Disability Law Center
Massachusetts Protection and Advocacy

A Public Report on the Efficacy of Service Delivery Reforms at Bridgewater State Hospital

Exterior barbed wire fence and exterior sign at Bridgewater State Hospital.

A Report to the President of the Senate, Speaker of the House of Representatives, Chairs of the Joint Committee on Mental Health Substance Use and Recovery, Joint Committee on the Judiciary, Senate Ways and Means Committee, and House Ways and Means Committee, submitted pursuant to the FY 2020 Budget (Line Item #8900-0001.)

March 2020

The Protection and Advocacy System for Massachusetts

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Introduction and Overview

This Disability Law Center (DLC) report covers the monitoring of Bridgewater State Hospital (BSH), pursuant to expanded authority granted by Line Item #8900-0001, for the period from September 2019 through February 2020. During this reporting period, in particular, the Department of Correction (DOC) and Wellpath have worked together to serve individuals at BSH through some difficult times. The past six months have seen challenges ranging from smoothing the transition of a new Superintendent to healing a community in the wake of a fentanyl-related death. While cooperation and collaboration are certainly themes during this reporting period, DLC continues to raise the same concerns regarding the deteriorating physical plant, the administration of medication, and the disparate treatment of individuals served who are under DOC, and not Wellpath, security. This report highlights progress over the past six months and provides an overview of important issues that need continued attention going forward.

During this monitoring period, DLC staff conducted 11 site visits, fielded a high-volume of over 300 phone calls and letters from Persons Served (PS) at BSH, met individually with several PS to offer legal advice and/or referrals, received and reviewed daily reports from both Wellpath and DOC, and held weekly internal staff meetings. As an on-site monitor, DLC continues to enjoy unfettered access to a range of different meetings and events, including several Wellpath Morning Meetings, regular DLC-Wellpath and DLC-DOC meetings, and BSH Governing Body and Department of Mental Health (DMH) quarterly meetings. DLC also had the opportunity to conduct mold testing with our contracted mycology expert. The extent of DLC's monitoring would not be possible without our broad access, and mold testing conducted in December 2019 would not be possible without our expanded authority granted by Line Item #8900-0001.

DLC focused on five issues of concern during this period: (1) deteriorating physical plant; (2) administration of medication issues; (3) disparities in use of force between BSH and Old Colony Correctional Center (OCCC) units; (4) contraband and security at BSH; and (5) continued progress on policies and practices. For each issue, we have made a specific recommendation based upon our expertise of almost six years monitoring at BSH, and upon the progress that has been made over this reporting period.

1) Deteriorating Physical Plant

As previously noted in DLC's last three reports, each entitled *A Public Report on the Efficacy of Service Delivery Reforms at Bridgewater State Hospital,* dated May 18, 2018, February 25, 2019, and July 15, 2019, respectively, the physical plant and infrastructure at BSH are potentially hazardous to the health of any individuals on-site and necessitate endless costly and ineffective repairs. During this reporting period, highly anticipated roof replacements and repairs were completed on the administrative building and gymnasium. Unfortunately, with the first heavy rainfall, the administrative

building roof leaked again, continuing the cycle of a crumbling infrastructure and wet, hazardous health conditions.

For over a year now, DLC has raised concerns about these potentially hazardous conditions and has highlighted the narrower issue of mold and adequate mold testing. While DLC remains deeply concerned about other physical plant hazards beyond mold, DLC has focused on this area as a definitive issue for DOC to address to ensure the health and safety of PS and staff alike. For over a year now, DLC has urged DOC to conduct extensive mold sample swab testing throughout BSH (see DLC's recommendation in our February 25, 2019 and July 15, 2019 reports). DOC has repeatedly and consistently not only refused to do such testing but has actively denied DLC access to perform the tests.

Fortunately, during this reporting period, DLC was granted specific authority under Line Item #8900-0001 to conduct mold testing, including areas of the facility where PS do not reside. As such, DLC toured BSH with our expert on December 5, 2019, and returned on December 19, 2019, to conduct mold sample testing throughout the facility. Both observations and sample testing revealed extensive mold in almost every single area swabbed by our expert, including HVAC systems/vents. A copy of the Mold Sample Test Results and the Mold Inspection Report are attached as Appendix A.

Accordingly, DLC again strongly urges DOC to take swift, appropriate action to address the mold and other physical plant issues at BSH.

DLC Recommendation:

Consistent with DLC's prior recommendations in our public investigation findings on July 11, 2014, repeatedly reiterated since then and stated in our February 25, 2019 and July 15, 2019 reports, "[i]nstead of the resource drain of patchwork fixes, the Commonwealth needs to construct a modern facility that can effectively provide humane and appropriate treatment."

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2) Administration of Medication Issues

For almost six years now, DLC has raised concerns around the use of forced psychotropic medication at BSH and OCCC Units. DLC detailed these concerns in our public reports to the legislature dated May 18, 2018 at 3-5, February 25, 2019 at 10 and July 15, 2020 at 6-7. During this reporting period, Wellpath finalized its "Use of Involuntary Psychotropic Medication," effective January 24, 2020. This policy is identical to the draft discussed in DLC's July 15, 2019 report at 6. Thus, DLC now renews all of our concerns previously raised.

Wellpath's forced medication policy delineates three standards for administering psychotropic medication without a court order, namely: (1) prevention of imminent harm to self or others, or treatment of intolerable distress, also known as Emergency Treatment Order (ETO); (2) restriction of ability to engage in behaviors that are causing serious volitional harm to self or others, or present an imminent risk of doing so, also known as Medication Restraint (MR); and (3) prevention of immediate, substantial, and irreversible deterioration of mental illness, also known as Irreversible Deterioration Order (IDO). This policy does not protect PS rights to the fullest extent required by Massachusetts law and does not align with the exceptions outlined in *Rogers v. Commissioner of the Dep't of Mental Health*, 390 Mass. 489, 510-511 (1983), and as detailed in our May 18, 2018 at 3-5. This is of particular concern given that the Medical Director and psychiatrists at BSH have publicly advocated for limiting the scope of individual rights and narrowing the breadth of rights granted in *Rogers. See, e.g*., Christopher Myers, MD and Jhilam Biswas, MD, *Treatment Delayed is Treatment Denied*, (July 22, 2019) presentation at the International Congress on Law & Mental Health in Rome, Italy (advocating for curtailment of individual rights to independent evaluations and full hearings in an effort to medicate individuals without complete judicial process).

