

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Office of Environmental Quality, Region 5  
232 Golf Course Road, Warrensburg, NY 12885  
P: (518) 623-1200 | F: (518) 623-3603  
[www.dec.ny.gov](http://www.dec.ny.gov)

## Sent Via Email and USPS

March 21, 2024

Ahren Wolson  
Moriah Ventures, LLC  
dba WhistlePig Whiskey Company  
2139 Quiet Valley Rd  
Shoreham, VT 05770  
[awolson@whistlepigrye.com](mailto:awolson@whistlepigrye.com)

**Re: WhistlePig Whiskey Company warehouse emissions  
52 Tom Phelps Ln  
Moriah (T), Essex County**

Dear Ahren Wolson:

The Department of Environmental Conservation (DEC) has determined that emissions of ethanol from WhistlePig's whiskey aging warehouses in the Town of Moriah, New York, appear to be contributing to the growth of unsightly black whiskey fungus on building exteriors near the facility. The spread of this fungus has led to an increasing number of public complaints to DEC, including five in the last 12 months. In addition, DEC anticipates that WhistlePig's planned expansion of this facility is likely to cause additional fungus growth and lead to more complaints from community residents unless WhistlePig takes appropriate actions to mitigate the effects of its emissions.

"Whiskey fungus" is the common name for *Baudoinia compniacensis*, a naturally occurring fungus that thrives in the presence of ethanol. The tens-of-thousands of whiskey barrels aging in your warehouses emit ethanol, which is passively vented from the facility. These emissions appear to be contributing to the growth of whiskey fungus on nearby buildings. The enclosed reports prepared by DEC's Division of Air Resources analyzed mold samples collected in 2023 from your facility and from six local addresses up to 1,379 yards from your warehouses. Samples from five of the six addresses and from the outside of your warehouse are consistent with whiskey fungus.

DEC coordinated with the New York State Department of Health to evaluate these results, and although whiskey fungus is not typically associated with adverse health effects and does not pose a unique or significant health risk to people, the spread of whiskey fungus on outside surfaces such as building exteriors, decks, playgrounds, and furniture has the potential interrupt residents' quality of life and enjoyment of their properties. DEC has authority under New York Environmental Conservation Law Article 19, Section 19-0301, and Title 6 of the New York Codes, Rules, and Regulations, Part



Moriah Ventures, LLC  
re: dba WhistlePig Whiskey Company  
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Page 2

211, to regulate emissions of air contaminants that “unreasonably interfere with the comfortable enjoyment of life or property.”

Without a protocol in place to neutralize emissions of ethanol or mitigate the growth of whiskey fungus, WhistlePig’s operations are likely to contribute to an actionable interference under these provisions.

Therefore, as the owner of this facility, DEC is requiring WhistlePig Whiskey Company to submit, within 30 days, a written corrective action plan for DEC’s review and approval to address the effects of the WhistlePig facility’s emissions. The plan should include specific measures and a schedule for implementation to either neutralize ethanol emissions or to mitigate the effects of whiskey fungus in the facility’s environs. Thank you for your attention to this matter and if you have any questions about this letter or the required corrective action plan, please contact me at 518-623-1715 or [rachel.savarie@dec.ny.gov](mailto:rachel.savarie@dec.ny.gov).

Sincerely,

A handwritten signature in cursive script that reads "Rachel Savarie".

Rachel Savarie, P.E.  
Division of Air Resources

Enclosure: Lab Summary Reports

Ec (w/enc.): T. Schmelzer, WhistlePig ([tschmelzer@whistlepigrye.com](mailto:tschmelzer@whistlepigrye.com))  
Y. Zeng/File

**REPORT  
for  
Mineville 2023**

**Bureau of Air Quality Surveillance  
Division of Air Resources  
NYS Department of Environmental Conservation  
Final 03/18/2024**

