

Letter Health Consultation

MACMILLAN RING FREE OIL SITE

NORPHLET, ARKANSAS

**Prepared by
Arkansas Department of Health**

JULY 3, 2018

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Community Health Investigations
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

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Prepared By:

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Environmental Epidemiology
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Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Asa Hutchinson
Nathaniel Smith, MD, MPH, Director and State Health Officer

July 3, 2018

Robert Sullivan
US EPA REGION 6
1445 Ross Avenue, Suite 1200
Mail Code: 6SF-RA
Dallas, TX 75202-2733

Dear Mr. Sullivan,

The Arkansas Department of Health (ADH) Environmental Epidemiology staff has begun evaluation of the MacMillan Ring Free Oil Superfund site. The Agency for Toxic Substances and Disease Registry (ATSDR) Arkansas Cooperative Agreement Program at ADH will conduct a public health evaluation of the soil, sediment, surface and groundwater data and summarize the findings in a future document. This letter addresses the observed physical hazards on the MacMillan Ring Free Oil site due to the need to address the immediate health concerns of these physical hazards. On multiple site visits, ADH staff found corrugated metal, exposed rebar and other sharp objects and additional physical hazards to people who may access the site. The potential for trespassing exists at this unoccupied site due to the lack of fencing on the east side of the property and close proximity to the school and city park on the western side of the property. There are gaps in the fence near the park and the main gate has a gap between the doors large enough for children and adolescents to squeeze through. ADH staff also found historic anecdotal references in the Remedial Investigation Report of trespassers at the site. ADH concludes that trespassers could be at risk for physical harm due to the unmaintained site areas. Additionally, because there is access to this site, the physical hazards at the site are a potential public health hazard. ADH recommends that EPA immediately repair any breaches of the site's western perimeter, post signs along the perimeter of the site alerting potential trespassers to the hazards on site, and conduct an asbestos inspection prior to removal of equipment.

Background and History

MacMillan Ring Free Oil (EPA Identification Number: ARD008049207) is an abandoned refinery located in Norphlet, Arkansas, at the end of MacMillan Road off of State Highway 335. The MacMillan Ring Free Oil site was listed by the EPA on the National Priorities List (NPL) on May 12, 2014. Surface and subsurface soil, sediment, surface water, and groundwater are contaminated with polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs), and metals. The Arkansas Department of Environmental Quality (ADEQ) and EPA have conducted extensive assessment and removal actions at the MacMillan site since the early 1990s. The Remedial Investigation was completed in July 2016 [1].

The physical address of the site is 600 MacMillan Road (Figure 1). The site is situated on approximately 100 acres and is currently zoned for light industrial use. The site is located adjacent to the Norphlet Public School to the west, Hayes Creek on the north and east, and Massey Creek and associated bottomlands to the southwest (Figure 2). A majority of the site is surrounded by wooded areas. The site is located in a rural area, and residential areas are located within 1,500 feet (ft.) of the site. There is also a city park and baseball fields to the northwest of the site [1].

MacMillan Ring Free Oil Refinery operated as a crude oil refinery and manufacturer of lubrication oil and asphalt products from 1929 until closing in 1987. The facility was inactive from 1987 until 1989, when the property was sold to Nor-Ark Industrial Corp (Nor-Ark), who allegedly had plans to develop an Industrial Park. Nor-Ark stored asphalt products in the onsite storage tanks. In March 1991, Nor-Ark filed for bankruptcy. In early 2006, the facility was refurbished by Norphlet Chemical, Inc. (NCI) as a chemical manufacturing plant to produce tetrafluoroethane (Freon 134A) refrigerant used in automobiles. However, the NCI plant failed to produce sellable product upon completion of the plant in 2007 and never operated as intended. The site has been vacant since 2007 [1].

The majority of the site is undeveloped and consists mainly of hardwood trees. The Norphlet wastewater treatment ponds are located to the southeast of the site and are not considered part of the site. Major site features include the following abandoned structures: an office building, a laboratory building, a boiler building, a 50,000-barrel bulk crude oil aboveground storage tank (AST), a number of smaller ASTs, a storage building, a drum storage building, a canning building, and a Fire Water Pond (Figure 2). Debris, piping, drums, used equipment, and parts are found at various locations on the property. Eleven large surface impoundments were located on the south side of the site and the east side of the railroad tracks. Railroad tracks with railroad spurs run through the property east of the main production facility. The railroad tracks divide the Industrial Area from the Hayes Creek area (see Figure 1 and 2). The property is partially fenced along the west side of the property, but there is no fence along the railroad tracks to the east, leaving the site accessible to the general public [1]. The rail line appears to be an active line.

