Special Review

Review of Procurement of Certain COVID Tests

March 2021

OFFICE OF LEGISLATIVE AUDITS
DEPARTMENT OF LEGISLATIVE SERVICES
MARYLAND GENERAL ASSEMBLY

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DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF LEGISLATIVE AUDITS
MARYLAND GENERAL ASSEMBLY

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March 31, 2021

Senator Clarence K. Lam, M.D., Senate Chair, Joint Audit and Evaluation Committee
Delegate Carol L. Krimm, House Chair, Joint Audit and Evaluation Committee
Members of Joint Audit and Evaluation Committee
Annapolis, Maryland

Ladies and Gentlemen:

We have conducted a special review of the procurement and related use of COVID tests from LabGenomics, a foreign-based healthcare company. We also reviewed the circumstances surrounding the termination of two State employees after they had raised concerns related to the COVID tests. Our review was initiated based on a joint request from the chairs of the Senate Education, Health, and Environmental Affairs and the House Health and Government Operations Committees for a review of two COVID-related emergency procurements. This report is limited to the results of our review of one of those procurements and the two State employee terminations.

We conducted our review during the period from September 11, 2020 through January 29, 2021 and the results herein are based on information obtained during this period. As will be expanded upon later, we were unable to obtain written documentation on various aspects of the subject matter, but other information relevant to our review may exist and could be provided to us in the future. Any additional developments, which may come to our attention, will be addressed in a subsequent report along with results of our review of other emergency procurements made during the COVID pandemic state of emergency and the related recommendations.

Our review disclosed a pervasive lack of written documentation to support the key aspects of the procurement, use, and validity of the tests and the aforementioned terminations. Consequently, the results of our review are based primarily on interviews with current and former State employees and

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other personnel including members of senior management at the Department of General Services (DGS), Maryland Department of Health (MDH), the Governor's Office, and Towson University (TU). The procurement of the tests occurred during the onset of the formal state of emergency declared by the Governor. While there was an expressed urgency to procure the tests, such conditions would not mitigate the need to properly document and comply with State regulations specifically tailored to emergency procurements.

We concluded that the tests were not procured in accordance with State procurement regulations. For example, the payments made for the COVID tests were not supported by formal written contracts or agreements containing any of the critical provisions required by State procurement regulations. Instead, we were provided with a letter of intent for the initial purchase; however, this document was not a contract as required by regulations. The lack of a comprehensive written contract precluded effective monitoring. We also were not provided with comprehensive written documentation of the extent to which other vendors were considered, or of the specific parties involved in the evaluation and selection of LabGenomics. Finally, there was no support of the basis for the $11.5 million ultimately paid for the tests or the decision to charter a flight for the shipment of the first tests at a cost of $464,369 when the second tests were shipped for a cost of $14,265.

We also found that the first tests obtained from LabGenomics had not been authorized by the Federal Food and Drug Administration and one study conducted by a laboratory in Maryland concluded the tests were likely to have an increased number of false-negatives and inconclusive results. In addition, while concerns were raised with the reliability of test results reported by the University of Maryland Pathology Associates (UMPA) laboratory using the second tests obtained from LabGenomics, we were unable to obtain documentation of test results from UMPA to corroborate the concerns with the reliability of test results. As discussed below, our requests for these records were initially denied. Subsequently, legal counsel to the Maryland General Assembly confirmed that we were entitled to these records, but we have not yet obtained and analyzed the records. We also determined that MDH looked into concerns with the test results and noted deficiencies with the lab procedures, but it did not determine if there were any issues with the tests.

Finally, our review of the circumstances surrounding the termination of two State employees after they had raised concerns related to the COVID tests, found that the verbal representations made to us by the agencies' management as the basis for the terminations were not supported by available written

documentation. For example, one of these employees was terminated approximately one month after questioning a large spike in positive COVID cases, which we were advised were processed by UMPA, and among the tests used by UMPA at the time were the second LabGenomics tests. In this regard, supervisory officials advised us that the termination was due solely to unrelated performance issues; however, this was not supported by written documentation in the employee's personnel file.

The responses to this review from the Governor's Office, the Departments of General Services and Health (combined), and Towson University are included in Appendices B, C, and D, respectively. In accordance with State law, we have reviewed the responses, and identified numerous statements that conflict or disagree with statements and findings in our report. In each instance, we re-examined and reassessed our documentation, and reaffirmed the validity of our work and the related findings. In accordance with our policy, we have redacted certain names and other information from the agencies' responses.

Appendix A includes auditor's comments, on what we deemed to be the significant disagreements. Perhaps most troubling for OLA, is that we had discussed each of these issues with senior management at the respective agencies. As noted in the report, our conclusions reached were based on their answers to specific questions, and our review of often limited documentation made available by them or their staff to us. Nevertheless, we have concluded that these responses, while generally disagreeing with our findings, have either confirmed the correctness of our findings (such as the lack of a comprehensive contract) or do not answer key questions posed by the review (such as the identity of the individual who was ultimately responsible for making the decision to purchase the test kits).

In addition to the aforementioned auditor's comments included to address certain disagreements in the agencies' responses, we also want to address two general statements included in the combined DGS and MDH response. The first is the perception that this review "gives the appearance that OLA produced a rushed and politically-driven report", which is a characterization unsupported by the facts. The field work underlying this report's conclusions was conducted over a four-and-half-month period, which is an unprecedented amount of time for such a focused review, and demonstrates OLA's level of care and detail taken to ensure the comprehensiveness and correctness of our conclusions. In addition, as State government agencies are well aware, OLA provides nonpartisan services to the General Assembly, and prides itself on presenting objective results in an unbiased manner. Second, we wish to acknowledge the "full and frank working relationship" that OLA has with both departments. These longstanding

relationships are much valued by OLA and are based on mutual respect and trust, and driven by a shared goal to establish proper accountability and good governance. We believe that the conclusions in this report demonstrate OLA's commitment to that shared goal.

Respectfully submitted,

Gregory A. Hook, CPA
Legislative Auditor

Background Information

Legislative Request and Allegations

In June 2020, the chairs of the Senate Education, Health, and Environmental Affairs and the House Health and Government Operations Committees requested that the Office of Legislative Audits conduct a review of the emergency procurements awarded to:

- LabGenomics for COVID tests used by laboratories to analyze samples collected from patients at testing sites, and
- Blue Flame Medical for medical supplies

The legislators asked that the review include an evaluation of the procurement process and accountability over the items purchased. We initially intended to conduct the review in conjunction with our fiscal compliance audit of the Department of General Services (DGS) – Office of the Secretary. However, our preliminary inquiries disclosed that multiple State agencies were involved in the procurement, accountability, and use of the items purchased from these vendors. In addition, we identified numerous other material emergency procurements made by the State associated with the ongoing COVID-19 pandemic. Consequently, we decided to expand the scope of our review and we will issue a separate report on emergency procurements made by the State during the COVID state of emergency, rather than as a component of the DGS audit.

Our initial focus was on the LabGenomics tests due to the ongoing concerns with the procurement and use of the related tests. In addition, our review included the review of the termination of two employees associated with the LabGenomics tests. Specifically, we received an allegation through our fraud, waste, and abuse hotline regarding concerns raised with COVID test results by an employee at Towson University (TU) who was subsequently terminated. In addition, during the December 8, 2020 Joint Audit and Evaluation Committee hearing, we were also asked to review the circumstances of the termination of the former Director of Procurement at the Maryland Department of Health (MDH) who had raised concerns with the process used to procure the COVID tests from LabGenomics.

In order to provide timely results on our efforts, this report includes the results of our review of the procurement and accountability of the LabGenomics tests and the aforementioned terminations based on information we obtained as of January 29, 2021. Our review of other emergency procurements, including the award to Blue Flame Medical, will be included in a subsequent report.

COVID-19 Pandemic

COVID-19 (Coronavirus disease 2019) is a disease that was first identified in China in December 2019. It quickly spread worldwide and was characterized as a pandemic on March 11, 2020 by the World Health Organization.

On March 5, 2020, the Governor of Maryland announced the State's first positive cases of COVID-19 and declared a state of emergency to mobilize all of the State's available resources. The COVID-19 pandemic created a worldwide demand for COVID tests, and increased demand for personal protective equipment (PPE) and other supplies. While the identification of these items was a coordinated effort of multiple State agencies, DGS was primarily responsible for conducting the related emergency procurements with technical assistance from MDH.

Overview

DGS purchased the first 500,000 tests from LabGenomics in April 2020. We were advised by MDH that all of these tests (except for the limited number used by certain laboratories) were returned to LabGenomics on June 23, 2020. DGS purchased the second 500,000 tests from LabGenomics in May 2020. The combined costs of these purchases (including shipping charges) for the 500,000 tests ultimately received by the State totaled approximately $12 million.

Scope, Objectives, and Methodology

Scope

We conducted a review of the emergency procurements performed by the Department of General Services (DGS) to purchase COVID tests from LabGenomics. We also reviewed the circumstances surrounding the terminations of the former Director of Student Health Services (SHS) at Towson University (TU) and the former Director of Procurement at the Maryland Department of Health (MDH).

This review was initiated based on requests from members of the Maryland General Assembly; and after its commencement, we received an allegation of a related matter through our fraud, waste, and abuse hotline. Our review was conducted during the period from September 11, 2020 through January 29, 2021 and the results herein reflect information we were able to obtain during this period. Other information relevant to our review may exist and could be provided to us in the future. Any additional developments, which may come to our attention, as well as the results of our review of other emergency procurements and any related recommendations will be addressed in a subsequent report.

We conducted our review under the authority of State Government Article, Section 2-1220 of the Annotated Code of Maryland. Our review did not constitute an audit conducted in accordance with generally accepted government auditing standards.

OLA Access to Information

During our review, we requested documentation of test results from the laboratories that used the LabGenomics tests, specifically from the University of Maryland, Baltimore's Institute of Genome Sciences and University of Maryland Pathology Associates, the MDH Maryland Public Health Laboratory, and CIAN Diagnostics. The reason that we asked for this documentation was to verify certain assertions made by the individuals that we interviewed. These assertions included statements about the reliability or unreliability of the tests as well as their disposition. The laboratories initially denied our request for these records. Legal counsel to the Maryland General Assembly confirmed that we were entitled to these records; however, we were unable to obtain and analyze the records prior to issuing this report. Accordingly, the results of our review of those records will be subject to inclusion in a subsequent report.

Objectives and Methodology

Our review included the following three objectives:

1. To evaluate the following areas related to the first 500,000 tests purchased from LabGenomics.
   - Procurement of Tests
   - Receipt of Tests
   - Disposition of Tests

2. To evaluate the following areas related to the second 500,000 tests purchased from LabGenomics.
   - Procurement of Tests
   - Receipt of Tests
   - Disposition of Tests
   - Concerns with Test Results

3. To review the circumstances of the terminations of the former Director of SHS at TU and the former Director of Procurement at MDH after they had raised concerns related to the COVID tests.

Our review included tests, analyses, observations, and discussions with current and former State personnel and others, as we deemed necessary to accomplish our objectives. We reviewed numerous documents, including available procurement records, invoices, laboratory studies and procedures, COVID test specifications, and other related records. We interviewed 36 current and former State employees and other personnel including members of senior management at DGS, MDH, the Governor's Office, TU, and the aforementioned laboratories (see Exhibit for a listing). Finally, we conducted certain physical inspections of COVID tests located at State and private facilities.

Due to a pervasive lack of written documentation to support the objectives in our review, the majority of our results are based on verbal representations of the State employees and other personnel we interviewed. To ensure that information obtained by these interviews was properly recorded and was not subject to misinterpretation, at least two OLA employees were present during substantially all of the interviews and physical inspections we conducted.

OLA Observations

Objective 1

Initial Tests				
Vendors	**Number Purchased**	**Purchase Price**	**Shipping Cost**	**Total Cost**
JKICT/LabGenomics Samsung SDS	500,000	$9,000,000	$464,369	$9,464,369
Disposition of Tests				
MDH advised us that almost all of the tests were returned unused on June 23, 2020.				
OLA Conclusions as of January 29, 2021				
• **Tests were not procured in accordance with State procurement regulations, including the lack of a written contract.[1]** • **While there was certain documentation that other vendors were contacted, we could not determine the extent to which they were actually considered to provide the tests.[1]** • **We found no records documenting the formal evaluation of the vendors, the basis for the selection of LabGenomics, or whether LabGenomics was the best qualified vendor.[1]** • **We were unable to identify the specific parties ultimately responsible for the evaluation and selection of LabGenomics.[1]** • **A review of available records indicates the State did not ensure that the tests received on April 18 and 22, 2020, were authorized by the Federal Food and Drug Administration prior to them being shipped by LabGenomics.** • **A study of the tests by one laboratory indicated the tests were likely to have an increased number of false-negatives and inconclusive results, and increased test processing times.** • **We were advised by MDH that certain tests used by one laboratory were found to produce inconclusive results.** • **MDH did not acknowledge the aforementioned issues in its decision to return the tests.**				

Procurement of Tests:

The COVID tests were procured by the Department of General Services (DGS) as an emergency procurement authorized in State procurement regulations. These regulations include several requirements for emergency procurements including

[1] Condition described is a violation or potential violation of requirements found in State procurement regulations.

(a) a formal written contract; (b) obtaining as much competition as practicable; (c) submitting the procurement to the Board of Public Works; (d) publicizing the award on *eMaryland Marketplace (eMM)*[2]; and (e) documenting the details of the procurement, including justification for the use of the emergency procurement and the basis for selecting the vendor. In regard to the written contract, the regulations require the contract to include critical provisions such as conformance of specifications, delivery and acceptance, dispute resolution, indemnification, liquidated damages, compliance with laws, cost and price certifications, political contribution disclosures, anti-bribery statements, and requirements for registration of the business in the State.

a. Was the procurement in accordance with State procurement regulations?

Our review disclosed that DGS did not have a formal written contract with LabGenomics, a South Korean company, containing the critical provisions required by State procurement regulations. Rather, DGS provided us with a Letter of Intent (LOI) dated April 2, 2020 it issued to a Virginia firm (JKICT) representing LabGenomics. The LOI included the following information:

> *We are writing to provide a letter of intent from the Maryland Department of General Services (DGS) with respect to a transaction with your firm for Covid19 PCR Assay Kit (100T), quantity 5,000*[3]*, responsive to your Proforma Invoice PIL20-0402, dated April 2, 2020. The total cost of the transaction is $9,000,000. The terms are 100% upon placement of order, via wire transfer. This wire is scheduled for transmittal on April 3, 2020.*

As such, the LOI did not contain any of the aforementioned critical provisions required by State procurement regulations or any specifications or requirements for the tests to ensure they would work as intended and complied with Federal Food and Drug Administration (FDA) Emergency Use Authorization (EUA)[4]. Furthermore, we determined that neither LabGenomics nor JKICT were registered with the State Department of Assessments and Taxation (SDAT), as required, to do business in the State

[2] Although DGS replaced *eMM* with *eMaryland Marketplace Advantage (eMMA)* effective July 2019, the same publishing requirements exist.

[3] 5,000 refers to the number of test kits (1 test kit = 100 tests), which totals 500,000 tests.

[4] EUAs are issued by the FDA to permit the emergency use of an unapproved medical product during a period of a public health emergency.

prior to the purchase. JKICT subsequently registered with the SDAT three months after the purchase.

In relation to the selection of LabGenomics as the vendor to provide the tests, as further described below, we found there was documentation that other vendors were contacted regarding the procurement, but we could not determine the extent to which they were actually considered to provide the tests or whether the selected vendor was the best qualified. DGS did notify the Board of Public Works (BPW) of the procurement and publish the award in *eMaryland Marketplace* as required. However, BPW staff advised us that due to the lack of the required written contract, the purchase may now need to be submitted for ratification by BPW.

In addition, we found certain assertions made by State employees regarding the selection of LabGenomics could not be supported. Specifically, DGS prepared an undated procurement checklist, which included the following statement:

> *On behalf of the Maryland Department of Health (MDH), DGS Office of State Procurement (OSP) tendered payment to JKICT/LabGenomics for 500,000 COVID-19 tests. Due to the emerging details about the virus and testing, OSP has little to no market research around this commodity. Accordingly, DGS OSP relies upon the expert opinions of clinicians and others within MDH who have made the determination that these tests will meet the needs of the State and that costs are fair and reasonable. DGS OSP is unable to find comparable products within current contracts or its normal supply chain sources.*

Regarding this statement, neither DGS nor MDH staff could provide us with written documentation to support the evaluation of potential vendors as further described below in Question c. "Why was LabGenomics selected?"

Finally, DGS chartered two special flights from South Korea to deliver the tests for which it paid an additional $464,369 to another company (Samsung SDS) without any written contract. DGS's undated written justification for the charter stated that

> *Samsung has provided a fair and reasonable cost for charters. DGS OSP notes lack of availability of flights and, when available, prices have been significantly higher than the cost presented by this vendor. Due to the volatile environment of*

overseas air freight, as well as the need for this transaction to be finalized immediately, seeking competition was not practical. Further, due to the need for upfront payment for the flights, a direct voucher wire payment has been initiated.

DGS senior staff we interviewed could not provide us with any documentation to support these assertions made in DGS' written justification. Moreover, as noted below, the shipping cost for the second 500,000 tests was $14,265. DGS did not document its rationale for chartering the flights and incurring the additional cost for the first tests.

b. Were other vendors considered?

While there was certain documentation that other vendors were contacted, we could not determine the extent to which they were actually considered to provide the tests. Specifically, the Governor's Office provided us with a spreadsheet containing the names of 23 vendors that it claimed were contacted prior to and after the tests from LabGenomics were purchased including 8 from the United States, 13 from South Korea, and 2 from China. We were advised that one employee from the Governor's Office and one employee from MDH were primarily responsible for contacting and obtaining information from these companies related to their tests. The results of these inquiries such as the status of the vendor's application for FDA EUA, types of equipment that may be used with the tests, technical specifications for the tests, and number of tests available were included on the spreadsheet for certain vendors.

However, the information for certain attributes was not completed for 20 of the vendors on the spreadsheet (including for LabGenomics), and no documentation was provided to support any of the information on the spreadsheet for 12 vendors. For the remaining 11 vendors, we were provided with certain written documentation such as performance data and EUA acknowledgment letters for their respective tests, which appears to substantiate that they had been in contact with the State.

c. Why was LabGenomics selected?

Neither DGS nor MDH could provide us written documentation to support or otherwise justify the selection of LabGenomics as the vendor to provide the tests. Rather, we were advised by the Secretary of DGS that MDH selected LabGenomics because it had the ability to provide the desired quantity of COVID tests within the State's timeframe, which can be characterized as "as soon as possible". As noted above, we were advised by Governor's Office personnel that numerous vendors were contacted and the

selection was based on an evaluation of specifications (for example, the type of equipment required to process the tests). Senior management officials at DGS and the Governor's Office advised us that pricing was considered, but the State's priority was to obtain a large volume of tests that met the State's requirements within a minimal amount of time.