Furthermore, because this forced medication policy carves out a narrow definition of medication restraint when read in conjunction with Wellpath's draft Use of Seclusion and Restraint policy (PC 400-08), Wellpath is not required to track or report the use of all non-court-ordered forced medication to DOC or any other body. As a result, these policies make it is impossible to get a firm grasp on how often PS at BSH are being forcibly medicated through a review of records or otherwise. Without full and accurate reporting, there can never be adequate oversight of the practices and treatment of PS at BSH. This is particularly concerning with respect to restraint practices BSH, as it was the excessive and inappropriate use of seclusion and restraint at BSH that gave rise to DLC's investigation in 2014 and subsequent monitoring.

DLC Recommendation:

DLC renews its concerns raised in our May 2018 report that medication should be administered with informed consent first and, if that is not possible, then "…a court order should be sought. In the meantime, should there be a finding of imminent danger that can only be prevented with medication, the administration of medication involuntarily should be considered a chemical/medication restraint, labeled and documented as such in the records of the persons served." In order to fully resolve medication administration issues, all individuals in need of "strict security" psychiatric evaluation and/or treatment should be under the auspices of the Department of Mental Health.

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3) Disparities in Use of Force Between BSH and OCCC Units

There are two BSH units at OCCC, the Recovery Unit (RU) and Intensive Stabilization and Observation Unit (ISOU). Wellpath provides mental health and medical services on these units and DOC provides security. This model is drastically different than at BSH where Wellpath provides all services, including security. Currently, Wellpath and DOC security policies, protocols, and practices are not aligned. In fact, much of DOC involvement in the RU and ISOU flies in the face of de-escalation and trauma-informed care that Wellpath strives to achieve at BSH. DLC continues to raise the disparities in the treatment of PS at BSH and the OCCC Units, as they have not even remotely been addressed, and, perhaps, cannot be effectively addressed while BSH is under DOC control.

As monitor, DLC receives and reviews Wellpath's daily 24-hour report and DOC's Incident Reports. DLC regularly compares these reports to determine how well daily care is documented, communicated to others, and shared between the entities, and to note any disparities in treatment between BSH and OCCC Units. While the disparities in the care provided to PS at BSH and OCCC are obvious to someone reviewing these reports, they may not be clear to others.

During the reporting period, individuals at OCCC were subjected to a range of 'security' responses that individuals at BSH were not. From chemical agents to handcuffs, DOC security measures typically escalate situations and are both inflammatory and trauma-inducing to PS. For example, on September 1, 2019, a PS was upset from being subjected to a random cell search in the RU. The interaction between the PS and DOC correctional officers escalated to the point that DOC sprayed chemical agent on the PS. It is important to note that numerous random searches have been conducted at BSH and no such event has ever involved a chemical agent being used by Wellpath. In fact, a chemical agent is not even available at BSH. Another such example that occurred on January 23, 2020, involved another PS in the RU who refused to "lock-in" for an event that was happening outside of the unit. This individual was physically taken down by DOC correctional officers, and once down on the floor, was sprayed with a chemical agent. Again, the individual received no de-escalation interventions and was instead subjected to physical intervention and a painful chemical agent by DOC. DOC's culture of punishment and containment is at the very core of these events. It is particularly important to note that on days where Wellpath has offered additional programming, such as a holiday meal, there are no DOC Incident Reports of these kinds of events. Trauma-informed humane treatment is safer and more effective in every way.

Additionally, each time DOC physically intervenes with hands on an individual in an OCCC Unit, whether for a takedown, handcuffs, chemical agent, etc., it is NEVER recorded by Wellpath as an event or restraint. Thus, the drastically reduced numbers of restraints at BSH recorded since the transition to Wellpath can only be known to be accurate at BSH, not the OCCC Units. Further progress, and parity, cannot be achieved unless and until all BSH, including the OCCC Units, are managed the same. Until this is

resolved, there will be a fundamental disparity of treatment between all PS needing "strict security" in Massachusetts.

DLC Recommendation:

In order to fully resolve disparities at both BSH and OCCC Units, in addition to building a new modern facility (recommended above), all individuals in need of "strict security" for psychiatric evaluation and/or treatment should be under the auspices of the Department of Mental Health.

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4) Contraband and Security at BSH

During this reporting period, Wellpath and DOC continued their collaboration and partnership efforts around safety and security following a death at BSH. On September 19, 2019, Wellpath staff found an unresponsive PS in his room. Staff responded by performing CPR and calling EMTs, who transferred the PS to Morton Hospital where he was pronounced dead. Wellpath and DOC suspected, and later confirmed, that the individual died of a drug overdose from fentanyl that he obtained from another PS at BSH. Wellpath and DOC immediately partnered to conduct an extensive search of BSH for contraband and to identify and respond to any safety threats. DLC commends this partnership, especially in light of the fact that it was the same week that Superintendent Kennedy started at BSH. Wellpath and DOC worked to create improved admission and re-entry screening protocols for PS, including using a body scanner at OCCC to identify contraband is hidden in a person.

The above measures were implemented and, in the weeks and months that followed, more permanent solutions were created. For example, BSH obtained its own body scanner and retrofitted part of the medical building to facilitate scans and the new admission/re-entry process for PS on site. Also, in response to the individual's death in September 2019, Wellpath obtained naloxone (Narcan) for every unit and trained staff on its use. This was not only an appropriate response but has already proved itself useful and effective in January 2020 at BSH. Both Wellpath and DOC continue to explore solutions to contraband safety and security risks at BSH.

DLC Recommendation:

Wellpath and DOC should continue to collaborate on safety and security improvements while prioritizing the treatment and well-being of the individuals being served at BSH.

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5) Continued Progress on Policies and Practices

In addition to those noted above, DLC has raised concerns to Wellpath and DOC about areas where there is a lack of consistency or clarity in policies and practices. The two main areas during this reporting period have been (1) the consent standard pursuant to the Prison Rape Elimination Act (PREA) and (2) the standard for admitting someone to the OCCC ISOU in lieu of BSH.

First, PREA does not define or describe consent, and it does not provide guidance on determining an individual's capacity/competency to provide consent. Likewise, PREA does not provide guidance on an individual's capacity/competency to file a complaint or follow through with the complaint process. As a result, it is unclear whether all PREA related events are reported, and how an individual's capacity impacts the process and findings. At BSH, Wellpath investigates PREA concerns and reports findings to DOC. However, without clarity about consent and capacity issues raised here, it is impossible to know what standards Wellpath should be using in this process. For example, if the PS seems to consent but lacks the capacity/competency to do so, how should that factor into Wellpath's investigation and findings? DLC raised this issue with DOC and expects DOC to provide clarification to Wellpath.

