill to be present to as much as possibly 3.5 ft bgs, however the depth of fill is not known at other areas on the property. In addition, inspection of the boring logs suggests that fill may actually be present to 5 ft bgs.

The soil borings will be advanced using direct push-probe or hollow-stem auger (HSA) drilling methods depending on conditions encountered in the field. Soil samples will be collected continuously using the push-probe or a 2-inch split spoon for HSA drilling. A qualified geologist will log the soils for lithology to the terminus of the borehole. All samples will be logged according to the Unified Soil Classification System (USCS) and in



accordance with ASTM standards. Soil samples will be field screened (open air) using a photo-ionization detector (PID) equipped with a 10.6 EV lamp. PID responses and any visual staining or olfactory observations will also be recorded on the boring logs.

It is assumed that two soil samples from each soil boring will be submitted to the analytical laboratory for analysis. One sample will be collected from the upper 2 ft of surficial soil below the topsoil or pavement, and a second sample will be collected from the apparent most impacted interval within the fill (below 2 ft bgs) based on visual observation and PID readings. If paper sludge is encountered the second sample will be collected in that interval.

# **Temporary Monitoring Wells and Groundwater Sampling**

In order to "screen" for groundwater impacts, groundwater samples will be obtained from up to four temporary monitoring wells by sampling groundwater directly from the boreholes or a screened sampler exposed below the geoprobe rods. Samples will be collected with a check valve sampler or peristaltic pump. The temporary wells will include one boring located in the most impacted area of the Site, one boring on the up-gradient (northwest) side of the Site and two borings on the downgradient (southeast) side of the Site. An attempt will be made to withdraw at least three well/borehole volumes prior to sampling to potentially reduce turbidity and bring fresh groundwater into the temporary well. Since this is simply a screening methodology, extracted groundwater will not be monitored for stability parameters prior to sampling.

# **Analytical Testing**

Soil samples collected from the proposed soil borings and groundwater collected from temporary wells/borings will be submitted to the Pace Analytical Services (Pace) laboratory in Green Bay, WI and analyzed for PCBs. In addition to PCBs, soil and groundwater samples will also be tested for Resource Conservation and Recovery Act (RCRA) metals at the request of the WDNR. Analytical method numbers for the referenced analysis are as follows:

# Parameter - Soil

- PCBs
- RCRA Metals

# **EPA Method**

8082 w/ 3541 Prep 6010 w/ 7471 Prep

#### Parameter - Water

- PCBs
- RCRA Metals

#### **EPA Method**

8082 w/ 3510 Prep 6010 w/ 7470 Prep



Based on collection and analysis of up to 24 environmental soil samples from the soil borings (2 samples per boring), quality assurance/quality control (QA/QC) samples will consist of the following:

- 3 Duplicates
- 2 Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- 3 Equipment Rinsate Blanks

QA/QC samples related to groundwater sample collection from temporary wells/borings are as follows:

- 1 Duplicate
- 1 Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- 1 Equipment Rinsate Blanks

Sample field forms that will be used in the investigation are included as Attachment B.

# 2.4 Sample Naming Convention

A sample numbering convention will be used to identify each sample. The numbering system will provide a tracking procedure to allow retrieval of information about a particular sample and to assure that each sample is uniquely numbered.

Soil boring numbers will begin with the letters "SB" followed by the year in which they were installed (e.g., "16" for 2016). The soil boring identification number will follow the year designation and consist of a two digit numeric code beginning with "01." Soil samples collected during drilling operations will begin with the number of the soil boring from which the sample was collected, followed by a dash then the depth range (in ft) of the interval from which the sample was collected.

Temporary well numbers will begin with the letters "TW" followed by the year installed (i.e., "16" for 2016). The temporary well identification number will follow the year designation and consist of a two digit numeric code beginning with "01." Groundwater samples collected will begin with the number of the temporary well from which the sample was collected, followed by a dash and then a four digit number indicating the month and day collected (i.e., 0216).

# 2.5 Equipment Decontamination

Decontamination of all drilling tools, equipment, pipe, casing, sampling equipment and excavation equipment will be conducted. All drilling equipment will be steam cleaned on a decontamination pad (or equivalent) between drilling of the soil borings/temp wells and



before leaving the Site. Probe tubes, augers and other drilling tools will be mechanically stripped of soil before steam cleaning to minimize the generation of water.

In order to prevent cross-contamination all sampling tools/equipment and instruments (pumps, water level meter, etc.) will also be decontaminated. The general decontamination procedure for these items is as follows:

- Wash equipment with detergent (Alconox) and potable water using brushes,
- Rinse/wash equipment with potable water,
- Rinse equipment twice with de-ionized distilled organic free water and allow to air dry, and
- Collect all wash/rinse water.