## MINEVILLE SAMPLING REPORT

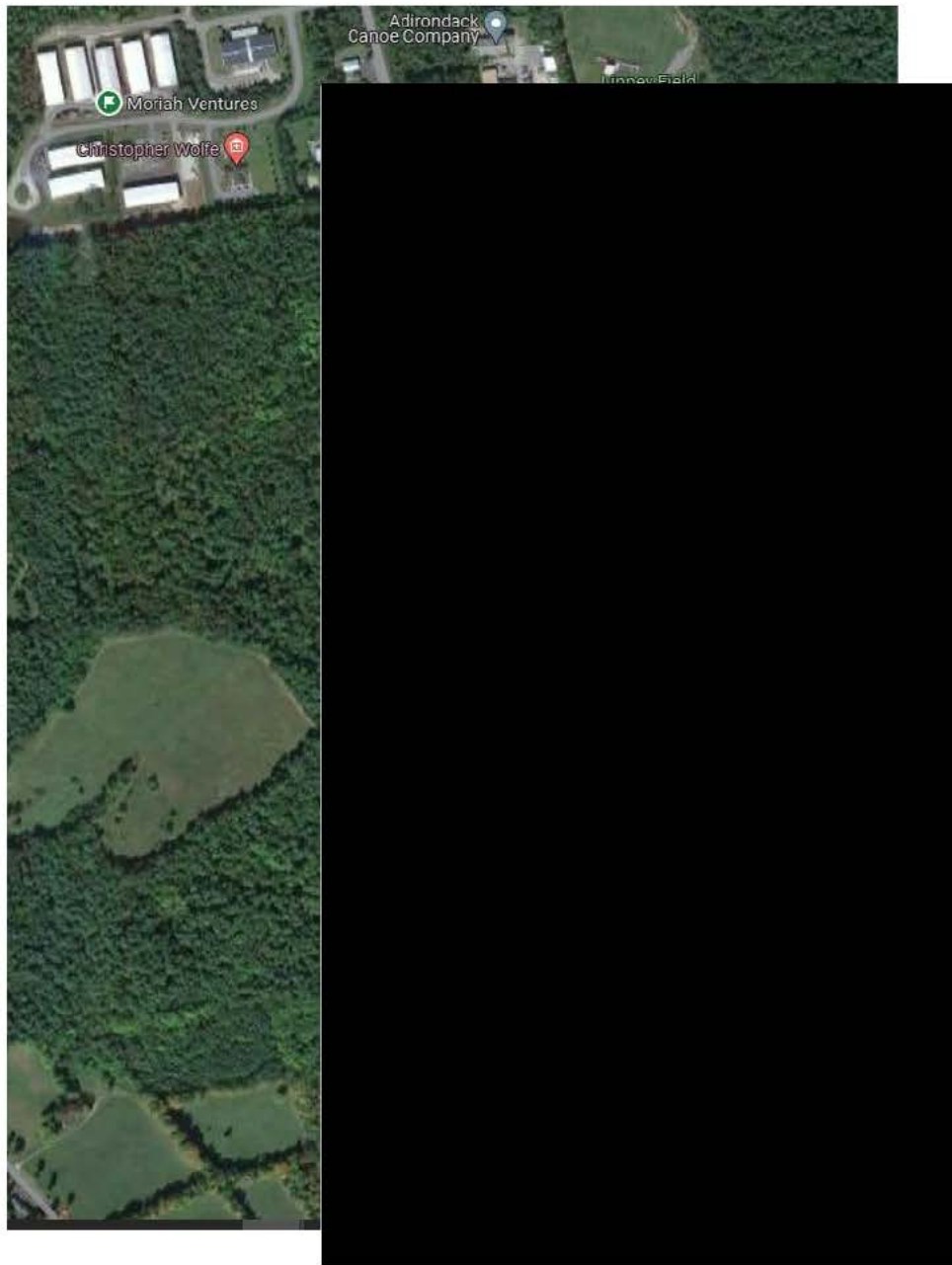
### SUMMARY

A study into air pollution complaints in the vicinity of the WhistlePig Distillery has been completed. The WhistlePig facility in Mineville, New York is a spirits warehouse with processing and bottling operations. The complaints from nearby residents are regarding what appears to be a black fungus that has accumulated on their homes that they believe to be “Whiskey Fungus”. “Whiskey Fungus” is a common term used to describe the fungus *Baudoinia Compniacensis* that occurs naturally in the environment and has an affinity for ethanol exposed materials. The WhistlePig facility stores barrels of whiskey in warehouses for aging and ethanol emanates into the environment from the barrels as part of the aging process.

On November 9<sup>th</sup>, 2023, DEC staff visited the site of the WhistlePig operation in Mineville and collected samples for analysis. Several of the warehouses were examined and two samples were collected to be used as Source material for comparison in an analysis of the black material covering nearby buildings. The Source sample was collected directly from the warehouse where there was an observed concentrated amount of the black material. Onsite staff said the black material on the outside of the warehouses on site is *Baudoinia*. DEC staff then proceeded to the residences of the complainants and collected four samples. Many of the homes in the vicinity did appear to be impacted by a black substance that resembled a mold or fungus. A sample outside of the area where no known ethanol vapors are escaping was also collected.

The samples were analyzed by comparing the source sample collected from WhistlePig to the samples collected from the surface of the residential homes as well as the sample collected from outside the area. A scanning electron microscope (SEM) was used at 1000X to match the morphology of the source material to the morphology of the material collected at residences in the neighborhood. Fifty fields were examined across the SEM stub (the device each sample was collected on) and a percent match per sample analyzed was determined by matching morphology and size between source material and the receptor. This analysis does not positively identify the mold or fungus. The DEC Particle ID Laboratory does not have the capability at this time to analyze biological material with a transmitted light microscope. If positive identification of *Baudoinia* is necessary, samples will be sent out for mass spectrometry, PCR (polymerase chain reaction) or genome sequencing.

## Sampling



Sample descriptions	Sample Location	Distance from WhistlePig Facility
R511923-1,	Source Sample WhistlePig	
R511923-2,	Source Sample WhistlePig	
R511923-3, 1A	[REDACTED]	663 Yards
R511923-4, 2A	[REDACTED]	796 Yards
R511923-5, 3A	[REDACTED]	961 Yards
R511923-6, 4A	[REDACTED]	1379 Yards
R511923-7	Control (not on the map, Warrensburg Office)	

-The distance from WhistlePig facility was approximated by using tools available on Google Earth

The map on the previous page marks the sampling locations with green flags. A total of seven samples were collected, six appear on the map above, the other was the background sample.

During the month of October, prevailing winds were coming from the WhistlePig facility to the sampled areas at an average of 7 mile per hour from the Northwest. Sample number 1A was closest to the facility, at approximately 663 yards. Sample number 2A approximately 796 yards, 3A approximately 961 yards, and 4A approximately 1379 yards, were collected at increasing distances from the facility. Sample number 7, the background sample, was collected near the DEC Warrensburg office. According to James Scott, a scientist and professor at Dalla Lana School of Public Health in Toronto, Baudouinia can be found 100 or 200 yards from distilleries with 20,000 to 30,000 barrels in storage.<sup>1</sup> DEC staff visited the WhistlePig facility in Mineville and had conversations regarding “Whiskey Fungus”, and transport of ethanol vapors. The staff at WhistlePig mentioned a study that determines how far the ethanol emanates from a given source point. A copy of this study has been requested. At the time of DEC’s site visit, WhistlePig had 11 of their 13 warehouses in use. While in the Mineville area, DEC staff visually examined the residential neighborhood as samples were collected.

### **Source Samples**

Source samples from two warehouses were collected to determine the presence of matching black particulate in the residential samples. The Particle ID lab obtained two samples from the WhistlePig Facility. These samples were both collected from the exterior surface of the warehouses where there was a concentration of the black material.