Second, since the transition to Wellpath, there have been two PS who were legally appropriate to be admitted to BSH but were admitted to OCCC ISOU instead. In the first instance, the individual was at BSH and was transferred to OCCC after an incident at BSH. This transfer was immediate, and DOC approved it. More recently, an individual who was going to be admitted to BSH was instead admitted to OCCC ISOU. In this situation, Wellpath requested and DOC approved the individual's admission to OCCC ISOU. DLC has raised concerns over this practice because there is currently no policy (Wellpath or DOC) on such a decision-making process or standard. DLC expects DOC to immediately draft a policy that provides agencies clear guidance to ensure that PS are protected against arbitrary decisions placing them in an OCCC Unit when placement in BSH is appropriate.

Third, since the transition almost three years ago, Wellpath has not consistently and reliably reported out assaults – either PS on PS, or PS on staff. In December 2019, Superintendent Kennedy presented assault information to the Governing Body that did not match that maintained by Wellpath. Since then, Wellpath and DOC have been collaborating to compile similar data that Wellpath may report on during the March 2020 Governing Body meeting. DLC looks forward to reviewing this data, as it is long overdue.

DLC Recommendation:

Wellpath and DOC must continue to identify and respond to issues where there is a lack of clarity and/or no policy guidance. DLC recommends that DOC formulate policies on PREA consent standards and OCCC ISOU admissions as soon as possible and that Wellpath continue efforts to track and report on assaults.

Conclusion

DLC commends the continued partnership and collaboration between Wellpath and DOC because such cooperation best serves the individuals at BSH and OCCC Units. DLC urges all involved to work to protect the overall health and well-being of those at BSH by building a new facility and transferring oversight to the Department of Mental Health. Further, DLC urges all involved to immediately discontinue the use of forced medication outside of the *Rogers* decision, and to track the use of all forced medication for reporting purposes. Similarly, DLC urges uniformity between BSH and OCCC Units security protocols and to discontinue any security measures based on a culture of punishment and control, namely chemical agents and handcuffs. Finally, DLC commends the efforts of Wellpath and DOC when they work together on security issues and looks forward to reviewing DOC policies and Wellpath data, as mentioned above. To ensure the continued improvement of safety and treatment of persons served at BSH and the OCCC Units, DLC calls on DOC, Wellpath, and the Commonwealth to follow the recommendations discussed above.

Appendix A

Gordon Mycology Laboratory, Inc.
P.O. Box 310, Groton, MA 01450
Phone: 978-448-9954 Fax: 978-448-9152

Mold Inspection Report

Bridgewater State Hospital
20 Administration Road
Bridgewater, MA

Project ID: 19-143GML
Inspection Date: December 19, 2019

February 11, 2020

Tatum A. Pritchard, Director of Litigation
Disability Law Center
11 Beacon Street, Suite 925
Boston, MA 02108

Dear Ms. Pritchard:

The following report details observations, laboratory results, and recommendations from a mold inspection performed by Gordon Mycology Laboratory, Inc. ('GML') on December 17, 2019 in several buildings of Bridgewater State Hospital located at 20 Administration Road in Bridgewater, MA. The goal of the inspection was to evaluate areas in which mold remediation had been completed and several additional buildings for potential mold growth sources and to provide appropriate remediation recommendations for any confirmed problems.

Inspection and Laboratory Procedures

GML first visited the property for an onsite meeting on October 16, 2018 with building maintenance staff, attorneys, facilities director, and others involved with the project; the meeting supplied information regarding steam pipe releases and other water issues in the Administration and Medical Buildings, subsequent discovery of mold growth in those buildings, mitigation work done up to that point, and mold inspection and testing services performed. GML performed a walkthrough of remediated areas and several other buildings on December 5, 2019 in order to develop an accurate sampling plan.

Culturable surface swab samples were collected using sterile sampling supplies and industry-standardized sampling procedures from remediated building materials in the basements of the Medical and Administration Buildings, HVAC system components in several buildings, and suspect building materials in inspected areas to determine if mold growth was present and if so, what types and to what extent. Samples were sent to QLab in Metuchen, NJ (AIHA EMPAT Laboratory ID: 178794) for processing and analysis where they were cultured until mold types and quantities could be determined.

Airborne mold samples were not collected, as they were not warranted at this time. There was visible mold growth in many of the inspected areas and a strong mold odor throughout both remediated basements, confirmation of mold growth sources and, therefore, airborne mold spores and mVOC's (microbial volatile organic compounds). The main goal of the inspection was to identify potential

mold growth sources that may be remaining in the remediated areas and other areas that had not had remediation performed; HVAC system components were also tested as the systems were old, in poor condition (filthy), and have not been professionally cleaned.

Inspection Observations

- Administration Building Basement
  - Strong mold odor detected
  - Basement was divided into several rooms that had been used for storage; all contents that had been stored in the basement were removed
  - The basement had a few items stored there now but they were reportedly only there temporarily
  - Considerable evidence of accumulated/chronic moisture was noted by rusted metal surfaces, rust staining on floors where metal items had been stored, water damaged wall framing, and visible mold growth
  - Concrete block walls with peeling paint from chronic moisture
  - Painted plywood partition wall in the old IPS Record Room (Rm AD11) was water damaged and moldy at its base
  - Self-contained modular air filtration unit in the ceiling of the old IPS Record Room was filthy; this unit is reportedly not in operation any longer
  - Visible mold growth on wall framing, plywood partition wall, ventilation system vents, painted concrete walls, ceilings, and baseboards
  - Some surfaces had been painted over prior to this inspection so the original condition and whether the surfaces contained mold growth could not be ascertained
  - No dehumidifier
- Medical Building Basement
  - Significantly strong mold odor noted
  - Basement was divided in several rooms once used for storage, although now empty, a main room, and a mechanical room
  - Basement was mostly empty; a few moldy wood pallets with boxes remained along with some other random items
  - Remediated rooms had been painted over, however, mold growth was noted through the ceiling paint, on older ceiling paint that had been covered with plastic before remediation began, on HVAC ductwork paint, and above the ceiling in an open hole
  - Bubbling and peeling ceiling paint in one green room appeared to be from water
  - HVAC ductwork had been painted in the past but the paint was peeling and visibly moldy throughout
  - Considerable evidence of accumulated/chronic moisture was noted by rusted metal surfaces, rust staining on floors where metal items had been stored, water damaged building materials, peeling foundation paint, and visible mold growth
  - HVAC vents in the green rooms were filthy, almost blocked with black dust and debris; specialized mold remediation would not have left these vents so dirty (they would have been hand scrubbed as all other surfaces in the rooms)
  - Pipe insulation was visibly moldy throughout
  - Door frames were rusted along the bottom few inches
  - Door casings with peeling paint and visible mold growth beneath the paint
  - No dehumidifier
  - Mechanical room
    - Large, partially open sump with standing water and water rushing in through a pipe
    - Right wall was covered with a fabric-type material that was water stained and covered in mold growth

