



ARM Group Inc.

Engineers and Scientists

May 29, 2019

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Lead Based Paint Survey Report
Former Lumber Shed
Area B: Parcel B23
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group Inc. (ARM), on behalf of EnviroAnalytics Group (EAG), is pleased to present this Lead Based Paint (LBP) Survey Report detailing the recent field investigation completed on the exterior of the former Lumber Shed located in Area B: Parcel B23 (the Site) of the Tradepoint Atlantic property located in Sparrows Point, MD. The Maryland Department of the Environment (MDE) provided comments on the Phase II Investigation Work Plan for Parcel B23 on October 4, 2018, in which they requested that visible peeling paint along the exterior of the former Lumber Shed be assessed to determine whether or not building components contained LBP. The criteria to be considered LBP in Maryland is set at $>0.7 \text{ mg/cm}^2$; exposure to which may pose a risk to human health.

ARM provided the MDE with the proposed field methods and sampling procedures for the LBP survey within the Parcel B23 Comment Response Letter dated November 2, 2018, and the testing of the former Lumber Shed was subsequently completed by ARM personnel on November 12, 2018. The survey was conducted in accordance with the relevant Standard Operating Procedures (SOPs) and requirements given in the property-wide Quality Assurance Project Plan (QAPP).

ARM used a handheld X-Ray Fluorescence (XRF) detector to conduct the LBP inspection on all accessible exterior components of the former Lumber Shed. The XRF detector emits high-energy X-rays which bombard the sample, causing it to fluoresce and emit secondary X-rays which are detected. Secondary X-rays are characteristic of each specific element, allowing for quantification of the materials in the sample. The XRF is a commonly used tool for the quantitative evaluation of LBP.

Test locations were selected to be representative of the numerous paints and underlying materials of the structure. Areas with the thickest application of paint, different colors of paint, and

different layers of paint (exposed base layers in the vicinity of peeled paints, as well as top layers of paint) were selected for the tests. In the event of a positive test result (i.e. $>0.7 \text{ mg/cm}^2$), a secondary measurement was taken from an adjacent location to confirm the presence of lead above the accepted threshold. Standardization of the instrument was performed before any measurements were recorded, and calibration checks were completed at the onset and close of testing. These calibration checks did not indicate concerns with the XRF performance.

A photographic log has been provided as **Attachment 1** and shows the variety of paint samples analyzed for LBP using the XRF. A summary of sampling locations and XRF results can be found in **Table 1** (attached). For samples with very high lead concentrations, a measurement of $>5.0 \text{ mg/cm}^2$ was reported from the XRF; indicating that the material was classified as a LBP but the concentration of lead was above the instrument's upper limit of quantification. An aerial view of the former Lumber Shed that identifies the approximate locations of each LBP sample has been provided as **Figure 1** (attached).

The MDE had identified black peeling paint along the exterior of the former Lumber Shed, which prompted their request for this LBP survey. The identified black paint covered the majority of the exterior of the former Lumber Shed. The XRF results for the black paint (10 samples in total) ranged from lead detections of $0.00 \pm 0.02 \text{ mg/cm}^2$ to $0.02 \pm 0.03 \text{ mg/cm}^2$; indicating that the black paint contains negligible concentrations of lead and is not LBP. Two types of blue paint were identified on the doors located along the eastern side of the former Lumber Shed. The top layer of blue paint had XRF readings of $0.00 \pm 0.00 \text{ mg/cm}^2$, indicating that this paint sample was not LBP. However, the base layer of blue paint (older paint) on the doors had XRF readings of $3.83 \pm 0.72 \text{ mg/cm}^2$; indicating that it was LBP. Yellow paint was identified on components on the northern and western sides of the former Lumber Shed. Several yellow poles and ladders had confirmed presence of LBP with XRF readings from $3.51 \pm 0.61 \text{ mg/cm}^2$ to $>5.0 \text{ mg/cm}^2$. The last color of paint visible on the exterior of the Lumber Shop was green paint on the doors on the western side of the building and windowsill panes on the southern and northern sides of the building. This green paint had XRF readings between $0.21 \pm 0.56 \text{ mg/cm}^2$ to $3.50 \pm 0.62 \text{ mg/cm}^2$, indicating the presence of LBP.