The MacMillan Ring Free Oil site was divided into separate zones for evaluation. The separation of zones was based upon the layout/past use of the site and the groundwater flow patterns. Figure 3 presents the delineation of the site zones [1].

Zone 1 – Industrial Area encompasses the area of the site where a majority of activities occurred. Groundwater within this zone generally flows towards Massey Creek.

Zone 2 – Massey Creek Forested Area encompasses sample locations within the forested area that includes Massey Creek. Groundwater within this zone flows toward Massey Creek and the confluence of Massey Creek and Hayes Creek.

Zone 3 – Hayes Creek Forested Area encompasses sample locations within the forested area that includes Hayes Creek. Groundwater within this area flows towards Hayes Creek.

Discussion

The potential for trespassing exists due to the lack of fencing on the east side of the property and close proximity to the school and city park (see Photos 1 and 2) on the western side of the property. While there is a fence along the western border, there are gaps large enough for children or adolescents to access if they choose to trespass (see Photos 3 and 4). The conditions depicted in the earlier dated photographs had not changed at the time of our February 2018 site visit.

Historic anecdotal evidence found in the daily logs of EPA's Remedial Investigation Report, identifies vandalism and theft at the site near the drum storage building where locks were cut and picked to access fenced areas and gates [2].

Zone 1, the Industrial Area, has a number of physical hazards present. The site has abandoned equipment, such as tanks, platforms, etc. in various conditions where trespassers could climb, fall and injure themselves (see Photos 5 through 8). There is corrugated sheet metal and other debris including exposed rebar that present cut or impalement hazard (see photos 9 through 12).

Some other hazards at the site include a tall stack of pallets that could topple over, a white lidded container where someone may be trapped inside (Photo 13), and a large open pipe (Photo 14).

There are a number of drums still on site that are unlabeled and unknown if they contain any hazards (see Photos 15 and 16).

Several large steel storage tanks have been cut down leaving flowable asphalt tank bottom material that have crusted over appearing solid but is not (see Photos 17 through 20). One of these has water over the asphalt bottoms, adding the potential for a drowning hazard (see Photo 18).

Suspected asbestos insulation from pipes and tanks is crumbling and in poor condition (see Photos 21 through 24). The former boiler house is full of block insulation and accessible through broken windows (see Photos 25 and 26).

Recommendations

For prudent public health and safety, ADH recommends the following:

Immediately repair any breaches of the site's western perimeter fence to ensure that trespassers cannot gain access to the site.

Post signs along the perimeter of the site alerting potential trespassers to the hazards on site. Maintain signs until hazards are removed.

Due to the presence of suspected asbestos insulation materials in poor condition and on the ground, conduct an asbestos inspection prior to removal of equipment to develop a proper management or disposal plan for the material.