We were advised that the State requested specifications on each vendor's tests, the status of their EUA application, estimated volumes of production, and whether there were any issues with timely delivery. We were further advised that the Maryland Public Health Laboratory (MPHL), which is a unit within MDH – Laboratories Administration, was responsible for reviewing the technical qualifications. While we sighted certain correspondence related to the qualifications of the tests, there was no formal document (such as selection committee evaluations and rankings) summarizing the evaluation of the vendors for these key attributes with a corresponding recommendation for which vendor was best suited to meet the State's needs.

In addition, the officials we interviewed could not identify the individual or individuals ultimately responsible for deciding to procure the tests from LabGenomics. The following is our understanding of the events surrounding the procurement of the tests from LabGenomics based on our review of existing documents and interviews of appropriate officials. The former DGS Director of Procurement advised us that he prepared and signed the LOI at the direction of the DGS Secretary. The Secretary of DGS said we would have to speak with MDH for details regarding this decision and could not identify the specific individual responsible for making the decision. The former Secretary and current Acting Secretary of MDH both advised us that they were not involved in the process and did not know who decided to select LabGenomics. A senior MDH official said that the Governor's Office (including the First Lady's staff), worked with DGS on acquiring the initial tests. However, the Governor's former chief of staff acknowledged that he was involved in logistics, such as facilitating calls, but did not know who made the decision to purchase the tests from LabGenomics, and the First Lady's current chief of staff advised us that she was just involved as a translator.

As of January 29, 2021, we have been unable to locate any documentation or reach a conclusion as to the identity of the party or parties who authorized the purchase of the tests from LabGenomics. Ultimately, it is possible that a paper trail identifying the employee responsible for approving the LabGenomics purchase does not exist.

Receipt of Tests

a. When and how many tests were received?

We received shipping records indicating the receipt of two shipments of tests on April 18, 2020 and April 22, 2020 at the Baltimore/Washington International Thurgood Marshall Airport containing 350,000 tests and 150,000 tests, respectively. MDH advised us in writing that the 350,000 tests were transported to MDH's warehouse and the 150,000 tests were transported to the Maryland Department of State Police's Pikesville lab. We were provided with a tracking sheet maintained by MDH documenting the location and disposition of the tests. However, we have not been able to trace the information from the tracking sheet to any supporting documentation (receiving reports or independently maintained inventory records identifying the specific number of tests received and transported to other locations), and we were unable to sight any of these physical tests because, as described below, the tests were returned prior to our review.

Based on the tracking sheet, it appears that MDH retained most of the tests until they were returned (see below for discussion of the return process) and the remainder of the tests were distributed as follows:

- **Maryland Department of State Police** received 150,000 tests.
- **CIAN Diagnostics** received 10,100 tests (7,200 were returned to MDH. The 2,900 remaining tests were used for laboratory studies and patient testing.)
- **University of Maryland Medical System** received 500 tests.
- **Integrated Cellular & Molecular Diagnostics** (ICMD) received 100 tests.

b. Did the State verify the tests worked as intended?

The CIAN Diagnostics and ICMD laboratories performed studies to verify the efficacy of the tests by conducting analyses and comparing the results to an FDA authorized test from another manufacturer. We obtained the results of the studies, which disclosed that CIAN Diagnostics did not have any concerns with the reliability and processing time of the tests. However, ICMD's study identified several concerns[5] including:

- The LabGenomics' test is less sensitive than the other manufacturer's test.

[5] As of January 29, 2021, we are waiting on a response from the Maryland Public Health Laboratory regarding the reasonableness of comparing the bridging studies between CIAN and ICMD.

- The LabGenomics' test processing times (6-8 hours) was almost twice as long as the other manufacturer's test (3-4 hours) which limits the number of samples that can be processed in a given day.
- The design of the LabGenomics' test is likely to increase the number of false-negative and inconclusive results.

Due to the concerns raised by ICMD, MDH requested that MPHL conduct an independent study. MPHL noted that the tests did not contain the same internal control reagent material and procedures that were referenced in the FDA's EUA granted to LabGenomics. Our review of available documentation disclosed the following timeline and relevant facts related to the EUA application submitted by LabGenomics and the shipment of the tests to the State.

March 26, 2020	LabGenomics submitted the EUA application to the FDA.
March 30, 2020	The FDA requested that LabGenomics change the internal control reagent material included in the test.
April 2, 2020	DGS issued the LOI to LabGenomics for the order of 500,000 tests.
April 3, 2020	LabGenomics revised its EUA application to reflect the new internal control reagent material and resubmitted it to the FDA.
April 18, 2020	350,000 tests were shipped from South Korea and delivered to the State.
April 22, 2020	150,000 tests were shipped from South Korea and delivered to the State.
April 29, 2020	The FDA issued the EUA to LabGenomics; however, the 500,000 tests previously shipped to the State did not contain the new internal control reagent material and, therefore, did not conform to the EUA ultimately issued by the FDA.

So, the tests received on April 18, 2020 and April 22, 2020 were not in conformity with the EUA issued to LabGenomics. This means that although MDH had verified that LabGenomics submitted its EUA application to the FDA prior to purchasing the tests, there was no written requirement that LabGenomics had to provide tests that conformed to the EUA.

In addition, we were advised by MDH management (including the prior Deputy Secretary for Public Health) that "up to a couple thousand" tests were used by CIAN Diagnostics for patient testing in early May 2020 and that some of the specimens had to be retested using a different manufacturer's test because the LabGenomics' test results were

inconclusive. In this regard, CIAN Diagnostics management initially denied using any of the tests but subsequently acknowledged using some of them but denied having any concerns with the results. We were unable to validate these assertions because documentation of these test results has not been provided by CIAN Diagnostics as of January 29, 2021.

Disposition of Tests

a. Why were the tests returned?

MDH did not acknowledge the aforementioned problems (the ICMD concerns and EUA issues) as the reason(s) for returning the tests when responding to our inquiries in its written response dated November 16, 2020. Rather, MDH stated that the reason the tests were returned (to obtain the newer tests) was because, after delivery of the first tests, MDH learned that LabGenomics had an upgraded test that had better controls for extraction of the RNA process. MDH further asserted that it understood that the original tests could still have been used with a custom lab process (as permitted by the federal government) but this process would have taken longer than purchasing the upgraded tests.

b. What happened to the unused tests?

We were advised by MDH that all of the original tests (except for the limited number used by the laboratories) were returned to LabGenomics on June 23, 2020. Our review of shipping documents provided by MDH disclosed that 26 boxes of tests were picked up from the Maryland Department of State Police on June 23, 2020, for shipment to an address in Ridgefield, New Jersey. MDH did not provide us with the specific number of tests included in the 26 boxes.

Objective 2

Second Tests				
Vendor	**Number Purchased**	**Purchase Price**	**Shipping Cost**	**Total Cost**
LabGenomics	500,000	$11,500,000 (original payment of $9 million for initial tests and an additional payment of $2.5 million)	$14,265	$11,514,265
Disposition of Tests				
The Governor announced that all of the tests were used as of December 15, 2020.				
OLA Conclusions as of January 29, 2021				

- **Tests were not procured in accordance with State procurement regulations, including the lack of a written contract.[6]**
- **We were provided no documentation of the extent to which other vendors were considered.[6]**
- **We were provided no documentation to support the basis for the selection of LabGenomics.[6]**
- **We were unable to identify the specific parties involved in the decision to purchase the second tests from LabGenomics.[6]**
- **We were provided no documentation supporting negotiations for the additional $2.5 million paid for second tests that were received May 21, 2020 and June 17, 2020.**
- **We were unable to obtain documentation of test results from laboratories to substantiate the disposition of the tests.**
- **Towson University and certain nursing homes raised concerns with the reliability of test results reported by the University of Maryland Pathology Associates (UMPA) laboratory; among the tests used by UMPA at the time were the second tests from LabGenomics.**
- **MDH Maryland Public Health Laboratory (MPHL) and the MDH Office of Health Care Quality (OHCQ) looked into concerns with the test results and noted deficiencies with the UMPA procedures but did not determine if there were any issues with the tests themselves.**
- **We were unable to obtain documentation of test results from laboratories to corroborate the concerns with the reliability of test results.**

[6] Condition described is a violation or potential violation of requirements found in State procurement regulations.

Procurement of Tests:

DGS purchased the second COVID tests directly from LabGenomics in May 2020 and returned the first tests as previously discussed. The purchase of the second tests was also conducted as an emergency procurement authorized by State procurement regulations and was subject to the same requirements we noted for the initial tests. We were advised that the State returned the initial tests after the two shipments of the second tests were received in May and June 2020.

a. Was the procurement consistent with State procurement regulations? Although the purchases of the initial and second tests were separate transactions, we could not determine if they were considered one combined emergency procurement or two separate procurements. Specifically, while we were advised by BPW staff that both purchases could be considered one large emergency procurement, the first purchase agreement was with a Virginia-based company (JKCIT) and the second purchase was made directly from LabGenomics. In this regard, there was no written contract or LOI for the second test purchase, and there was no amendment to the original LOI issued for the initial test purchase to account for the second purchase. This lack of a contract is significant given the issues previously noted with the initial tests.

DGS notified BPW of the second purchase and published the award on *eMaryland Marketplace* as required. However, BPW staff advised us that due to the lack of the required written contract, the purchase may need to be submitted for ratification by BPW.

We found that documentation for the procurement of the second tests from LabGenomics was lacking, such as, support for the basis of selecting the particular vendor, and for certain assertions made regarding the negotiation, competition, and pricing. Rather, DGS prepared an undated procurement checklist, which included the following statement:

> *For greater reliability, productivity and efficiency in laboratory settings, DGS received a request to purchase upgrades to previously acquired COVID-19 test kits. These upgrades were negotiated directly with the manufacturer, LabGenomics. Citing the compatibility needs, competition would not be practicable. Pricing is fair and reasonable both by comparing to the costs of the original tests, as well as examining the extremely limited available data regarding the costs to acquire tests. The air freight charge is far below market value and is also considered fair and reasonable. Due to the payment being made via wire transfer, a BPO has*

been created for tracking purposes only. Payment to be made upon final delivery of all 500,000 upgraded tests.

However, neither DGS nor MDH could provide us with documentation to support the negotiation with LabGenomics and the determination that competition was not practicable and pricing was fair and reasonable.[7] In regard to the shipping of the tests, the invoice from LabGenomics included a shipping charge of $14,265.

b. Were other vendors considered?

We could not determine if any other vendors, in lieu of LabGenomics, were considered at the time the second tests were acquired. The Secretary of DGS did not know if other vendors were considered at the time of this purchase and referred us to MDH. The former Deputy Secretary for Public Health advised us that other vendors were consistently being pursued but could not provide us with documentation to support this assertion. A former Chief of Staff to the Governor advised us that he believed other vendors were considered because he was personally engaged in conversations with at least three test suppliers. However, he could not provide us with any documentation related to these conversations. The current Deputy Legislative Officer at the Governor's Office, although not providing us with written information regarding the consideration of vendors during the decision to procure the second tests, did advise us that other vendors were considered at the end of summer 2020, which was several months after the purchase of the second tests. Specifically, the State was researching Multiplex tests (that is, tests that could detect both flu and COVID), and he believed MPHL ultimately purchased COVID tests from another vendor, in addition to those purchased from LabGenomics.

c. Why was LabGenomics selected?

Neither DGS, MDH, nor the Governor's Office could provide us with documentation to support the decision or the specific parties responsible for the decision to procure the second tests from LabGenomics. The former Director of Procurement at DGS who processed the transaction advised us that the Secretary of DGS directed him to process the purchase of the new tests. The Secretary of DGS directed us to MDH for the reason that the purchase was made from LabGenomics, and the former Secretary of MDH advised us that it was the Secretary of DGS or the Governor who made the decision. The current Chief of Staff to the First Lady advised us that someone determined LabGenomics was the only option available at the time of the second purchase, but could not specify who made the determination. A former Chief

[7] We were unable to obtain clarity if the second tests were deemed a new procurement or upgrades to the original existing purchase.

of Staff to the Governor advised us that the decision was made in consultation with multiple agencies, but also could not specifically identify who ultimately made the decision. The current Deputy Legislative Officer at the Governor's Office said the former Deputy Secretary of Public Health at MDH and a former Chief of Staff at the Governor's Office participated in the discussions regarding the new tests; however, both of these individuals denied any direct involvement in the decision.

As of January 29, 2021, we have been unable to locate any documentation as to why LabGenomics was selected and the identity of the party or parties who authorized the purchase of the second tests, and it is possible that a paper trail does not exist.

d. How was the additional amount paid to LabGenomics determined?
We could not obtain any documentation to support how the price of the second tests was determined. The current Chief of Staff to the First Lady advised us that LabGenomics required the additional $2.5 million to offset the costs of manufacturing and raw materials used to produce the tests. However, there was no documentation to support this assertion. A former Chief of Staff to the Governor advised us that the cost was always a concern; however, the State was more focused on increasing testing capacity (that is, purchasing as many tests as possible) in the interest of saving lives. In addition, the former Chief of Staff stated that negotiations with LabGenomics occurred with a combination of people from DGS and MDH but we spoke to the DGS Secretary and the current Deputy Legislative Officer at the Governor's Office who was the former Deputy Director of Governmental Affairs at MDH, and they could not provide us with the specific parties involved. The current Deputy Legislative Officer at the Governor's Office also advised that he participated in a few of the initial phone calls between the State and LabGenomics, during which LabGenomics was notified that the State wanted the new tests at no additional cost to the State. He could not explain or document how the payment of the additional $2.5 million was ultimately determined.

Receipt of Tests

a. When and how many tests were received?
We reviewed shipping records and other documentation indicating the receipt of two shipments of the second tests on May 21, 2020 and June 17, 2020 at the University of Maryland, Baltimore's (UMB) Health and Science Facility containing 100,000 tests and 400,000 tests, respectively. According to available records, 344,800 of these tests were subsequently distributed to

CIAN Diagnostics and 30,200 were distributed to MPHL. The remaining 125,000 were retained by the laboratories at the UMB's Institute of Genome Sciences (IGS) and UMPA.

b. Did the State verify the tests worked as intended?

We obtained documentation of studies performed on the second tests by MPHL and CIAN Diagnostics. MPHL's study concluded that the tests demonstrated a slightly narrower range of detection compared to the federal Centers for Disease Control and Prevention's test, but concluded that the tests did consistently detect the virus. CIAN Diagnostic's study did not identify any concerns with the tests.

Disposition of Tests

On December 15, 2020, the Governor announced that all of the tests from LabGenomics had been used, but, as of January 29, 2021, we were unable to obtain documentation supporting this assertion. No centralized records of tests distributed and/or used was maintained by MDH, and we are unaware of the existence of any such records. Consequently, we requested documentation of test results from the laboratories that used the second tests (specifically from MPHL, CIAN Diagnostics, and UMB for IGS and UMPA) in part to aid us in accounting for the number of tests used. However, the laboratories initially denied our request for these records. Legal counsel to the Maryland General Assembly confirmed we were entitled to these records. However, we were unable to obtain and analyze the records from the laboratories prior to issuing this report. The results of our review of those records will be subject to inclusion in a subsequent OLA report.

Concerns with Test Results

We received an allegation on our fraud, waste, and abuse hotline in September 2020 regarding concerns with the accuracy of test results received for samples collected at Towson University (TU) and the response to these concerns by TU administration. Subsequent to the receipt of this allegation, the local news reported on similar concerns with the accuracy of test results identified by at least one nursing home in the State. The samples collected at TU and the nursing home during this period of time were sent to the laboratory at UMPA for processing and analysis, and among the tests used by UMPA at the time were the second tests from LabGenomics.

a. When were the concerns first identified?

The individual who submitted the allegation to our fraud, waste, and abuse hotline advised us that 66 individuals whose test samples were collected by TU in August 2020 and sent to UMPA for analysis were positive; however, we were further advised that many of these individuals challenged the validity of their test results for a variety of reasons (such as having no symptoms or known exposures since an earlier test). As a result, the individual who submitted the allegation stated that certain of these individuals immediately retested at other laboratories and received negative test results.

In September 2020, OHCQ received a complaint from a nursing home regarding staff members and residents whose test results came back positive from UMPA. The Director of OHCQ provided us a redacted copy of the nursing home complaint, which noted that nursing home staff members and residents, who were asymptomatic, received positive test results. The nursing home contacted MDH, which had MPHL retest staff members. Per the complaint, all the retests for staff members were negative.

The Director of the MDH Laboratories Administration advised us that the State Epidemiologist contacted him in September 2020 about concerns with clusters of positive test results at several nursing homes that had their samples tested by UMPA. Specifically, the Epidemiologist indicated that a large number of asymptomatic staff members from a nursing home tested positive and many of these individuals were subsequently retested by other laboratories, including MPHL, and received negative test results. The Epidemiologist was concerned that the results reported by UMPA using the second LabGenomics tests could be falsely positive and requested a review of the data by MPHL. The results of this review will be discussed in the section below.

b. What actions were taken to address the concerns?

We were advised by the individual who submitted the allegation to our fraud, waste, and abuse hotline that the former Director of Student Health Services at TU who was responsible for obtaining and monitoring COVID test results on campus raised concerns with the test results at TU. The individual who made the allegation further advised us that these concerns were shared with TU's senior management, including the President of TU, the Baltimore County Health Department, and the State Epidemiologist. However, the individual who submitted the allegation did not believe that adequate action was taken by TU, the Baltimore County Health Department, or the State Epidemiologist to address the concerns with the accuracy of the test results.

We attempted to contact the President of TU to discuss these concerns and were directed to the Vice President of Administration who was a member of TU's COVID response leadership team. The Vice President denied that there were any concerns with the accuracy of the test results. This response was not consistent with assertions made to us by the individual who submitted the allegation and documentation we obtained, which indicated concerns with the test results were communicated to TU's senior management, the Baltimore County Health Department, and MDH. In addition, this response was not consistent with information we received from medical personnel at TU.

Specifically, TU's Medical Staff Supervisor advised us that TU became aware of similar concerns raised with positive test results from nursing homes that used UMPA during this same period of time as TU and contacted UMPA to determine if the samples from TU were processed using the second LabGenomics tests and if the tests were repeated. The Supervisor advised us that UMPA refused to provide any information. We were advised by the individual who submitted the allegation that 44 of the 66 individuals who tested positive were retested, but we were unable to obtain documentation of the results as of January 29, 2021.

We also contacted the Supervisor of Disease Control at the Baltimore County Health Department who acknowledged that concerns were raised about a large number of positive test results at TU. He further advised that the Baltimore County Health Department continued to monitor the test results at TU, but did not take any actions to investigate the accuracy of the results.

In regard to the nursing home's concerns, OHCQ initiated a review of the UMPA laboratory after it received the September 2020 complaint to evaluate UMPA's compliance with federal and State regulations. The Director of OHCQ advised us that the review did not include an evaluation of the functionality or reliability of the specific LabGenomics tests used by UMPA because it is beyond the scope of OHCQ's authority. The Director advised us that UMPA was found to be non-compliant with federal and State regulations, for which OHCQ issued a statement of deficiencies on September 30, 2020. For example, OHCQ reported that UMPA failed to establish and follow written procedures to ensure patient samples were only tested within the allowable timeframe after collection.