        - Ceiling was covered with mold growth
        - Pipe insulation was water stained and covered in mold growth
        - HVAC system that was reported to out of use was running during the initial walk-through; moldy building materials and an old, moldy filter were sitting on top of the unit
        - Surfaces were rusted throughout, from floor to ceiling
        - Evidence of chronic moisture on the walls, particularly their base
- Building A (Adams)
    - Second floor recreation room with filthy HVAC ductwork
    - HVAC air handler in the small basement, with standing water on the floor, was filthy, covered inside and out with accumulated dust and debris, had water inside the unit, and mold growth on several dirty components
    - No visible mold growth found in the few inspected areas
- Attucks Building
    - Areas of water damaged ceilings from chronic roof leaks
    - HVAC vents were filthy
- Max 2 Building
    - HVAC vents were filthy
    - Open shower room with water damaged, deteriorated, and moldy wall materials; rotted/rusted out and moldy door framing as well
    - HVAC vents were filthy
- Recovery Place
    - Modular building reportedly at the end of its life (built in the 1980's)
    - Roof top HVAC units, vents within the building were filthy
    - Carpet in some rooms
    - VCT tile flooring elsewhere, lifting and broken in numerous areas

Laboratory Results

Please refer to the AccuScience report for detailed laboratory results

Surface Mold Samples

Surface swab results are reported as colony forming units per square inch (CFU/in^2), in other words, the total count of living mold spores per square inch of tested material. A colony forming unit (CFU) is a mass of growth on a culture plate large enough to see and typically begins with one spore. For example, if the mold level on a surface is found to be 500 CFU/in^2, and the sample contained only the mold *Penicillium*, the result can be interpreted as 500 living *Penicillium* spores per square inch of the tested material.

Swab sampling defined significantly elevated mold levels (abnormal and unacceptable) on the following tested materials:

- Administration building basement Rm AD11 – peeling foundation paint
- Administration building basement Rm AD11 – baseboard trim and painted plywood wall
- Administration building basement Rm AD11 – HVAC system supply air diffuser
- Administration building basement Rm AD04 – HVAC system supply air diffuser
- Administration building basement Rm AD04 – wood wall framing, at base
- Administration building basement Rm AD04 – backside of plywood wall
- Medical building basement – 1st green room, mold on HVAC ceiling soffit
- Medical building basement – 2nd green room, HVAC system supply air diffuser
- Medical building basement – 2nd green room, HVAC system return air vent
- Medical building basement – main room, mold on painted HVAC ductwork

- Medical building mechanical room – mold on insulation covering on wall
- Medical building mechanical room – mold on HVAC ductwork insulation
- Medical building main room – mold on pipe insulation in ceiling
- Medical building booking corridor – HVAC system supply air diffuser
- Adams building 2nd floor tv room - HVAC system supply air diffuser
- Max 2 hallway - HVAC system supply air diffuser
- Max 2 shower room – mold on walls behind fiberglass

Mold levels defined by culture analysis far exceeded those expected on these same materials if they had not been exposed to chronic moisture; mold levels ranged from 600 – 1,000,000 CFU/in^2. Mold types identified growing on the building materials included *Alternaria, Aspergillus flavus, Aspergillus fumigatus, Aspergillus niger, Aspergillus ochraceus, Aspergillus sydowii, Aspergillus ustus, Aspergillus versicolor, Aspergillus* sp., A*ureobasidium, Chaetomium, Cladosporium, Epicoccum, Fusarium, Memnoniella, Penicillium, Stachybotrys,* and *Trichoderma* along with environmental yeasts, non-sporulating fungi (unable to mature on culture plates for identification but require similar growth conditions as molds), and xerophilic fungi.

Several samples contained the molds *Chaetomium* and *Stachybotrys*. *Chaetomium* and *Stachybotrys* have higher moisture requirements than the other molds identified growing on the tested building materials and when present, confirm chronically wet materials. The considerable amount of rust, rot, and visible mold growth throughout the basements confirm chronic/long term moisture that was able to support the growth of these and many other molds.

The following samples contained relatively lower mold levels, however, based on the age and currently filthy condition of the HVAC systems, all HVAC systems will need to be professionally cleaned:

- Attucks foyer– HVAC system supply air diffuser
- Attucks library – HVAC system supply air diffuser
- Adams building – HVAC system air handler filters (filters were wet and surrounded by visible mold growth inside and surrounding the air handler)

Recommendations

The following remediation recommendations have been adapted from current literature from the EPA, AIHA, ACGIH, IICRC/ANSI, New York City Department of Health, and other applicable organizations that have developed plans for effectively managing indoor mold growth. Mold sensitivity can develop over time and the length of time leading to mold sensitivity or symptoms related to mold exposure is not known and can vary greatly between individuals. Once indoor mold growth is confirmed, it must be removed using the appropriate procedures to minimize/prevent potential mold exposure risks. The accepted protocol for indoor mold growth is to remove contaminated, porous building materials and remediate (described below) less porous and non-removable materials. Current standards state that mold growth must be eliminated (not fogged, sprayed, ozonated, painted over, killed but left in place, or encapsulated).

A specialized mold remediation company is needed to remove mold growth sources and remediate remaining materials/surfaces in the basements of the Administration and Medical Buildings that were previously remediated but not successfully as well as the basement of the Adams Building with standing water and mold growth. This type of company is skilled in containment and decontamination procedures and is familiar with the currently accepted mold remediation standards, procedures, and safety guidelines. Secure engineering controls (containment barriers, negative air pressure system, HEPA filtered air scrubbers) and safety procedures (personal protective equipment—PPE) for people performing the work will be necessary to prevent cross

contamination and exposure risk while the work is being conducted. A qualified remediation company knowledgeable and experienced in the field and who follows the IICRC/ANSI Document S520: Standard and Reference Guide for Professional Mold Remediation (2015) will do the appropriate work using procedures and guidelines outlined in this document to achieve complete and successful remediation of contaminated areas.

Remediation recommendations described below are based on onsite observations and reported information. GML is presenting guidelines for amounts of materials to be removed and remediated; the remediation company may ultimately decide how much material to remove and remediate in the affected areas. Additional materials may need to be removed or remediated based on the visual assessment once the remediation process is begun.