Sincerely,



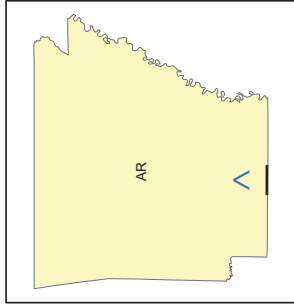
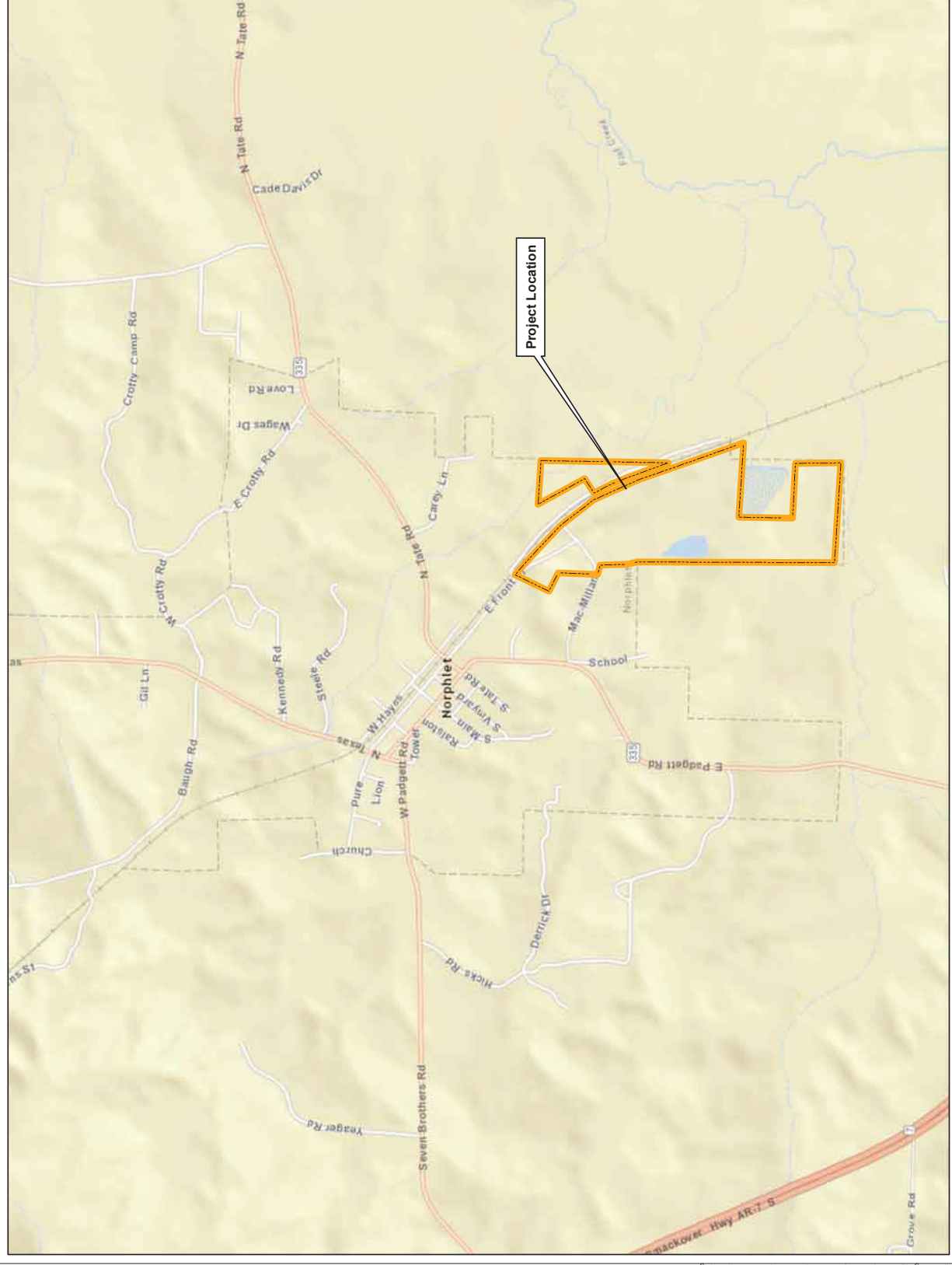
Chris C. Hemann, M.S.
ADH Environmental Epidemiologist
ATSDR Cooperative Agreement Health Assessor


cc: Lori Simmons, M.S., ADH Epidemiology Branch Chief
Ashley Whitlow, M.S., ADH ATSDR Principal Investigator
Andrew Haner, M.S., CESCO, CHMM, RPG, ADH Environmental Epidemiologist
Melissa Sandoz, M.S., ADH Environmental Epidemiologist
Eva D. McLanahan, Ph.D., REHS/RS, CDR, USPHS, ATSDR Technical Project Officer
George Pettigrew, ATSDR Region 6 Director
Mark Moix, P.E., ADEQ Engineer
Jim Crotty, Mayor of Norphlet

References

1. EA Engineering, Science, and Technology, Inc. July 2016. *Final Human Health Risk Assessment Remedial Investigation, MacMillan Ring Free Oil Norphlet, Union County, Arkansas*. Prepared for the Environmental Protection Agency and Arkansas Department of Environmental Quality.
2. EA Engineering, Science, and Technology, Inc. March 2017. *Remedial Investigation Report, MacMillan Ring Free Oil Superfund Site, Norphlet, Union County, Arkansas*. Prepared for the Environmental Protection Agency.