As noted above, the State Epidemiologist requested that MPHL conduct a review of the nursing home tests that had questionable results. The Director of the MDH Laboratories Administration advised us that the original samples processed by UMPA were not available to perform retesting to determine

whether the specific results were accurate. However, new samples were collected several days later from 27 individuals who had tested positive. The Director advised us that the new samples from all of these individuals, which were processed by MPHL using the CDC's test, had negative test results. MPHL also conducted antibody testing on 58 individuals who had tested positive from nursing homes and found that 51 individuals (88 percent) likely had not been exposed to the virus.

Ultimately, we were advised by the Director that MPHL was unable to determine if the questionable results were due to 1) inherent performance issues with the LabGenomics tests, 2) modifications of the LabGenomics tests made by UMPA, 3) cross contamination from specimen collection errors, or 4) breakdowns in testing practices or procedures at UMPA.

We were unable to obtain documentation of test results to corroborate these concerns and the related statements. As noted above, the laboratories had initially denied our request for these records. Legal counsel to the Maryland General Assembly confirmed that we were entitled to these records. However, we were unable to obtain and analyze the records from the laboratories prior to issuing this report, and will include any findings in a subsequent OLA report.

Objective 3

Employee Terminations
OLA Conclusions as of January 29, 2021
Our review of the circumstances surrounding the termination of two State employees after they had raised concerns related to the COVID tests found that the verbal representations made to us by Towson University (TU) and the Maryland Department of Health (MDH) as the basis for the terminations were not supported by available written documentation.

Employee Terminations

We received an allegation on our fraud, waste, and abuse hotline in September 2020 regarding concerns raised with COVID test results by an employee at TU who was subsequently terminated. Specifically, the former Director of Student Health Services (SHS) at TU was terminated approximately one month after pointing out potential inaccuracies with the LabGenomics test results. This related to 66 samples collected from individuals at TU in August 2020 which came back positive. During the December 8, 2020 Joint Audit and Evaluation Committee meeting, we were asked to review the circumstances of the termination of the former Director of Procurement at MDH who had raised concerns with the process used to procure the LabGenomics tests.

a. What circumstances led to the termination of the Director of SHS at TU?

Allegation

We were advised during the follow up of our allegation that the former Director of SHS was terminated on October 1, 2020, after a disagreement with TU management regarding the cause of a spike in positive COVID test results at TU in August 2020. Specifically, the former Director of SHS disagreed with the view of the President of TU and leadership personnel from other USM institutions who attributed the spike to the irresponsible behavior of the individuals (primarily students), such as attending social events.

We interviewed the former Director of SHS who stated that he shared his opinion with TU administration officials and other USM officials that the spike was attributable to problems with the UMPA laboratory that processed the tests. In this regard, the former Director of SHS advised us that many of the TU individuals who initially tested positive for COVID approached the then Director, challenging the validity of their test results for a variety of reasons, such as having no symptoms, and certain of them were immediately

retested at other laboratories and received negative test results. Specifically, the former Director further advised us that TU collected new samples from 44 of the individuals two days after the initial results were received and sent them to UMPA for retesting. The former Director of SHS further advised us that, upon being retested, 20 of these samples were negative, 16 were positive, and 8 were lost. These results combined with reports of increased positivity rates at nursing homes and other institutions resulted in the former Director of SHS' conclusion that the initial results from UMPA were not accurate. As previously noted, we were unable to obtain and analyze test results from UMPA.

The former Director was terminated approximately one month after voicing his concerns about the LabGenomics test results.

TU Administration's Comments on the Substance of the Allegation
The Associate Vice President of Student Affairs (the former Director of SHS's direct supervisor), the Vice President of Student Affairs, the Associate Vice President of Human Resources, and TU's General Counsel all advised us that the former Director of SHS was terminated because of performance issues and not the disagreement regarding the increase in positive COVID cases.

The Associate Vice President of Student Affairs stated that the former Director of SHS was good at working with students and had a "strong bedside manner", but had difficulty with administrative tasks, such as, creating spreadsheets and reports and automating certain practices, which led to a lack of trust in his abilities. In addition, TU's General Counsel stated the former Director of SHS expressed reluctance to embrace TU leadership's directives, such as establishing an external medical advisory committee, which was a source of tension. The Vice President of Human Resources stated that the termination was not the result of a singular event, but a pattern of behavior that was being addressed from a performance perspective, which extended prior to the COVID pandemic situation.

Personnel File
We reviewed the former Director's four most recent performance evaluations on file. While we were advised there is no requirement to document the reason for termination, all of the evaluations indicated that the Director of SHS met or exceeded expectations and had no areas of deficiencies. For example, the performance evaluation prepared by the Associate Vice President of Student Affairs and signed by the Director of SHS on July 1, 2020, included the following comments (former Director of SHS authorized for disclosure):

Administratively [the former Director] has met all deadlines, continued to maintain an open line of communication, kept me appraised of new developments, and brings potential solutions to problems and situations.

Based on my observations, I do not have any immediate areas of professional improvement or areas that that I would define as deficient.

Ultimately, TU could not provide any further documentation related to the former Director's termination.

b. What circumstances led to the termination[8] of the Director of Procurement at MDH?

Allegation

We interviewed the former Director of Procurement at MDH who advised us that he was terminated and his last day at work was November 23, 2020. We were further advised that this termination may have been related to the former Director's planned attendance at an upcoming Board of Public Works' meeting during which the COVID tests were to be a subject of discussion.

Specifically, the former Director of Procurement advised us that his termination may have been because the Governor's Office did not want him in attendance at the BPW meeting to avoid the risk of the former Director speaking in a direction that was not aligned with the public position of MDH and the Governor's Office. This BPW meeting occurred approximately one week after the former Director's termination, during which the Acting Secretary of MDH stated that the original LabGenomics tests were "clunky." The former Director of Procurement advised us that due to the nature of his position, he rarely missed BPW meetings and would have attended this meeting if not for the termination.

The former Director of Procurement further advised us that he had expressed concerns with the first tests from LabGenomics on two occasions. Specifically, he was contacted, via conference call, one evening prior to the purchase of the first tests by the current Deputy Secretary of Operations at MDH and the current Deputy Legislative Officer at the Governor's Office (who was the former Deputy Director of MDH's Office of Governmental

[8] Although the former Director officially resigned from State service, he advised us that he would characterize his separation from service as a termination, based on his discussions with MDH officials. Consequentially, we used "termination" throughout this discussion to be consistent with his interpretation of events and MDH's stated position.

Affairs) and was asked to wire millions of dollars to a South Korean COVID test company. The former Director of Procurement refused to process the payment and explained that the transaction had to follow the proper procurement process (previous sections in this report describe the lack of compliance with State procurement regulations in the test purchases). Additionally, after the original tests were received, the former Director of Procurement stated that he contacted his supervisor, the former Deputy Secretary of Operations, and suggested that the tests' be verified by MPHL for reliability. According to the former Director of Procurement, he was told to not ask questions of this nature.

MDH's Position on the Allegation

The former Secretary advised us that the termination was unrelated to the LabGenomics tests and the BPW meeting. Rather, the former Secretary and current Chief of Staff asserted that the former Director of Procurement was terminated because he was only working part-time and MDH needed a strong, full-time leader for procurement.[9] We were advised by the Director for the Office of Human Resources that she did not recall other terminations for a similar reason, but it was unusual for the director of a unit to only work part-time.

In addition, the current Deputy Legislative Officer at the Governor's Office acknowledged that he participated in a call to the former Director of Procurement prior to the purchase of the first tests, but denied that the former Director of Procurement was asked to process a wire transfer to a South Korean COVID test company. The current Deputy Legislative Officer advised us that the call was to inquire about expediting the procurement process if MDH could identify a COVID test company. The current Deputy Legislative Officer could not remember if LabGenomics was discussed during the call.

Personnel File

The concern with the former Director of Procurement only working part-time was not reflected in his personnel file. While we were advised there is no requirement to document the reason for termination, we found no mention of this concern in the performance evaluations that the former Director of Procurement received or on any other written document. In this regard, our review of the eight performance evaluations issued to the former Director of Procurement covering the period from January 2016 to June 2020, disclosed

[9] Based on the understanding that MDH needed a strong full-time procurement leader, we reached out to MDH to determine if a new full time Director of Procurement has been hired. As of February 25, 2021, we were advised by MDH that the position had not been filled.

that his performance was evaluated as "outstanding" on five of the evaluations including his most recent evaluation for the period ending June 2020 and "satisfactory" on three of the evaluations. Although the majority of these evaluations had no written comments on the performance of the former Director of Procurement, we noted that the evaluation dated July 3, 2018 stated that he had "done an excellent job of preparing MDH for BPW meetings." The former Director of Procurement authorized disclosure of information from the personnel file.

Finally, our review of payroll records for calendar years 2019 and 2020 did substantiate MDH's assertion that the former Director of Procurement only worked part-time during periods of those years. For example, the Director worked an average of 58 hours per pay period during the last 12 pay periods of calendar year 2019.

Ultimately, MDH could not provide any further documentation related to the former Director's termination.

Exhibit

Schedule of Individuals Interviewed	
Maryland Department of Health (MDH)	
Thomas C. Andrews	Chief of Staff
Corey Carpenter	Director of Policy, Office of Governmental Affairs
Dr. Jinlene Chan	Acting Deputy Secretary of Public Health Services; prior Assistant Secretary and Chief Medical Officer
Atif T. Chaudhry	Deputy Secretary of Operations (replaced Gregg Todd); prior Director of Facilities Management and Development
Dana L. Dembrow	Former Director of Procurement (resigned November 2020)
Rodney E. Hargraves	Deputy Director of Administrative and Support Services, Laboratories Administration
Jennifer E. McMahan	Director of Office of Human Resources
Dr. Robert A. Myers	Director of Laboratories Administration
Dr. Patricia T. Nay	Director of the Office of Health Care Quality, Public Health Services
Robert R. Neall	Former Secretary (retired November 2020)
Frances B. Phillips, R.N.	Former Deputy Secretary of Public Health Services (retired August 2020)
Dennis R. Schrader	Acting Secretary (since December 2020); prior Deputy Secretary of Health Care Financing and Chief Operating Officer
Gregg Todd	Former Deputy Secretary of Operations (resigned in July 2020)
Webster Ye	Assistant Secretary of Health Policy, Office of Governmental Affairs
Department of General Services (DGS)	
Ellington E. Churchill, Jr.	Secretary
Michael F. Haifley	Deputy Chief Procurement Officer
Daniel J. Mays	Former Director of Procurement Bureau, Office of State Procurement (resigned December 2020 to become Director of Procurement at Judiciary)
Institute for Genome Sciences (IGS) at the University of Maryland School of Medicine (UMB laboratory contracted by the State)	
Mike Humphrys	Director of Microbiome Service Laboratory at IGS
Dr. Jacques Ravel	Associate Director for Genomics

Towson University	
Dr. Matthias Goldstein	Former Director of Student Health Services (terminated October 2020)
Dr. Vernon J. Hurte	Vice President of Student Affairs
Steve Jones	Associate Vice President of Human Resources
Benjamin Lowenthal	Vice President of Administration and Finance and Chief Fiscal Officer; member of the University COVID Response Leadership Team
Dr. Lisa Murray	Medical Staff Supervisor
Anthony Skevakis	Associate Vice President of Student Affairs and Dean of Students
Sara Slaff	Vice President of Legal Affairs and General Counsel
Baltimore County Department of Health and Human Services	
Sabrina Chase	Assistant County Attorney, Baltimore County Office of Law
George Elder	Public Health Investigator, Supervisor of Disease Control; COVID liaison for colleges
Governor's Office	
Matthew A. Clark	Former Chief of Staff to Governor Hogan (effective August 2017, resigned June 2020 to become Senior Vice President for Marketing and Communications at the University of Maryland Medical System)
Soo Koo	Chief of Staff to the First Lady of Maryland; Prior Communications Director of the Governor's Office of Community Initiatives
Roy C. McGrath	Former Chief of Staff to Governor Hogan (effective June 2020, resigned August 2020)
Jake A. Whitaker	Deputy Legislative Officer (effective December 2020); former Deputy Director of Office of Governmental Affairs at MDH (started December 2017, resigned December 2020)
Others Interviewed or that Contributed to Our Review	
Sherry B. Adams	Director of Office of Preparedness and Response, Operations, MDH
Dr. Manoj Adusumilli	Medical Director, CIAN Diagnostics
Harrison Brown	Planning Unit Supervisor, Maryland Emergency Management Agency (MEMA)
Diane M. Croghan	Deputy Chief of Staff, Governor's Office
Marcia S. Deppen	Director of Consequence Management Directorate, MEMA
Charles A. Eby	Deputy Executive Director, MEMA
Robert E. Gleason	Chief Procurement Officer, DGS
Kristen Jones-Bryce	Chief External Affairs Officer, University of Maryland Medical System

Dr. Adnan Khan	Medical Director, Integrated Cellular and Molecular Diagnostics, LLC
Kyle Koeppler	Chief Executive Officer, CIAN Diagnostics
Walter F. Landon	Deputy Chief of Staff and Director of Office of Homeland Security
Jennifer Leatherman	General Counsel, CIAN Diagnostics
Dr. Sombabu Mallapudi	Principal/owner, CIAN Diagnostics
Russell J. Strickland	Director, MEMA
Jon Weinstein	Director, COVID-19 Testing Task Force, MDH

APPENDIX A

Auditor's Comments on Agencies' Responses

The agencies subject to this review disagreed with many of OLA's statements and conclusions in their written responses (see Appendices B – D). After reviewing these responses, we re-examined our work and reaffirmed that our published findings are appropriate, clearly presented, and properly supported by the results of interviews and our examination of the limited documentation provided to us both during the review and in the attached responses. Thus, we continue to believe that OLA's statements and conclusions in the report are valid and were not disproved by any of the unsupported assertions included in the responses. Although we reviewed each response in its entirety, we did not deem it necessary to provide a point-by-point rebuttal, but rather provided the Auditor's Comments below to certain significant disagreements in each of the agencies' responses.

Auditor's Comments regarding the Governor's Office response (Appendix B):

The Governor's Office disagreed with the statements made in our report regarding its failure to provide documentation. Specifically, the Governor's Office stated in its response that its Senior Deputy Legal Counsel had advised us that he was the point of contact for document requests, but our requests were made solely to two current Governor's Office employees for documents from their former positions with the State.

The Governor's Office had sufficient opportunities to provide the documentation we requested, and contrary to its response, OLA did request documentation from the Senior Deputy Legal Counsel. For example, in emails to the Senior Deputy Legal Counsel dated January 14, 2020, we requested "a list of manufacturers (and related documentation, such as proposals from the companies) that were contacted for COVID test kits and any other correspondence" and "Any documentation and correspondence that would be helpful for us to understand the process of acquiring the COVID test kits." Such requests were intentionally broad in scope, given a lack of specific information obtained from interviews on existing records, and were intended to obtain any documentation potentially or remotely relevant to the subject under investigation.

In addition, as is typical during our examinations, we requested documentation from the employees who were directly involved in the matters under review, and to support assertions made during the interviews. Consequently, during our

interviews, the aforementioned two employees agreed to look for and provide relevant documentation, as requested. Although these individuals provided us with some records, upon our examination the records were generally deemed to be insufficient to address the questions we were attempting to answer. Finally, although given two weeks to review our draft report and understand our concerns and findings, the Governor's Office's response did not include any additional documentation to address the questions, providing further evidence as to the validity of the conclusions reached in our report.

Auditor's Comments regarding the Department of General Services (DGS)/Maryland Department of Health (MDH) combined response (Appendix C):

The combined response from DGS and MDH included certain disagreements with the content of our report. After reviewing this response and our related work, we believe the content and conclusions of our report are appropriate, clearly presented, and properly supported. For example, we noted the following:

I. **Lack of Written Contract** – It is troubling to us that the response considers the letter of intent (see Attachment 1 to Appendix A) sufficient to document a $9 million procurement from a foreign vendor that had not previously conducted business with the State. Our report acknowledged that there was a letter of intent, but indicated that it did not include all of the required contract provisions, including language to address the following key elements intended to protect the State:

   a. conformance of specifications,
   b. indemnification,
   c. cost and price certifications, and
   d. requirements for registration of the business in the State.

   The response stated that the letter of intent satisfied the requirement of a legally valid contract. However, as noted above, it did not include all the required elements and accordingly did not comply with State procurement regulations. Furthermore, we were advised by Board of Public Works staff that, while the letter of intent may be evidence of an agreement between the vendor and the State, without further documentation incorporating the State's required contract provisions, including those noted above, this agreement may be "void" under State law.

   In addition, although the response stated that the procurement of the second tests was completed with a purchase order, we noted that the procurement checklist prepared by DGS for the second tests indicated that

the purchase order was created for tracking purposes only. This was confirmed during an interview with the former Director of Procurement at DGS who stated that the purchase order was created to track the receipt of the tests prior to payment of the invoices.

II. **Board of Public Works (BPW) Notification** – The response implies that the contract was compliant since it was submitted to the BPW and no concerns were raised with the form of the contract. However, in accordance with BPW Advisory 2009-2, when reporting emergency procurements to the BPW, agencies are required to only submit an Action Agenda item and a copy of the Procurement Officer's Determination of the Emergency. We were advised by BPW staff that the Labgenomics award was initially presented to the BPW on the June 3, 2020 Agenda in a compilation report with numerous other DGS emergency commodity awards. That report was remanded back to DGS so that actual documented invoices could be provided to the BPW office for review and verification. According to the BPW staff, DGS provided purchase orders (which as noted above were only used for tracking purposes), invoices, payment transmittal documents and verifications of payment disbursements, but BPW staff did not believe the actual contract(s) were provided. Consequently, the BPW would not have reviewed the actual "contract" document submitted and therefore, would not be in a position to, nor have been required to, comment on whether it was compliant with State regulations.

III. **Documentation of Test Results** – MDH acknowledged in its response that patient identifiers were redacted in the records initially provided to us in response to our inquiries. However, these records were deemed by us to be incomplete (which we previously conveyed to MDH) as the records only included results from certain periods of time and not all of the results produced using the LabGenomics tests. The missing/redacted information was critical to our review for multiple reasons. For example, the redaction and omission of certain patient information precluded us from conducting planned analyses and from verifying the accuracy and completeness of the records. While the legal concerns regarding this issue were ultimately resolved, we were unable to obtain and review the unredacted versions of the records prior to issuing this report (as prominently disclosed in our report).

IV. **Concerns with Selective Utilization of Statements** – The response raises concerns that we did not include all information obtained during interviews, which negatively impacts the validity of our work and

contributes an element of bias in our report. Frankly, this assertion confounds us as both departments know from longstanding practice and professional standards that OLA reports do not and are not intended to include all information obtained from an examination or review, verbatim. Rather, OLA condenses the results from numerous audit processes (for example, interviews, tests, observations, etc.) into a readable report of practical length.

We believe that we have included all information obtained relevant to the questions we attempted to answer for each of our objectives; and that the selection and presentation of that information was done consistent with our past practices. Finally, much of the lengthy response from DGS/MDH includes explanations and not answers to the questions we were tasked with answering and accordingly we did not include the information in the body of our report. However, consistent with OLA's report policy, we have included these explanatory agency comments, which were submitted with the combined response, in their entirety as an appendix to our report.

