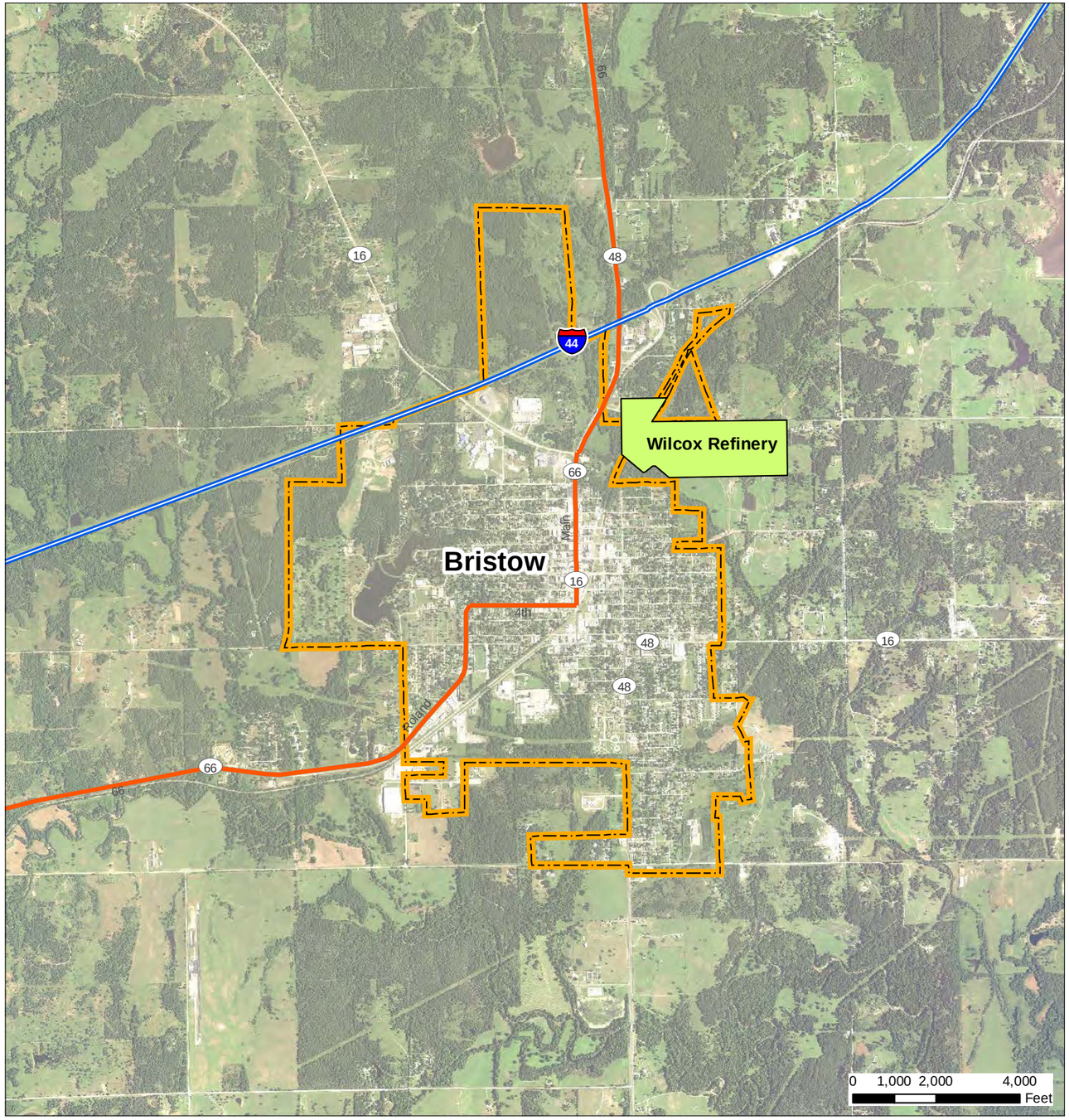
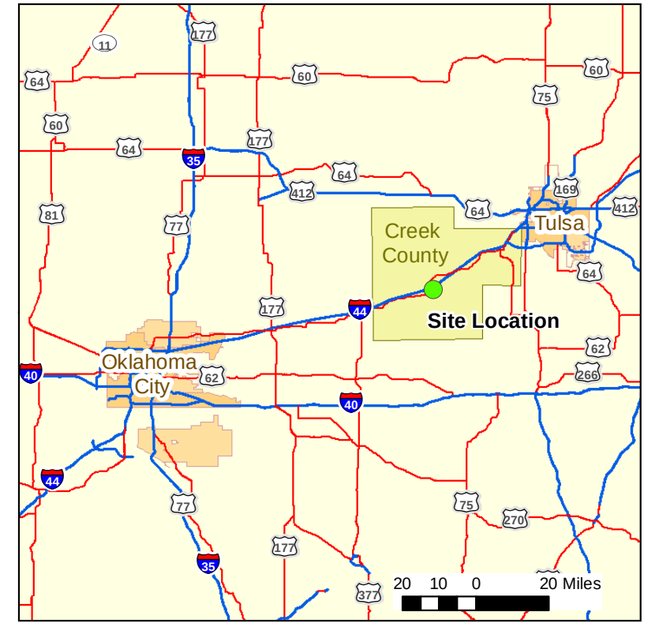
P:\gis\Projects\Wilcox\MXDs\SAP\2-Wilcox Location Map.mxd 4/14/2016 EA rmullen