Figures



Legend
 Property Boundary

Map Date: June 2015

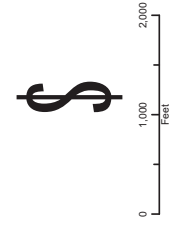
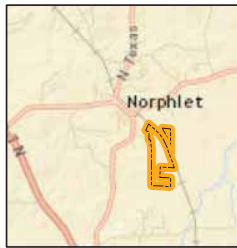
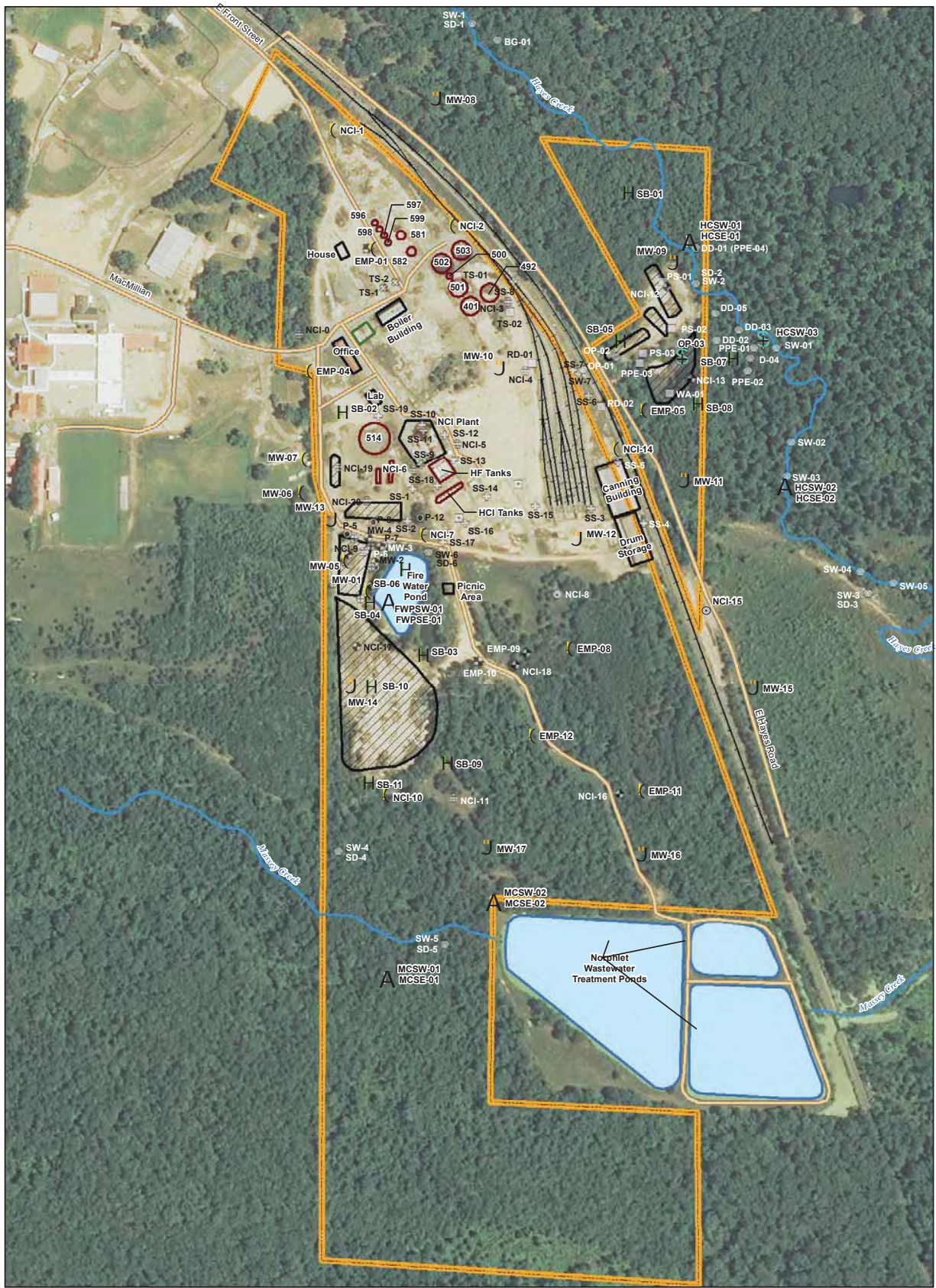


Figure 1
Site Location
 MacMillan Ring Free Oil
 Union County, Arkansas

Figure 1: Site Location. EA Engineering, Science, and Technology, Inc. July 2016. Final Human Health Risk Assessment Remedial Investigation, MacMillan Ring Free Oil Norphlet, Union County, Arkansas.