Auditor's Comments regarding Towson University's (TU) response (Appendix D):

The response from TU included certain disagreements with the content of our report. For example, TU disagreed with any implied or expressed assertion that it took inadequate action after receiving a spike in positive COVID test results in August 2020 and that the former Director of Student Health Services (SHS) was terminated because he raised concerns regarding this spike in positive test results.

In response to these disagreements, we note the following:

I. We did not opine on the adequacy of action taken by TU in response to the spike in positive tests or the reason for the termination of the former Director of SHS; rather, our report reflects the information that was communicated to us by the individuals involved in matters under review.

II. We acknowledged in our report that documentation was not required to justify the termination. Our report simply disclosed that the assertions made by TU regarding the reason for the termination were not supported with documentation and was not consistent with employee performance evaluations included in the former Director's personnel file.

We agree with TU's response that neither TU nor any of its employees had a role related to the procurement and use of the COVID tests from LabGenomics, and our report does not make such a statement. Rather, our reference to TU in this

report is limited to its role as a user of the LabGenomics tests and its termination of an employee.

APPENDIX A - Attachment 1

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Ellington E. Churchill, Jr.
Secretary

MARYLAND DEPARTMENT OF GENERAL SERVICES

ADMINISTRATION • FACILITIES OPERATIONS & MAINTENANCE • FACILITIES PLANNING, DESIGN, CONSTRUCTION & ENERGY
PROCUREMENT & LOGISTICS • REAL ESTATE

Date: April 2, 2020

Subject: Letter of Intent- LabGenomics/JKICT., INC

Mr. Kim,

We are writing to provide a letter of intent from the Maryland Department of General Services (DGS) with respect to a transaction with your firm for Covid19 PCR Assay Kit (100T), quantity 5,000, responsive to your Proforma Invoice PI-L20-0402, dated April 2, 2020.

The total cost of the transaction is $9,000,000. The terms are 100% upon placement of order, via wire transfer. This wire is scheduled for transmittal on April 3, 2020.

If you need any additional information from me, please feel free to reach out.

Sincerely,

Danny Mays
Director of Procurement
Office of State Procurement
Maryland Department of General Services
[redacted]
Danny.Mays@maryland.gov

APPENDIX B

STATE OF MARYLAND
OFFICE OF THE GOVERNOR

LARRY HOGAN
GOVERNOR

See Appendix A for Auditor's Comments regarding response

March 26, 2021

Gregory A. Hook, CPA
Legislative Auditor
Office of Legislative Audits
Department of Legislative Services
301 West Preston Street, Room 1202
Baltimore Maryland 21201
Submitted electronically to response@ola.state.md.us

Dear Mr. Hook:

We have received and reviewed the Office of Legislative Audits' special Review of the Procurement of Certain COVID Tests (the "Review"). Your thorough and comprehensive examination of these important matters is appropriate and welcomed. However, we concur with the response of the Department of General Services and the Department of Health, which conveys our shared concerns and disappointment with various aspects of this hastily completed Review.

We have been, and remain, eager to assist and comply with the Office of Legislative Audits' examination of emergency procurements. As such, we are particularly puzzled by the allegations in the Review that the Office of the Governor failed to provide documentation in numerous respects. Our senior deputy legal counsel, Christopher Mincher, recalls that, in a phone conversation with the Office of Legislative Audits on January 14, he explained that he was the point of contact for document requests to the Office of the Governor. Yet requests were made solely to two current Governor's Office employees for documents from their former positions with the State.

In emails on January 19 and February 4, auditor [redacted] wrote to Mr. Mincher that she would review the documentation provided and let him know of any follow-up questions. Mr. Mincher did not receive auditor requests for documents from the Governor's Office more generally or any related follow-up questions. In short, the Review appears to fault the Governor's Office for failing to provide documents that were not requested.

We want to additionally reiterate and highlight the dire need for COVID-19 tests that Maryland and all states across the nation faced in the early days of the pandemic. The decisions made to procure 500,000 tests - a resource unimaginable in many states at the time - from LabGenomics reflected the best information available at the time and the most creative thinking to solve a very real problem. The procedures that were followed matched the reality of the rapidly developing public health emergency, and the resulting emergency procurements were unanimously accepted by the Board of Public Works on September 2, 2020. The purposes of the State's procurement law were fulfilled, and the tests acquired ultimately saved the lives of countless Marylanders. On December 15, 2020, the State announced that 500,000 LabGenomics tests were utilized, and an additional 1 million tests were acquired by a private clinical laboratory based in Maryland.

We respectfully request that the Office of Legislative Audits revisit the Review's conclusions in light of the departments' response and with fuller appreciation of the exigent circumstances in which the procurements were made.

Please do not hesitate to contact me if you have further questions that I can assist you with.

Sincerely,

Amelia Chasse Alcivar
Chief of Staff, Office of the Governor

STATE HOUSE, ANNAPOLIS, MARYLAND 21401
(410) 974-3901 1-800-811-8336
TTY USERS CALL VIA MD RELAY

APPENDIX C

Maryland | DEPARTMENT OF HEALTH
Dennis R. Schrader, Acting Secretary
DEPARTMENT OF GENERAL SERVICES
Ellington E. Churchill, Jr., Secretary

See Appendix A for Auditor's Comments regarding response

March 26, 2021

Gregory A. Hook, CPA
Legislative Auditor
Office of Legislative Audits
Department of Legislative Services
301 West Preston Street, Room 1202
Baltimore Maryland 21201
Submitted electronically to response@ola.state.md.us

Dear Mr. Hook:

The Maryland Departments of General Services (DGS) and Health (MDH) appreciate the opportunity to respond to the Office of Legislative Audits' (OLA) Review of Procurement of Certain COVID Tests (Review), received on March 12, 2021. We thank the OLA auditors for our ongoing conversations regarding these matters. DGS and MDH collaborated on this response.

We highlight the Review's cautionary note: "[OLA's] review did not constitute an audit conducted in accordance with generally accepted government auditing standards" (Review at page 9). Unfortunately, the Review has a number of factual and other inaccuracies, which we respectfully raise below.

We have five principal areas of concerns about the Review and respectfully disagree with:

1. OLA Review Objective 2: "We were unable to obtain documentation of test results from laboratories to substantiate the disposition of the tests" and "We were unable to obtain documentation of test results from laboratories to corroborate the concerns with the reliability of the test results." ;

2. OLA Review Objective 3: "Our review of the circumstances surrounding the termination of two State employees after they had raised concerns related to the COVID tests found that the verbal representations made to us by Towson University (TU) and the Maryland Department of Health (MDH) as the basis for the terminations were not supported by available written documentation."

3. OLA Review Objective 1: "Tests were not procured in accordance with state procurement regulations, including the lack of a written contract."

4. OLA Review Objective 1: "A review of available records indicates the State did not ensure that the tests received on April 18 and 22, 2020, were authorized by

the Federal Food and Drug Administration prior to them being shipped by LabGenomics."

5. Additional Concerns and Conclusions

1. OLA Review Objective 2: "We were unable to obtain documentation of test results from laboratories to substantiate the disposition of the tests" and "We were unable to obtain documentation of test results from laboratories to corroborate the concerns with the reliability of the test results."

Both DGS and MDH have fully complied with all requests for documentation made by OLA. The Review contains several inaccuracies and omissions related to document requests and productions, all seemingly intended to portray MDH and its public health laboratory in a suspicious light.

On page 17, the Review claims that it could not "obtain documentation of test results from laboratories to substantiate the disposition of tests" and that it was "unable to obtain documentation of test results from laboratories to corroborate the concerns with the reliability of test results." Those assertions ignore the documents that the MDH lab provided on November 24, 2020 as attachments 4, 9, 12, 12, 16, 22, 23, 25, and 27 to Dr. Myers' response via the OLA portal; see **Attachment A**. These attachments contain the results from tests run by the MDH lab as well as the results of the tests run by UMPA that were questioned. Only patient identifiers were redacted.

On page 21, the Review asserts that "[n]o centralized records of tests distributed and/or used was maintained by MDH, and we are unaware of the existence of any such records." That assertion ignores the documentation provided as attachments 17-19 of Dr. Myers' response.

Also on page 21, the Review claims that the MDH lab denied OLA's requests for documentation of test results. As the attachments listed above show, that assertion is inaccurate. In response to the November request for documents, the MDH lab gave OLA documents with patient identifiers redacted. In one case, in response to a request for a report by source of test, patient names were not requested. See attachment 16 of Dr. Myers' response.

Regarding the so-called denial of record requests and the related question of whether OLA was entitled to the unredacted versions of the attachments listed above, at some point after MDH provided those attachments, MDH counsel learned that UMPA and UMB were questioning whether OLA was entitled to unredacted records without at least an explanation of the need for patient specific information like name, DOB, SSN, etc. The assistance of the OAG's Opinions and Advice counsel was requested in resolving this matter. Accordingly, the MDH lab did not provide unredacted documents showing test results until that legal issue was resolved.

2. OLA Review Objective 3: "Our review of the circumstances surrounding the termination of two State employees after they had raised concerns related to the COVID tests found that the verbal representations made to us by Towson University (TU) and the Maryland Department of Health (MDH) as the basis for the terminations were not supported by available written documentation."

Regarding the individual in question with the Towson University personnel action, no one in the Administration, DGS, or MDH was aware of this employee, the complaint, or the termination prior to reading the Review. As such, we reject any implication or allegation that the Towson University personnel action had any nexus to the procurement of COVID-19 tests as inaccurate and not based in fact.

MDH rejects the implication that the former employee mentioned in Review resigned for any reason other than 1) MDH needed new leadership to manage a proposed redesigned procurement and contract management office, and 2) that leadership could not be provided by a part-time employee.

These circumstances were discussed with the former employee who acknowledged during the course of the conversation that indeed, the part-time nature of his employment was a limitation on the overall performance of the Office of Procurement and Support Services. These were the only topics discussed during the meeting on November 23, 2020. However, at the conclusion of the meeting, the former employee referenced a letter he intended to respond to from DGS recommending that a major MDH procurement unrelated to COVID be terminated due to questionable procedures. The former employee was thanked for his good service during his tenure, which as stated in the Review, is reflected in the former employee's personnel file.

The former employee's part-time status was due to the earning limitation placed on a retired state employee who returns to work for a state agency; i.e., the returned employee's salary cannot exceed the difference between the employee's salary prior to retirement and the employee's pension amount. The earnings limitation provision resulted in the former employee having to work less than 40 hours per week, as the Legislative Auditor acknowledged. This was explained to the Legislative Auditor as well as to why other MDH employees in similar circumstances were not subject to the same treatment as the former employee; that is, they were not the head of a major MDH program averaging more than $600 million in procurements each year.

If the former employee had any concerns about the procurements addressed in the Review for which he was not responsible, those concerns were not brought to the attention of senior MDH leadership at any time before, during, or after the November 23, 2020 meeting when the former employee's status with the department was discussed.

The Review asserts as does the former employee that he was terminated to keep him from appearing at an upcoming Board of Public Works (BPW) meeting. The former employee resigned on November 23, 2020. The next BPW meeting was held on December 2, 2020. There were no test kit procurements on that agenda. Furthermore, reports of the LabGenomics emergency procurements were accepted by the BPW at its September 2, 2020 meeting, nearly three months prior to the former employee's

resignation. These facts directly contradict the assertion in the Review that the employee was terminated to prevent him from attending the upcoming BPW meeting where the test kits would be discussed.

MDH respectfully suggests that the only pertinent documentation related to the former employee's "termination" is his letter of resignation.

The footnote on page 28 of the Review implies that the MDH was disingenuous in asserting that a change in procurement leadership needed to occur because the position had not been filled as of February 25, 2021. In order to demonstrate MDH's commitment to re-defining and revamping its procurement operations, the following actions are currently underway to improve and redesign procurement and contract management processes:

- MDH has been working with the DGS Office of State Procurement (OSP) regarding the need to redesign the overall methodology for procurement and contract management within MDH. MDH is coordinating extensively with DGS OSP to perform an end-to-end review and analysis of the procurement policies and procedures across MDH.
    - The DGS Agency Procurement Review program (APR) team is currently assessing MDH's procurement processes and procedures to provide recommendations for improvement.
        - The initial kick off meeting for this review occurred on January 4, 2021.
        - This involves evaluating all aspects of procurement operations, including: Organizational standards; Compliance; Program standards; Staffing standards; and Professional standards.
        - MDH is working closely with DGS APR throughout this review process and is beginning to implement recommendations prior to completion of the assessment and finalization of the report.
- MDH worked with DGS OSP to develop a proposed expanded organizational structure for the MDH Office of Procurement and Support Services, which includes:
    - Adding additional permanent positions to more than double the number of staff in this unit
    - Restructuring the department with an additional layer of oversight by procurement managers
        - Previously, all procurement managers reported directly to the Deputy Director who oversaw all procurements directly
    - Restructuring the workflows within the department by creating structured service delivery lines that are segregated based on common procurement disciplines
- MDH is also working with DGS OSP to expand the capacity of the MDH Office of Procurement and Support Services to provide additional services that were not previously provided by this office. These additional services include:
    - Comprehensive end-to-end contract management for all agreements
    - A consolidated agency-wide unit for Memoranda of Understanding and Interagency Agreements

    - A consolidated agency-wide unit for grants management
- MDH is reviewing the existing Contract Tracking System and evaluating the need for an advanced contract management system, in order to:
    - Enhance visibility into the performance of the contracting process
    - Better track contracts and agreements across all MDH departments

MDH and DGS OSP developed a job posting that will be utilized to fill both the MDH and DGS vacant Procurement Director positions. A job posting was published on January 4, 2021 and closed on January 25, 2021 to fill both of these positions. Subsequent to the closing of the job posting, MDH coordinated with DGS OSP to upgrade the job classifications for both the MDH and DGS Procurement Director positions. This has delayed the hiring for these positions; however, MDH and DGS began conducting joint interviews the week of March 22nd.

3. OLA Review Objective 1: "Tests were not procured in accordance with state procurement regulations, including the lack of a written contract."

The Review faults the lack of a "formal written contract" to evidence the transactions. In the regulations referenced in the Review, a "contract" is defined as a written agreement entered into by a procurement agency for the acquisition of supplies. Additionally, the statutory definition of a procurement contract is an agreement **in any form** entered into by the unit for a procurement. By either legal definition, the original letter of intent between the State of Maryland and JKICT/LabGenomics (the "LOI"), provided upon request to the OLA, was indeed a legally valid contract at the time that the State wired payment.

Moreover, the procurement of the upgraded tests was completed with a purchase order, a copy of which was provided to OLA. The regulations referenced by the Review specifically state that, upon acceptance, a purchase order "becomes a contract." The accepted purchase order here was also a legally valid contract.

In its review of these emergency procurements, the BPW -- which can also waive any of its regulations when appropriate -- did not express any concern that the form of the contracts violated its regulations. As described in BPW Advisory 2009-2, the regulations referenced by the Review provide that, after reviewing an emergency procurement, the BPW "may require the agency to take preventive or corrective future action." After reviewing these contracts, however, BPW did not state that any corrective future action was needed. The Review's conclusions about the contractual requirements are legally questionable and to date unsupported by the unit that promulgated them.

In any case, the contracts did embody several of the regulatory clauses, such as those accounting for the parties, scope, price, terms, and payment method. In the end, valid contracts occurred with goods delivered at the prices stipulated and in the provided delivery timeframes.

The OLA's Review also finds fault with what it claims is a lack of evidence documenting the extent to which research was conducted into other sources of tests, and the

subsequent evaluation process. The regulations require that for an emergency procurement, the agency's procurement officer obtain such competition as is possible and practicable to acquire the needed items or services in time to meet the emergency.

In the instant case, alternative vendors were sought and considered. A chart naming the companies and noting important aspects for consideration when selecting a vendor was created as part of this due diligence. The OLA received a copy of this chart. There is no legal requirement for emergency procurements that there be records documenting a "formal evaluation" of vendors, or a determination by the procurement officer that the vendor selected is the "best qualified," as would occur in a procurement conducted under normal circumstances.

The regulations referenced by OLA state that an emergency procurement occurs when there is a "sudden or unexpected occurrence or condition which agency management could not foresee" and items must be "procured in time to meet the emergency." These are not the circumstances, as suggested by the Review, when a "selection committee" should be organized to deliberate and compile rankings.

It is important to remember the context during which this procurement occurred. During the early stages of the pandemic, there was unprecedented global competition for scarce resources to mitigate the threats posed by the pandemic and allow the State to care for the health and safety of the citizens of Maryland. After a needed resource was identified as being available, and an offer was made to the State with acceptable terms given the circumstances, if the State were to hesitate for too long to undertake standard due diligence, more often than not, the offer was no longer available. The need for caution and due diligence had to be viewed in light of the unprecedented crisis the State, the nation and the world were facing at the time, and the risk inherent in any transaction had to be balanced with the risk to the lives of Marylanders.

During the early stages of the pandemic, the sources for most of the high-demand items (masks, ventilators, test kits, etc.) were almost non-existent domestically. South Korea was well-positioned to offer these desperately needed supplies.

Subsequent to the procurement, DGS reported the emergency procurements to the BPW. DGS worked with BPW staff to determine how best to report these items, after which BPW provided DGS with emergency procurement forms and agreed to accept a chart with the required information. (Copies of the chart and completed reporting forms were provided to the OLA upon request.) Members of the BPW submitted numerous follow-up questions about the procurement.

4. OLA Review Objective 1: "A review of available records indicates the State did not ensure that the tests received on April 18 and 22, 2020, were authorized by the Federal Food and Drug Administration prior to them being shipped by LabGenomics."

OLA further faults the State for procuring test kits that had not yet received an EUA. At the time the LabGenomics' COVID-19 test kits were purchased, the EUA was pending with the FDA. The Review also fails to explain that the FDA allowed manufacturers to sell a COVID test as soon as they had validated the test and with the understanding that an EUA application would be submitted within 15 days. *See* Policy for Coronavirus Disease-2019 Tests During the Public Health Emergency (Revised) - Immediately in Effect Guidance for Clinical Laboratories, Commercial Manufacturers, and Food and Drug Administration Staff (fda.gov) (Mar. 25, 2020).

The unprecedented nature of the emergency required adapting existing practices to assure that Maryland was able to meet the needs of this emergency and was not restrained by practices that had never been tested in such an extraordinary way. The simple truth is that the demand was so high in America and around the globe for test kits, that practically instant decisions had to be made with the best information available in an effort to ensure the State could properly respond to the ongoing threats to the health and safety of Maryland's citizens.

Given the existence of a catastrophic health emergency and a worldwide pandemic, and given the scarcity of tests for COVID in April 2020, it was a reasonable decision to purchase the tests before LabGenomics' receipt of the EUA.

Lastly, the Review suggests impropriety in, as part of the initial procurement of COVID-19 tests, incurring costs for charter freight instead of commercial shipping. These payments to Samsung SDS were accepted by BPW on September 2, 2020. *See* line 51, page 63, BPW Agenda: https://bpw.maryland.gov/MeetingDocs/2020-Sept-02-Agenda.pdf.

Commercial passenger air transport is a critical component of the freight supply chain. Under normal times it is more economical to place freight in the cargo area of a passenger plane. Worldwide passenger flights experienced an unprecedented decline in 2020. Per the International Civil Aviation Organization (ICAO) international and domestic air passengers experienced an overall reduction of 60% in 2020 compared to 2019. In April 2020, international commercial air traffic had essentially ceased, and for the flights that were still in operation, it was sporadic at best. There was an enormous amount of competition for the limited cargo transport space available.