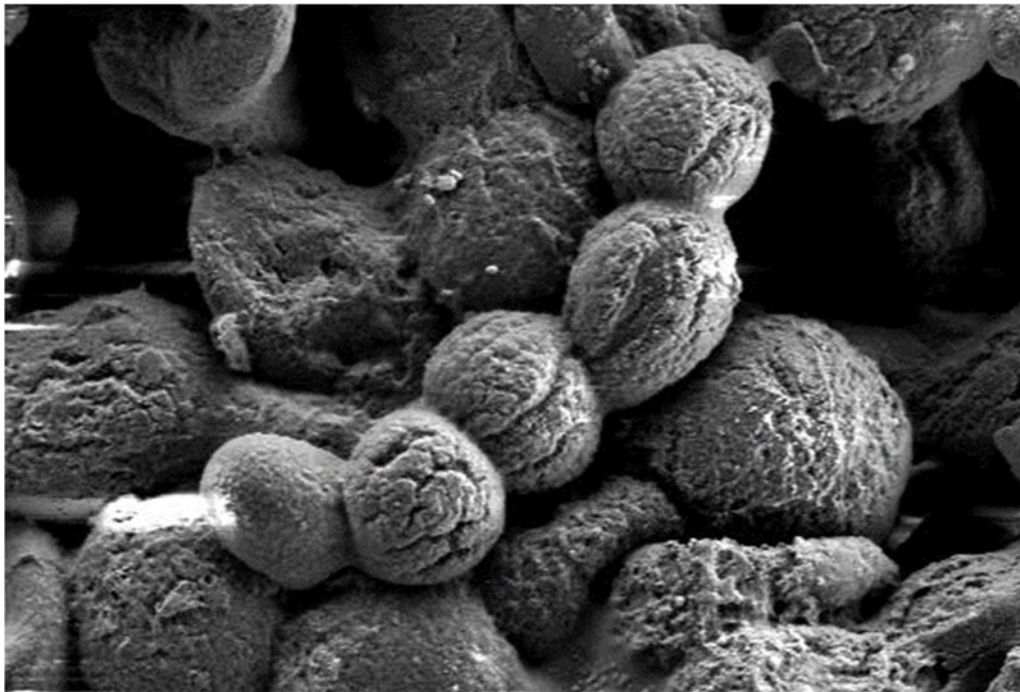
### **Sample Analysis**

Samples were analyzed via direct examination with the following instrument: Scanning Electron Microscope. This report includes representative examples of what was observed. Many thousands of particles were analyzed for this investigation.

**RESULTS:**

**Scanning Electron Microscopy (SEM)**

**WhistlePig Warehouse Source Sample**

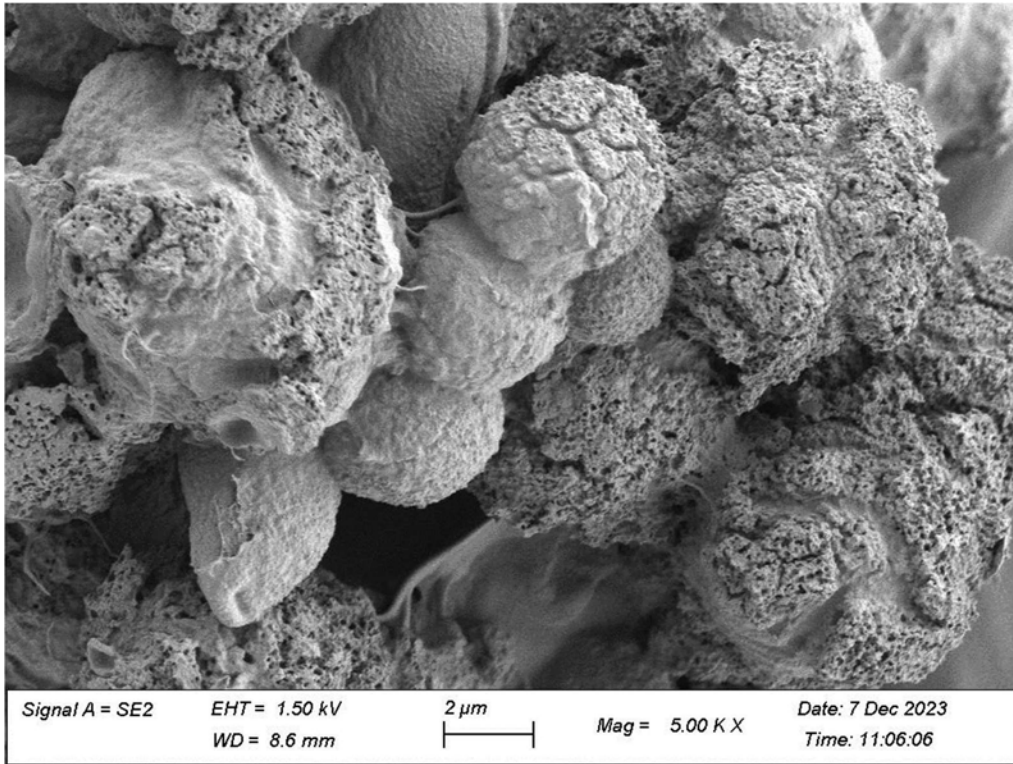


Signal A = SE2    EHT = 1.50 kV    2  $\mu$ m    Mag = 5.00 K X    Date: 16 Nov 2023  
WD = 6.3 mm    Time: 10:48:34

WhistlePig Warehouse Source.

This image is a representation of source material collected.

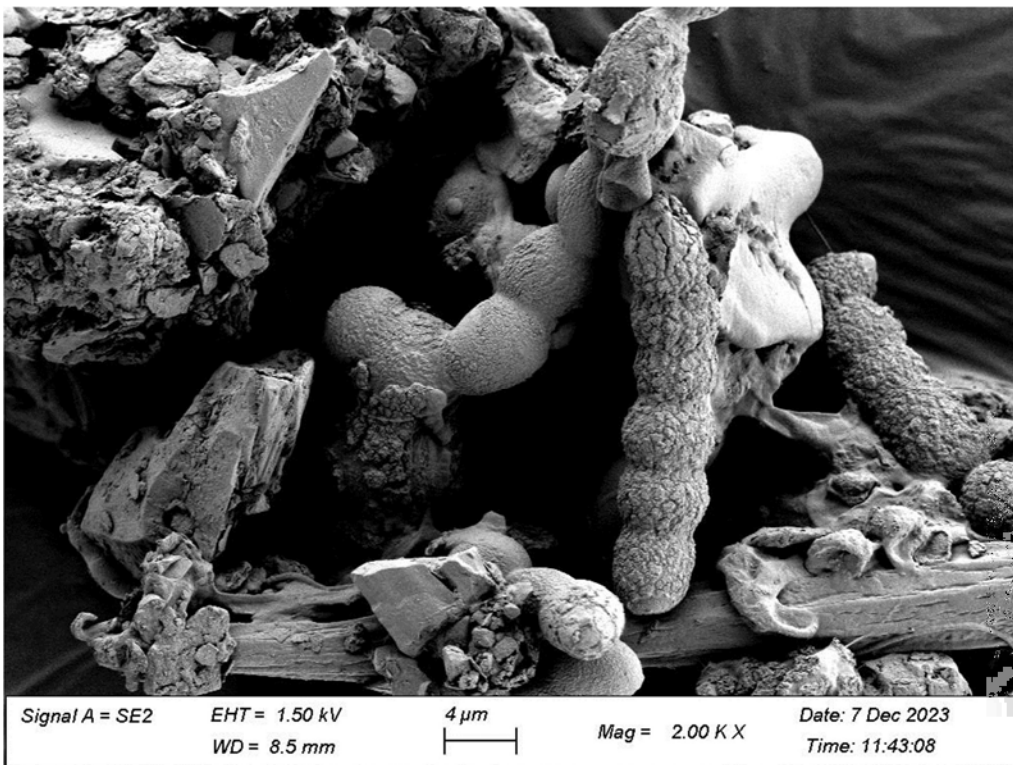
The fungus is in a chain and has a crusty appearance.