Legend

- Interstate
- Highway
- Bristow City Boundary

Sampling and Analysis Plan for
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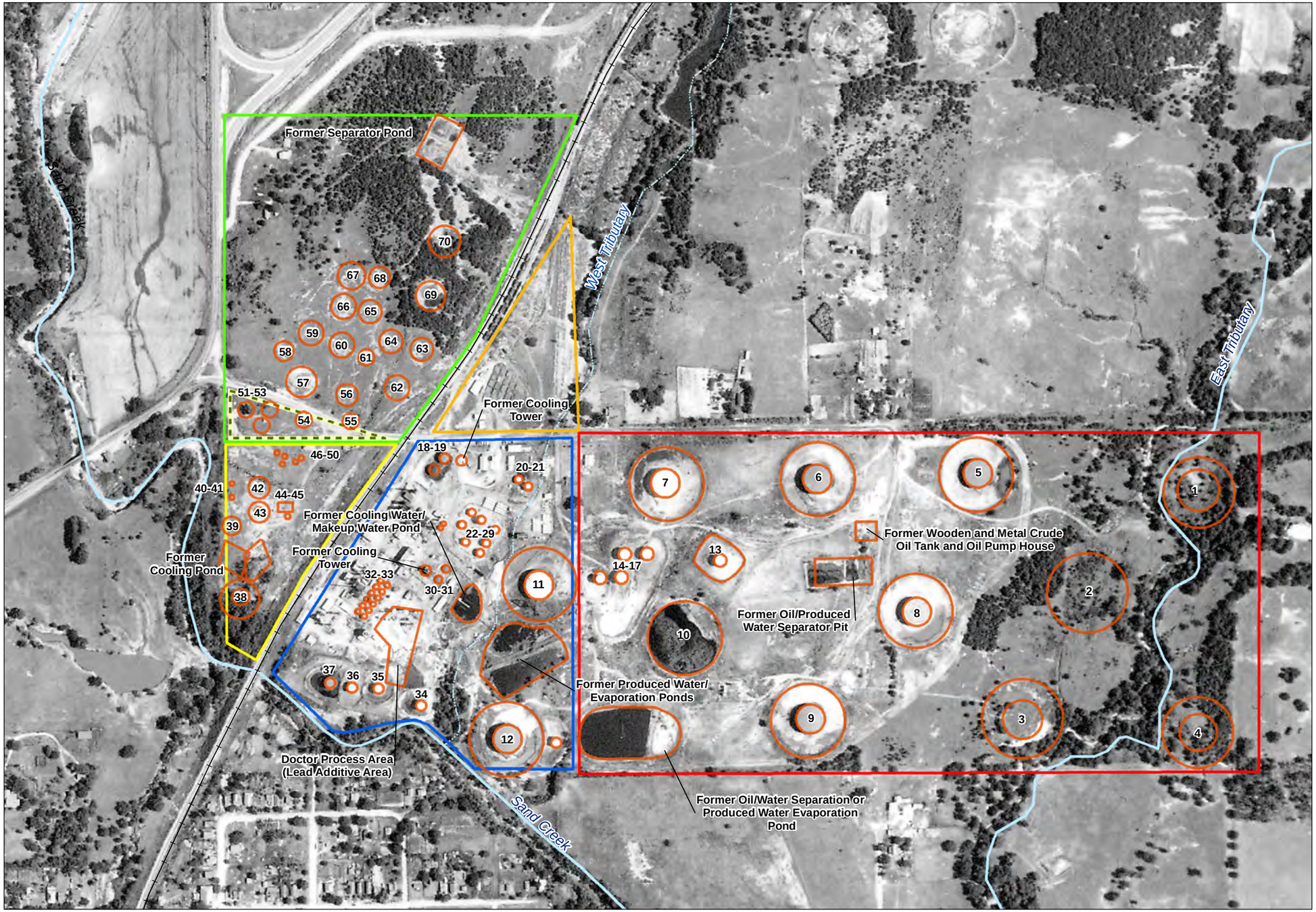
Image Source: National Agriculture Imagery Program 2015

9957510

FIGURE 2
SITE LOCATION

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\3-Historical Site Features.mxd 6/17/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Historical Feature
- Railroad
- Stream, Intermittent
- Stream, Perennial
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area
- Area will be designated as part of Lorraine Process Area for this investigation.

Image Source: 1956 Aerial Photograph.

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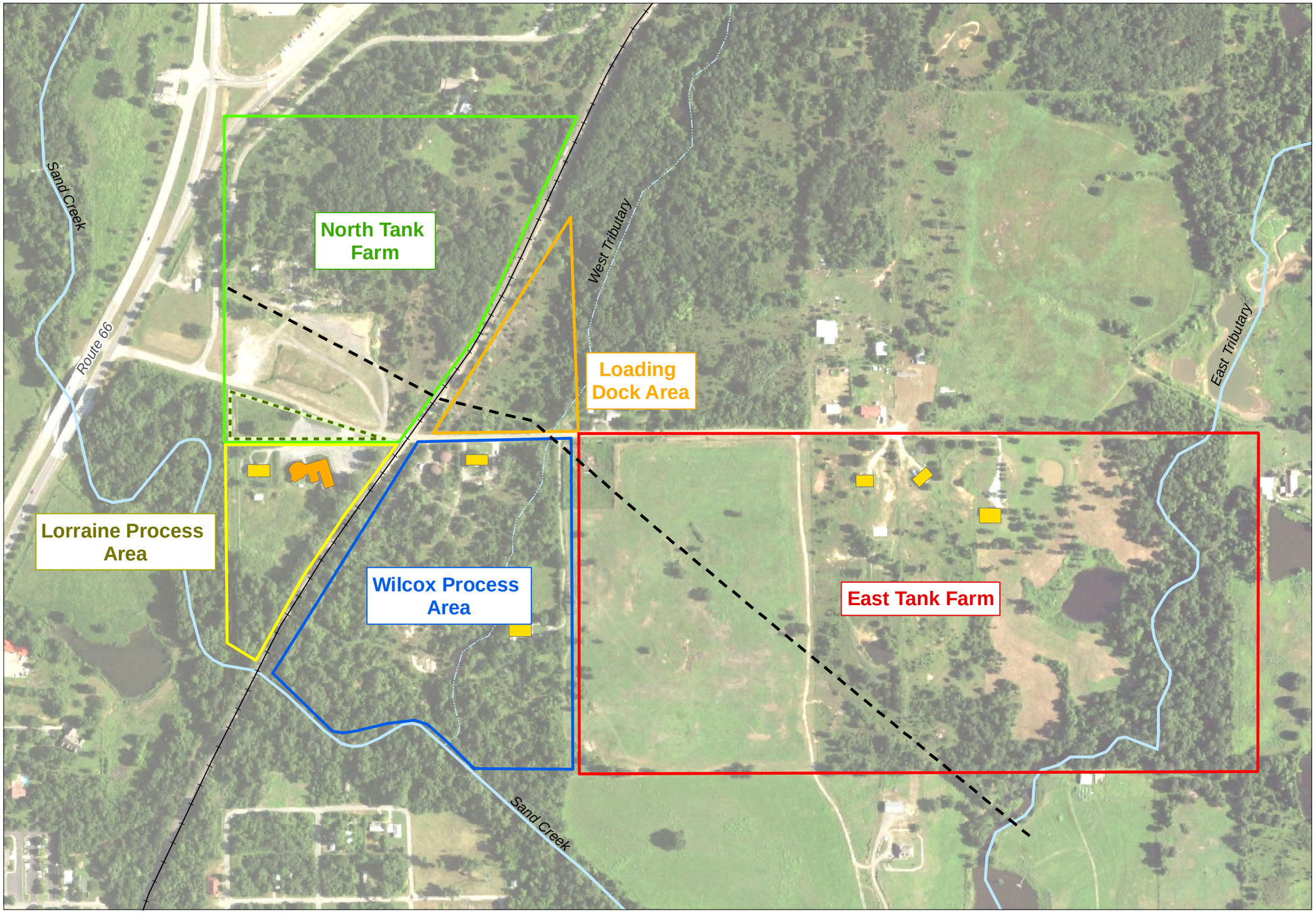
FIGURE 3
HISTORICAL SITE FEATURES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\4-Site Layout.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Stream, Intermittent
- Stream, Perennial
- Pipeline
- Railroad

On-Site Building

- Church
- Residence
- Area will be designated as part of Lorraine Process Area for this investigation.