Additionally, at the time of the charter, numerous health care officials and state leaders had reported instances in which federal authorities had intervened and, in some cases diverted the delivery of medical supplies related to the COVID pandemic regardless of contracts between State and local governments and vendors. In several cases, state officials reported that the Federal Emergency Management Agency confiscated supplies

with no explanation, while others reported that the agency had outbid them for the equipment. A sampling of news reports in March and April 2020 is included as **Attachment B.**

In order to ensure the timely and safe delivery of the test kits, and to avoid having the cargo confiscated or diverted by the federal government upon arrival, chartering a flight directly into Maryland's State- owned airport was deemed essential. Baltimore/ Washington International Thurgood Marshall Airport provided the safest, most reliable and expedient transport option to allow the State of Maryland greater control of the cargo. DGS consulted its logistics specialist to consider alternate direct charter pricing. Initial estimates far exceeded the transport cost offered through Korean Air.

5. Additional Concerns and Conclusions

MDH and DGS strenuously object to the Review's practice throughout of selectively utilizing statements and reflections gleaned from the interviews conducted by the auditors without mentioning certain information and explanations that were also provided during the interviews. For example, it was explicitly stated during one of the MDH interviews that the former employee who was allegedly terminated for disagreeing with the test kit procurements had absolutely nothing to do with those procurements. That information is absent from the Review. For the Review to fail to present all of the information given to OLA, both through in-person interviews and the voluminous amounts of documentation provided, casts serious doubt as to whether the Review completely and accurately presents a factual set of findings and any subsequent inferences were properly drawn.

In conclusion, for both DGS and MDH, compliance with audits and the underlying statutes and regulations is of the highest priority. As a matter of professional pride, we have ensured that we typically have a full and frank working relationship with OLA. Unfortunately, the Review and the manner in which it was conducted, gives the appearance that OLA produced a rushed and politically-driven report implying dubious conclusions reached without regard to the actual circumstances surrounding the subjects of the Review.

Please do not hesitate to let us know if you have any questions in this regard.

Sincerely,

Eric T. Lomboy
Chief of Staff, DGS

Thomas C. Andrews
Chief of Staff, MDH

ATTACHMENT A

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Re: Concerns about UMPA

1 message

David Blythe -MDH- <david.blythe@maryland.gov> Wed, Sep 9, 2020 at 6:04 PM
To: Robert Myers -MDH- <robert.myers-phd@maryland.gov>
Cc: Monique Duwell -MDH- <monique.duwell@maryland.gov>

I do have the total positives for each day but they're in separate emails each day - don't have those put together in a summary.

And no, have the Ct values for only one of the outbreak-associated clusters. Have attached that to this email

On Wed, Sep 9, 2020 at 5:58 PM Robert Myers -MDH- <robert.myers-phd@maryland.gov> wrote:

David,

Do you have the total number of positives reported for each day because I noticed large differences in the number of tests reported on certain days (<500 to 6500/day) ? I am assuming the red line is the percent positive ?Their overall positivity rate 2.84% is not much higher than ours. For the month of August MDH Lab's positivity rate was 2.46% but they do report larger numbers and therefore more positives. Can you obtain a line list of their positives with the Ct. values for the SARS-CoV-2 gene targets? I would be more concerned if there are clusters of weak positives in their runs.

Best regards,

Bob
Robert A. Myers PhD
Director
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, Maryland 21205

Phone: 443-681-3800 Fax: 443-681-4501

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On Wed, Sep 9, 2020 at 5:06 PM David Blythe -MDH- <david.blythe@maryland.gov> wrote:

Hi Monique and Bob - see the attached graph Ryan put together of % positivity for UMPA. Might be missing something but I don't see anything here that suggests some sort of specific event that led to a bunch of false positives. You guys?

--
David Blythe, MD, MPH
State Epidemiologist and Director
Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

Attachment 4

Maryland Department of Health is committed to customer service. Click here to take the Customer Satisfaction Survey.

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--

David Blythe, MD, MPH
State Epidemiologist and Director
Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

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ct values sep 1 positives (1).xlsx
10K

Attachment 4

UMPA Lab GunPCR ct values
Outbreak associated patients

name	accession	e gene	RdRP	MMS2 E	Ms2
[redacted]	7340	37.4	39.95	28.5	28.7
	7290	36.9	37.3	29.6	29.7
	7160	36.4	38.3	29.1	29.2
	7664	32.1	31.5	29	29
	7643	30.1	30.1	28.8	28.8
	7611	36	35.2	20.6	20.7
	7597	36.3	35.6	28.8	28.6
	7570	36.9	36.9	28.6	28.7
	7559	38.6	37	28.5	28.5
	7551	n/a	39.9	29.5	29.5
	7475	36.8	35.2	28.5	28.5
	7462	39	37.3	28.8	29
	7449	29.5	29.6	27.7	27.7
	7439	36.7	36	27.6	28
	7424	35.6	35.1	28.4	28.3
	7415	35.3	34.7	28.6	28.4
	7408	35.9	35.2	28.5	28.5
	7402	36.9	35.5	28	28
	7392	37.8	36.6	28.7	28.9
	7382	35.7	35.4	28.1	28
	7372	37.2	38.6	28.6	28.7
	7363	36.3	35.7	28.8	28.8
	7354	35.8	35.1	27.9	27.7
	7348	40.7	38	29.4	29.6
	7334	37.2	36.8	30.8	30.7
	7170	42.3	39.5	28.8	28.6
	7152	37.6	38.6	28.6	28.8
	7157	39.9	39.4	28.4	28.3
	8152	n/a	39.8	29.7	29.7
	8112	39.2	39.2	29.4	29.3

Attachment 4

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Ct Values from UMPA Testing

1 message

David Blythe -MDH- <david.blythe@maryland.gov> Thu, Sep 17, 2020 at 8:26 AM
To: Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>
Cc: Brian Bachaus <brian.bachaus@maryland.gov>, Monique Duwell -MDH- <monique.duwell@maryland.gov>, Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Hi Jake - As discussed previously, we are still trying to resolve whether some people who had "positive" PCRs at UMPA are really cases. It's important for us to sort this out because we're trying to determine whether these locations are really having "outbreaks" and therefore having to impose all the associated restrictions and restrict their ability to move through reopening phases, etc.

To help, we're looking at several additional types of information: prior and subsequent PCR tests; serologic tests; and the Ct values and specific test used for the UMPA testing.

Can you help us get the Ct values from UMPA?

We have the Ct values for one of the outbreaks ([redacted]- Outbreak 2020-250). We do NOT have the Ct values for 2 other situations

[redacted](2020-1567)
Summary of results: 17 positive out of 227 tested (all staff)
Date of test: 9/8/2020 (not 100% sure of date of collection)

[redacted]
Date of collection 8/28: 6 positive staff, 25 pending.
Date of collection 9/4: 49 +residents, 3+staff. None symptomatic.

We also have questions about results from at least two universities - and given the numbers, might be hard to get all the Cts. If available, great. If not, would at least be helpful to know what test was used for those specimens.

Salisbury University
333 (6.1%) of 5479 tests positive between 9/5-9/11.

Towson University
260 (18%) of 1434 tests positive between 8/29-9/9.

Brian or Bob - anything to add?

Thanks. - David

--
David Blythe, MD, MPH
State Epidemiologist and Director
Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

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Attachment 9

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Fwd: Ct Values from UMPA Testing

1 message

David Blythe -MDH- <david.blythe@maryland.gov> Thu, Sep 17, 2020 at 11:21 AM
To: Brian Bachaus <brian.bachaus@maryland.gov>, Robert Myers -MDH- <robert.myers-phd@maryland.gov>, Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>

Do you all want to be on this call?

---------- Forwarded message ---------
From: **Baehr, Nicole** <NBaehr@som.umaryland.edu>
Date: Thu, Sep 17, 2020 at 11:19 AM
Subject: Re: Ct Values from UMPA Testing
To: David Blythe -MDH- <david.blythe@maryland.gov>

That works, I have sent out an appointment invite to you and our team.

Thanks!
Nicki

Nicole E. Baehr, MHA
Emergency Medicine Population Health Project Supervisor
University of Maryland Department of Emergency Medicine
110 South Paca St. 6th Floor Suite 200
Baltimore, MD 21201
Nbaehr@som.umaryland.edu
[redacted]

From: David Blythe -MDH- <david.blythe@maryland.gov>
Sent: Thursday, September 17, 2020 11:16 AM
To: Baehr, Nicole <NBaehr@som.umaryland.edu>
Subject: Re: Ct Values from UMPA Testing

How about 2:15?

On Thu, Sep 17, 2020 at 9:37 AM Baehr, Nicole <NBaehr@som.umaryland.edu> wrote:

> We can be flexible to your schedule so whatever works best for you.
>
> Thanks,
> Nicki
>
> Nicole E. Baehr, MHA
> Emergency Medicine Population Health Project Supervisor
> University of Maryland Department of Emergency Medicine
> 110 South Paca St. 6th Floor Suite 200
> Baltimore, MD 21201
> [redacted]

Attachment 9

From: David Blythe -MDH- <david.blythe@maryland.gov>
Sent: Thursday, September 17, 2020 9:34 AM
To: Baehr, Nicole <NBaehr@som.umaryland.edu>
Subject: Re: Ct Values from UMPA Testing

Sure - but mainly want to see the Ct values. I understand the issues related to Cts but as one element of several, they help us with decision-making.

What times this afternoon might work?

On Thu, Sep 17, 2020 at 9:28 AM Baehr, Nicole <NBaehr@som.umaryland.edu> wrote:

> Good Morning, Dr. Blythe
>
> I spoke with the UMPA/UMB team on the below information request, they suggested to set up a call to further discuss the infromation.
> Can you let me know if you have any availability today for a brief call?
>
> Thank you,
> Nicki
>
> Nicole E. Baehr, MHA
> Emergency Medicine Population Health Project Supervisor
> University of Maryland Department of Emergency Medicine
> 110 South Paca St. 6th Floor Suite 200
> Baltimore, MD 21201
> Nbaehr@som.umaryland.edu
> [redacted]

Attachment 9

From: Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>
Sent: Thursday, September 17, 2020 8:30 AM
To: David Blythe -MDH- <david.blythe@maryland.gov>
Cc: Brian Bachaus <brian.bachaus@maryland.gov>; Monique Duwell -MDH- <monique.duwell@maryland.gov>; Robert Myers -MDH- <robert.myers-phd@maryland.gov>; Baehr, Nicole <NBaehr@som.umaryland.edu>
Subject: Re: Ct Values from UMPA Testing

Dr. Blythe,

I'm looping in Nicole Baehr who will be able to assist with getting this information.

Nicole - can you please work with the UMPA/UMB team to get the information requested by Dr. Blythe?

Thanks,
Jake

On Thu, Sep 17, 2020 at 8:25 AM David Blythe -MDH- <david.blythe@maryland.gov> wrote:

> Hi Jake - As discussed previously, we are still trying to resolve whether some people who had "positive" PCRs at UMPA are really cases. It's important for us to sort this out because we're trying to determine whether these locations are really having "outbreaks" and therefore having to impose all the associated restrictions and restrict their ability to move through reopening phases, etc.
>
> To help, we're looking at several additional types of information: prior and subsequent PCR tests; serologic tests; and the Ct values and specific test used for the UMPA testing.
>
> Can you help us get the Ct values from UMPA?

We have the Ct values for one of the outbreaks ([redacted] - Outbreak 2020-250). We do NOT have the Ct values for 2 other situations

[redacted] (2020-1567)
Summary of results: 17 positive out of 227 tested (all staff)
Date of test: 9/8/2020 (not 100% sure of date of collection)

[redacted]
Date of collection 8/28: 6 positive staff, 25 pending.
Date of collection 9/4: 49 +residents, 3+staff. None symptomatic.

We also have questions about results from at least two universities - and given the numbers, might be hard to get all the Cts. If available, great. If not, would at least be helpful to know what test was used for those specimens.

Salisbury University
333 (6.1%) of 5479 tests positive between 9/5-9/11.

Towson University
260 (18%) of 1434 tests positive between 8/29-9/9.

Brian or Bob - anything to add?

Thanks. - David

--
David Blythe, MD, MPH
State Epidemiologist and Director
Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

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Attachment 9

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CHANGING Maryland *for the Better*

Jake Whitaker, JD
Deputy Director,
Office of Governmental Affairs
Maryland Department of Health
201 West Preston Street
Baltimore, Maryland 21201
jake.whitaker1@maryland.gov
[redacted]

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--

David Blythe, MD, MPH
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--

David Blythe, MD, MPH
State Epidemiologist and Director
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Attachment 9

--

David Blythe, MD, MPH
State Epidemiologist and Director
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Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

UMPA Ct Values

1 message

David Blythe -MDH- <david.blythe@maryland.gov> Wed, Sep 23, 2020 at 7:47 AM
To: Brian Bachaus <brian.bachaus@maryland.gov>, Monique Duwell -MDH- <monique.duwell@maryland.gov>, Robert Myers -MDH- <robert.myers-phd@maryland.gov>, Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>

Received last night from UMPA. I haven't looked through carefully yet.

--
David Blythe, MD, MPH
State Epidemiologist and Director
Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