The vast majority of the building and its components were painted black, which tested negative for LBP. The following exterior components exceeded the acceptable level of 0.7 mg/cm^2 and qualify as LBP in the state of Maryland: yellow ladders and poles, blue base layer paint on bay door frames, green bay doors, and green windowsills. These structures represent a small fraction of the overall painted surfaces of the structure. It is evident that characteristic paint colors, such as the yellow, green, and base layer blue paint used on exterior components were indicative of the presence of LBP.

Although there was some LBP along the exterior of the former Lumber Shed, most structures containing LBP were observed to be in fair condition, with little evidence of flaking or peeling



paint. However, the green doors and yellow ladder on the western side of the building showed weathering and severe flaking was observed.

As previously described, the majority of the exterior walls of the former Lumber Shed consisted of black paint that did not indicate the presence of LBP. Due to the limited areas of LBP that were identified during this survey, no further actions or additional sampling are recommended in the vicinity of the former Lumber Shed regarding LBP.

If you have questions regarding any information covered in this document, please feel free to contact ARM Group Inc. at (410) 290-7775.

Respectfully submitted,
ARM Group Inc.



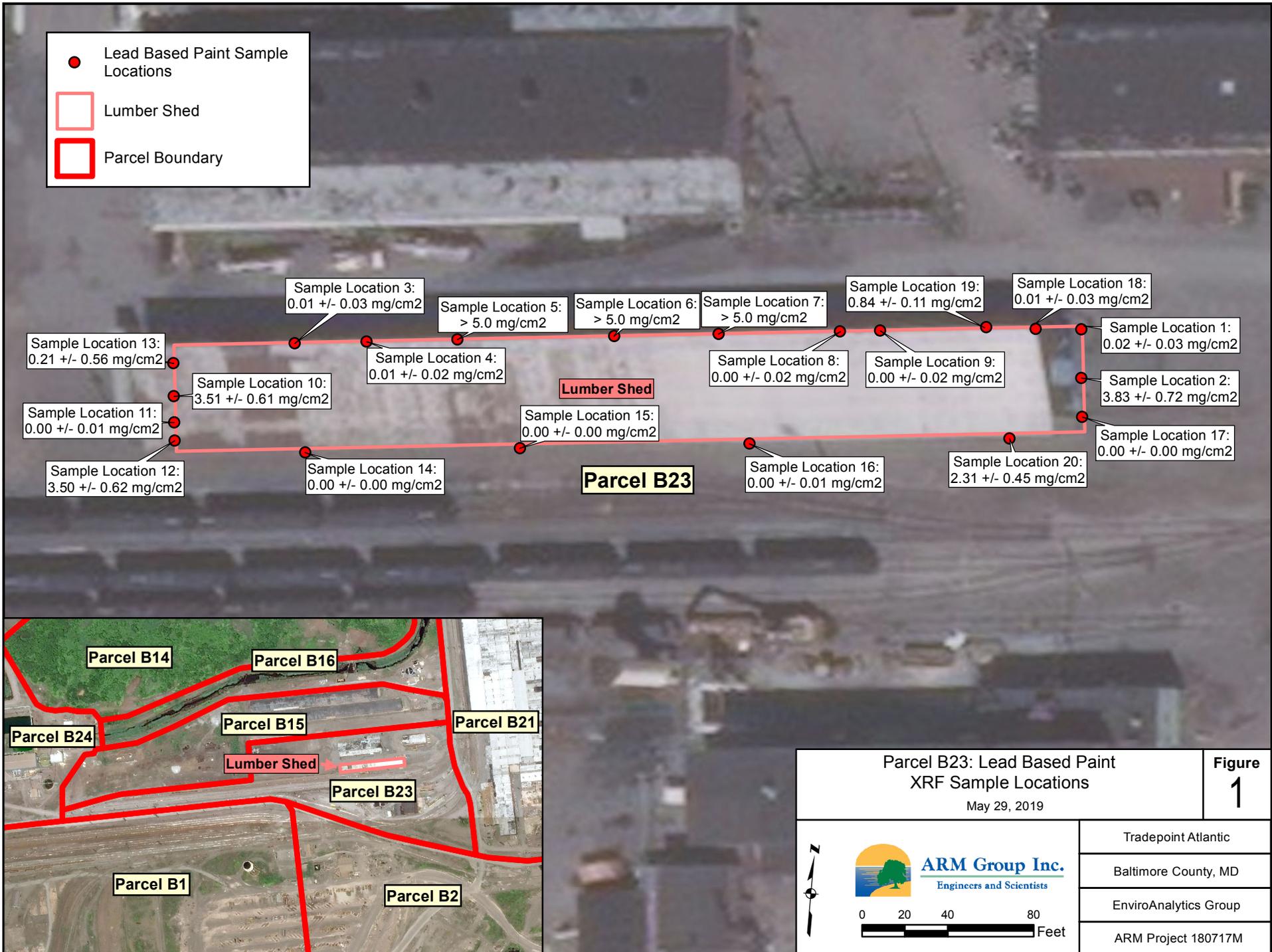
Leandra M. Glumac
Project Geologist



Eric S. Magdar, P.G.
Vice President



FIGURES



TABLES

Table 1
Parcel B23 - Lead Based Paint Survey
XRF Results
Sparrows Point, Maryland

Sample Location	Component Description	Lead Concentration Reading (mg/cm ²) Maryland Limit >0.7
1	Black side wall	0.02 ± 0.03