Image Source: National Agriculture Imagery Program 2015.

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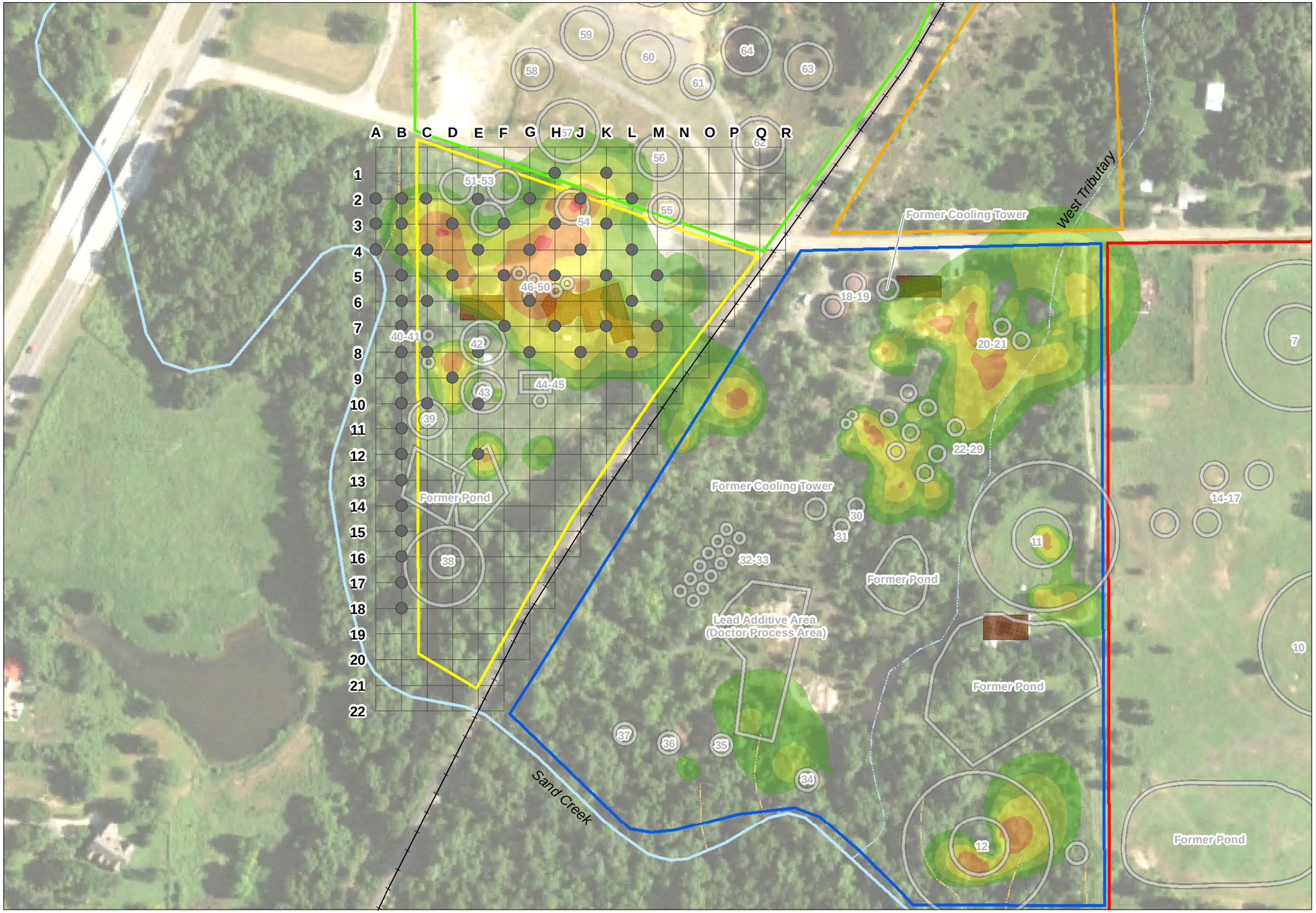
FIGURE 4
SITE LAYOUT