# 2.6 Investigation Derived Waste (IDW)

Investigation Derived Waste (IDW) generated during this investigation will include potentially impacted soil boring cuttings, temporary well purge water, equipment decontamination water and used PPE.

All IDW soils and water will be containerized in Department of Transportation (DOT) approved, locking, labeled 55-gallon drums. The drums will be placed on a pallet and covered with a tarp. Labeling on the drums will include the date, type of material in the drum, the point of origin of the material (i.e., ATA Site) and the Amec Foster Wheeler project manager's telephone number.

IDW will be disposed of in accordance with appropriate state and federal regulations. To determine the method of IDW transport and disposal, soil cuttings, decontamination water and well purge water will be sampled and analyzed for parameters based on requirements of the selected disposal facility. It is assumed that 1 soil IDW sample and 1 water IDW sample will be collected and analyzed.

Used PPE (i.e. sampling gloves etc.) will be decontaminated to the extent possible and placed in plastic garbage bags and disposed of as municipal waste at the Site.

IDW will remain on-Site and staged at a location where it will not interfere with apartment complex activities until analytical data is received to determine proper disposal. Amec Foster Wheeler assumes that all soil IDW generated during this investigation will be disposed at the GP solid waste landfill and water IDW will be disposed at the GP waste water treatment facility, both located in Green Bay, WI.



# 2.7 Surveying

Prior to boring installation activities, Amec Foster Wheeler will stake or mark all proposed soil boring locations using a hand held sub-meter global positioning system (GPS). Additional Site features may be staked/marked for inclusion into the Site survey as deemed necessary. All soil boring locations will be surveyed for horizontal location and surface elevation by a registered land surveyor following completion of the field activities. All data points will be surveyed to the nearest 0.1 foot vertically and horizontally. Temporary well tops will be shot with a lazer level to the nearest 0.01 ft as they are installed. All data points will reference either a United States Geological Survey (USGS) or a United States Department of Transportation monument. Elevations will be reported in ft above mean sea level (amsl). GPS coordinates will be provided for all borings and temporary wells installed.

Due to field conditions, underground utilities and surface obstructions, some proposed locations may need to be moved in the field however all necessary moves will be communicated and discussed with the GP project manager prior to drilling.

#### 3.0 REPORTING

Following the receipt of analytical data, Amec Foster Wheeler will prepare and submit a Phase II ESA Investigation report. The report will present, summarize and document methods used to conduct the investigation and include the results of fieldwork, analysis of the data, conclusions and recommendations. Tabulated soil and groundwater analytical data referencing appropriate regulatory criteria/standards, soil boring logs, site figures, field notes and laboratory analytical reports will also be provided.

The structure of the report will adhere to the general guidelines provided by ASTM E 1903.97(02). A PDF electronic copy of the draft work plan will be submitted to GP for review. Upon GP review and approval, a GBC bound hard copy and a PDF copy of the revised draft work plan will be submitted to both GP and the WDNR. A final version of the work plan will be produced following WDNR review and approval. Hardbound and PDF versions of the final report will then be distributed to GP and the WDNR.

# 4.0 COMMUNICATION AND INFORMATION MANAGEMENT

Amec Foster Wheeler representatives will communicate daily with the client representative either via e-mail or through a telephone call to document activities performed during each day of field activity. The communication will include which elements of the scope were completed, issues or challenges that arose and any other pertinent information.



# 5.0 SCHEDULE

The field work will be conducted following acceptance of the final Work Plan and official notice to proceed from GP. Field work will commence based on availability of the subcontractors and weather conditions.

If you have any questions or comments, please do not hesitate to contact us.

Joseph M Renier, P.G.