2	Blue base layer paint on door	3.83 ± 0.72
3	Black wall (lower section)	0.01 ± 0.03
4	Black wall (upper section)	0.01 ± 0.02
5	Yellow pole	>5.0
6	Yellow pole	>5.0
7	Yellow pole	>5.0
8	Black wall (lower section)	0.00 ± 0.02
9	Black wall (upper section)	0.00 ± 0.02
10	Yellow ladder	3.51 ± 0.61
11	Black side wall	0.00 ± 0.01
12	Green door	3.50 ± 0.62
13	Green door	0.21 ± 0.56
14	Black siding wall	0.00 ± 0.00
15	Black siding wall	0.00 ± 0.00
16	Black siding wall	0.00 ± 0.01
17	Blue door (chipping top coat paint)	0.00 ± 0.00
18	Black side wall	0.01 ± 0.03
19	Green windowsill	0.84 ± 0.11
20	Green windowsill	2.31 ± 0.45

Values in red indicate an exceedance of the criteria of >0.7 mg/cm²

Attachment 1

**Parcel B23 – XRF Lead Based Paint Survey
Photograph Log
Sparrows Point, Maryland**



111218-1: View of the blue paint on the doors on the eastern side of the Lumber Shed. Pictured are sample locations 1, 2, and 17.



111218-2: View of the northern side of the Lumber Shed that shows the yellow paint and the lower and upper black paint. Pictured are sample locations 3, 4, 5, 6, 7, 8, and 9.

**Parcel B23 – XRF Lead Based Paint Survey
Photograph Log
Sparrows Point, Maryland**



111218-3: View of the green door paint and yellow ladder on the western side of the Lumber Shed. Pictured are sample locations 10, 11, 12, and 13.



111218-4: View of the southern side of the Lumber Shed that shows the black paint. Pictured are sample locations 14, 15, and 16.

**Parcel B23 – XRF Lead Based Paint Survey
Photograph Log
Sparrows Point, Maryland**



111218-5: View of the southern side of the Lumber Shed that shows the black paint. Pictured is sample location 20.



111218-6: View of northern side of the Lumber Shed that shows the green windowsill paint. Pictured are sample locations 18 and 19.