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\5-PSG_Lorraine.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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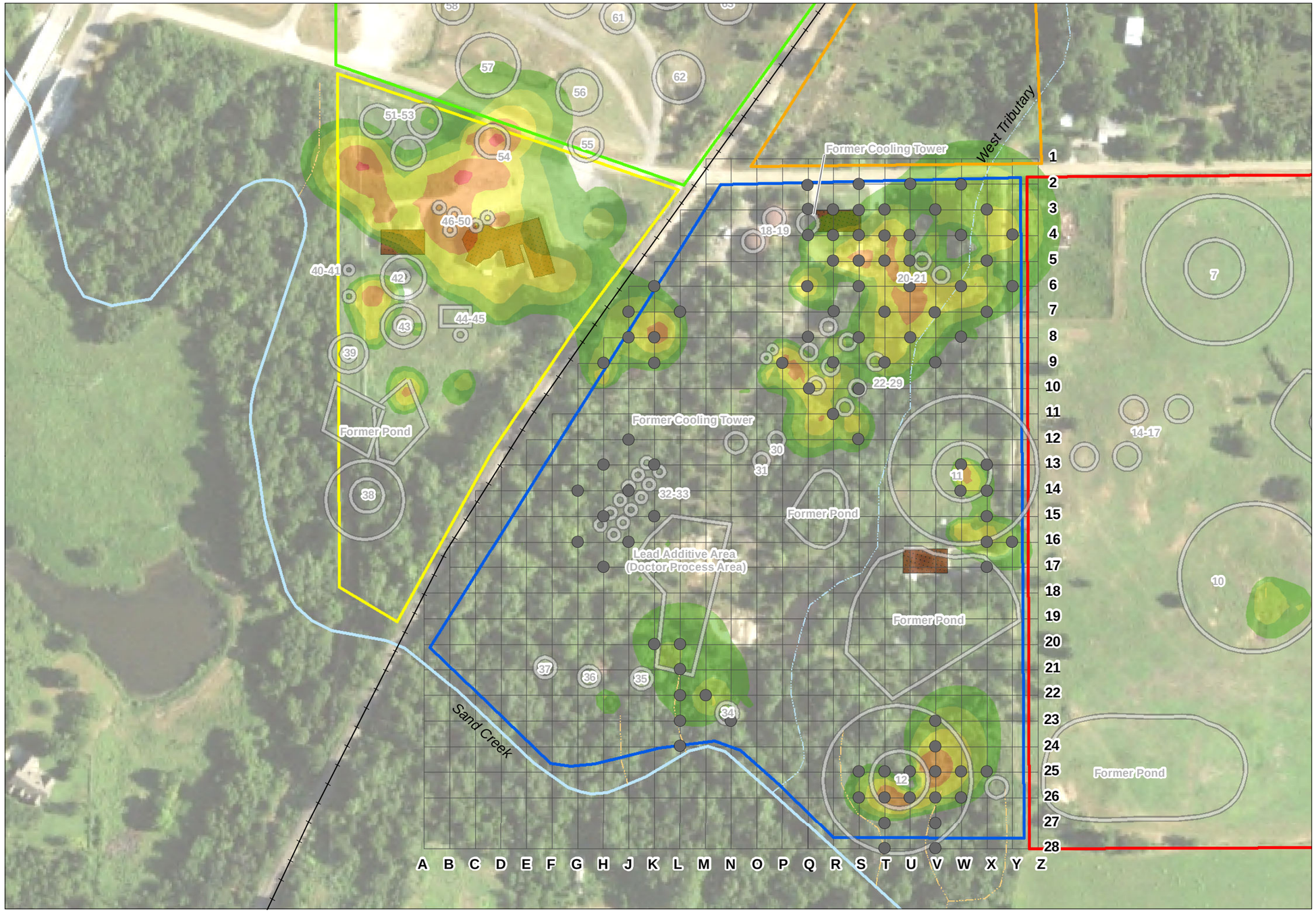
FIGURE 5

PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - LORRAINE PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\6-PSG_Wilcox.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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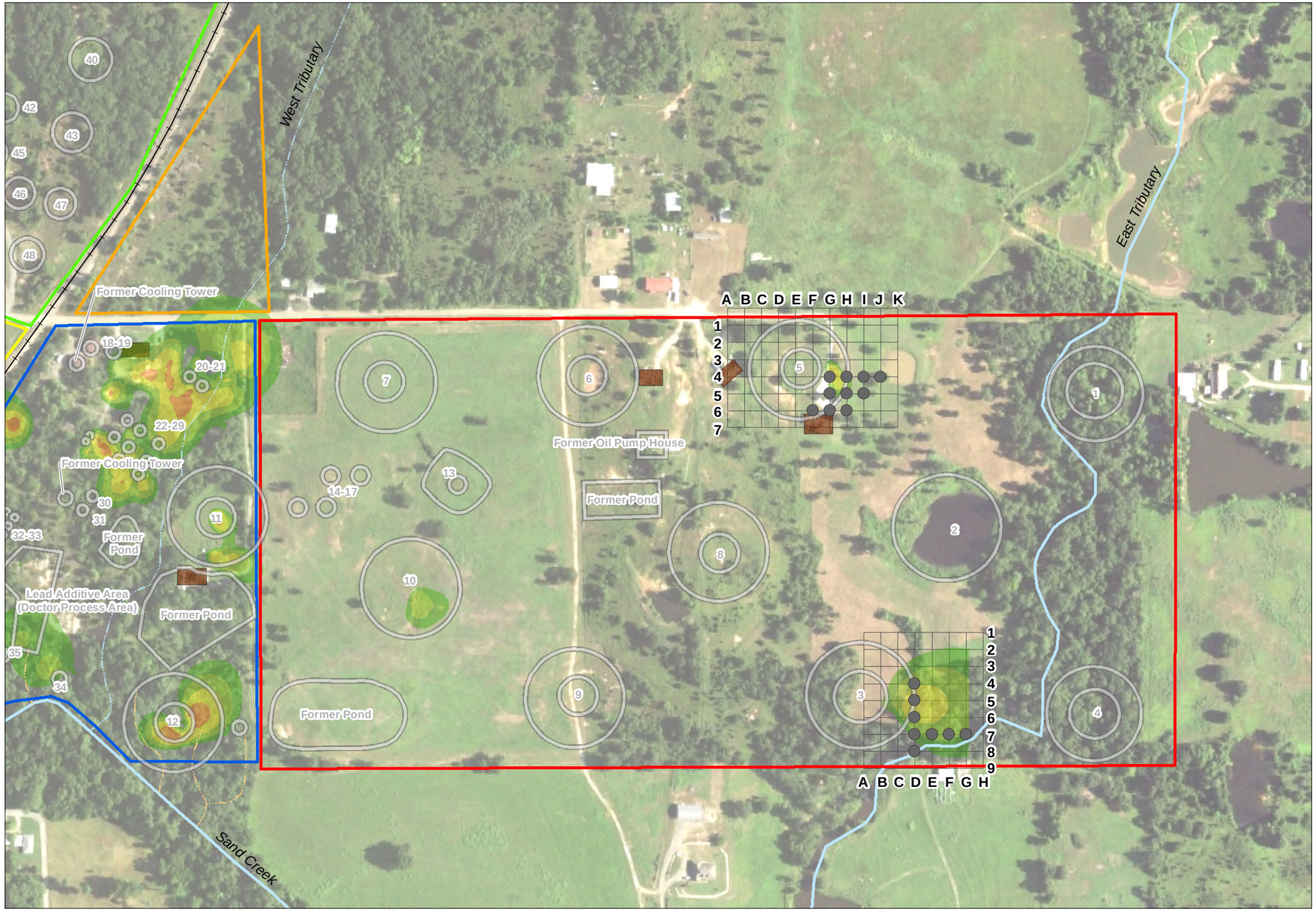
FIGURE 6

PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - WILCOX PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\7-PSG_ETF.mxd 6/23/2016 EA rmullen