Administration Building Remediation Protocol

The following should be done by the remediation company once secure engineering controls have been established:

- All removable wall materials (drywall, plywood) should be removed from the floor up 4 feet; discard any remaining baseboards on all basement walls (no building materials had been removed as part of the previous mold remediation and these materials had been significantly compromised by water and subsequent mold growth)
- VCT floor tiles should be removed as they showed considerable evidence of water damage; moisture was able to get beneath the tiles resulting in mold growth on the underside of the tiles as well as the installation adhesive
- Remove any rotted materials if discovered, as they cannot be remediated
- Abandoned/unused HVAC equipment or air movers should be removed along with the ductwork; cleaning the ductwork of an abandoned system is not cost effective, although an alternative option is to have the ductwork sealed
- Materials to be removed should be bagged and the bags sealed and wiped down before taking out of the basement to be discarded
- Once removed materials are discarded, all remaining building materials from floor to ceiling, including concrete floor and walls and all materials in ceilings, should be remediated which includes wire brushing/scrubbing/wiping (different materials require varying cleaning techniques), application of an EPA approved sanitizing agent, HEPA vacuuming, and sanding or grinding if necessary
- Painted concrete walls will need to be scrubbed/wire brushed to remove the moldy paint
- Damp wipe and HEPA vacuum all other surfaces in the basement to remove settled mold spores and demolition dust
- HEPA filtered air scrubbers should run for at least 48 hours after the work is completed

Medical Building Remediation Protocol

The smaller rooms had been painted so the full extent of the mold growth was not known, however, it was clear that some if not all of the original mold growth had been painted over based on several areas where the paint had missed. Removing the new paint is not a viable option at this point but all newly painted surfaces will still need to be remediated/scrubbed/wire brushed. It would be best to 'gut' this basement down to concrete walls and floor, removing all absorbent, porous building materials because they had been exposed to long term moisture and many are beyond cleaning at this point.

- Remove all pipe insulation from all rooms
- Remove all softer/absorbent wall materials in all rooms
- Remove all rotted building materials

- Remove all wood pallets or other absorbent, organic materials on the floors
- Remove ceiling materials two feet in all possible directions around water damage
- Abandoned/unused HVAC equipment or air movers should be removed along with the ductwork; cleaning the ductwork of an abandoned system is not cost effective, although an alternative option is to have the ductwork sealed
- Remove, if possible, the mechanical room ceiling as it was covered with mold growth and removal may be more cost effective than cleaning
- Once removed materials are discarded, all remaining building materials from floor to ceiling, including concrete floor and walls and all materials in ceilings, should be remediated which includes wire brushing/scrubbing/wiping (different materials require varying cleaning techniques), application of an EPA approved sanitizing agent, HEPA vacuuming, and sanding or grinding if necessary
- Painted concrete walls will need to be scrubbed/wire brushed to remove the moldy paint in the rooms that had not been recently painted; the green paint will still need to be scrubbed
- Damp wipe and HEPA vacuum all other surfaces in the basement to remove settled mold spores and demolition dust
- HEPA filtered air scrubbers should run for at least 48 hours after the work is completed

General Building Recommendations

- Remove all carpeting that is older than 5 years
- Perform whatever actions are needed to prevent pigeons from roosting on windows; bird guano contains pathogenic bacteria
- Remove all water damaged ceiling materials from roof or HVAC leaks two feet beyond all visual evidence of water or mold damage
- Remove water damaged, deteriorated, and moldy wall materials in the Max 2 shower area

HVAC Cleaning Protocol

All in-use HVAC systems in all buildings need to be professionally cleaned by a NADCA certified air handling system cleaning specialist. Cleaning the systems will include all components of the air-handlers (unless they are being discarded or replaced), which may need to be disassembled to access all necessary parts, metal ductwork, diffusers and vents throughout the buildings, pipes/tubing, external surfaces, etc. All fiberglass linings inside the air handlers or ductwork (if present) should be removed and replaced with an alternative insulating material such as Armaflex. New, allergen-trapping, high efficiency filters (highest MERV rating the systems can accommodate) should be installed after the cleaning is completed. Filter compartments should be sealed with removable covers to ensure that external air, particularly basement air, is not getting into the systems beyond the filters. Cleaning HVAC systems as described here is recommended every 5—7 years. Regular inspection of HVAC systems is important for early detection of problems.

Conclusion

As long as moldy building materials have been removed and/or cleaned appropriately and water intrusion/accumulation sources resolved, mold spores will be inhibited from re-growing because favorable growth conditions will no longer exist. Vigilance about maintaining dry building materials and contents, monitoring for leaks and repairing them when discovered, drying/removing wet building materials and contents when discovered, and appropriate maintenance in areas where there tends to be accumulation of moisture is the best defense against future mold growth.

Please contact our office if you have any questions. Thank you.

Sincerely,

Deborah J. Gordon
Microbiologist, Owner
Gordon Mycology Laboratory, Inc.

Disclaimer/Limitations:

The conclusions presented in this report are based only on the services described in this report and not on scientific procedures beyond the scope, time, and budgetary constraints imposed by the client. The information presented in this report is based in part on the observation of conditions in the field and communications with those persons involved in the project. GML makes no conclusions regarding those areas of the site that may have been inaccessible or unavailable during the investigation.

General Mold Information

Molds are simple, microscopic organisms that have a vital role in nature of decomposing decaying organic debris (dead leaves, plants and trees, etc.). Molds originate outdoors and are found in almost every type of environment. However, abnormal mold growth indoors on a "food" source (nourishment for mold growth) is of great importance to property owners and building occupants.

Mold growth is not normal for any indoor environment and only occurs when mold spores (found everywhere, but invisible to our eyes in low levels) land on food sources that provide them with enough moisture to grow. Under ordinary circumstances, microscopic mold spores in work environments, health care facilities, homes, cars, and schools go unnoticed and do not present a problem; mold spores are inadvertently removed each day by traditional cleaning methods (dusting, vacuuming, washing surfaces).

Indoor food sources for mold include carpet materials, clothing, leather, cardboard and paper products, Sheetrock, wood, insulation, over-watered plants, plastics, paints and other surface coatings, among so many others. Mold spores left on a food source that remains wet or is simply located in a humid environment, will continue to grow, producing billions of new spores allowing mold contamination to spread. This is the primary motivation for identifying and quickly resolving moisture issues. If building materials or belongings are not dried within 48 hours, mold growth begins to develop.

Because mold spores are so small, a surface can be contaminated without visual evidence of the growth; once mold growth becomes visible, it has already become a larger problem. Contrary to the stereotype, moisture that can promote and support mold growth is not limited to 'flooding' or 'wet basement' situations. Chronically elevated relative humidity, roof leaks, foundation seepage, washing machine leaks, carpets wicking moisture from foundation floors, steam production in kitchens and bathrooms, slow-drip pipe leaks, and window condensation are examples of moisture sources that often result in mold growth if they are not managed quickly and appropriately.