Project Manager

Senior Hydrogeologist

320-963-5742

joe.renier@amecfw.com



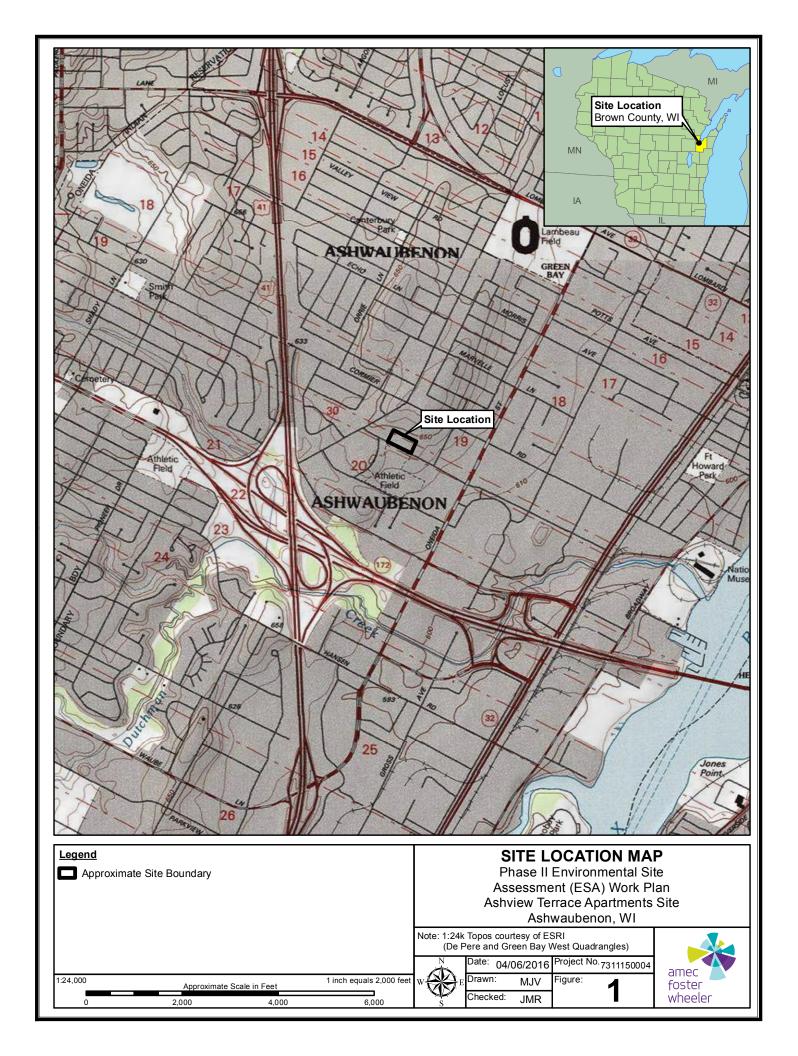
# **REFERENCES**

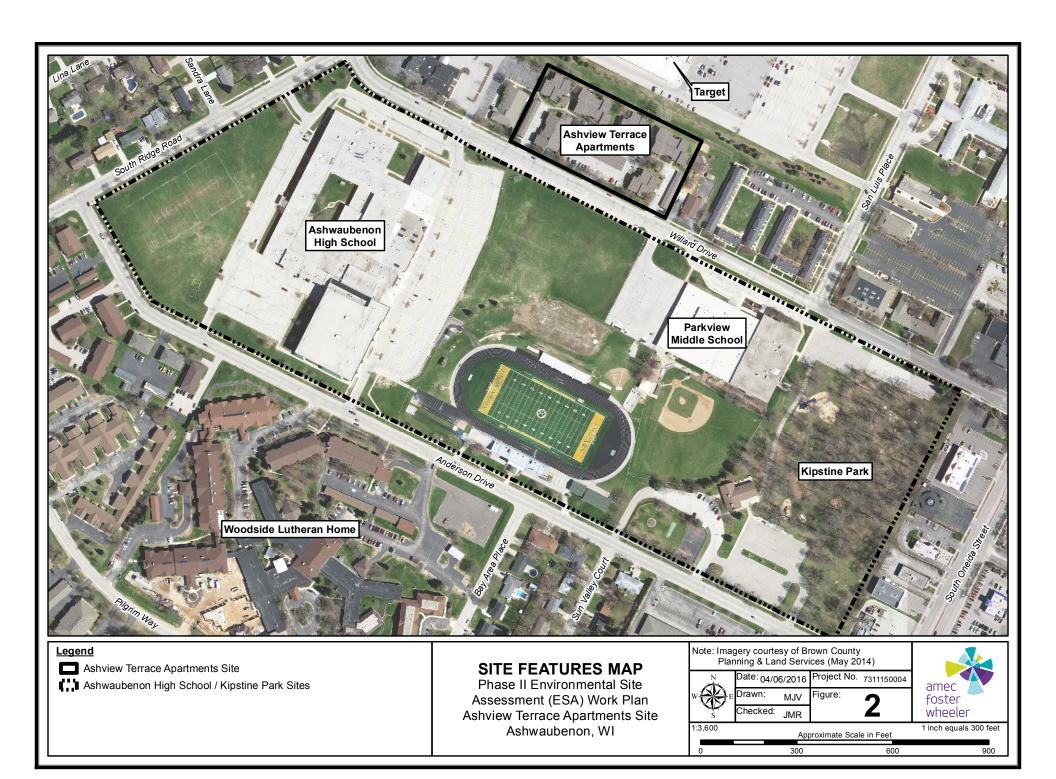
OMNNI Associates, February 2015. Phase II Subsurface Investigation, at Perry Property, 988 – 1020 Willard Drive, Parcel VA-120-5, Ashwaubenon, Brown County, Wisconsin.