WhistlePig Warehouse second source.

This is consistent with the first source collected.

### Residential Samples

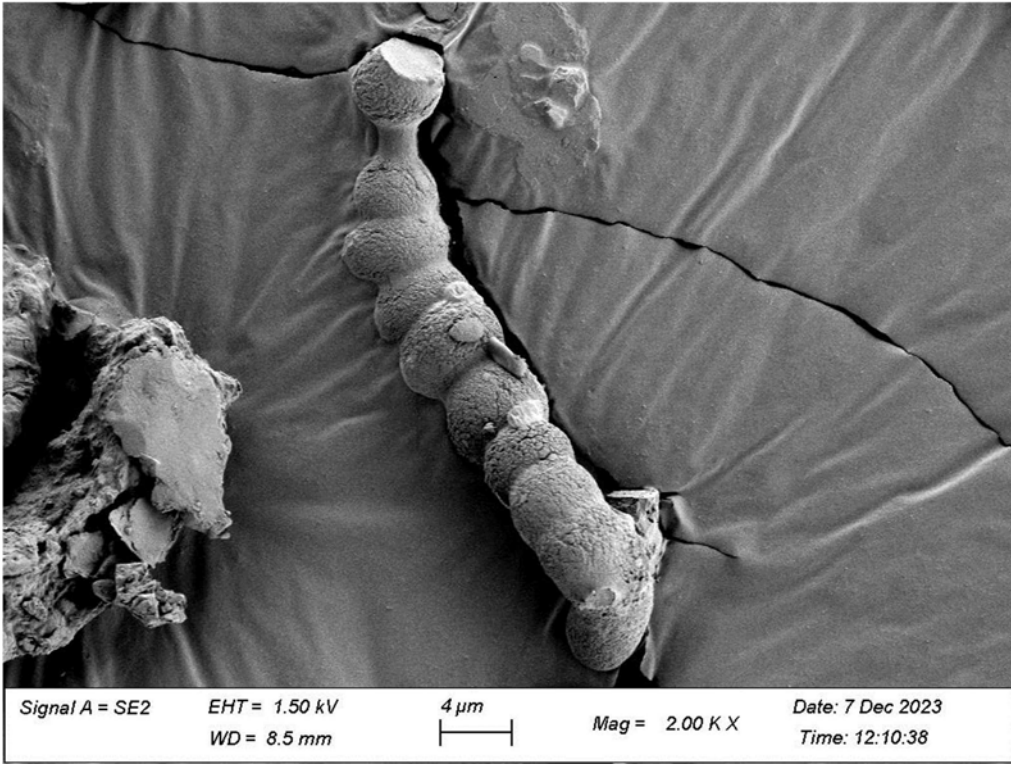


**1A**

This image is of the first residential sample collected from the homeowner on [REDACTED]. The homeowner just had his garage resided and the growth was new. It was black and relatively concentrated.

The image is consistent with the source collected from WhistlePig in size and morphology, and crusty exterior.



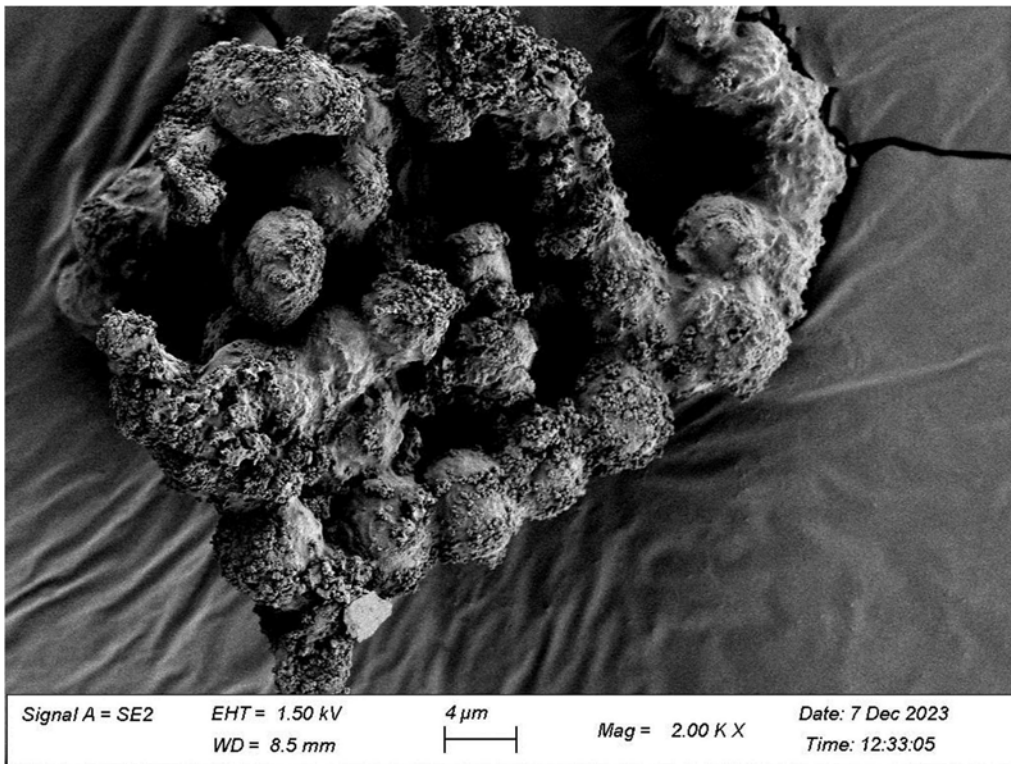


## 2A

This image is of the second residential sample and was collected from the homeowner on [REDACTED].

The homeowner was in the process of cleaning her house.