General Basement Recommendations

Foundation Floors and Walls

Breaches in foundation floors and walls must be sealed/made as watertight as possible. Cracks in floors and walls should be filled/sealed with an appropriate product. Gaps and holes around where pipes exit the foundation should be sealed. Areas with efflorescence indicate moisture penetration from outdoors; evaluate for problems with gutters, drainage, and landscaping. Consult with a foundation specialist, engineer, or mason on the problems and solutions. Sumps should have concrete bottoms and be covered at all times with plastic or metal well-fitted covers to prevent evaporation. Dirt floor crawlspaces must be permanently sealed with either a thick, corrugated plastic system sealed to the walls or layer of concrete.

Exterior Systems

Evaluate landscape, drainage, walkways and patios, and the gutter system and have work done to prevent/minimize water from accumulating at the foundation, where it can potentially come into the basement. The ground and artificial surfaces (walkways, driveways, patios, etc.) should pitch away from the house, the gutter system must have effective downspout extenders and be monitored to be sure sections remain connected and clear of debris, different types of fill and exterior drainage pipes can be installed if warranted, and dense vegetation and shrubs against the

house should be cut back to prevent water from splashing and accumulating along the foundation. Basement window wells should remain clear of vegetation and organic debris.

Basement Dehumidification

Consistent and effective dehumidification in all basement rooms/areas is essential to provide continuous drying, which will significantly decrease the chances for mold growth in the future. The target relative humidity level in basements is below 50% throughout the year and can be monitored with hygrometers (relative humidity meters). It is recommended to put hygrometers in several areas to be sure the dehumidification system is keeping all areas below 50%. If hygrometers read above 50% for prolonged periods, additional dehumidification will be needed. GML strongly recommends the use of high capacity, self-draining dehumidifiers (i.e. Santa Fe Classic by Thermastor) to provide uninterrupted and effective drying; energy efficient models with evacuation pumps are now available so they can be put where they are needed (not simply near the drain location as is usually the case with the types that do not have pumps). Ducted dehumidification systems are also available for finished basements with multiple rooms. Dehumidifiers should ideally have a back-up battery system to prevent spikes in relative humidity in the event of power failures. While dehumidifiers are running, basement windows and exterior doors should remain closed.

Basement Storage

It is recommended to store contents whenever possible in plastic containers with lids that can be taped shut, or plastic bags that can be sealed, and all contents should be stored off the floors, away from foundation walls, and on metal or plastic shelves and racks with legs that hold them off the floor. Furniture in particular, should be pulled away from walls several inches to allow for air circulation, preventing moisture build-up; having furniture that sits on raised legs rather than directly on the floor is important as well. Cardboard boxes should be emptied, their contents switched to plastic containers that are sealed, and the cardboard discarded. Air circulation around and under belongings in the basement is essential for preventing mold growth.

Basement Flooring

It is recommended to install only non-absorbent flooring, such as ceramic or stone tile, directly on foundation floors. Raised flooring (even small areas in closets or platforms at the base of staircases), carpeting, hardwood, cork, laminate, Dri-Core, and other absorbent materials are strongly discouraged in basements because they trap moisture, supply food sources for mold and bacteria, and provide a substrate for trapped particulates such as food, house dust, skin cells, pet hairs, etc. that even the best vacuum cleaners cannot remove. Linoleum and rubber-type flooring including rubber-backed mats are not recommended because of their water resistant nature; moisture will be trapped beneath promoting mold growth on the underside of the material itself as well as the adhesive used for installation. Natural moisture migration through the concrete slab should be allowed to occur, the moisture will pass through the non-absorbent yet porous tiles and grout, and then be removed by the dehumidification system instead of being absorbed or trapped by other flooring types. Area rugs with pads that can be discarded if they become wet or moldy can be used on top of the tile floors; these can even be as large as the room itself to emulate wall-to-wall carpeting but are much more easily and cheaply replaced if needed. Be sure to ventilate the raised platform at the base of the staircase during the reconstruction.

Basement Wall Materials

Mold growth may be avoided on the base of walls if wallboard is not in contact with the concrete floor. Traditional gypsum board acts like a sponge and will wick moisture up from the concrete, promoting and supporting mold growth on the painted and paper sides. Gypsum board should be

replaced with a cement board-type or other non-absorbent product (fiberglass wallboard, fiber-rock, etc.) that does not contain a mold food source, at least along the bottom 4 feet of basement walls. Leaving wall materials at least ½ inch off the concrete floor can effectively prevent moisture wicking (mold can grow on finished painted surfaces of even the products mentioned above). Baseboards will hide this gap, which can also be made out of a material that is less or non-absorbent (plastic, composite, vinyl) further decreasing the risk for mold growth. Metal wall framing cannot absorb water or support mold growth and is, therefore, an excellent choice when finishing or renovating a basement.

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AIHA EMPAT Lab ID: 178794

Mycologix™ Hidden Mold Detection (HMD) Technologies

Analysis: Culturable Fungi (FC-12MEA+) - **Surface/Bulk**
Client: Gordon Mycology Laboratory, Inc.
Groton, MA
Contact: Gordon, Deb
Project ID: 19-143GML Bridgewater

QLAB Job No.: ME191223-18
Date Sampled: 12/19/2019
Date Received: 12/23/2019
Date Reported: 12/31/2019

Reviewed by: WT **Approved by:** Wei-Chih Tang, Ph.D., Lab Director

Lab Sample No.	ME191223-18(1)			ME191223-18(2)			ME191223-18(3)		
Sample ID	**S1**			**S2**			**S3**		
Sample Location	**Admin basement Rm AD11 – peeling foundation paint**			**Admin basement Rm AD11 – baseboard trim and painted plywood wall**			**Admin basement Rm AD11 – HVAC system supply air diffuser**		
Sample Type / Device	Surface/SpongeSWAB (M)			Surface/SpongeSWAB (M)			Surface/SpongeSWAB (M)		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	2 in²			2 in²			2 in²		
Dilution Factor	100			100			100		
Detection Limit (DL)	DL = 50 CFU/in²			DL = 50 CFU/in²			DL = 50 CFU/in²		
Culturable Fungi Conc.*	**1,500 CFU/in²**			**8,600 CFU/in²**			**2,800 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium									
Chaetomium	1	50	3	2	100	1	23	1,200	42
Stachybotrys									
Memnoniella	3	150	10	17	850	10	18	900	33
Yeast, non-specified									
Rhodotorula (yeast)									
Fusarium									
Trichoderma [Spreader]***				3	150	2	6	300	11
Mucor [Spreader]***									
Other Fungi									
Cladosporium	6	300	21				1	50	2
Penicillium	1	50	3	1	50	< 1			
Aspergillus versicolor				3	150	2			
Aspergillus sydowii				41	2,100	24	3	150	5
Aspergillus ochraceus							2	100	4
Aspergillus niger				103	5,200	60	1	50	2
Aspergillus ustus									
Aspergillus fumigatus									
Aspergillus flavus									
Alternaria									
Epicoccum									
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi	18	900	62	1	50	< 1	1	50	2
Xerophilic Fungi Screening		***ND***			***ND***			***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 50 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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Analysis: Culturable Fungi (FC-12MEA+) - **Surface/Bulk**
Client: Gordon Mycology Laboratory, Inc.
Groton, MA
Contact: Gordon, Deb
Project ID: 19-143GML Bridgewater