2015-11-16 C:\DATA\Federal\EPRI\ARC\110118\McMillan Ring\GIS\MXD\Figure 4 - Sample Locations.mxd EA-Dallas jshwertz




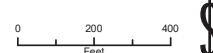
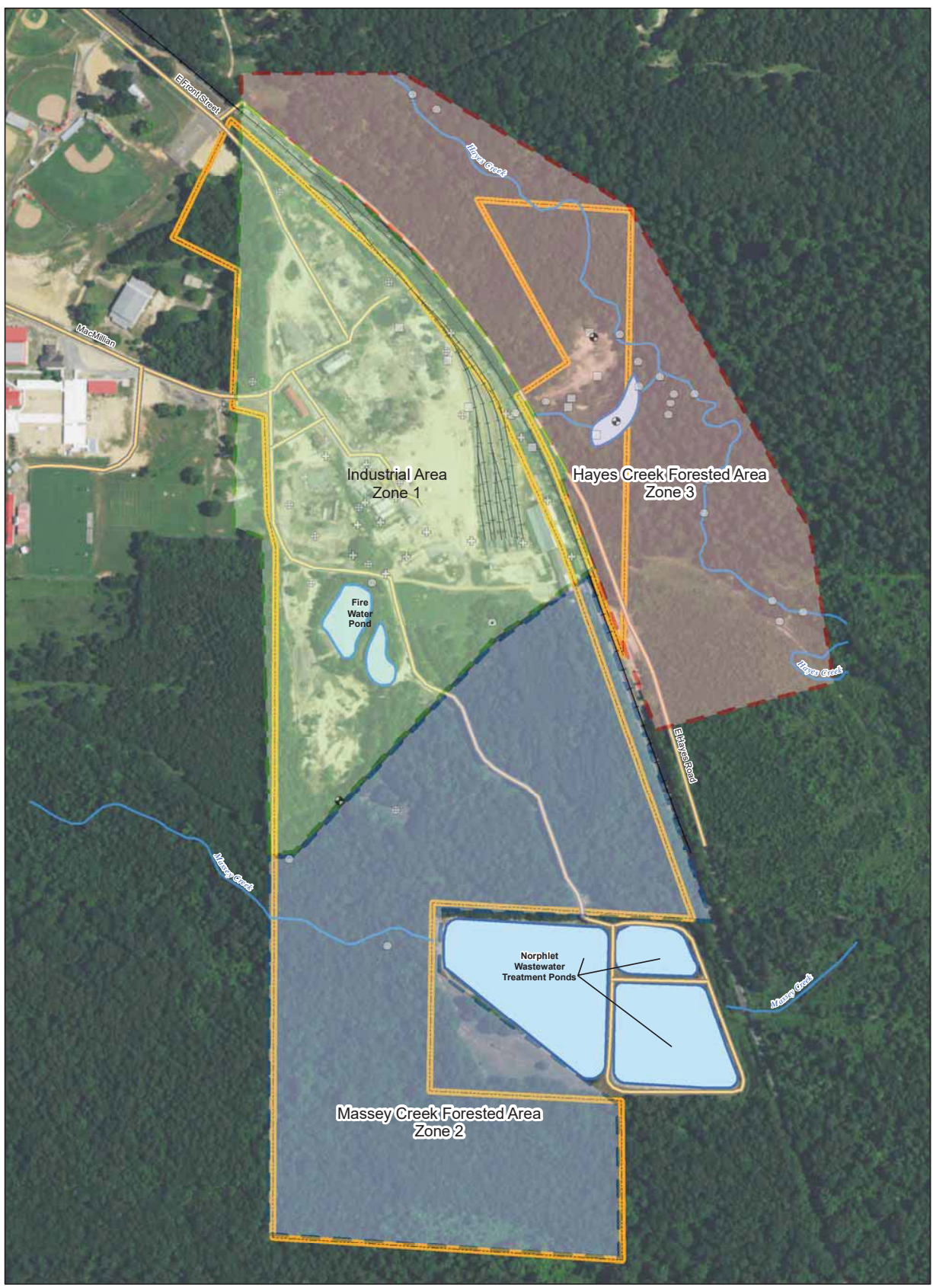
<p>Legend</p> <ul style="list-style-type: none"> — Railroads — Rivers — Roads ▭ Buildings ▨ Former Impounds ▭ Ponds ▭ Property Boundary ▭ Proposed Decon/IDW Staging Area ▭ Tanks 	<p>Historical Sample Locations</p> <ul style="list-style-type: none"> D EMP Series Well / Fireplug/Sprayer > Ground Water Monitoring Well < Ground Water Sample P Piezometer 	<p>F Surface Soil Sample</p> <ul style="list-style-type: none"> * Surface Water/Sediment Sample) Soil/Sediment Sample 3 Soil Sample @ Soil/Ground Water Sample < Transformer Soil Sample 	<p>2015 RI Sample Locations</p> <ul style="list-style-type: none"> H Soil Boring Sample J Monitoring Well Sample 	<p>A Sediment and Surface Water Sample</p> <ul style="list-style-type: none"> \$ Surface Water Sample (Ground Water Sample from Existing Well 	 <p>Figure 2 Sample Locations (1987 - 2015) MacMillan Ring Free Oil Union County, Arkansas</p> <p>0 200 400 Feet</p> 
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Figure 2: Site Details. EA Engineering, Science, and Technology, Inc.. July 2016. Final Human Health Risk Assessment Remedial Investigation, MacMillan Ring Free Oil Norphlet, Union County, Arkansas.