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3 attachments

CtResultsSalisburyPositives-09-05-to-09-11-2020.xlsx
46K

[redacted] LabGun at IGS with CT counts_detected only.xlsx
28K

Towson University LabGun at IGS with CT counts_detected only.xlsx
117K

Attachment 9

UMPA LabGun COVID-19 PCR results
Towson University

Rec'd 09/23/20

Person Name Full	DateTime Birth	Age	Person MRN	Curr Person Loc Facility	Order Physician	Order Procedure	Detail Procedure	Result Formatted	Result Alpha	Result Numeric	Result Type	Accession Nbr Formatted	Date Order	Date Drawn	Date Complete
[redacted]	[redacted]	[redacted]	3000769400	PA Towson Fac/Staff	[redacted]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	01 20 224 07194	8/12/2020	8/11/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	01 20 224 07194	8/12/2020	8/11/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000769400	PA Towson Fac/Staff	[redacted]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	01 20 224 07194	8/12/2020	8/11/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 224 07194	8/12/2020	8/11/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]	[illegible]		[illegible]	01 20 224 07194	8/12/2020	8/11/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000769645	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		37.55780069	Numeric	01 20 224 07677	8/13/2020	8/11/2020	8/14/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		31.14806581	Numeric	01 20 224 07677	8/13/2020	8/11/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000769648	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 224 07677	8/13/2020	8/11/2020	8/14/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 224 07677	8/13/2020	8/11/2020	8/14/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]	[illegible]		[illegible]	01 20 224 07677	8/13/2020	8/11/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000599269	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	21		[illegible]	[illegible]	01 20 225 06654	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	MS2	32		32.14157911	Numeric	01 20 225 06654	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	32		31.72541284	Numeric	01 20 225 06654	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000599269	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	RdRP Gene	21		[illegible]	[illegible]	01 20 225 06654	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	SARS-CoV 2 RNA Amp	Detected	Detected		[illegible]	01 20 225 06654	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000769613	PA Towson Fac/Staff	[redacted]	[illegible]	[illegible]	38		[illegible]	[illegible]	01 20 225 06661	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	31		[illegible]	[illegible]	01 20 225 06661	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	31		[illegible]	[illegible]	01 20 225 06661	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000769613	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	39		39.01251119	Numeric	01 20 225 06661	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]	Detected		[illegible]	01 20 225 06661	8/12/2020	8/12/2020	8/13/2020
[redacted]	[redacted]	[redacted]	3000770171	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	39		[illegible]	[illegible]	01 20 225 07428	8/13/2020	8/12/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000770171	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	30		[illegible]	[illegible]	01 20 225 07428	8/13/2020	8/12/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000770171	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	30		30.28463562	Numeric	01 20 225 07428	8/13/2020	8/12/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000770171	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	RdRP Gene	39		38.69975960	Numeric	01 20 225 07428	8/13/2020	8/12/2020	8/14/2020
[redacted]	[redacted]	[redacted]	3000770171	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	SARS CoV 2 RNA Amp	Detected	Detected		Alpha	01 20 225 07428	8/13/2020	8/12/2020	8/14/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	22		21.71618070	Numeric	01 20 226 05859	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	30		30.21467099	Numeric	01 20 226 05859	8/14/2020	8/13/2020	8/15/2020
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[redacted]	[redacted]	[redacted]	3000771093	PA Towson Fac/Staff	[redacted]	[illegible]	[illegible]	22		[illegible]	[illegible]	01 20 226 05859	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]	Detected		Alpha	01 20 226 05859	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	E Gene	41		41.37034448	Numeric	01 20 226 05860	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2	30		30.08349908	Numeric	01 20 226 05860	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2 E	30		[illegible]	[illegible]	01 20 226 05860	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	3000771210	PA Towson Students	[redacted]	[illegible]	[illegible]	39		[illegible]	[illegible]	01 20 226 05860	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]	Detected		Alpha	01 20 226 05860	8/14/2020	8/13/2020	8/15/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	43		43.0985622	Numeric	01 20 226 06110	8/14/2020	8/13/2020	8/17/2020
[redacted]	[redacted]	[redacted]	3000771321	PA Towson Fac/Staff	[redacted]	[illegible]	[illegible]	[illegible]		28.7947014	Numeric	01 20 226 06110	8/14/2020	8/13/2020	8/17/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 226 06110	8/14/2020	8/13/2020	8/17/2020
[redacted]	[redacted]	[redacted]	3000771321	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 226 06110	8/14/2020	8/13/2020	8/17/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	SARS CoV 2 RNA Amp	[illegible]	Detected		Alpha	01 20 226 06110	8/14/2020	8/13/2020	8/17/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	[illegible]		33.28114470	Numeric	01 20 227 06009	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	1491424	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	MS2	[illegible]		32.67885038	Numeric	01 20 227 06009	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	MS2 E	[illegible]		[illegible]	[illegible]	01 20 227 06009	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	RdRP Gene	[illegible]		[illegible]	[illegible]	01 20 227 06009	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	SARS CoV 2 RNA Amp	[illegible]	Detected		[illegible]	01 20 227 06009	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS-CoV 2 RNA Amplification LabGun	E Gene	[illegible]		[illegible]	[illegible]	01 20 227 06213	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2	[illegible]		[illegible]	[illegible]	01 20 227 06213	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	MS2 E	[illegible]		[illegible]	[illegible]	01 20 227 06213	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	RdRP Gene	[illegible]		[illegible]	[illegible]	01 20 227 06213	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]	Detected		[illegible]	01 20 227 06213	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	[illegible]		27.54329515	Numeric	01 20 227 06221	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2	[illegible]		29.83096735	Numeric	01 20 227 06221	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2 E	[illegible]		[illegible]	[illegible]	01 20 227 06221	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	RdRP Gene	[illegible]		[illegible]	[illegible]	01 20 227 06221	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	01 20 227 06221	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	[illegible]		[illegible]	[illegible]	01 20 227 06339	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	3000772555	PA Towson Students	[redacted]	[illegible]	MS2	[illegible]		[illegible]	[illegible]	01 20 227 06339	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2 E	[illegible]		32.52468504	Numeric	01 20 227 06339	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	RdRP Gene	[illegible]		33.11459988	Numeric	01 20 227 06339	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	[illegible]	[illegible]	Detected		Alpha	01 20 227 06339	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	34		[illegible]	[illegible]	01 20 227 06384	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2	31		[illegible]	[illegible]	01 20 227 06384	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	MS2 E	31		[illegible]	[illegible]	01 20 227 06384	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS-CoV 2 RNA Amplification LabGun	RdRP Gene	33		[illegible]	[illegible]	01 20 227 06384	8/14/2020	8/14/2020	8/16/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	SARS CoV 2 RNA Amp	Detected	Detected		[illegible]	01 20 227 06384	8/14/2020	8/14/2020	8/16/2020
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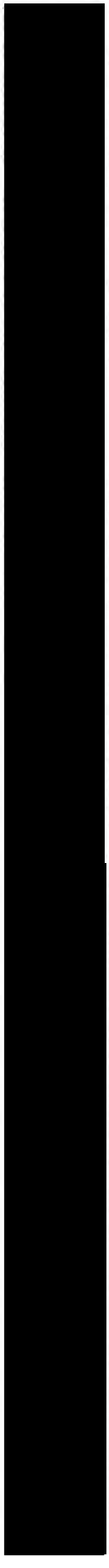
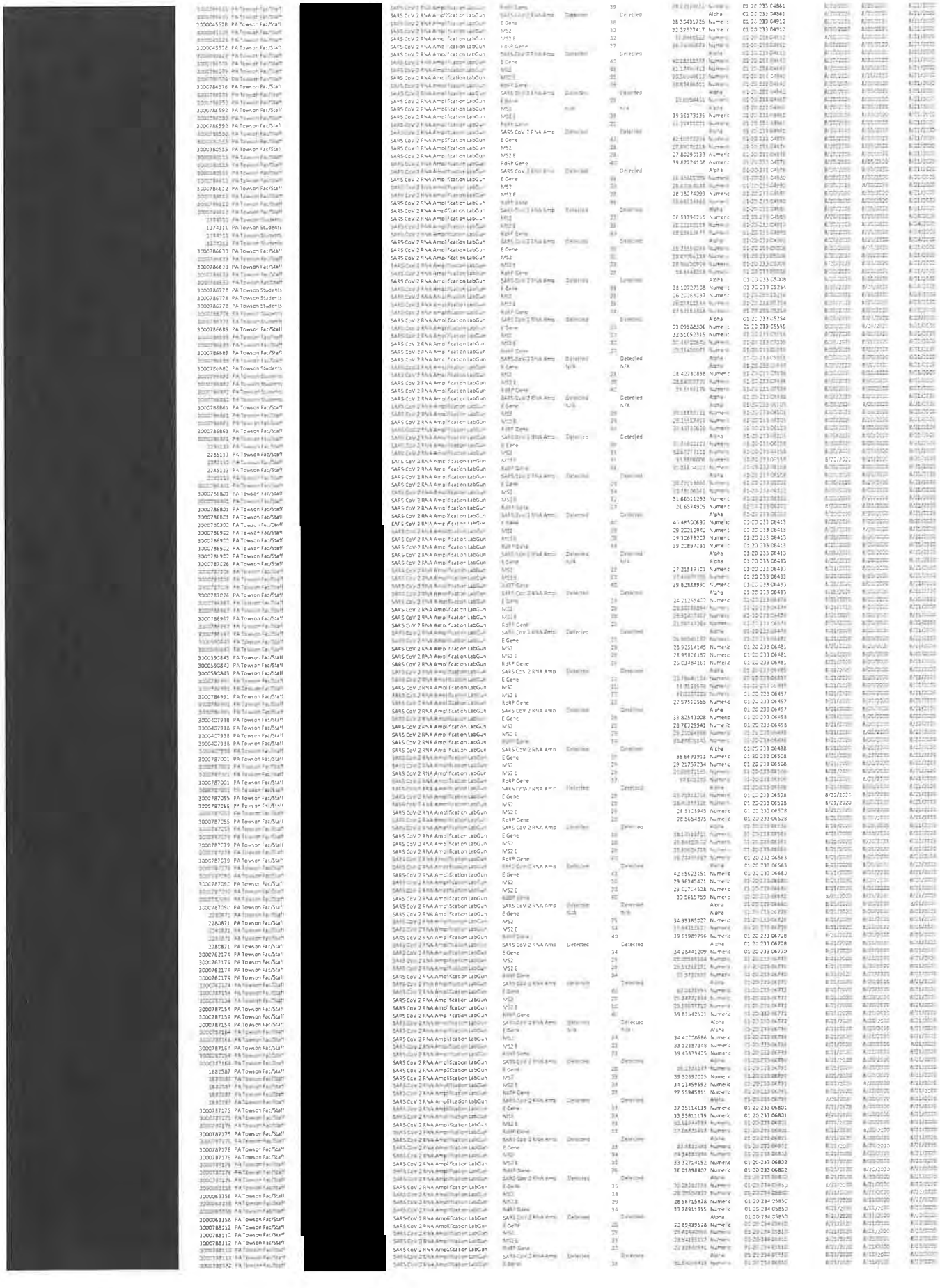
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS-CoV 2 RNA Amplification LabGun	[illegible]	[illegible]		[illegible]	[illegible]	01 20 230 07095	8/18/2020	8/17/2020	8/18/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	01 20 230 07095	8/18/2020	8/17/2020	8/18/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	RdRP Gene	40		39.91914684	Numeric	01 20 230 07095	8/18/2020	8/17/2020	8/18/2020
[redacted]	[redacted]	[redacted]	[illegible]	[illegible]	[redacted]	SARS CoV 2 RNA Amplification LabGun	SARS CoV 2 RNA Amp	Detected	Detected		Alpha	01 20 230 07095	8/18/2020	8/17/2020	8/18/2020
[redacted]	[redacted]	[redacted]	3000775553	PA Towson Fac/Staff	[redacted]	SARS CoV 2 RNA Amplification LabGun	E Gene	37		36.99912635	Numeric	01 20 230 07119	8/18/2020	8/17/2020	8/19/2020

Attachment 9



Attachment 9



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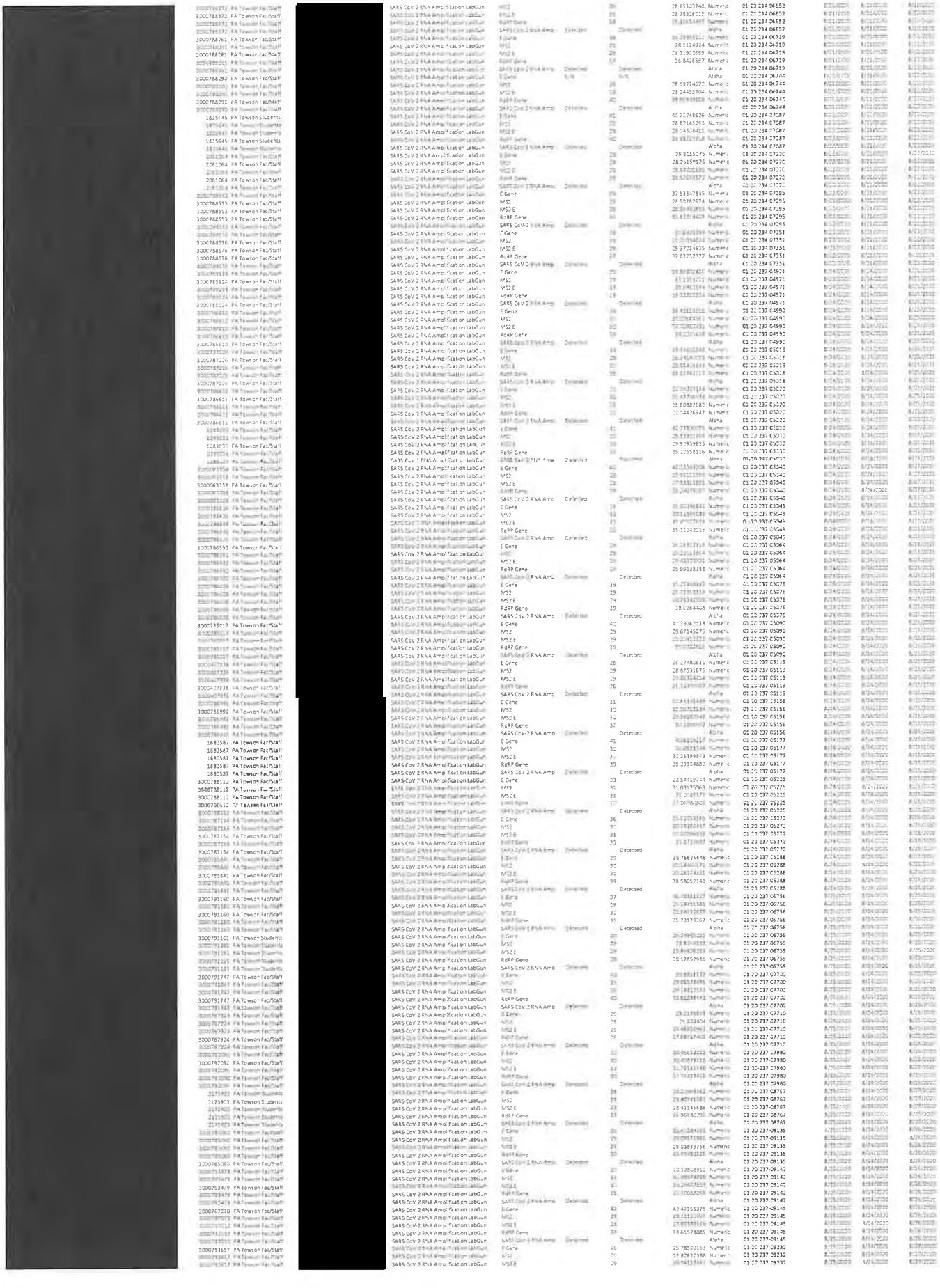
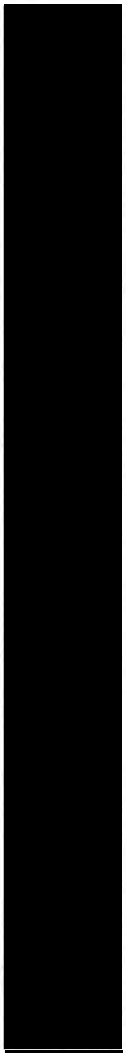


Attachment 9



Attachment 9

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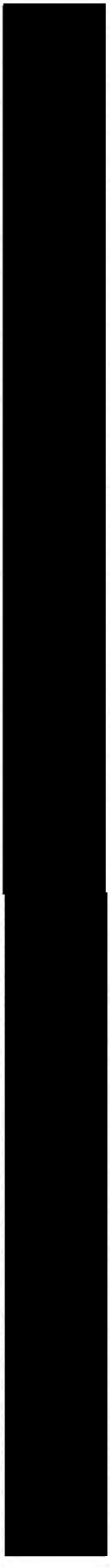

Attachment 9

Attachment 9

Towson University 8d10

Attachment 9

Attachment 9

Towson University

Attachment 9

UMPA Lab Gun COVID-19 PCR Results

[redacted] Rec'd 09/23/2020

Person Name - Full	Date/Time - Birth	Alias	Person MRN	Curr Person Loc - Facility	Order Physician	Order Procedure	Detail Procedure	Result - Alpha	detected	Result - Numeric	Result Type	Accession Nbr - Formatted	Date - Order	Date - Drawn	Date - Complete
[redacted]			830926	[redacted]	[redacted]	SARS CoV-2 RNA Amplification LabGun	E Gene		yes	33.664711	Numeric	01 20 248 C7174	9/5/2020	9/4/2020	9/5/2020
			830926			SARS CoV-2 RNA Amplification LabGun	MS2		yes	31.225385	Numeric	01 20 248 C7174	9/5/2020	9/4/2020	9/5/2020
			830926			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	32.475521	Numeric	01 20 248 C7174	9/5/2020	9/4/2020	9/5/2020
			830926			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	31.125434	Numeric	01 20 248 C7174	9/5/2020	9/4/2020	9/5/2020
			830926			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7174	9/5/2020	9/4/2020	9/5/2020
[redacted]			3000707575			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	37.717079	Numeric	01 20 248 C7282	9/5/2020	9/4/2020	9/5/2020
			3000707575			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.088316	Numeric	01 20 248 C7282	9/5/2020	9/4/2020	9/5/2020
			3000707575			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.3554	Numeric	01 20 248 C7282	9/5/2020	9/4/2020	9/5/2020
			3000707575			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	38.096251	Numeric	01 20 248 C7282	9/5/2020	9/4/2020	9/5/2020
			3000707575			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7282	9/5/2020	9/4/2020	9/5/2020
			3000820431			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	25.245213	Numeric	01 20 251 C4904	9/9/2020	9/7/2020	9/11/2020
			3000820431			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.185458	Numeric	01 20 251 C4904	9/9/2020	9/7/2020	9/11/2020
			3000820431			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	28.261726	Numeric	01 20 251 C4904	9/9/2020	9/7/2020	9/11/2020
			3000820431			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	23.860014	Numeric	01 20 251 C4904	9/9/2020	9/7/2020	9/11/2020
			3000820431			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 251 C4904	9/9/2020	9/7/2020	9/11/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	37.259246	Numeric	01 20 245 C7199	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.117249	Numeric	01 20 245 C7199	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.354858	Numeric	01 20 245 C7199	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	28.626565	Numeric	01 20 245 C7199	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 245 C7199	9/2/2020	9/1/2020	9/4/2020
			1731185			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	35.597784	Numeric	01 20 248 C7196	9/5/2020	9/4/2020	9/5/2020
			1731185			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.531938	Numeric	01 20 248 C7196	9/5/2020	9/4/2020	9/5/2020
			1731185			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.695053	Numeric	01 20 248 C7196	9/5/2020	9/4/2020	9/5/2020
			1731185			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	35.039206	Numeric	01 20 248 C7196	9/5/2020	9/4/2020	9/5/2020
			1731185			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7196	9/5/2020	9/4/2020	9/5/2020
[redacted]			1561647			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	34.776777	Numeric	01 20 248 C7367	9/5/2020	9/4/2020	9/5/2020
			1561647			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.52546	Numeric	01 20 248 C7367	9/5/2020	9/4/2020	9/5/2020
			1561647			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	30.142215	Numeric	01 20 248 C7367	9/5/2020	9/4/2020	9/5/2020
			1561647			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	34.554731	Numeric	01 20 248 C7367	9/5/2020	9/4/2020	9/5/2020
			1561647			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7367	9/5/2020	9/4/2020	9/5/2020
[redacted]			352136			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	33.638417	Numeric	01 20 248 C6653	9/5/2020	9/4/2020	9/5/2020
			352136			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.783939	Numeric	01 20 248 C6653	9/5/2020	9/4/2020	9/5/2020
			352136			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	30.023367	Numeric	01 20 248 C6653	9/5/2020	9/4/2020	9/5/2020
			352136			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	33.953413	Numeric	01 20 248 C6653	9/5/2020	9/4/2020	9/5/2020
			352136			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C6653	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	38.437256	Numeric	01 20 245 C7269	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.3208	Numeric	01 20 245 C7269	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.382187	Numeric	01 20 245 C7269	9/2/2020	9/1/2020	9/4/2020
			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	37.733883	Numeric	01 20 245 C7269	9/2/2020	9/1/2020	9/4/2020
			1185044			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 245 C7269	9/2/2020	9/1/2020	9/4/2020
			247720			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	36.350784	Numeric	01 20 248 C7204	9/5/2020	9/4/2020	9/5/2020
			247720			SARS CoV-2 RNA Amplification LabGun	MS2		yes	30.514868	Numeric	01 20 248 C7204	9/5/2020	9/4/2020	9/5/2020
			247720			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	31.36726	Numeric	01 20 248 C7204	9/5/2020	9/4/2020	9/5/2020
			247720			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.072747	Numeric	01 20 248 C7204	9/5/2020	9/4/2020	9/5/2020
			247720			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7204	9/5/2020	9/4/2020	9/5/2020
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			1521336			SARS CoV-2 RNA Amplification LabGun	MS2		yes	28.961448	Numeric	01 20 248 C6832	9/5/2020	9/4/2020	9/5/2020
			1521336			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.550119	Numeric	01 20 248 C6832	9/5/2020	9/4/2020	9/5/2020
			1521336			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.425749	Numeric	01 20 248 C6832	9/5/2020	9/4/2020	9/5/2020
			1521336			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C6832	9/5/2020	9/4/2020	9/5/2020
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			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	28.576467	Numeric	01 20 248 C7515	9/5/2020	9/4/2020	9/5/2020
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			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7515	9/5/2020	9/4/2020	9/5/2020
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3000725703			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.125475	Numeric	01 20 248 C6642	9/5/2020	9/4/2020	9/5/2020
3000725703			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.722361	Numeric	01 20 248 C6642	9/5/2020	9/4/2020	9/5/2020
3000725703			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.013333	Numeric	01 20 248 C6642	9/5/2020	9/4/2020	9/5/2020
3000725703			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C6642	9/5/2020	9/4/2020	9/5/2020
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[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	36.061734	Numeric	01 20 248 C6646	9/5/2020	9/4/2020	9/5/2020
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3000707576			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	41.524694	Numeric	01 20 248 C7455	9/5/2020	9/4/2020	9/5/2020
3000707576			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	32.263966	Numeric	01 20 248 C7455	9/5/2020	9/4/2020	9/5/2020
3000707576			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	32.849797	Numeric	01 20 248 C7455	9/5/2020	9/4/2020	9/5/2020
3000707576			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	38.957716	Numeric	01 20 248 C7455	9/5/2020	9/4/2020	9/5/2020
3000707576			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7455	9/5/2020	9/4/2020	9/5/2020
3000707408			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	35.236953	Numeric	01 20 248 C7193	9/5/2020	9/4/2020	9/5/2020
3000707408			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	30.305629	Numeric	01 20 248 C7193	9/5/2020	9/4/2020	9/5/2020
3000707408			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	30.59598	Numeric	01 20 248 C7193	9/5/2020	9/4/2020	9/5/2020
3000707408			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.247131	Numeric	01 20 248 C7193	9/5/2020	9/4/2020	9/5/2020
3000707408			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7193	9/5/2020	9/4/2020	9/5/2020
[redacted]			1631048			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	42.079973	Numeric	01 20 248 C7680	9/5/2020	9/4/2020	9/5/2020
[redacted]			1631048			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.487573	Numeric	01 20 248 C7680	9/5/2020	9/4/2020	9/5/2020
[redacted]			1631048			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.456714	Numeric	01 20 248 C7680	9/5/2020	9/4/2020	9/5/2020
[redacted]			1631048			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	39.630858	Numeric	01 20 248 C7680	9/5/2020	9/4/2020	9/5/2020
[redacted]			1631048			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7680	9/5/2020	9/4/2020	9/5/2020
[redacted]			412910			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	35.648179	Numeric	01 20 248 C7260	9/5/2020	9/4/2020	9/5/2020
[redacted]			412910			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.455248	Numeric	01 20 248 C7260	9/5/2020	9/4/2020	9/5/2020
[redacted]			412910			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.61332	Numeric	01 20 248 C7260	9/5/2020	9/4/2020	9/5/2020
[redacted]			412910			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.269928	Numeric	01 20 248 C7260	9/5/2020	9/4/2020	9/5/2020
[redacted]			412910			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7260	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	35.636479	Numeric	01 20 248 C7226	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	28.581065	Numeric	01 20 248 C7226	9/5/2020	9/4/2020	9/5/2020
1695384			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.927004	Numeric	01 20 248 C7226	9/5/2020	9/4/2020	9/5/2020
1695384			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	36.776149	Numeric	01 20 248 C7226	9/5/2020	9/4/2020	9/5/2020
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[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	34.573279	Numeric	01 20 248 C7182	9/5/2020	9/4/2020	9/5/2020
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[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.652173	Numeric	01 20 248 C7182	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	34.664426	Numeric	01 20 248 C7182	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7182	9/5/2020	9/4/2020	9/5/2020
[redacted]			2123433			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	38.597303	Numeric	01 20 248 C7229	9/5/2020	9/4/2020	9/5/2020
[redacted]			2123433			SARS CoV-2 RNA Amplification LabGun	MS2		yes	32.517945	Numeric	01 20 248 C7229	9/5/2020	9/4/2020	9/5/2020
[redacted]			2123433			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	33.452278	Numeric	01 20 248 C7229	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	38.695254	Numeric	01 20 248 C7229	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7229	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	38.030052	Numeric	01 20 248 C7341	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.818289	Numeric	01 20 248 C7341	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.915797	Numeric	01 20 248 C7341	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	37.85057	Numeric	01 20 248 C7341	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7341	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	38.415078	Numeric	01 20 248 C7278	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	30.282049	Numeric	01 20 248 C7278	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	30.909329	Numeric	01 20 248 C7278	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	38.708625	Numeric	01 20 248 C7278	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7278	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	38.685224	Numeric	01 20 248 C7597	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	30.018339	Numeric	01 20 248 C7597	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	30.32691	Numeric	01 20 248 C7597	9/5/2020	9/4/2020	9/5/2020
3000707577			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	37.430262	Numeric	01 20 248 C7597	9/5/2020	9/4/2020	9/5/2020
3000707577			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7597	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	37.52517	Numeric	01 20 248 C7718	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	28.469575	Numeric	01 20 248 C7718	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	28.428347	Numeric	01 20 248 C7718	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	38.878658	Numeric	01 20 248 C7718	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7718	9/5/2020	9/4/2020	9/5/2020
3000707578			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	37.672135	Numeric	01 20 248 C7604	9/5/2020	9/4/2020	9/5/2020
3000707578			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	29.070087	Numeric	01 20 248 C7604	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	29.233124	Numeric	01 20 248 C7604	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	37.735171	Numeric	01 20 248 C7604	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7604	9/5/2020	9/4/2020	9/5/2020
[redacted]			1542695			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	32.353815	Numeric	01 20 248 C7434	9/5/2020	9/4/2020	9/5/2020
[redacted]			1542695			SARS CoV-2 RNA Amplification LabGun	MS2		yes	28.486757	Numeric	01 20 248 C7434	9/5/2020	9/4/2020	9/5/2020
[redacted]			1542695			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	28.688598	Numeric	01 20 248 C7434	9/5/2020	9/4/2020	9/5/2020
[redacted]			1542695			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	32.453357	Numeric	01 20 248 C7434	9/5/2020	9/4/2020	9/5/2020
[redacted]			1542695			SARS CoV-2 RNA Amplification LabGun	SARS CoV-2 RNA Amp	Detected	yes		Alpha	01 20 248 C7434	9/5/2020	9/4/2020	9/5/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	E Gene		yes	39.282359	Numeric	01 20 248 C7694	9/5/2020	9/4/2020	9/7/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2		yes	27.613989	Numeric	01 20 248 C7694	9/5/2020	9/4/2020	9/7/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	MS2 E		yes	27.768599	Numeric	01 20 248 C7694	9/5/2020	9/4/2020	9/7/2020
[redacted]			[redacted]			SARS CoV-2 RNA Amplification LabGun	RdRP Gene		yes	39.75298	Numeric	01 20 248 C7694	9/5/2020	9/4/2020	9/7/2020