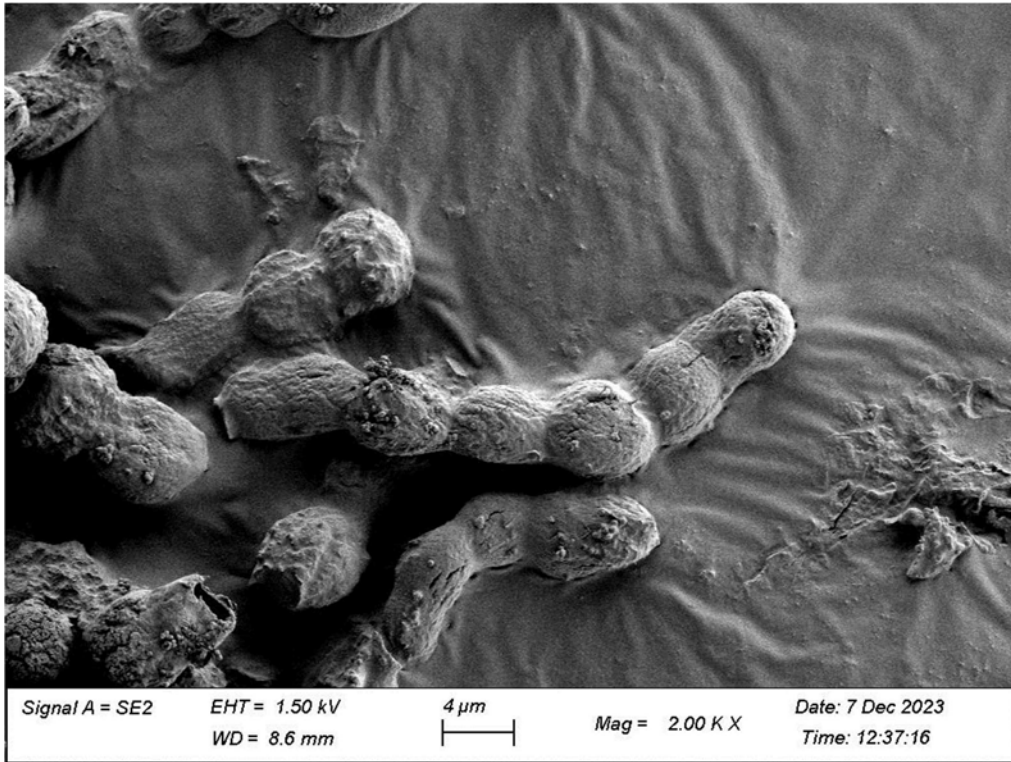
The image is consistent with the source collected from WhistlePig in size and morphology.



## 3A

This image is of the third residential sample and was collected from the homeowner on [REDACTED].

The image is consistent with the source collected from WhistlePig in size and morphology.

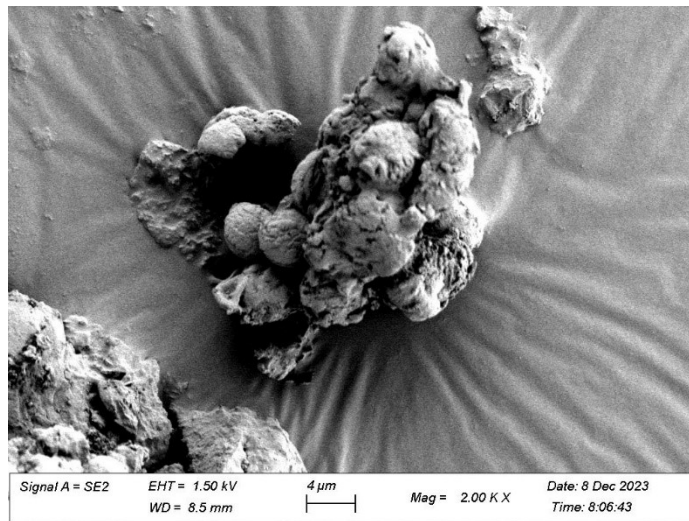


#### 4A

This image is of the fourth residential sample and was collected from the homeowner on [REDACTED].

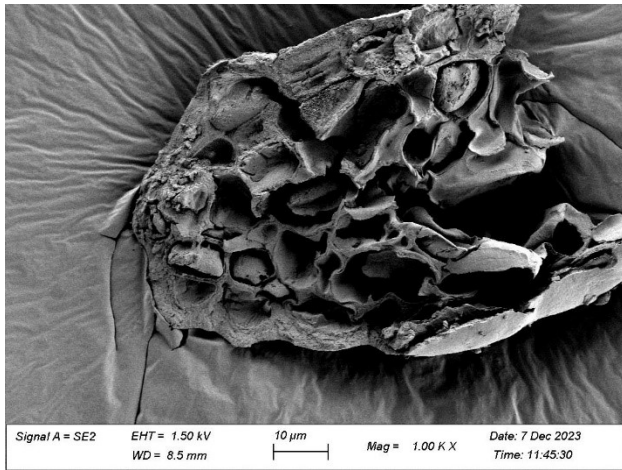
The image is consistent with the source collected from WhistlePig in size and morphology.

#### Control Sample

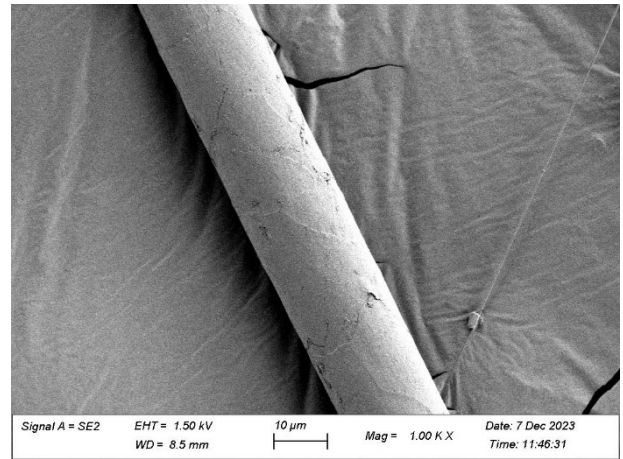


What appears to be Boudoinia is also present in the control sample. The control sample consisted mostly of growth other than Boudoinia.

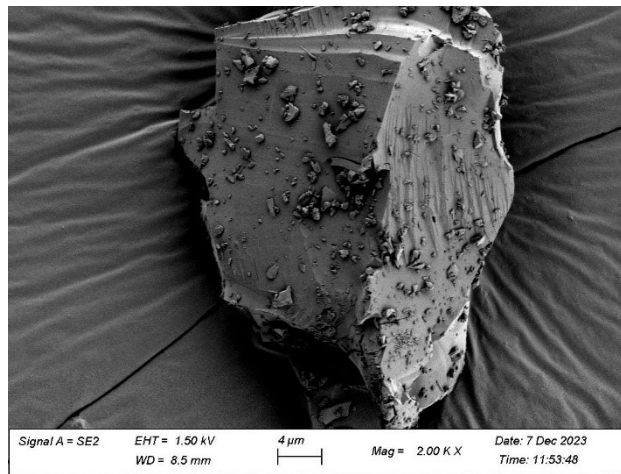
#### Other Particulate Matter Present on Residential Samples



Mold



Hair



Crustal Particulate Matter

The comparison of the samples to the source material revealed a significant amount of particulate matter that had a likeness to the source material. Sample 1A appeared to have the most and it also was closest to the facility. Sample 2A was the next closest, the homeowner indicated that they had been cleaning the outside of their home. All of the samples were collected in areas that appeared to have higher concentrations of dark particulate matter. The areas with higher concentrations were areas that were darker in color compared to other areas on the outside of the house.