R:\Federal\EPRA\AC 110\118\MacMillan Ring\GIS\MXD\HRR\Figure X - HRR Zones.mxd



Legend

	Railroads
	Rivers
	Roads
	Buildings
	Former Impoundments
	Ponds
	Property Boundary
	Proposed Decom/IDW Staging Area
	Tanks

Historical Sample Locations

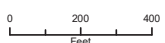
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	Fireplug/Sprayer
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P symbol"/>	Piezometer

2015 Remedial Investigation Sample Locations

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@ symbol"/>	Soil/Ground Water Sample
< symbol"/>	Transformer Soil Sample

2015 Remedial Investigation Sample Locations

	Soil Boring Sample
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A symbol"/>	Surface Water Sample
A symbol"/>	Sediment Sample



Map Date: May 2015



Figure 3
Human Health Exposure Zones
MacMillan Ring Free Oil
Union County, Arkansas

Figure 3 Site Zone Map. EA Engineering, Science, and Technology, Inc.. July 2016. Final Human Health Risk Assessment Remedial Investigation, MacMillan Ring Free Oil Norphlet, Union County, Arkansas.

Photographs



Photo 1: MacMillan Road Gate looking towards school. 2016



Photo 2: Fence line looking towards the school. 2014



Photo 3: Fence looking towards city park ball fields. 2014



Photo 4: MacMillan Road Gate. 2014



Photo 5: Unstable metal platform and other former process equipment near Industrial Area. 2018



Photo 6: Tanks and former equipment at Industrial Area. 2018



Photo 7: Tanks and former equipment at Industrial Area. 2018



Photo 8: Tanks and former equipment at Industrial Area. 2018



Photo 9: Various pipes and metal debris at former asphalt tank site near Industrial Area. 2018



Photo 10: Debris near Industrial Area. 2018



Photo 11: Exposed rebar, corrugated sheet metal and other debris near Industrial Area. 2018



Photo 12: Debris adjacent to the boiler house near Industrial Area. 2018



Photo 13: Palettes and debris near Industrial Area. 2018



Photo 14: Open pipe near Industrial Area. 2018



Photo 15: Unidentified rusty drum near Industrial Area. 2018



Photo 16: Unidentified drums near Industrial Area. 2018



Photo 17: Cut down former asphalt tank with flowable asphalt bottoms near Industrial Area. 2018



Photo 18: Cut down former asphalt tank with water over flowable asphalt bottoms near Industrial Area. 2018



Photo 19: Cut down former asphalt tank with flowable asphalt bottoms near Industrial Area. 2016



Photo 20: Close up of flowable asphalt material in cut down tank near Industrial Area. 2016



Photo 21: Tank with suspected asbestos insulation exposed on pipe and blanketing main vessel at Industrial Area. 2016



Photo 22: Suspected asbestos insulation from pipe exposed and on ground at Industrial Area. 2016



Photo 23: Cut down former asphalt tank with flowable asphalt bottoms near Industrial Area. 2018



Photo 24: Close up of suspected asbestos insulation material at former asphalt tank near Industrial Area. 2018



Photo 25: Unsecured boiler house near Industrial Area. 2018



Photo 26: Block asbestos insulation at boiler house near Industrial Area (Asbestos danger signs posted on building). 2016