Attachment 9

[redacted]

Attachment 9

UMPA Lab Gun COVID-19 PCR Results
Salisbury University Rec'd 09/23/2020

LegalLastName	LegalFirstN	DOB	CollectionDate	SpecimenID	ProcessedOn	Result	TestType	RDRP_CT	E_CT	N1_CT	N3_CT	RNASEP_C	ProviderNI	Facility
[redacted]			9/9/2020	XMSAL00021423	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.862681	34.6265986620931				12455110	Salisbury
			9/9/2020	XMSAL00020998	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.070886	30.1046278354296				12455110	Salisbury
			9/9/2020	XMSAL00021348	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			38.641628	36.339477	27.563533	12455110	Salisbury
			9/9/2020	XMSAL00019646	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.087285	33.9751922862077				12455110	Salisbury
			9/9/2020	XMSAL00022237	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.062387	32.2996134702201				12455110	Salisbury
			9/9/2020	XMSAL00023146	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.832857	28.219118748328				12455110	Salisbury
			9/11/2020	XMSAL00024948	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			28.865624	30.636275	27.093357	12455110	Salisbury
			9/9/2020	XMSAL00021139	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	21.607584	21.3554591541819				12455110	Salisbury
			9/9/2020	XMSAL00022740	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.185582	23.2989418494089				12455110	Salisbury
			9/9/2020	XMSAL00021916	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.571026	26.8633004011533				12455110	Salisbury
			9/9/2020	XMSAL00021873	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	27.471528	27.3651025418064				12455110	Salisbury
			9/9/2020	XMSAL00021699	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.243981	34.134814415981				12455110	Salisbury
			9/9/2020	XMSAL00020835	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	33.520244	34.3795498983465				12455110	Salisbury
			9/8/2020	XMSAL00018825	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.332429	29.9726110924532				12455110	Salisbury
			9/9/2020	XMSAL00022259	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			34.239541	36.119800	25.113460	12455110	Salisbury
			9/9/2020	XMSAL00017937	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	21.346841	21.4390481933947				12455110	Salisbury
			9/8/2020	XMSAL00022554	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	19.267700	19.2575310114897				12455110	Salisbury
			9/9/2020	XMSAL00020999	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.436004	29.9849369649259				12455110	Salisbury
			9/9/2020	XMSAL00018655	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.264267	24.3813528621504				12455110	Salisbury
			9/9/2020	XMSAL00018859	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.073997	28.235044385825				12455110	Salisbury
			9/9/2020	XMSAL00022450	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.873994	30.6050275705717				12455110	Salisbury
			9/9/2020	XMSAL00019958	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.371269	23.6691513872949				12455110	Salisbury
			9/8/2020	XMSAL00021205	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.079182	21.9624333329296				12455110	Salisbury
			9/9/2020	XMSAL00021626	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			23.083759	25.198768	26.504285	12455110	Salisbury
			9/9/2020	XMSAL00021049	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.489481	21.7858186793381				12455110	Salisbury
			9/9/2020	XMSAL00018955	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			35.612379	36.116335	26.409466	12455110	Salisbury
			9/9/2020	XMSAL00022871	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.532948	23.336543236126				12455110	Salisbury
			9/9/2020	XMSAL00020800	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			19.709402	20.770472	26.117518	12455110	Salisbury
			9/9/2020	XMSAL00022064	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			20.633996	22.183943	25.829745	12455110	Salisbury
			9/9/2020	XMSAL00023184	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.249014	30.1251200203063				12455110	Salisbury
			9/9/2020	XMSAL00021325	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			31.391935	34.077897	26.514580	12455110	Salisbury
			9/11/2020	XMSAL00021478	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			17.013549	19.147867	26.444079	12455110	Salisbury
			9/11/2020	XMSAL00025108	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			32.188162	33.308289	26.603861	12455110	Salisbury
			9/9/2020	XMSAL00018490	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.413047	30.5678435707793				12455110	Salisbury
			9/7/2020	XMSAL00020380	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			39.123578	38.393531	26.139154	12455110	Salisbury
			9/9/2020	XMSAL00022713	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			37.843319	37.463183	30.061098	12455110	Salisbury
			9/9/2020	XMSAL00018109	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			23.484662	24.228521	26.053558	12455110	Salisbury
			9/9/2020	XMSAL00017803	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	29.685801	30.6315434608827				12455110	Salisbury
			9/9/2020	XMSAL00018943	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	27.840078	26.5008141502728				12455110	Salisbury
			9/11/2020	XMSAL00024842	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			36.259594	35.492450	28.381289	12455110	Salisbury
			9/11/2020	XMSAL00024894	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			18.518488	19.608851	27.019531	12455110	Salisbury
			9/9/2020	XMSAL00022661	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			37.569371	37.224613	27.330683	12455110	Salisbury
			9/9/2020	XMSAL00022264	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.301829	31.4636394109953				12455110	Salisbury
			9/9/2020	XMSAL00019169	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	33.028318	32.6036858407035				12455110	Salisbury
			9/9/2020	XMSAL00021963	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.924391	33.8632121128367				12455110	Salisbury
			9/9/2020	XMSAL00021198	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.206390	31.5553900873123				12455110	Salisbury
			9/9/2020	XMSAL00018290	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			31.210550	32.197160	26.495488	12455110	Salisbury
			9/9/2020	XMSAL00022810	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			31.250127	31.851693	26.667857	12455110	Salisbury
			9/9/2020	XMSAL00020326	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			35.400553	38.453865	27.375836	12455110	Salisbury
			9/11/2020	XMSAL00024998	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			32.500410	33.535867	27.360495	12455110	Salisbury
			9/9/2020	XMSAL00021675	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			27.613002	30.573317	27.226548	12455110	Salisbury
			9/9/2020	XMSAL00023384	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			36.710510	38.047944	27.280416	12455110	Salisbury
			9/9/2020	XMSAL00019247	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			35.326825	30.457511	28.284322	12455110	Salisbury
			9/9/2020	XMSAL00018671	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	25.184059	25.9599749752962				12455110	Salisbury
			9/9/2020	XMSAL00018380	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	20.402226	20.144733543096				12455110	Salisbury
			9/9/2020	XMSAL00023232	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.453166	34.9503713821118				12455110	Salisbury
			9/9/2020	XMSAL00018458	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			24.096629	22.208323	25.432330	12455110	Salisbury
			9/9/2020	XMSAL00018862	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			23.052921	23.683454	25.586867	12455110	Salisbury
			9/8/2020	XMSAL00021921	9/11/2020	DETECTED	CDC Assay using N1/N3 genes			22.635951	24.387601	25.807602	12455110	Salisbury
			9/9/2020	XMSAL00021483	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.727949	26.2438896367993				12455110	Salisbury
			9/9/2020	XMSAL00022817	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	27.893492	28.1037112431281				12455110	Salisbury
			9/9/2020	XMSAL00020450	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.082275	32.5135640690531				12455110	Salisbury
			9/9/2020	XMSAL00020612	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.620660	26.3241707344363				12455110	Salisbury
			9/9/2020	XMSAL00018799	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.484171	24.4496089428015				12455110	Salisbury
			9/9/2020	XMSAL00021785	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.814515	30.8305369769903				12455110	Salisbury
			9/9/2020	XMSAL00018226	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	18.970072	19.3644165141687				12455110	Salisbury
			9/9/2020	XMSAL00017578	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			31.731815	34.341609	27.756259	12455110	Salisbury
			9/9/2020	XMSAL00021568	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	19.981859	19.792282011105				12455110	Salisbury
			9/9/2020	XMSAL00020772	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			34.021709	34.338495	27.222919	12455110	Salisbury
			9/9/2020	XMSAL00022681	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.849316	32.9305537149377				12455110	Salisbury
			9/9/2020	XMSAL00023021	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.123042	22.3358179774935				12455110	Salisbury
			9/9/2020	XMSAL00022642	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.781656	34.4702450374619				12455110	Salisbury
			9/9/2020	XMSAL00021765	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.353872	34.6532035602457				12455110	Salisbury
			9/9/2020	XMSAL00022617	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	21.612155	20.2920964813966				12455110	Salisbury
			9/9/2020	XMSAL00023098	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.056532	28.1279263722827				12455110	Salisbury
			9/9/2020	XMSAL00019919	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.041793	32.4685752349548				12455110	Salisbury
			9/9/2020	XMSAL00023259	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.108387	33.4708695558505				12455110	Salisbury
			9/8/2020	XMSAL00019535	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.409787	30.7830086413266				12455110	Salisbury
			9/9/2020	XMSAL00022257	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.490510	24.895854110475				12455110	Salisbury
			9/9/2020	XMSAL00019607	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			30.140895	30.730155	26.339285	12455110	Salisbury
			9/9/2020	XMSAL00018593	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	25.199808	24.8133529730896				12455110	Salisbury
			9/11/2020	XMSAL00024986	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			36.596500	37.966246	25.555319	12455110	Salisbury
			9/9/2020	XMSAL00022400	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.287753	35.5617410703954				12455110	Salisbury
			9/9/2020	XMSAL00018334	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.767924	30.2478102453225				12455110	Salisbury
			9/9/2020	XMSAL00022542	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			36.432954	38.330666	28.998162	12455110	Salisbury
			9/9/2020	XMSAL00021154	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	27.073111	26.7457114637072				12455110	Salisbury
			9/11/2020	XMSAL00024895	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			18.784054	20.151437	25.598086	12455110	Salisbury
			9/9/2020	XMSAL00023187	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.748440	33.3168999623656				12455110	Salisbury
			9/9/2020	XMSAL00020866	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.767367	27.3492801008773				12455110	Salisbury
			9/9/2020	XMSAL00019292	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			23.197623	24.170565	26.111139	12455110	Salisbury
			9/9/2020	XMSAL00020864	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	18.412137	17.8804411420615				12455110	Salisbury
			9/9/2020	XMSAL00019511	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	29.579258	29.592516294989				12455110	Salisbury
			9/9/2020	XMSAL00020384	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			28.769759	29.495959	25.856046	12455110	Salisbury
			9/9/2020	XMSAL00023235	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.061953	34.0391483244948				12455110	Salisbury
			9/9/2020	XMSAL00020462	9/12/2020	DETECTED	CDC Assay using N1/N3 genes			30.309842	31.196375	24.105827	12455110	Salisbury
			9/7/2020	000681	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.732891	24.1820424666834				12455110	Salisbury
			9/9/2020	XMSAL00020217	9/10/2020	DETECTED	CDC Assay using N1/N3 genes			38.037270	38.048519	28.771175	12455110	Salisbury
			9/9/2020	XMSAL00023009	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.685096	23.9498348119613				12455110	Salisbury

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[redacted]