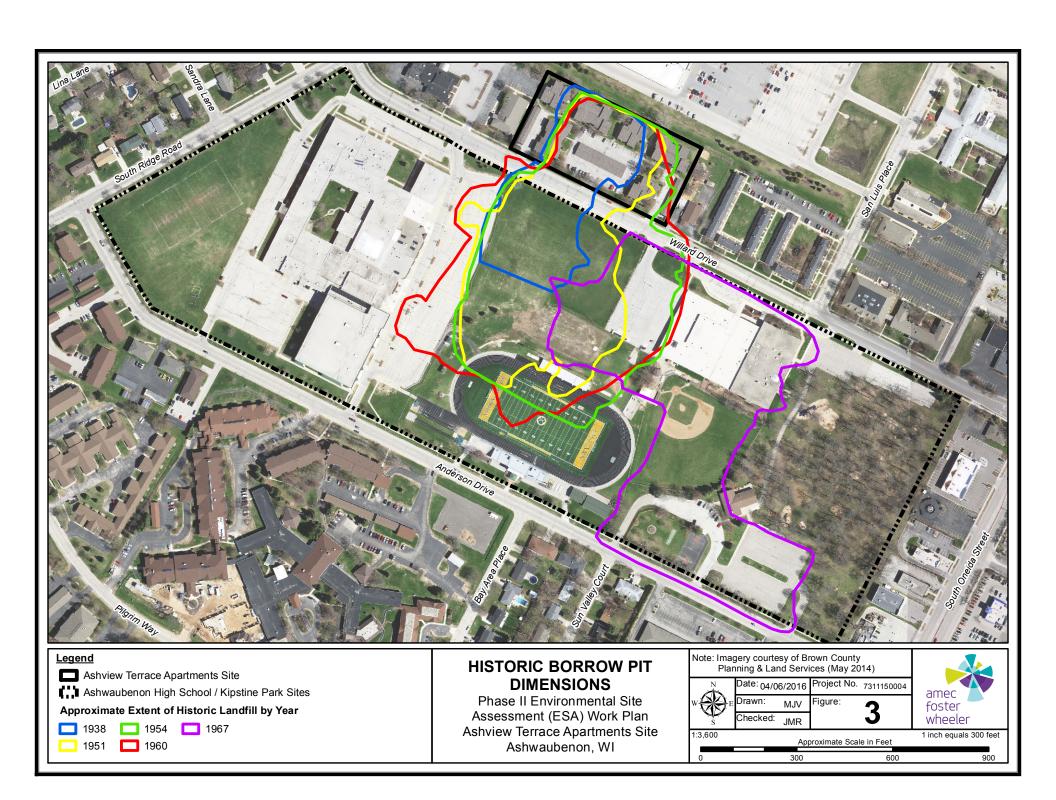
WDNR, August 10, 2015. Letter to Mr. Michael Kawleski, Georgia Pacific , Reported Contamination at Ashview Terrace Apartments, 988-1020 Willard Drive, Ashwaubenon, WI, BRRTS Activity # 02-05-564043.