0 150 300 600 Feet

1 inch = 300 feet

Legend

- Proposed Passive Soil Gas Sample
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- Sample Grid (Cells 50 feet by 50 feet)
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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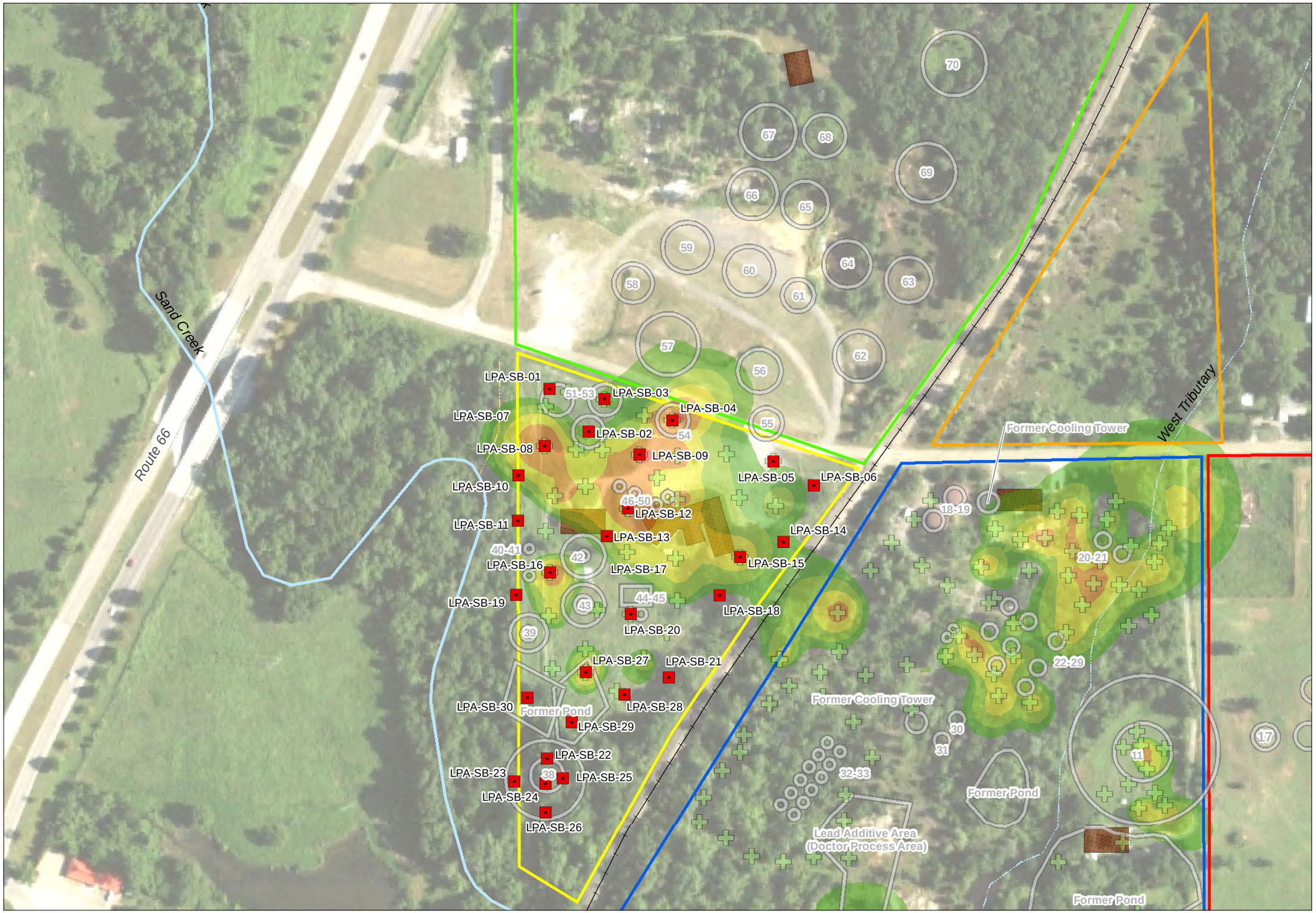
FIGURE 7
PROPOSED PASSIVE SOIL GAS SAMPLE LOCATIONS - EAST TANK FARM

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\8-Soil_Lorraine.mxd 6/27/2016 EA rmullen



0 100 200 400 Feet

1 inch = 200 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emittance
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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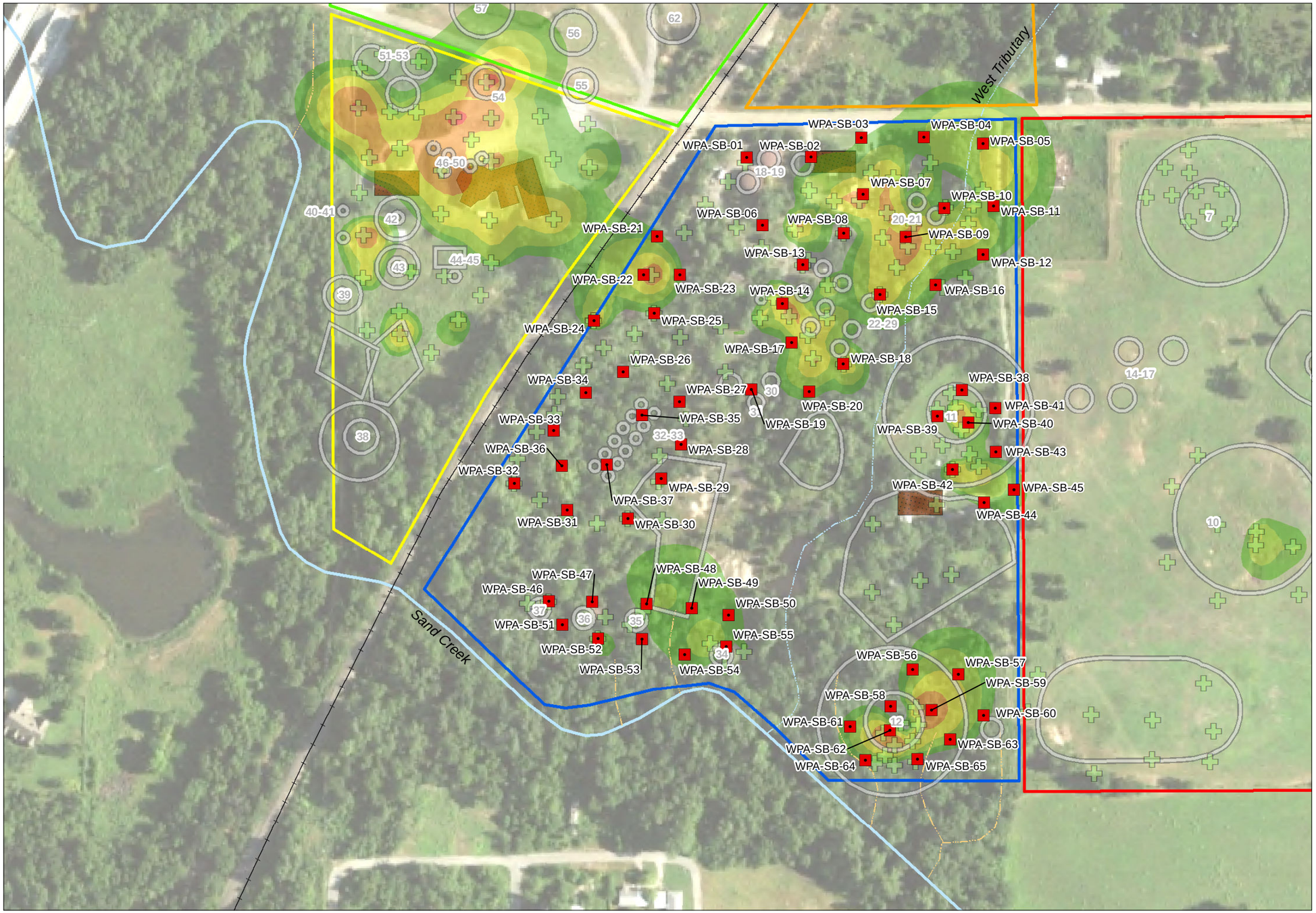
FIGURE 8
PROPOSED LOCATIONS FOR SOIL SAMPLES - LORRAINE PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\9-Soil_Wilcox_2.mxd 6/23/2016 EA rmullen