The table below shows the estimated percentages of what was observed on the sample analyzed. The column labeled crustal refers to but is not limited to any dust, mineral, concrete, or earthen agglomeration that was present during the examination.

## Conclusions

The residential samples were compared to the samples collected from the WhistlePig warehouse surfaces. All the samples were collected directly onto a SEM stub.

A control sample was collected out of the area to determine background. The control was collected at the DEC Warrensburg office.

Based on all the available information, it is concluded that the fungus from the residences is consistent with that collected from the property of WhistlePig. The examination of the control sample shows evidence that the fungus material in the area is observed in greater quantities than what is naturally found in the environment.

<b><u>Estimated % of Particulate Observed on Prepared Sample Stub Analyzed</u></b>							
	<b><u>Matched Source</u></b>	<b><u>Hair</u></b>	<b><u>Pollen</u></b>	<b><u>Crustal</u></b>	<b><u>Other Mold/Fungus</u></b>	<b><u>Insect Part</u></b>	<b><u>Uncategorized</u></b>
<b><u>R511923-1 1A</u></b>	62%	2%	0%	20%	9%	1%	6%
<b><u>R511923-2 2A</u></b>	65%	0%	3%	16%	13%	0%	3%
<b><u>R511923-3 3A</u></b>	67%	0%	3%	3%	5%	0%	22%
<b><u>R511923-4 4A</u></b>	51%	0%	0%	0%	49%	0%	2%
<b><u>Control</u></b>	2%	1%	1%	14%	77%	0%	5%

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## Division of Air Resources

625 Broadway, Albany, New York 12233-3250

P: (518) 402-8452 | F: (518) 402-9035

www.dec.ny.gov

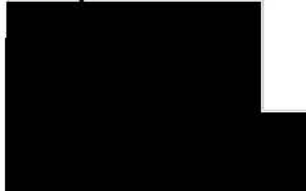
To: Paul Siezenga, Rachel Savarie  
From: Malissa Kramer, Environmental Chemist 2  
Re: Region 5,  
Date: 08/15/2023

A complaint was received and responded to by the Department of Environmental Conservation's (DEC) personnel on August 15, 2023. Samples were collected by DEC personnel to determine if the mold was from a nearby distillery from [REDACTED]. The samples were submitted to the Particle ID Laboratory for characterization. Samples were collected using prepared sampling devices as well as brushing material into petri dishes.

### Sample Number

R581523-1 Garage 1  
R581523-2 Garage 2  
R581523-3 House 1  
R581523-4 Hospice 1  
R581523-5 Hospice 2

### Sample Location



### SAMPLING LOCATION



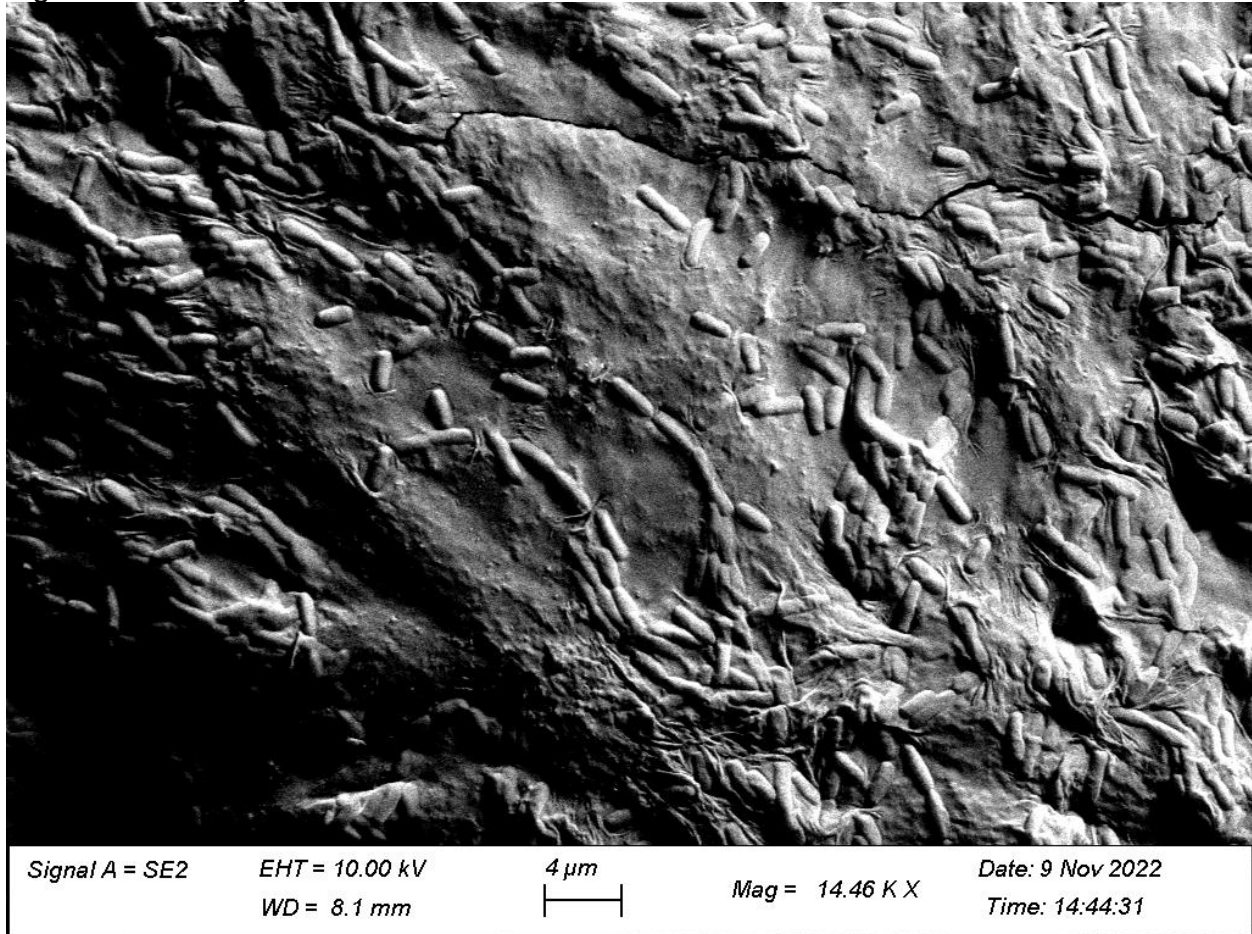
The residence is approximately 2000 ft South of the suspected distillery.