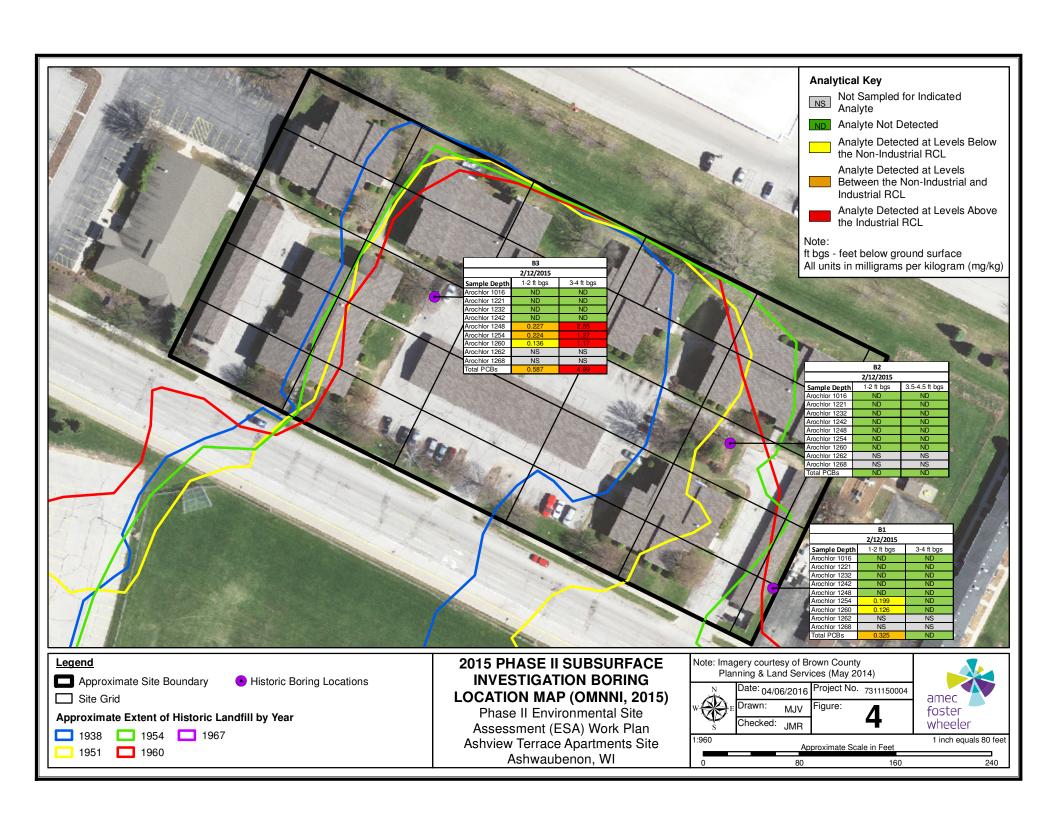


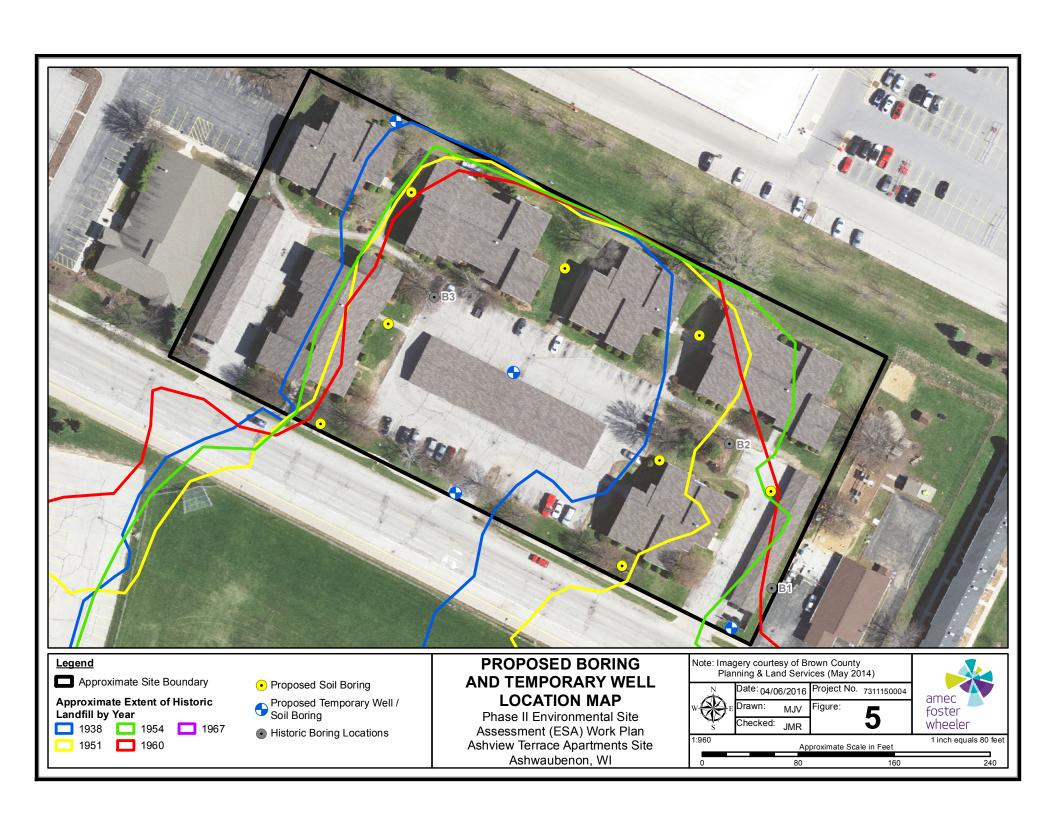
# **FIGURES**













# ATTACHMENT A AERIAL PHOTOS

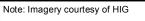


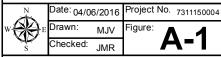
Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# **1938 AERIAL PHOTOGRAPHY**