0 50 100 200 300 Feet

1 inch = 200 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emitter
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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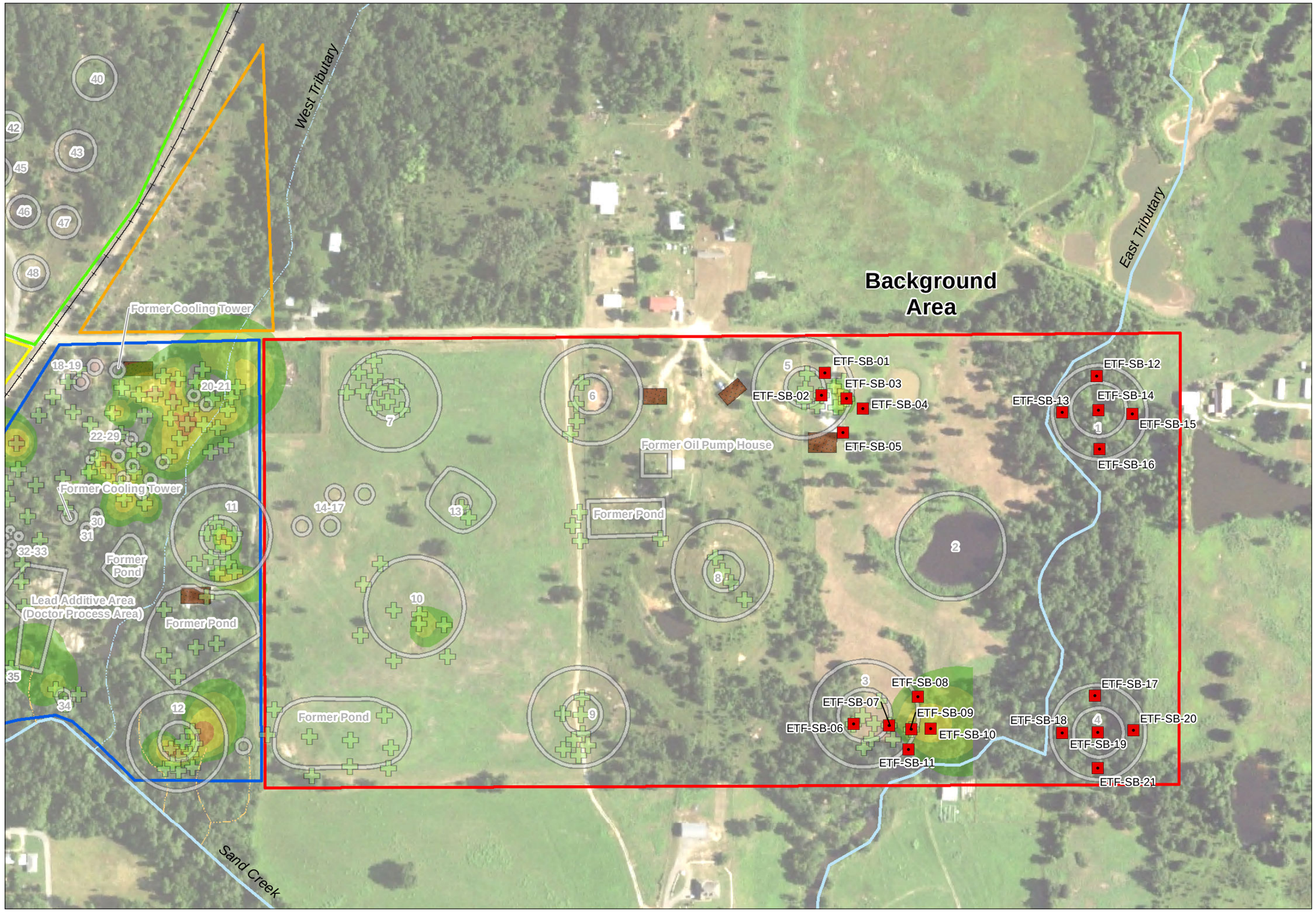
FIGURE 9
PROPOSED LOCATIONS FOR SOIL SAMPLES - WILCOX PROCESS AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\10-Soil-ETF_Background.mxd 6/23/2016 EA rmullen



0 150 300 600 Feet

1 inch = 300 feet

Legend

- Proposed Soil Boring
- 2015 ROST LIF Location*
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

ROST Fluorescence (% RE)*

- <5
- 5-10
- 10-25
- 25-100
- >100

Abbreviations and Acronyms
< - Less than
> - Greater than
% - Percent
LIF - Laser-induced fluorescence
RE - Reference emitter
ROST - Rapid Optical Scanning Tool
SERAS - Scientific, Engineering, Response, and Analytical Services

* Source: Lockheed Martin SERAS 2016.
Image Source: National Agriculture Imagery Program 2015.

