

Waite - Heindel
Environmental Management

MEMORANDUM

To: Calderwood File, Miles Waite (MW)
From: Chris Page (CP)
DT: March 31, 2017
Re: Indoor Air Sampling and Differential Pressure monitoring.

Air Sampling Locations and Notes:

Below are descriptions of indoor air quality sampling locations, along with any notes regarding the sampling process (including odors, possible sources of volatile emissions, etc). Refer to the attached Site Plan for approximate sampling locations. Note that "First Floor" refers to the basement level of each building.

IAS-1: Sample was located in the middle of the first floor hallway of Building #2. Sampling canister was placed atop a chair, intake height 40". Nearby room used for temporary storage of files, but no sources of volatile emissions or strange odors observed. Sample was run with 12-hour flow controller. All doors to first floor rooms were opened during sampling.

IAS-2: Second floor of Building #2. Sample was set upon table in the small conference/meeting room located beside staircase. Sampler intake height was 48". Faint perfume odor noted. Purell in corner of room possible emitter of volatiles, but no other sources noted. Sample was run with 12-hour flow controller. Door to meeting room left open during sampling.

IAS-3: First floor of Building #1. Sample was set atop desk/file cabinet, intake height was 48". No odors or possible emitter of VOCs noted. Sample was run with 12-hour flow controller, but only ran for ~10 hrs due to relatively low vacuum (-5.0" Hg) during check.

IAS-4: First floor of Building #1. Sample was placed on desk in office nook, intake height was 48". Purell hand-pump in nearby space, with possible emissions, but no odors observed. Sample was run with 12-hour flow controller, but was near-ambient so was cut after less than 10 hours.

IAS-5: First floor of Building #1. Sample was placed in hallway nook atop chair, intake height approximately 40". No odors, sources of emissions observed. Sample was run with a 10-hr flow controller with no issues.

IAS-6: First floor of Building #1, in foyer/waiting room space near elevator. Sample was placed atop chairs, intake height of 42". No odors, sources of emissions observed, but space was quite dusty. Sample was checked after running 9.5 hours on 10-hour flow controller, but samples went to ambient pressure. TestAmerica has confirmed that the flow rate was outside of the acceptable range—we should consider getting that flow controller for free (review on invoice), since it failed.

IAS-7: First floor of Building #3, set upon desk in corner office. Intake height of 48". No odors or sources of emissions observed. Sample was run with 10-hr flow controller with no issues.

IAS-8: First floor of Building #3, set upon chairs in the waiting room area. Sample intake height of 42". No odors or sources of emissions observed. Sample was run with a 10-hr flow controller with no issues.

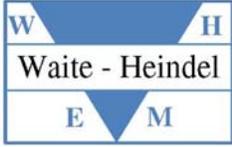
There were very few obvious signs of emissions from products/materials, though various odors were noted throughout the building. Due to the size and use of the space, and in the interest of time, a complete cataloguing of possible VOC emitting products/substances was not conducted. Most notably, the first floor of Building #3 had been recently remodeled, and there was olfactory evidence of recent re-carpeting and painting, though these odors were not strong enough to be bothersome or noxious. Had sampling been conducted in these spaces, likely some VOCs would be identified in analytical results. At no time was a PCE/TCE odor detected by field staff.

Differential Pressure Monitoring was conducted from the three (3) existing soil vapor points (VP-1, VP-2, and VP-3) present in the floor of the first floor of Building #2 at sample deployment and sample pickup. Numbers ranged dramatically from deployment to sample pickup, possibly a result of temperature shifts of changes in rising/falling of barometric pressure.

Sample Deployment: VP-1 was the only vapor point to show weakly positive (building sucking) differential pressure during deployment. Both VP-2 and PV-3 were weakly negative (subslab sucking air from first floor) at this time.

Sample pickup: VP-1 and VP-2 both reported strongly positive (building sucking) differential pressure; VP-3 was also positive, but significantly weaker than the other two vapor points. These data suggest that for at least a portion of the sampling period, the building's chimney effect was occurring and subslab vapors, as well as consistently pressurized outdoor air, had some potential to penetrate the building envelope.