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI



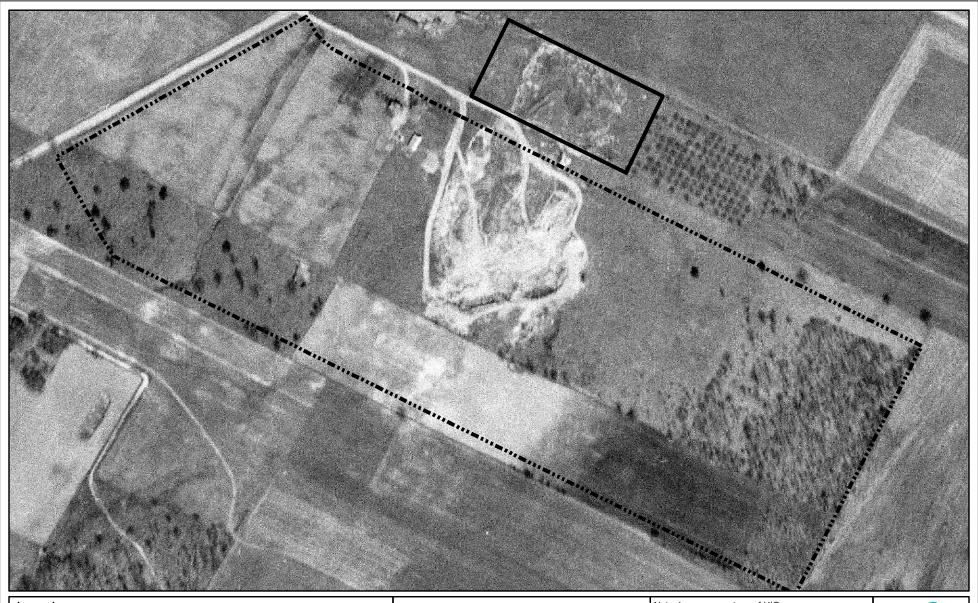


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Approximate Scale in Feet 600

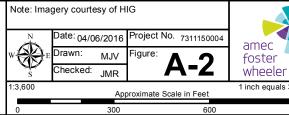


Ashview Terrace Apartments Site

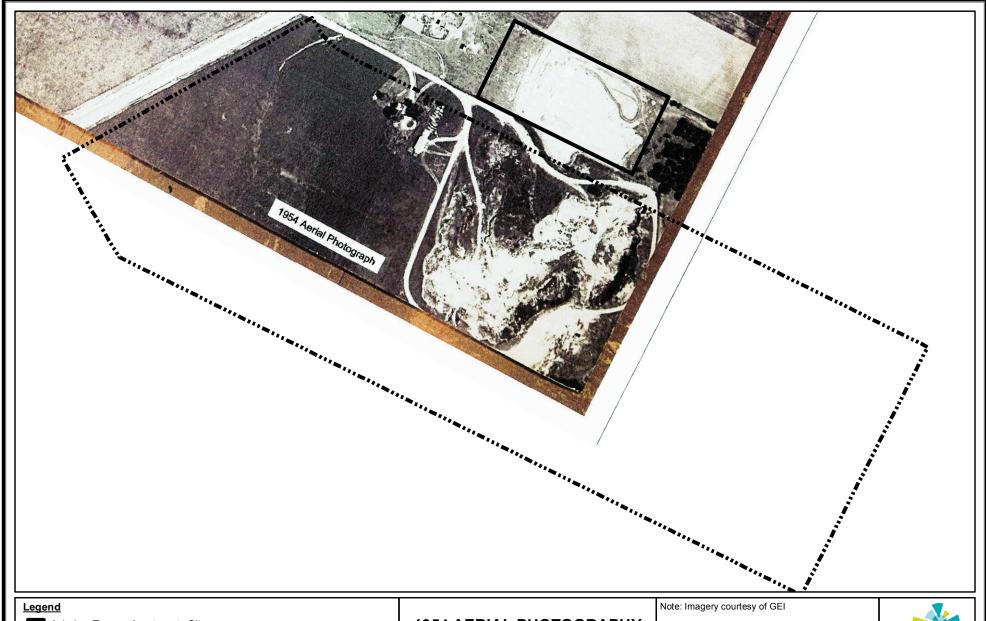
Ashwaubenon High School / Kipstine Park Sites