QLAB Job No.: ME191223-18
Date Sampled: 12/19/2019
Date Received: 12/23/2019
Date Reported: 12/31/2019

Lab Sample No.	ME191223-18(4)			ME191223-18(5)			ME191223-18(6)		
Sample ID	**S4**			**S5**			**S6**		
Sample Location	**Admin basement Rm AD04 – HVAC system supply air diffuser**			**Admin basement Rm AD04 – wood wall framing, at base**			**Admin basement Rm AD04 – backside of plywood wall**		
Sample Type / Device	Surface/SpongeSWAB (M)			Surface/SpongeSWAB (M)			Surface/SpongeSWAB (M)		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	2 in²			4 in²			4 in²		
Dilution Factor	100			1,000			100		
Detection Limit (DL)	DL = 50 CFU/in²			DL = 250 CFU/in²			DL = 25 CFU/in²		
Culturable Fungi Conc.*	**1,800 CFU/in²**			**12,000 CFU/in²**			**1,400 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium									
Chaetomium	7	350	19	20	5,000	42	28	700	50
Stachybotrys									
Memnoniella	15	750	42	2	500	4	3	75	5
Yeast, non-specified									
Rhodotorula (yeast)									
Fusarium									
Trichoderma [Spreader]***	8	400	22	6	1,500	13	4	100	7
Mucor [Spreader]***									
Other Fungi									
Cladosporium	1	50	3						
Penicillium							1	25	2
Aspergillus versicolor							10	250	18
Aspergillus sydowii	2	100	6	18	4,500	38	2	50	4
Aspergillus ochraceus	1	50	3						
Aspergillus niger	1	50	3	1	250	2	8	200	14
Aspergillus ustus	1	50	3	0.3	75	< 1			
Aspergillus fumigatus									
Aspergillus flavus									
Alternaria									
Epicoccum									
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi									
Xerophilic Fungi Screening		***ND***			***ND***			***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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Analysis: Culturable Fungi (FC-12MEA+) - **Surface/Bulk**
Client: Gordon Mycology Laboratory, Inc.
Groton, MA
Contact: Gordon, Deb
Project ID: 19-143GML Bridgewater

QLAB Job No.: ME191223-18
Date Sampled: 12/19/2019
Date Received: 12/23/2019
Date Reported: 12/31/2019

Lab Sample No.	ME191223-18(7)			ME191223-18(8)			ME191223-18(9)		
Sample ID	**S7**			**S8**			**S9**		
Sample Location	**Medical bldg. bsmt. – 1st green room, mold on HVAC ceiling soffit**			**Medical bldg. bsmt. – 2nd green room, HVAC system supply air diffuser**			**Medical bldg. bsmt. – 2nd green room, HVAC system return air vent**		
Sample Type (Device)	Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	4 in²			4 in²			4 in²		
Dilution Factor	100			1,000			1,000		
Detection Limit (DL)	DL = 25 CFU/in²			DL = 250 CFU/in²			DL = 250 CFU/in²		
Culturable Fungi Conc.*	**3,300 CFU/in²**			**11,000 CFU/in²**			**100,000 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium									
Chaetomium				0.3	75	< 1	0.3	75	< 1
Stachybotrys							0.1	25	< 1
Memnoniella									
Yeast, non-specified				3	750	7			
Rhodotorula (yeast)				4	1,000	9			
Fusarium									
Trichoderma [Spreader]***				0.2	50	< 1	0.3	75	< 1
Mucor [Spreader]***									
Other Fungi									
Cladosporium	82	2,100	62	22	5,500	49	124	31,000	30
Penicillium				0.2	50	< 1			
Aspergillus versicolor									
Aspergillus sydowii	43	1,100	33	8	2,000	18	280	70,000	67
Aspergillus ochraceus									
Aspergillus niger	1	25	< 1	1	250	2	7	1,800	2
Aspergillus ustus	2	50	2				3	750	< 1
Aspergillus fumigatus									
Aspergillus flavus									
Alternaria				3	750	7			
Epicoccum				1	250	2			
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi	4	100	3	2	500	4	2	500	< 1
Xerophilic Fungi Screening		***ND***			***ND***		***2***	***500***	***< 1***
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 25 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*		*1000*	*(DL = 250 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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Mycologix™ Hidden Mold Detection (HMD) Technologies

Analysis: Culturable Fungi (FC-12MEA+) - **Surface/Bulk**
Client: Gordon Mycology Laboratory, Inc.
Groton, MA
Contact: Gordon, Deb
Project ID: 19-143GML Bridgewater