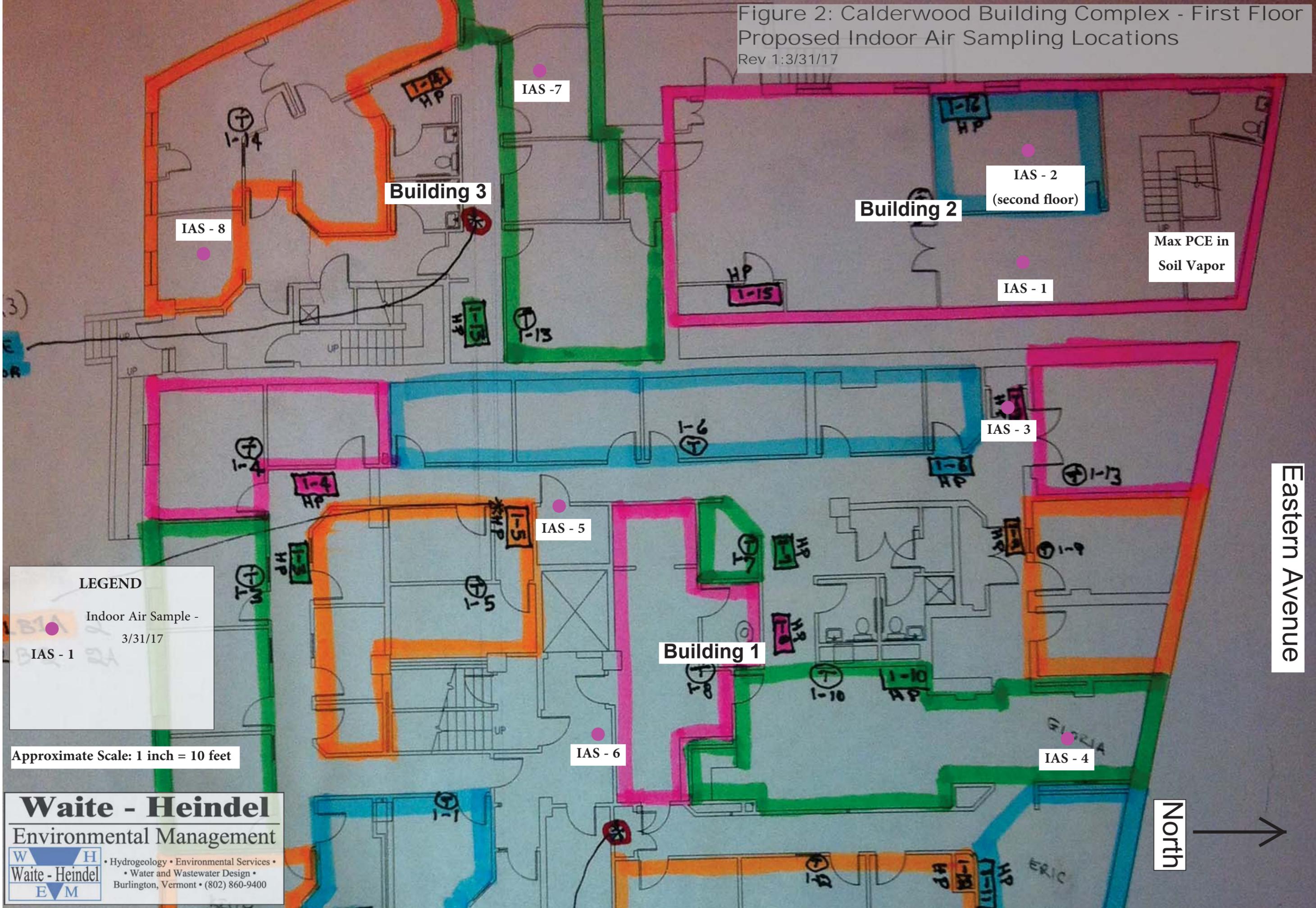
Field sheets are being prepared and are not included in this 3.31.17 memorandum.



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ATTACHMENT

Figure 2: Calderwood Building Complex - First Floor
Proposed Indoor Air Sampling Locations
Rev 1:3/31/17



LEGEND
Indoor Air Sample -
3/31/17
IAS - 1

Approximate Scale: 1 inch = 10 feet

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