RADIOLOGICAL SURVEY
OF UPLAND AREA

2 MORGAN DRIVE LOT 3
MT KISCO, NY

April 2018

Prepared By:

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EXECUTIVE SUMMARY

This Report presents the results of the radiological walkover survey conducted by Great Lakes Environmental & Safety Consultants, Inc. ("Great Lakes"), on April 9, 2018, at Morgan Drive Lot 3, 2 Morgan Drive, Mount Kisco, New York 10549 (the "Site"). The purpose of the survey was to identify potential radioactivity (or "Hot Spot") in the upland southeastern ~1 acre of the Site (the "Survey Area").

The focused gamma walkover of accessible areas in the Survey Area observed average activity levels not significantly greater than background levels. One area (the "Hot Spot") exhibited relatively significant elevated activity levels, within 100 feet southeast of the Primary Tank 1.

With the exception of the Hot Spot area, Great Lakes recommends no further action for the remainder of the Survey Area.

With respect to the Hot Spot, Great Lakes recommends that the Hot Spot be excavated and stockpiled at the nearest elevated area in the impacted portion of the site. Great Lakes will be submitting a proposed work plan to DEP and DEC in the immediate future.

GAMMA WALKOVER SURVEY

On April 9, 2018, Great Lakes personnel performed a gamma walkover survey of the Survey Area A diagram showing the results of the survey, labeled in counts per minute (+/- 1,000) is attached as **Appendix A**.

Under this task, Great Lakes used field measurement instruments to conduct a gamma walkover survey to detect for the presence of gamma emitting radionuclides and their progeny. Great Lakes utilized a calibrated Ludlum 2221 ratemeter equipped with Model 44-10 2" X 2" NaI gamma scintillation detectors under this task.

The gross gamma survey was recorded in units of counts per minute (cpm) across the Survey Area. A two-dimensional walkover survey diagram is included in **Appendix A**, noting the average background activity at each of the locations and representative readings across the walkover area, presented as a range of cpm for each ~100 square feet (e.g., 7,000-8,000 cpm)

Background radiation levels were documented both in areas on-site and in areas that are not impacted by the site and marked on the walkover surveys accordingly. Background radiation is established in order to verify that the results are not influenced by imported materials or equipment that may contain elevated concentrations of radionuclides.

Surveyors traveled at a speed of approximately 1.6 feet per second with the detectors about 4 inches above the ground surface. Gamma count rates were recorded in real time. Static background counts were obtained on either side of the Site (both ~9,000 cpm).

The average gamma count observed during the walkover was approximately 8,000 cpm.

The survey identified one area of elevated gamma count rates that suggest possible concentrations of radioactivity that are elevated with respect to background levels Hot Spot. This Hot Spot is labeled as HS-4 on the walkover diagram. Biased soil samples were obtained from each of the three Hot Spots, from a depth of approximately six inches

- HS-4 was discovered in an area just south of Primary Tank #1. Average gamma activity in the area was ~9,500 cpm, and the Hot Spot was measured at ~29,200 cpm.