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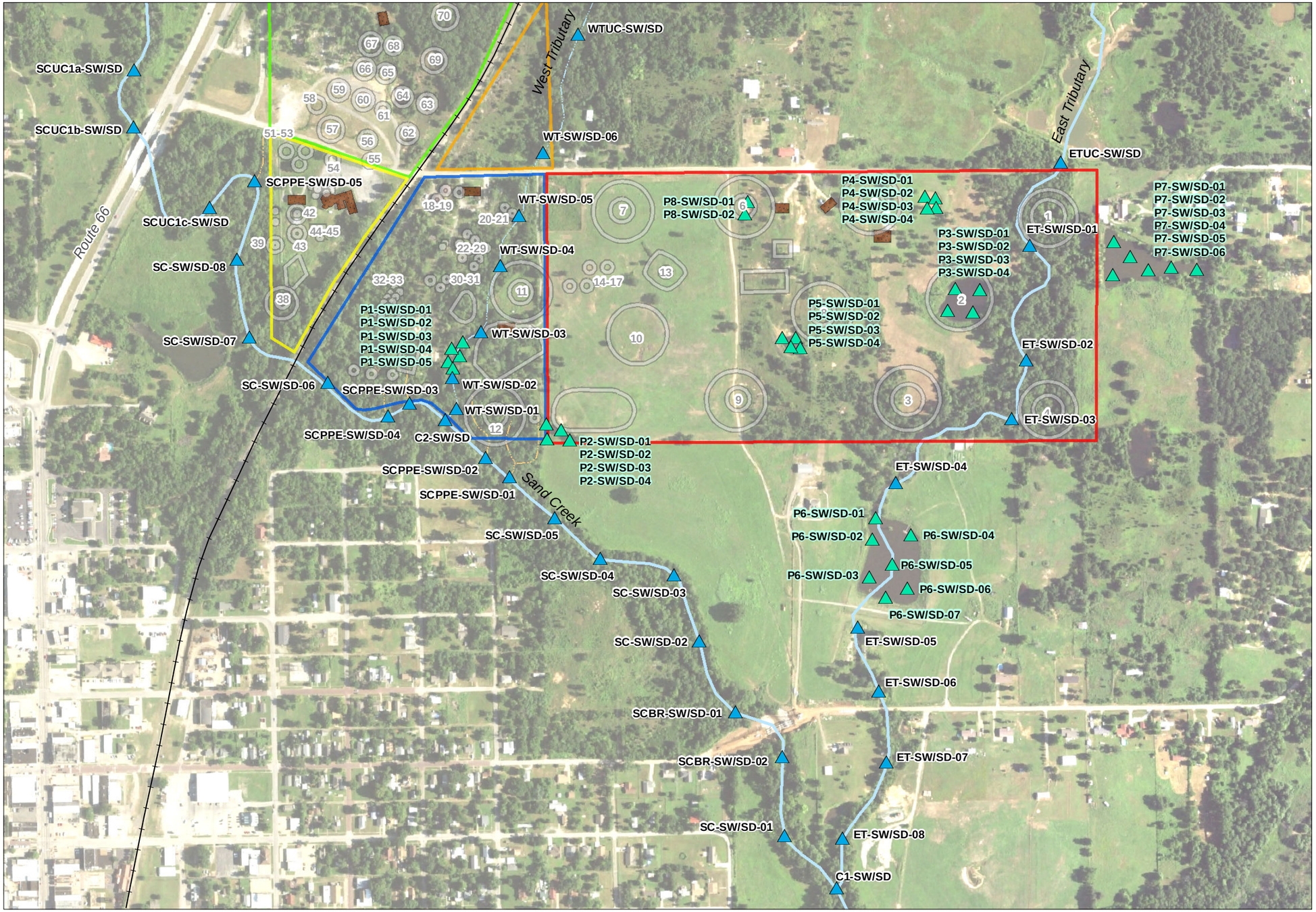
FIGURE 10
PROPOSED LOCATIONS FOR EAST TANK FARM SOIL SAMPLES AND BACKGROUND AREA

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\11-SW_Sediment.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 500 feet

Legend

Proposed Sample

- Surface Water/Sediment, Pond
- Surface Water/Sediment, Stream
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

Image Source: National Agriculture Imagery Program 2015.

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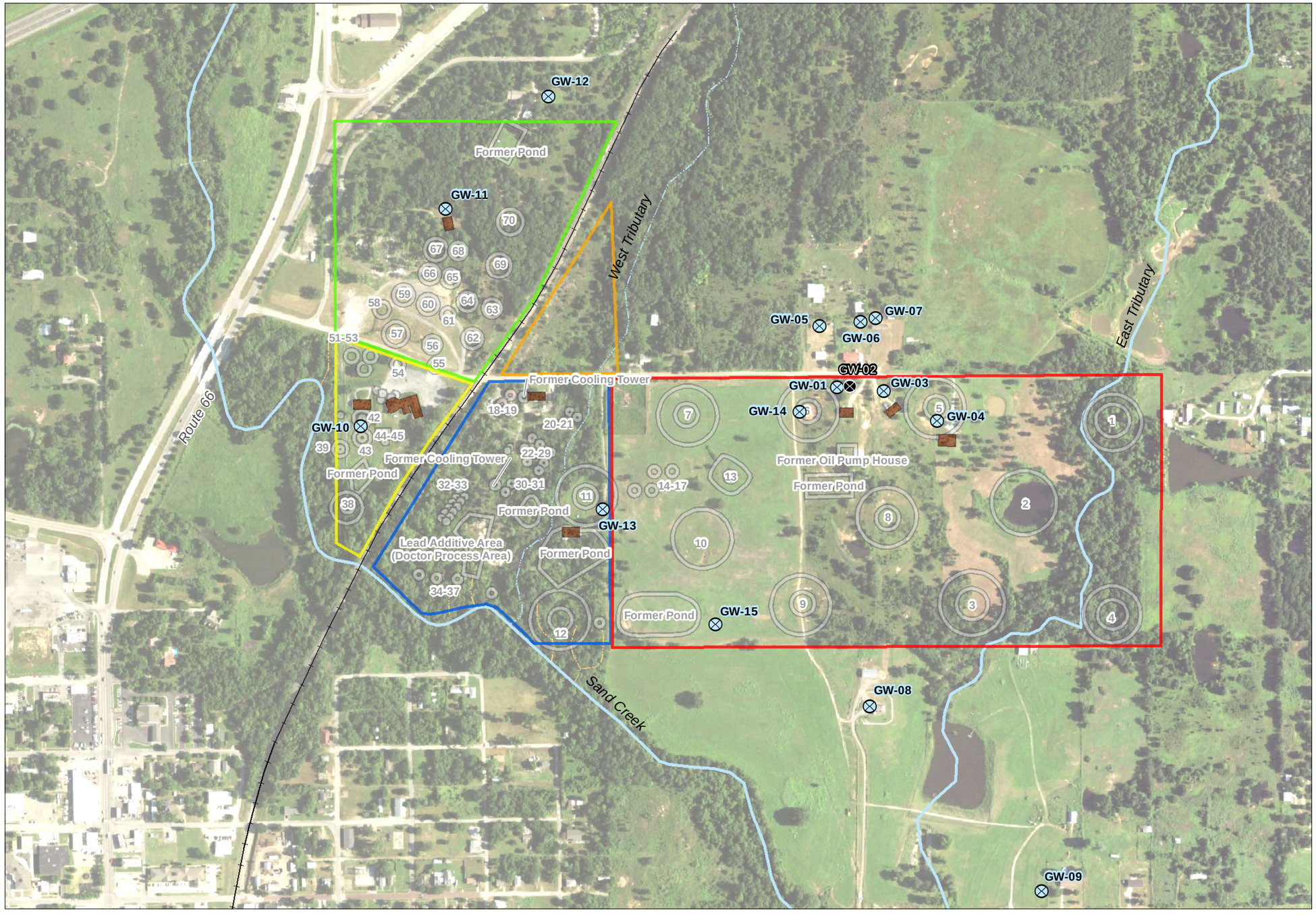
FIGURE 11
PROPOSED LOCATIONS FOR SURFACE WATER AND SEDIMENT SAMPLES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\12-PrivateWaterSupplySamples.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 500 feet