QLAB Job No.: ME191223-18
Date Sampled: 12/19/2019
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Lab Sample No.	ME191223-18(10)			ME191223-18(11)			ME191223-18(12)		
Sample ID	**S10**			**S11**			**S12**		
Sample Location	**Medical bldg. bsmt. – main room, mold on painted HVAC ductwork**			**Medical bldg. mechanical room – mold on insulation covering on wall**			**Medical bldg. mechanical room – mold on HVAC ductwork insulation**		
Sample Type (Device)	Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	2 in²			2 in²			2 in²		
Dilution Factor	100			100			10,000		
Detection Limit (DL)	DL = 50 CFU/in²			DL = 50 CFU/in²			DL = 5000 CFU/in²		
Culturable Fungi Conc.*	**4,800 CFU/in²**			**1,600 CFU/in²**			**1,000,000 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium									
Chaetomium				28	1,400	88			
Stachybotrys									
Memnoniella									
Yeast, non-specified									
Rhodotorula (yeast)									
Fusarium									
Trichoderma [Spreader]***									
Mucor [Spreader]***									
Other Fungi									
Cladosporium	94	4,700	99	2	100	6	196	980,000	96
Penicillium									
Aspergillus versicolor				1	50	3			
Aspergillus sydowii							0.01	50	< 1
Aspergillus ochraceus									
Aspergillus niger	1	50	1				0.01	50	< 1
Aspergillus ustus									
Aspergillus fumigatus									
Aspergillus flavus									
Alternaria									
Epicoccum									
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi				1	50	3	9	45,000	4
Xerophilic Fungi Screening		***ND***			***ND***			***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 50 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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Lab Sample No.	ME191223-18(13)			ME191223-18(14)			ME191223-18(15)		
Sample ID	**S13**			**S14**			**S15**		
Sample Location	**Medical bldg. main room – mold on pipe insulation in ceiling**			**Medical bldg. booking corridor – HVAC system supply air diffuser**			**Adams bldg. 2nd floor tv room - HVAC system supply air diffuser**		
Sample Type (Device)	Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	2 in²			4 in²			4 in²		
Dilution Factor	100			10,000			1,000		
Detection Limit (DL)	DL = 50 CFU/in²			DL = 2500 CFU/in²			DL = 250 CFU/in²		
Culturable Fungi Conc.*	**8,000 CFU/in²**			**290,000 CFU/in²**			**20,000 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium							1	250	1
Chaetomium							1	250	1
Stachybotrys									
Memnoniella									
Yeast, non-specified							3	750	4
Rhodotorula (yeast)							2	500	3
Fusarium									
Trichoderma [Spreader]***				0.01	25	< 1			
Mucor [Spreader]***									
Other Fungi									
Cladosporium	87	4,400	54	76	190,000	65	72	18,000	90
Penicillium				0.1	250	< 1			
Aspergillus versicolor									
Aspergillus sydowii	65	3,300	41	41	100,000	35	0.1	25	< 1
Aspergillus ochraceus									
Aspergillus niger				0.1	250	< 1			
Aspergillus ustus									
Aspergillus fumigatus									
Aspergillus flavus				0.2	500	< 1			
Alternaria									
Epicoccum							0.8	200	1
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi	8	400	5						
Xerophilic Fungi Screening		***ND***			***ND***			***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 50 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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Date Received: 12/23/2019
Date Reported: 12/31/2019

Lab Sample No.	ME191223-18(16)			ME191223-18(17)			ME191223-18(18)		
Sample ID	**S16**			**S17**			**S18**		
Sample Location	**Adams bldg. – HVAC system air handler filters**			**Attucks foyer– HVAC system supply air diffuser**			**Attucks library – HVAC system supply air diffuser**		
Sample Type (Device)	Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019			12/30/2019		
Amount of Sample Prepared	4 in²			4 in²			4 in²		
Dilution Factor	100			100			100		
Detection Limit (DL)	DL = 25 CFU/in²			DL = 25 CFU/in²			DL = 25 CFU/in²		
Culturable Fungi Conc.*	**600 CFU/in²**			**380 CFU/in²**			**500 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*									
Acremonium									
Aureobasidium									
Chaetomium				1	25	7			
Stachybotrys									
Memnoniella									
Yeast, non-specified	5	130	21	2	50	13	4	100	20
Rhodotorula (yeast)	4	100	17				3	75	15
Fusarium									
Trichoderma [Spreader]***									
Mucor [Spreader]***									
Other Fungi									
Cladosporium	6	150	25	5	130	33	6	150	30
Penicillium	1	25	4	1	25	7	3	75	15
Aspergillus versicolor	5	130	21						
Aspergillus sydowii	2	50	8						
Aspergillus ochraceus									
Aspergillus niger									
Aspergillus ustus									
Aspergillus fumigatus	1	25	4						
Aspergillus flavus									
Alternaria									
Epicoccum									
Pithomyces									
Aspergillus sp.									
Non-sporulating fungi				5	130	33	4	100	20
Xerophilic Fungi Screening		***ND***		***1***	***25***	***7***		***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 25 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*	
Note									

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected

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AIHA EMPAT Lab ID: 178794

Mycologix™ Hidden Mold Detection (HMD) Technologies

Analysis: Culturable Fungi (FC-12MEA+) - **Surface/Bulk**
Client: Gordon Mycology Laboratory, Inc.
Groton, MA
Contact: Gordon, Deb
Project ID: 19-143GML Bridgewater

QLAB Job No.: ME191223-18
Date Sampled: 12/19/2019
Date Received: 12/23/2019
Date Reported: 12/31/2019

Lab Sample No.	ME191223-18(19)			ME191223-18(20)		
Sample ID	**S19**			**S20**		
Sample Location	**Max 2 hallway - HVAC system supply air diffuser**			**Max 2 shower room – mold on walls behind fiberglass**		
Sample Type (Device)	Surface (SpongeSWAB (M))			Surface (SpongeSWAB (M))		
Media (Temperature: 25°C)	Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar			Common Media: PDA & DG18 QLAB Mycologix™ Media: HR-MEA, Stachybotrys Agar & RapidGrowth Mold Agar		
Date Analyzed	12/30/2019			12/30/2019		
Amount of Sample Prepared	3 **in²**			4 **in²**		
Dilution Factor	100			10,000		
Detection Limit (DL)	DL = 33 CFU/in²			DL = 2500 CFU/in²		
Culturable Fungi Conc.*	**1,100 CFU/in²**			**310,000 CFU/in²**		
Identification	**Adj. Ct.***	**CFU/in²**	**%**	**Adj. Ct.***	**CFU/in²**	**%**
Major Hydrophilic Fungi*						
Acremonium						
Aureobasidium						
Chaetomium						
Stachybotrys						
Memnoniella						
Yeast, non-specified						
Rhodotorula (yeast)						
Fusarium				13	33,000	11
Trichoderma [Spreader]***						
Mucor [Spreader]***						
Other Fungi						
Cladosporium	12	400	35	104	260,000	85
Penicillium	2	67	6			
Aspergillus versicolor	2	67	6			
Aspergillus sydowii	11	370	32	2	5,000	2
Aspergillus ochraceus						
Aspergillus niger						
Aspergillus ustus						
Aspergillus fumigatus	2	67	6			
Aspergillus flavus						
Alternaria						
Epicoccum	1	33	3			
Pithomyces						
Aspergillus sp.				3	7,500	2
Non-sporulating fungi	3	100	9			
Xerophilic Fungi Screening	***1***	***33***	***3***		***ND***	
DG18 (and/or MEA) Dilution Factor:	*100*	*(DL = 33 CFU/in²)*		*100*	*(DL = 25 CFU/in²)*	
Note						

*: Adjusted Counts less than 1 are converted from colony counts read from lower dilutions plates. All concentrations (conc.) are rounded to two digits of significant figures. Total concentrations/percentages may not be equal to the sum of individual concentrations/percentages due to rounding. **: Water-loving fungi, minimal Aw ≥ 0.89. *** Spreader: Trichoderma, Rhizopus, Mucor & Chrysonilia are fast growing fungi on MEA agar plate, which may inhibit the growth of other fungi on the same plate. Mycologix™ HR-MEA can significantly reduce the colony size of spreaders. ND: None detected