CONCLUSIONS

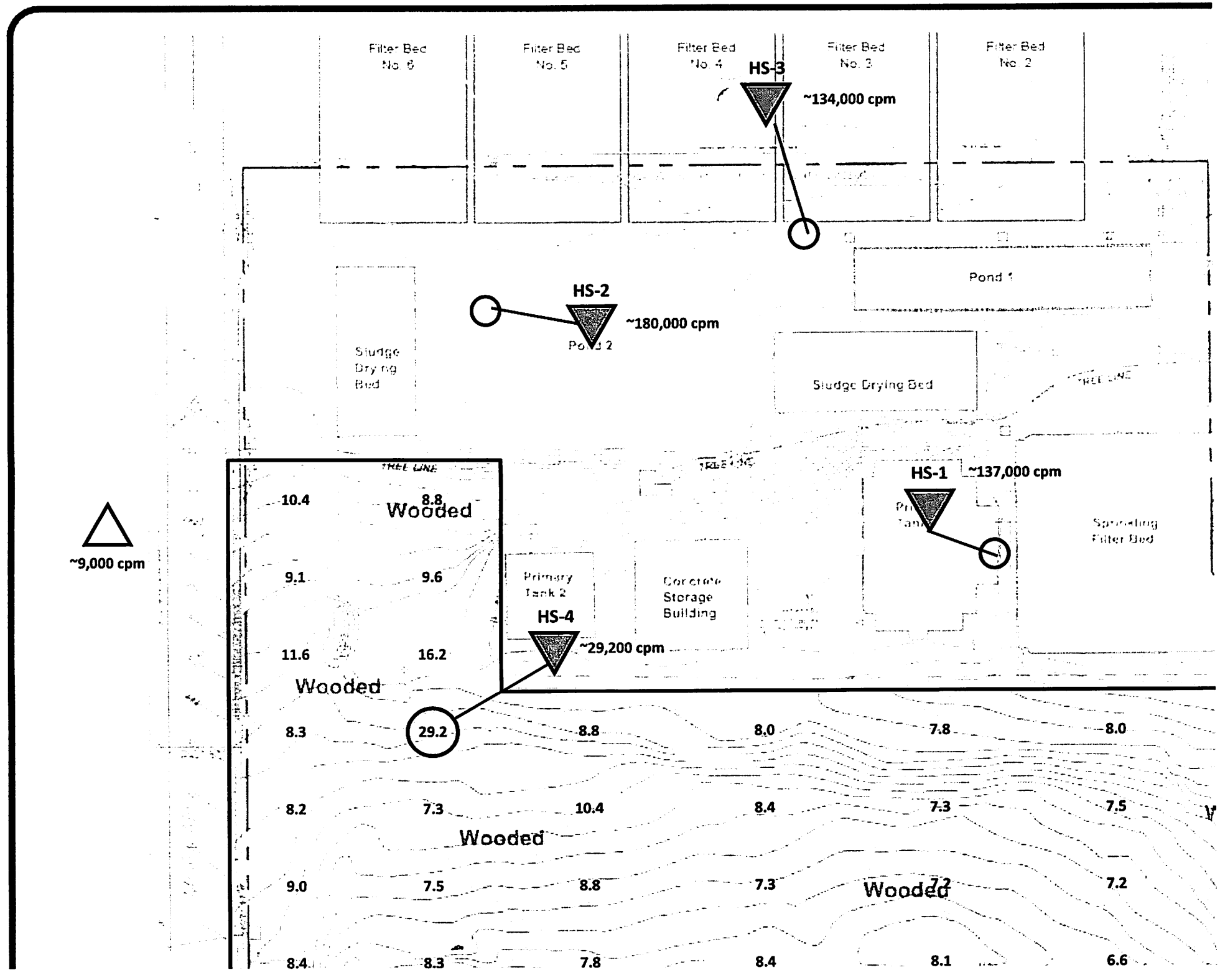
Based on the findings of the radiological survey, some slightly elevated gamma activity readings are present in one part of the Survey Area (HS-4). Relative to other Hot Spots found across the Site, HS-4 did not exhibit gamma activity to the same orders of magnitude (HS-4 was only 2-3x background activity levels, while the other Hot Spots ranged from 15-20x background levels). This suggests the potential for HS-4 to be a lower level, naturally occurring radioactive material, or a much smaller volume of similar contamination found across the Site.

The Hot Spot identified during the gamma walkover appears to be localized (approximately 15 by 15 feet) and should if, necessary, should be able to be removed during a one day excavation project. The nature and extent of the contamination associated with this area would be determined as part of the excavation activity.

Counts per minute radiation levels do not tell how much radiation something is emitting, but instead detect "events" picked up by the meter. Importantly, cpm does not show amount or strength of radiation, but can be converted into a unit of "dose" when multiplied with a unit of time to determine actual human health effect.

For context on the threat posed by an isolated area of surface soil emitting 29,000 cpm, granite curbs and countertops may exhibit gamma activity levels greater than 50,000 counts per minute without posing any significant human health effect.

Except for the lone Hot Spot, Great Lakes recommends no further action for the Survey Area.


Filter Bed No. 6
Filter Bed No. 5
Filter Bed No. 4
Filter Bed No. 3
Filter Bed No. 2
HS-3
~134,000 cpm
HS-2
~180,000 cpm
Pond 1
Sludge Drying Bed
Sludge Drying Bed
HS-1
~137,000 cpm
Spreading Filter Bed
~9,000 cpm
TREE LINE
10.4
8.8
Wooded
9.1
9.6
Primary Tank 2
Concrete Storage Building
HS-4
~29,200 cpm
11.6
16.2
Wooded
8.3
29.2
8.8
8.0
7.8
8.0
8.2
7.3
10.4
8.4
7.3
7.5
Wooded
9.0
7.5
8.8
7.3
7.2
7.2
Wooded
8.4
8.3
7.8
8.4
8.1
6.6