Department of Environmental Conservation

## Scanning Electron Microscope Images

Figure1: Whiskey Mold



The image above represents whiskey mold that was cultivated in the laboratory. The whiskey used for this experiment was Whistle Pig, Piggy Back 100% Rye Whiskey. The mold was cultivated by placing the whiskey in a petri dish and adding standard plate count media to the petri dish. The growth was examined after 7 days, but was not separated from the auger. The morphology of the growth was analyzed and compared to images published by Daniel Mosquin (<https://botanyphoto.botanicalgarden.ubc.ca/author/danielmosquin/>) December 22, 2011. See Figure 2.

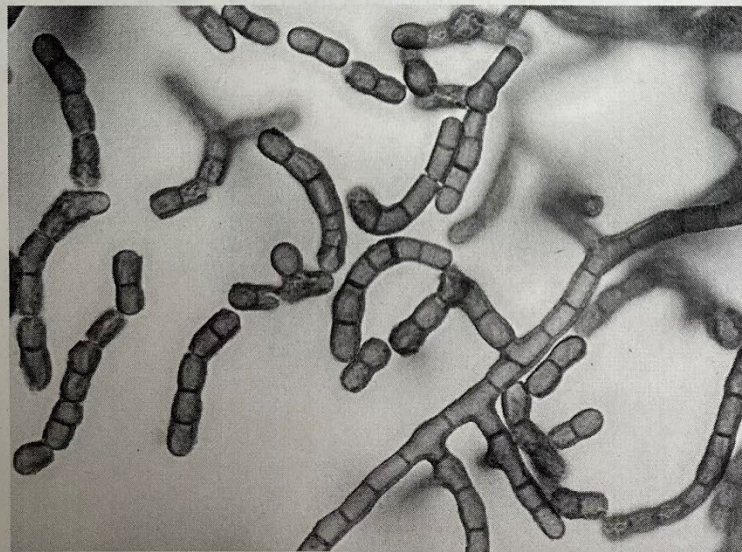
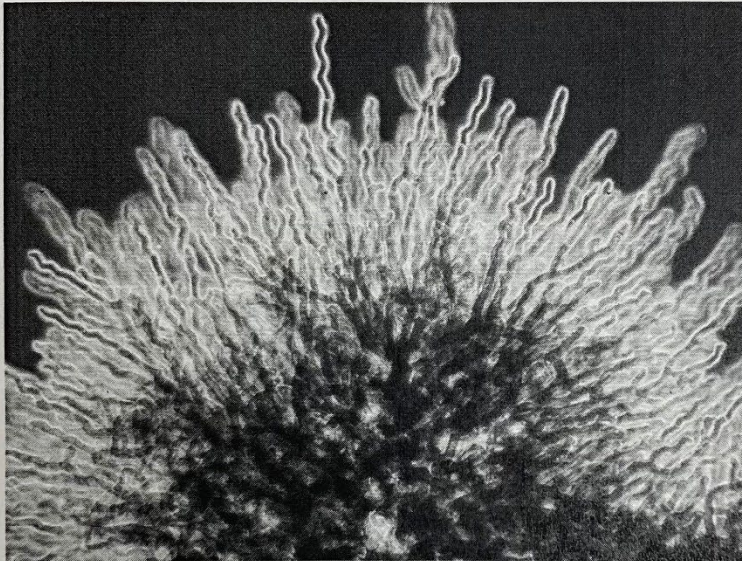
Figure 2:

## Research

# Baudoinia compniacensis

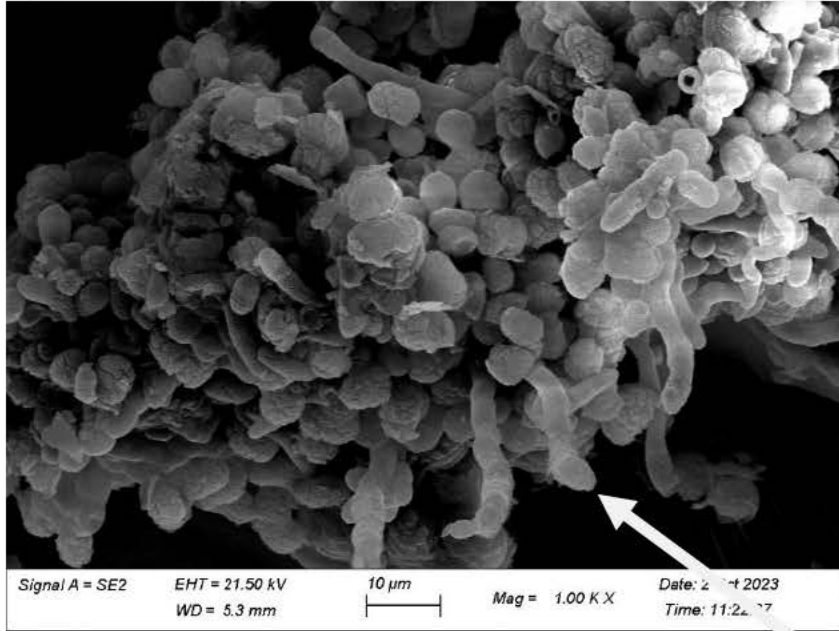
Published by Daniel Mosquin (<https://botanypromo.botanicalgarden.ubc.ca/author/danielmosquin/>) on December 22, 2011

Learning about *Baudoinia compniacensis* was the prompting for a "Botany and Spirits" series, as the story intrigued me so much. A big thank you to Dr. James Scott (<http://individual.utoronto.ca/jscott/>), Associate Professor from the Dalla Lana School of Public Health at the University of Toronto for sharing the first three images, and a nod of appreciation to Shadle@Wikimedia Commons for a photograph ([http://en.wikipedia.org/wiki/File:Heaven\\_Hill.jpg](http://en.wikipedia.org/wiki/File:Heaven_Hill.jpg)) of the phenomenon caused by the organism at Heaven Hill Distillery in Bardstown, Kentucky, USA.