Legend

- Former Private Supply Well (Plugged and Abandoned)
- Private Supply Well
- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- On-Site Building
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area

Image Source: National Agriculture Imagery Program 2015.

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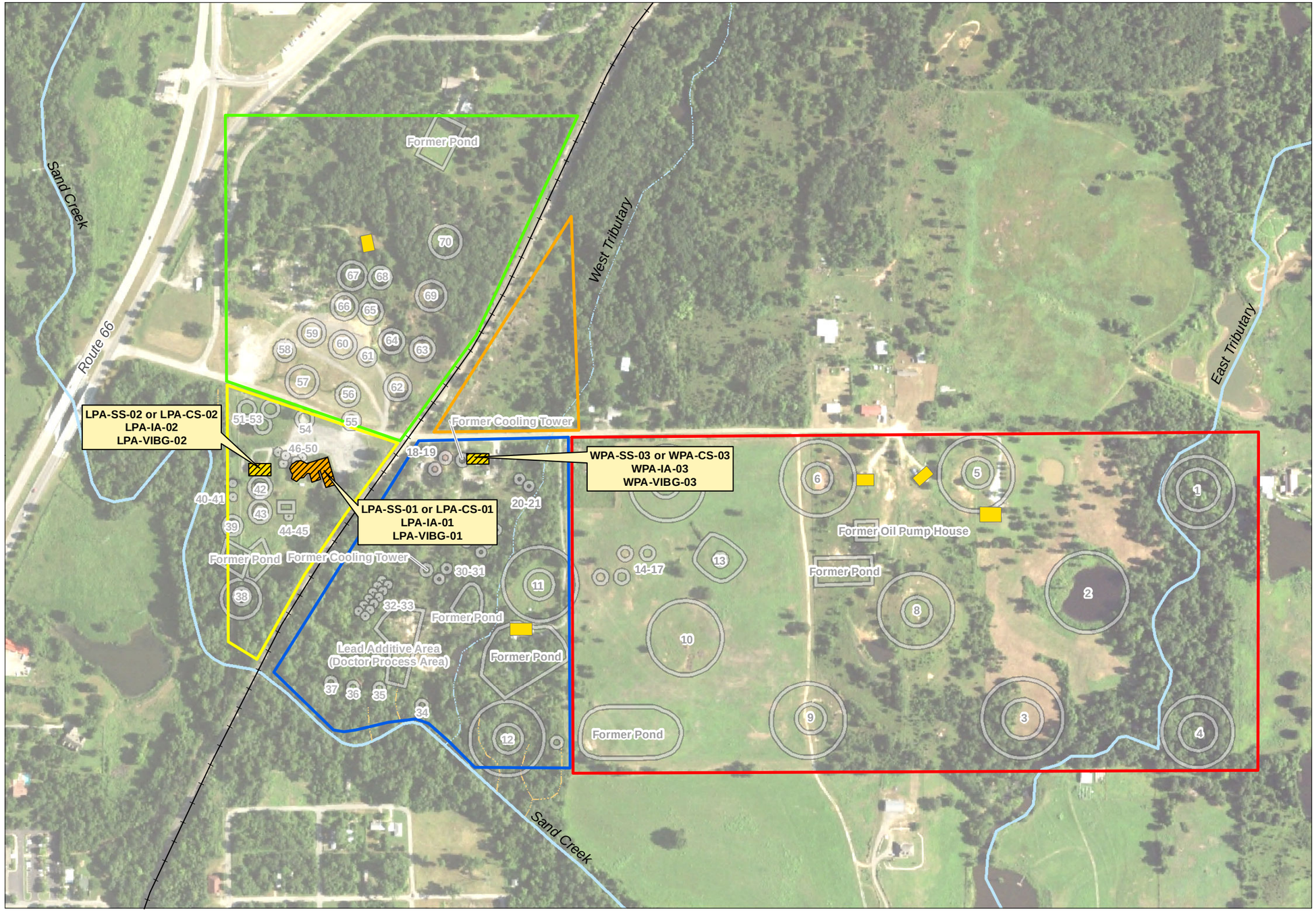
FIGURE 12

PROPOSED LOCATIONS FOR PRIVATE WATER SUPPLY WELL SAMPLES

P:\gis\Projects\Wilcox\MXDs\SAP\02 SAP revised 062016\13-SVI.mxd 6/23/2016 EA rmullen



0 200 400 800 Feet

1 inch = 400 feet

Legend

- Historical Feature
- Railroad
- Drainage
- Stream, Intermittent
- Stream, Perennial
- East Tank Farm
- Loading Dock Area
- Lorraine Process Area
- North Tank Farm
- Wilcox Process Area
- Proposed Vapor Intrusion Sampling

On-Site Building

- Church
- Residence

Image Source: National Agriculture Imagery Program 2015.

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FIGURE 13
PROPOSED LOCATIONS FOR VAPOR INTRUSION SAMPLES