# **1951 AERIAL PHOTOGRAPHY**

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI



900



Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# **1954 AERIAL PHOTOGRAPHY**

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI

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0 Approximate Scale in Feet 1 inch equals 300 feet

300 600 900

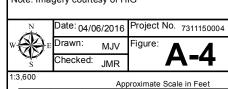


Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# **1960 AERIAL PHOTOGRAPHY**

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI

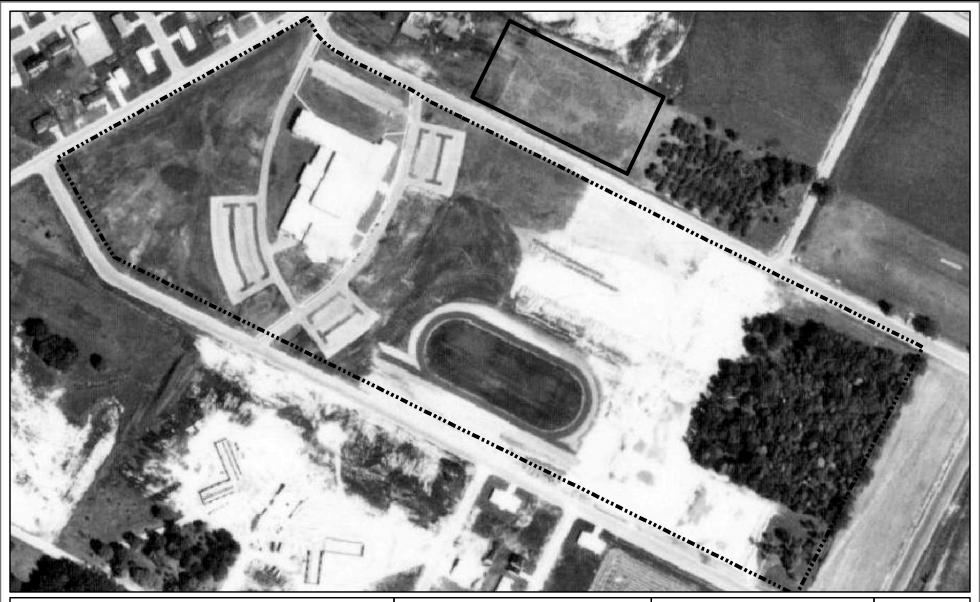


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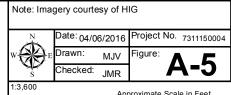


Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# **1967 AERIAL PHOTOGRAPHY**

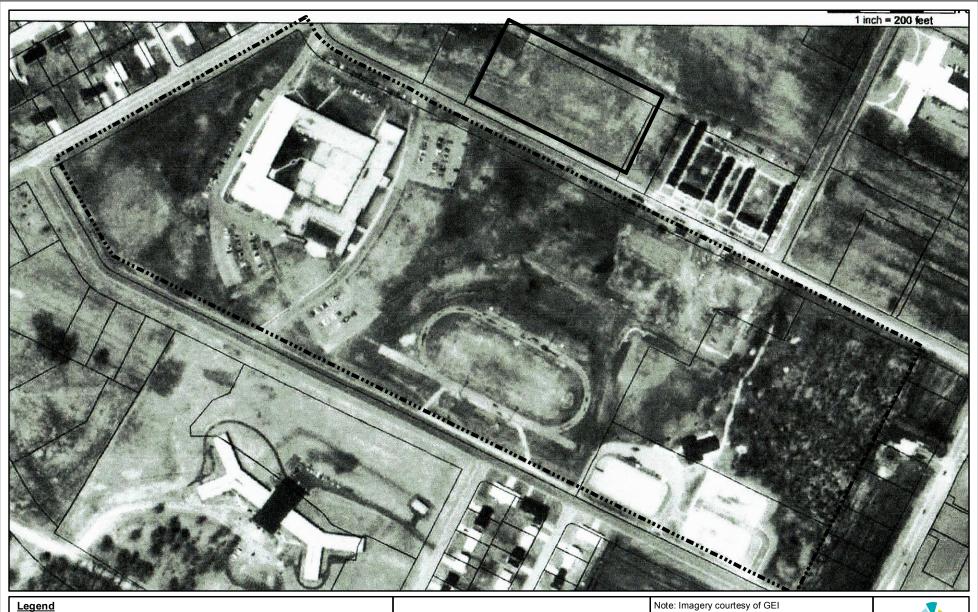
Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI





1 inch equals 300 feet Approximate Scale in Feet

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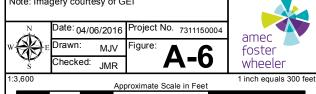


Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# 1972 AERIAL PHOTOGRAPHY

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI



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600

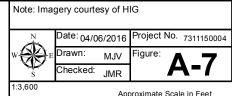


Ashview Terrace Apartments Site

Ashwaubenon High School / Kipstine Park Sites

# **1974 AERIAL PHOTOGRAPHY**

Phase II Environmental Site Assessment (ESA) Work Plan Ashview Terrace Apartments Site Ashwaubenon, WI





Approximate Scale in Feet

600 300



# ATTACHMENT B FIELD FORMS

# FIELD ACTIVITY DAILY LOG

DAILY	DATE		
LOG	NO.		
	SHEET	OF	

PROJECT NAME	PROJECT NO.				
FIELD ACTIVITY SUBJECT:					
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:					
VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:				
WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS / PHOTOS TAKEN				
PERSONNEL ON SITE:					
SIGNATURE	DATE:				

VISUAL CLASSIFICATION OF SOILS										
PROJECT NUMBER: PROJECT NAME:										
									DATE:	
GROUND SURFACE ELEVATION:									DATE STARTED:	
						DRILLING CONTRACTOR:		DATE COMPLETED:		
						DRILLING METHOD:		PAGE: OF:		
Depth (ft bgs)	Sample Interval & Number	Blow	Sample Recovery (ft or %)	PID/FID Reading	DESCRIPTION Plasticity, der	On: Major and secondary lithology, Munsell color, grain size, gradation, angularity nsity (or firmness), moisture content, soil structure (fractures, odor, staining, etc.), jin (till, alluvium, etc.)	USCS Symbol	Well Construction	Comments	
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# WELL/BOREHOLE ABANDONMENT

Project Name	Project No.				
LOCATION	FACILITY NAME				
County	Original Well Owner (If Known)				
1/4 of1/4 of Sec; TN; R W	Present Well Owner				
(If applicable)	Street or Route				
Grid Location  ft □ N □ S,	City, State, Zip Code				
Civil Town Name	Facility Well No. and/or Name (If Applicable)				
Street Address of Well	Reason for Abandonment				
City, Village	Date of Abandonment				
CONSTRUCTION DETAILS	ABANDONMENT PROCEDURE				
Original Well/Borehole Construction Completed on	Depth to Water (Feet)				
(Date) Construction Report Available? Water Well Drillhole Yes No	Pump & Piping Removed?				
☐ Borehole	11 10, Explain				
Construction Type:         □ Drilled         □ Driven (Sandpoint)         □ Dug           □ Other (Specify)	Was Casing Cut Off Below Surface?				
Total Well Depth (ft.)Casing Diameter (ins.)(From groundsurface)					
Screened Interval: From to					
Casing Depth (ft.)					
Condition of Casing	☐ Clay-Sand Slurry ☐ Bentonite-Cement Grout				
Was Well Annular Space Grouted? ☐Yes ☐ No ☐ Unknown If Yes, To What Depth? Feet	☐ Chipped Bentonite				
Sealing Material Used	From (Ft.) To (Ft.) No. Yards, Sacks Sealant or Volume				
	Surface				
Comments:					

# GROUND-WATER/SURFACE WATER SAMPLING FORM Site Location Surface Water Groundwater Well ID (Use: Well name) Project # Date Start Time Sampling Personnel Weather MEASUREMENT SUMMARY: Measuring Point \_\_\_\_\_ Depth to Water \_\_\_\_ Depth to Product \_\_\_\_ Product Thickness \_ Well Diameter Calculated Purge Volume Gallons Total Casing Depth SAMPLING SUMMARY: Sampling Type: Grab Composite Sampling Method: Grundfos Bladder Pump Peristaltic Pump Bailer Other Pump Started Pump Stopped Total Gallons Organic Vapor at Well Head SC Temp рΗ Turb. Time pH SC S.U. (umhos/cm) Flow Rate DTW D.O. Redox (military) (NTU) (ml/min) (ft) (mg/L) (mV) Final: pН SC DTW D.O. Time Temp Turb. Flow Rate Redox Comments: 7 10 pH Calibration Buffers: Eh Reference Solution SC Reference Solution \_\_\_\_\_umhos/cm Turbidity Reference Solution NTUs Sample Name Sulfate Dissolved Metals Pesticides Total Metals Explosives Other List: Blind Dup Name MS/MSD Blind Dup **GROUND-WATER/SURFACE WATER** SAMPLING FORM