## Scanning Electron Microscope Images

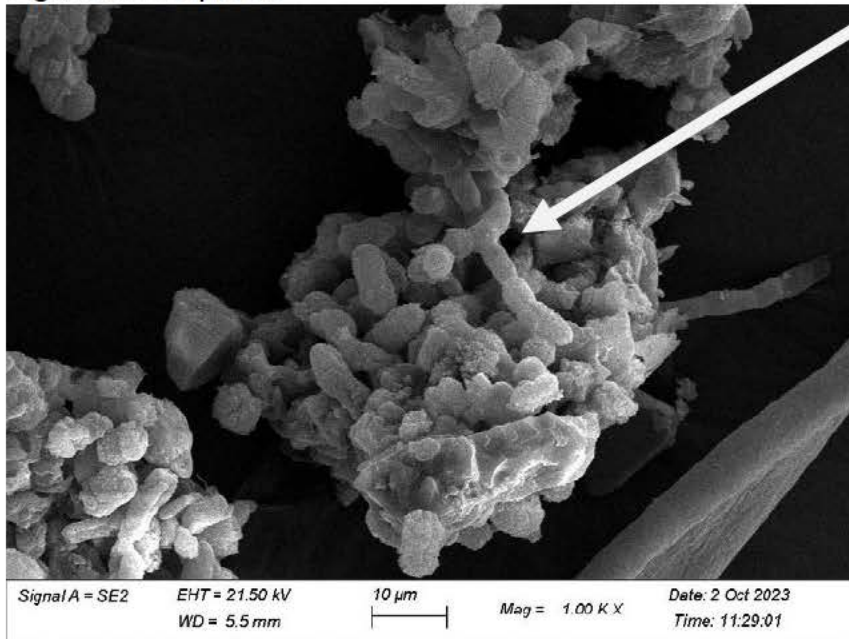
Figure 1: Hospice 1



This image represents the sample collected from Hospice 1. These samples were collected from [REDACTED], which is adjacent to the Whistle Pig warehouses where whisky is stored.

There is a strong correlation to "Whiskey" Mold.

Figure 2: Hospice 2



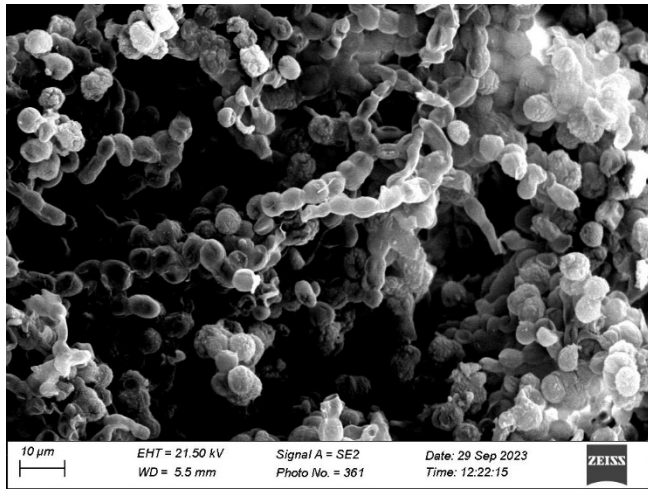
The morphology is consistent with "whiskey" mold and, filament is present in both hospice samples.

Filaments are associated with mold

## Scanning Electron Microscope Images

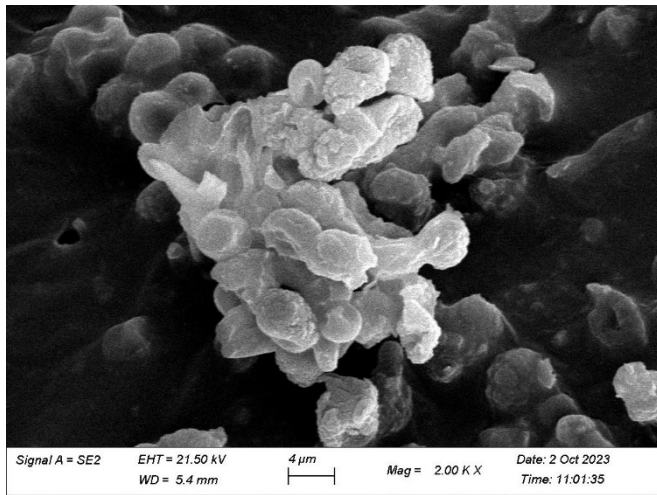
Figure 1: Garage 1





The images on the left represent the analysis of the samples collected from the residence located at [REDACTED]

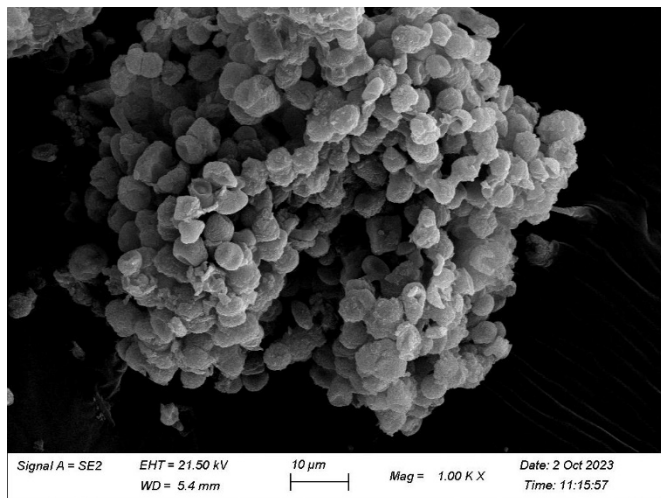
Figure 2: Garage 2



The particulate matter collected from the residence is smaller in size compared to the particulate matter collected from Hospice.

Figure 3: House 1

Filaments are not present on any of the samples collected from the residence.



**Conclusion:**

The analysis of the collected samples has been completed and at this time the determination is that samples collected from [REDACTED] do not agree with what the Particle ID Laboratory has

determined to be "Whiskey" mold. The specimen's analyzed from [REDACTED] [REDACTED] however do show agreement with 'Whiskey" mold. The filaments present and the morphology and size of the particulate matter agree with that of Baudoinia Compniacensis (also known as whiskey mold). The material observed on the samples collected from [REDACTED] do appear to be mold. The lab will investigate further to attempt to determine what type.