9/9/2020	XMSAL00018987	9/12/2020	DETECTED	CDC Assay using N1/N3 genes		34.919916	37.645049	26.329285	12455110	Salisbury
9/9/2020	XMSAL00021607	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.988353	35.0997841622203			12455110	Salisbury
9/9/2020	XMSAL00020059	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	20.070793	18.9484890230292			12455110	Salisbury
9/9/2020	XMSAL00019581	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.023266	35.8454588480281			12455110	Salisbury
9/9/2020	XMSAL00023222	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.639962	29.2672679852478			12455110	Salisbury
9/9/2020	XMSAL00022083	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.870165	33.1751914844489			12455110	Salisbury
9/8/2020	XMSAL00020637	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.764492	34.9609534606492			12455110	Salisbury
9/9/2020	XMSAL00017812	9/13/2020	DETECTED	CDC Assay using N1/N3 genes		23.529585	24.691694	25.754276	12455110	Salisbury
9/9/2020	XMSAL00016134	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.105385	34.6014325861149			17705628	Salisbury
9/9/2020	XMSAL00017459	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.441406	35.250674238264			17705628	Salisbury
9/11/2020	XMSAL00024669	9/12/2020	DETECTED	CDC Assay using N1/N3 genes		30.649900	32.248276	29.113797	17705628	Salisbury
9/9/2020	XMSAL00023184	9/15/2020	DETECTED	CDC Assay using N1/N3 genes		26.812815	28.818628	27.618180	12455110	Salisbury
9/9/2020	XMSAL00023232	9/15/2020	DETECTED	CDC Assay using N1/N3 genes		34.137134	34.317161	28.040656	12455110	Salisbury
9/9/2020	XMSAL00022812	9/15/2020	DETECTED	CDC Assay using N1/N3 genes		26.820271	27.529725	28.166604	12455110	Salisbury
9/8/2020	XMSAL00019517	9/9/2020	DETECTED	CDC Assay using N1/N3 genes		20.287512	22.171702	26.284793	12455110	Salisbury
9/9/2020	XMSAL00022257	9/15/2020	DETECTED	CDC Assay using N1/N3 genes		22.510719	24.540253	26.644050	12455110	Salisbury
9/9/2020	XMSAL00020462	9/10/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.664746	N/A			12455110	Salisbury
9/7/2020	XMSAL00017770	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.352585	38.8939107188706			12455110	Salisbury
9/7/2020	XMSAL00021998	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.594306	23.1355090361067			12455110	Salisbury
9/7/2020	XMSAL00020788	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.728932	38.5739132153608			12455110	Salisbury
9/7/2020	XMSAL00020943	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.670045	39.9854475315481			12455110	Salisbury
9/7/2020	XMSAL00018676	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.298109	29.1144241978192			12455110	Salisbury
9/7/2020	XMSAL00022185	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.006116	24.1313940823237			12455110	Salisbury
9/7/2020	XMSAL00019207	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.919444	38.6981332884848			12455110	Salisbury
9/7/2020	XMSAL00022148	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.386935	37.1774093028586			12455110	Salisbury
9/7/2020	XMSAL00022281	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	17.976179	17.8613859010569			12455110	Salisbury
9/7/2020	XMSAL00021282	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	20.596776	20.7953409256835			12455110	Salisbury
9/7/2020	XMSAL00019883	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.610700	32.5487650780388			12455110	Salisbury
9/7/2020	XMSAL00018966	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.373058	36.438745310828			12455110	Salisbury
9/7/2020	XMSAL00020064	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.491364	29.6913192315811			12455110	Salisbury
9/7/2020	XMSAL00020349	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	20.361745	19.8646286001522			12455110	Salisbury
9/7/2020	XMSAL00018613	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	23.639711	23.9976115464359			12455110	Salisbury
9/7/2020	XMSAL00018323	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.818786	N/A			12455110	Salisbury
9/7/2020	XMSAL00022573	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.754272	38.0990857258448			12455110	Salisbury
9/7/2020	XMSAL00019385	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.750786	31.6823601469702			12455110	Salisbury
9/7/2020	XMSAL00022011	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.904181	34.262386152239			12455110	Salisbury
9/7/2020	XMSAL00022874	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.792760	41.19923385685556			12455110	Salisbury
9/7/2020	XMSAL00022636	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.833836	32.7633102919215			12455110	Salisbury
9/7/2020	XMSAL00017829	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.437261	32.9568512531925			12455110	Salisbury
9/7/2020	XMSAL00017822	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.348152	35.538658700532			12455110	Salisbury
9/7/2020	XMSAL00022570	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	19.669718	19.3898118823744			12455110	Salisbury
9/7/2020	XMSAL00020456	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.695989	22.562207037231			12455110	Salisbury
9/7/2020	XMSAL00020072	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.100260	39.5978710080412			12455110	Salisbury
9/7/2020	XMSAL00023334	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.887079	N/A			12455110	Salisbury
9/7/2020	XMSAL00022345	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.302747	23.3272262151404			12455110	Salisbury
9/7/2020	XMSAL00021694	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.428775	38.1726385611115			12455110	Salisbury
9/7/2020	XMSAL00020182	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.831485	42.0233390453885			12455110	Salisbury
9/7/2020	XMSAL00020321	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.575673	38.2905508528128			12455110	Salisbury
9/7/2020	XMSAL00023130	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.387954	22.257868275541			12455110	Salisbury
9/7/2020	XMSAL00020514	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.551254	38.6275595498161			12455110	Salisbury
9/7/2020	XMSAL00020770	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	19.282865	19.0388706133975			12455110	Salisbury
9/7/2020	XMSAL00020667	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	29.142120	30.9795693237437			12455110	Salisbury
9/7/2020	XMSAL00019824	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	25.475560	27.8020984523903			12455110	Salisbury
9/7/2020	XMSAL00019552	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	21.070984	21.0969477630193			12455110	Salisbury
9/7/2020	XMSAL00018012	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	33.761407	32.8553601353217			12455110	Salisbury
9/7/2020	XMSAL00016110	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.992391	41.9113539110718			17705628	Salisbury
9/7/2020	XMSAL00017034	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.817664	36.6494659812247			17705628	Salisbury
9/7/2020	XMSAL00016885	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.536903	N/A			17705628	Salisbury
9/7/2020	XMSAL00016808	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.780292	38.2120597112816			17705628	Salisbury
9/7/2020	XMSAL00015980	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.526783	42.030485261949			17705628	Salisbury
9/7/2020	XMSAL00016117	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.829153	41.1718278244722			17705628	Salisbury
9/7/2020	XMSAL00017020	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.676464	35.2933861471633			17705628	Salisbury
9/7/2020	XMSAL00017563	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.716482	31.2245716554334			17705628	Salisbury
9/7/2020	XMSAL00016224	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.264195	38.1743684564538			17705628	Salisbury
9/7/2020	XMSAL00016339	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.890976	35.5404469963397			17705628	Salisbury
9/7/2020	XMSAL00017314	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.816380	37.7468592665073			17705628	Salisbury
9/7/2020	XMSAL00017311	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.625318	40.3500813807787			17705628	Salisbury
9/7/2020	XMSAL00016170	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.992109	36.7411218381931			17705628	Salisbury
9/7/2020	XMSAL00016511	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.887660	38.1721696410707			17705628	Salisbury
9/7/2020	XMSAL00017424	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.512034	N/A			17705628	Salisbury
9/7/2020	XMSAL00016703	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.837096	39.6680941567803			17705628	Salisbury
9/7/2020	XMSAL00017031	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.099534	39.7124357467494			17705628	Salisbury
9/7/2020	XMSAL00017465	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.901237	40.8772517779251			17705628	Salisbury
9/7/2020	XMSAL00017115	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.761166	38.8094607313951			17705628	Salisbury
9/7/2020	XMSAL00017129	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.609888	35.9598309035047			17705628	Salisbury
9/7/2020	XMSAL00016169	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.067477	N/A			17705628	Salisbury
9/7/2020	XMSAL00016401	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.880364	37.8072708776273			17705628	Salisbury
9/7/2020	XMSAL00017283	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.156400	38.0038994272939			17705628	Salisbury
9/7/2020	XMSAL00017120	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.856001	34.9199253872276			17705628	Salisbury
9/7/2020	XMSAL00015981	9/8/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.828327	35.0275208721791			17705628	Salisbury
9/8/2020	XMSAL00019043	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.462535	26.9591606207186			12455110	Salisbury
9/8/2020	XMSAL00021413	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.440268	32.5838442638714			12455110	Salisbury
9/8/2020	XMSAL00022377	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.058754	38.5602478138349			12455110	Salisbury
9/8/2020	XMSAL00018889	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.851198	41.2142775653665			12455110	Salisbury
9/8/2020	XMSAL00022209	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.636362	35.6326667213098			12455110	Salisbury
9/8/2020	XMSAL00018134	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.252855	39.2176998023952			12455110	Salisbury
9/8/2020	XMSAL00018070	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.123276	39.2627414213877			12455110	Salisbury
9/8/2020	XMSAL00021308	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.957930	39.0709273493159			12455110	Salisbury
9/8/2020	XMSAL00018502	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.580807	N/A			12455110	Salisbury
9/8/2020	XMSAL00018438	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.458343	44.9667700743367			12455110	Salisbury
9/8/2020	XMSAL00020503	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.502497	28.5662351840538			12455110	Salisbury
9/8/2020	XMSAL00019277	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.696811	36.9027831806914			12455110	Salisbury
9/8/2020	XMSAL00020707	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.183498	43.3088832977466			12455110	Salisbury
9/8/2020	XMSAL00021053	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.090398	19.0771378249771			12455110	Salisbury
9/8/2020	XMSAL00021057	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.116724	34.2981446805575			12455110	Salisbury
9/8/2020	XMSAL00022044	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	32.876756	33.9749876559453			12455110	Salisbury
9/8/2020	XMSAL00020117	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.608824	38.9339424742851			12455110	Salisbury
9/8/2020	XMSAL00022307	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	25.824385	26.2565399563694			12455110	Salisbury
9/8/2020	XMSAL00018021	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.623725	38.2429633074746			12455110	Salisbury

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[redacted]	9/8/2020 XMSAL00021541	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.657117 38.1517572793532	12455110; Salisbury
	9/8/2020 XMSAL00020153	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	32.908723 34.2492808674106	12455110; Salisbury
	9/8/2020 XMSAL00019462	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.890863 41.6417210601915	12455110; Salisbury
	9/8/2020 XMSAL00023435	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	31.909625 34.5287476614938	12455110; Salisbury
	9/8/2020 XMSAL00017774	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	32.077650 33.1620860620925	12455110; Salisbury
	9/8/2020 XMSAL00021768	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.734191 N/A	12455110; Salisbury
	9/8/2020 XMSAL00018319	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.157912 38.6629693823883	12455110; Salisbury
	9/8/2020 XMSAL00018907	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	25.900751 25.7613969513723	12455110; Salisbury
	9/8/2020 XMSAL00022712	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.384686 40.0813091793629	12455110; Salisbury
	9/8/2020 XMSAL00018459	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.087082 38.0735077938914	12455110; Salisbury
	9/8/2020 XMSAL00020902	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.430737 37.559699611837	12455110; Salisbury
	9/8/2020 XMSAL00019894	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.999000 N/A	12455110; Salisbury
	9/8/2020 XMSAL00019476	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	25.045372 25.570060108828	12455110; Salisbury
	9/8/2020 XMSAL00021119	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	19.988808 21.5483930435923	12455110; Salisbury
	9/8/2020 XMSAL00018014	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	34.654242 36.3856872495319	12455110; Salisbury
	9/8/2020 XMSAL00022132	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.602779 43.1598962045011	12455110; Salisbury
	9/8/2020 XMSAL00020075	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.273668 39.8366931215832	12455110; Salisbury
	9/8/2020 XMSAL00022687	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.155258 38.962024248886	12455110; Salisbury
	9/8/2020 XMSAL00023439	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	32.353045 32.7836763949552	12455110; Salisbury
	9/8/2020 XMSAL00018177	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.895869 22.8588817712032	12455110; Salisbury
	9/8/2020 XMSAL00019028	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	34.560509 35.9305572538804	12455110; Salisbury
	9/8/2020 XMSAL00020402	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	23.327010 23.1618479808143	12455110; Salisbury
	9/8/2020 XMSAL00019896	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.829426 41.3676329382573	12455110; Salisbury
	9/8/2020 XMSAL00021578	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.497223 36.7859241302204	12455110; Salisbury
	9/8/2020 XMSAL00021836	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.299619 39.3129290869202	12455110; Salisbury
	9/8/2020 XMSAL00020713	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.764046 42.4903702066422	12455110; Salisbury
	9/8/2020 XMSAL00021508	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.843540 39.8250227250333	12455110; Salisbury
	9/8/2020 XMSAL00018620	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.848016 N/A	12455110; Salisbury
	9/8/2020 XMSAL00020473	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	29.738617 29.7908863163456	12455110; Salisbury
	9/8/2020 XMSAL00022917	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.395242 36.3728135644823	12455110; Salisbury
	9/8/2020 XMSAL00021389	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	33.921357 33.9680526488069	12455110; Salisbury
	9/8/2020 XMSAL00018215	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.115423 41.943370037013	12455110; Salisbury
	9/8/2020 XMSAL00021412	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	17.923608 16.4018358748628	12455110; Salisbury
	9/8/2020 XMSAL00020712	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.289592 38.2031787461448	12455110; Salisbury
	9/8/2020 XMSAL00019813	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	33.837145 33.1307898575398	12455110; Salisbury
	9/8/2020 XMSAL00019917	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.865542 37.1820524865209	12455110; Salisbury
	9/8/2020 XMSAL00023368	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.341245 39.8762509977203	12455110; Salisbury
	9/8/2020 XMSAL00023046	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.008188 35.4971891254738	12455110; Salisbury
	9/8/2020 XMSAL00020576	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	30.788359 30.7471038180178	12455110; Salisbury
	9/8/2020 XMSAL00022321	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.546172 42.7135503854715	12455110; Salisbury
	9/8/2020 XMSAL00019945	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.944878 36.1618627089103	12455110; Salisbury
	9/8/2020 XMSAL00022461	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.387530 38.0018313558662	12455110; Salisbury
	9/8/2020 XMSAL00022656	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.971250 41.0524439187198	12455110; Salisbury
	9/8/2020 XMSAL00018946	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	34.585885 33.3005964532864	12455110; Salisbury
	9/8/2020 XMSAL00018246	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.044696 40.9875561732077	12455110; Salisbury
	9/8/2020 XMSAL00020680	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	20.904374 21.6152188765401	12455110; Salisbury
	9/8/2020 XMSAL00019285	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.461020 38.1652068854134	12455110; Salisbury
	9/8/2020 XMSAL00018938	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	28.171985 29.0864869508208	12455110; Salisbury
	9/8/2020 XMSAL00021239	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	32.749724 33.548488417502	12455110; Salisbury
	9/8/2020 XMSAL00023392	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.908715 39.2697229643814	12455110; Salisbury
	9/8/2020 XMSAL00022549	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	24.173828 23.3307861354933	12455110; Salisbury
	9/8/2020 XMSAL00019640	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.483663 36.0568636060031	12455110; Salisbury
	9/8/2020 XMSAL00018176	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	27.425002 27.3717283710032	12455110; Salisbury
	9/8/2020 XMSAL00019826	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.445457 39.9028334655922	12455110; Salisbury
	9/8/2020 XMSAL00021264	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.733880 37.9713390379421	12455110; Salisbury
	9/8/2020 XMSAL00018543	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	31.721193 32.255709669484	12455110; Salisbury
	9/8/2020 XMSAL00020202	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	21.570615 21.8749114166855	12455110; Salisbury
	9/8/2020 XMSAL00018576	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.753706 38.0859002835122	12455110; Salisbury
	9/8/2020 XMSAL00021874	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.864747 38.0966611688358	12455110; Salisbury
	9/8/2020 XMSAL00018111	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.965323 38.051902552033	12455110; Salisbury
	9/8/2020 XMSAL00022940	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.631906 39.6855135293005	12455110; Salisbury
	9/8/2020 XMSAL00018574	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.555298 22.6169620687035	12455110; Salisbury
	9/8/2020 XMSAL00019681	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	23.632524 25.5389115203397	12455110; Salisbury
	9/8/2020 XMSAL00020822	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	31.140953 32.0071186216037	12455110; Salisbury
	9/8/2020 XMSAL00022895	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.740852 40.5894315831594	12455110; Salisbury
	9/8/2020 XMSAL00019881	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.887706 40.2329788236198	12455110; Salisbury
	9/8/2020 XMSAL00021060	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.161135 41.7615289260009	12455110; Salisbury
	9/8/2020 XMSAL00023163	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.895768 39.0849853549542	12455110; Salisbury
	9/8/2020 XMSAL00018782	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	37.099619 37.3392053803428	12455110; Salisbury
	9/8/2020 XMSAL00020038	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.325916 38.3658415312686	12455110; Salisbury
	9/8/2020 XMSAL00021334	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	33.279465 32.9066351340378	12455110; Salisbury
	9/8/2020 XMSAL00021327	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	18.771852 18.134669214454	12455110; Salisbury
	9/8/2020 XMSAL00020588	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.674251 36.0728103728261	12455110; Salisbury
	9/8/2020 XMSAL00017850	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.098340 36.3028237723759	12455110; Salisbury
	9/8/2020 XMSAL00021408	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	30.002945 29.8897170407309	12455110; Salisbury
	9/8/2020 XMSAL00019699	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	35.368086 35.757544013229	12455110; Salisbury
	9/8/2020 XMSAL00019891	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.683656 22.1498044892836	12455110; Salisbury
	9/8/2020 XMSAL00021613	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.677039 39.9771243757694	12455110; Salisbury
	9/8/2020 XMSAL00021669	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.303875 37.2022163710604	12455110; Salisbury
	9/8/2020 XMSAL00022522	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.977970 N/A	12455110; Salisbury
	9/8/2020 XMSAL00022433	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	36.697519 35.8389096656701	12455110; Salisbury
	9/8/2020 XMSAL00023468	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.875826 N/A	12455110; Salisbury
	9/8/2020 XMSAL00018626	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.292520 N/A	12455110; Salisbury
	9/8/2020 XMSAL00020104	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.105827 N/A	12455110; Salisbury
	9/8/2020 XMSAL00018190	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.388556 38.9751172608516	12455110; Salisbury
	9/8/2020 XMSAL00023353	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	19.513249 20.5343507265834	12455110; Salisbury
	9/8/2020 XMSAL00021539	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	33.351180 34.5511340346489	12455110; Salisbury
	9/8/2020 XMSAL00022196	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	31.534488 31.3976548972305	12455110; Salisbury
	9/8/2020 XMSAL00020346	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.578078 39.8472852631983	12455110; Salisbury
	9/8/2020 XMSAL00018756	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	39.919397 42.4066710238687	12455110; Salisbury
	9/8/2020 XMSAL00017762	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	26.102055 26.2187257532884	12455110; Salisbury
	9/8/2020 XMSAL00022992	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.182412 23.207811419301	12455110; Salisbury
	9/8/2020 XMSAL00023446	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	38.600353 38.6820838224546	12455110; Salisbury
	9/8/2020 XMSAL00020242	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.820954 24.2069027554073	12455110; Salisbury
	9/8/2020 XMSAL00019517	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	22.691122 22.0695425201841	12455110; Salisbury
	9/8/2020 XMSAL00018831	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	28.929579 29.6440907571807	12455110; Salisbury
	9/8/2020 XMSAL00021446	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	32.038167 32.447999366764	12455110; Salisbury
	9/8/2020 XMSAL00022336	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	20.470399 20.3113937023295	12455110; Salisbury
	9/8/2020 XMSAL00021482	9/9/2020 DETECTED	LabGun using E Gene and RdRp Gene	24.782508 25.3301632645661	12455110; Salisbury

Attachment 9

Salisbury University

4.04

[redacted]

9/8/2020	XMSAL00022774	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.124517	29.1041661782761		12455110	Salisbury
9/8/2020	XMSAL00022866	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.330119	40.3649315798379		12455110	Salisbury
9/8/2020	XMSAL00018117	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	25.703109	26.8052126301524		12455110	Salisbury
9/8/2020	XMSAL00018377	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	34.989936	35.0934864379701		12455110	Salisbury
9/8/2020	XMSAL00019175	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	27.119348	28.1635747894988		12455110	Salisbury
9/8/2020	XMSAL00019190	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.488568	41.2002898641666		12455110	Salisbury
9/8/2020	XMSAL00021910	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.668665	36.3602890468224		12455110	Salisbury
9/8/2020	XMSAL00019380	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	22.554803	22.6667338083819		12455110	Salisbury
9/8/2020	XMSAL00022164	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	33.003764	33.0247692780434		12455110	Salisbury
9/8/2020	XMSAL00021361	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.785555	37.8247444307921		12455110	Salisbury
9/8/2020	XMSAL00021193	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	35.223635	35.9731625211943		12455110	Salisbury
9/8/2020	XMSAL00022161	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.089080	37.2060259135364		12455110	Salisbury
9/8/2020	XMSAL00023365	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.309788	N/A		12455110	Salisbury
9/8/2020	XMSAL00019394	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	33.715621	34.1273439359888		12455110	Salisbury
9/8/2020	XMSAL00020967	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	26.400775	25.9658048901547		12455110	Salisbury
9/8/2020	XMSAL00021215	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.376167	28.4838397359861		12455110	Salisbury
9/8/2020	XMSAL00019340	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.939347	39.4326791867895		12455110	Salisbury
9/8/2020	XMSAL00022404	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.357530	38.7105173470962		12455110	Salisbury
9/8/2020	XMSAL00020910	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.609023	31.2652713939609		12455110	Salisbury
9/8/2020	XMSAL00019851	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.068203	39.3309623456299		12455110	Salisbury
9/8/2020	XMSAL00019330	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	31.932707	32.8773629734709		12455110	Salisbury
9/8/2020	XMSAL00021517	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.120004	38.2080050273537		12455110	Salisbury
9/8/2020	XMSAL00018521	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.226980	30.3301745494997		12455110	Salisbury
9/8/2020	XMSAL00018789	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	38.910406	39.2060991349639		12455110	Salisbury
9/8/2020	XMSAL00019414	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.570285	35.8371773330574		12455110	Salisbury
9/8/2020	XMSAL00019779	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.648559	42.4430828625597		12455110	Salisbury
9/8/2020	XMSAL00018681	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.255329	38.0848028700236		12455110	Salisbury
9/8/2020	XMSAL00022639	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	21.013046	20.6160094985346		12455110	Salisbury
9/8/2020	XMSAL00020616	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.998525	25.8630721111267		12455110	Salisbury
9/8/2020	XMSAL00022167	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	37.234861	37.5641041079187		12455110	Salisbury
9/8/2020	XMSAL00019912	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.296165	38.5802026100121		12455110	Salisbury
9/8/2020	XMSAL00020956	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.370147	N/A		12455110	Salisbury
9/8/2020	XMSAL00018833	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	20.270455	19.4750603518994		12455110	Salisbury
9/8/2020	XMSAL00021226	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	29.546299	30.5660809878602		12455110	Salisbury
9/8/2020	XMSAL00018496	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.004888	23.079096179843		12455110	Salisbury
9/8/2020	XMSAL00021015	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.897108	39.7736034853668		12455110	Salisbury
9/8/2020	XMSAL00021544	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	24.908580	24.1931363163593		12455110	Salisbury
9/8/2020	XMSAL00019109	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.814732	37.8015051910137		12455110	Salisbury
9/8/2020	XMSAL00022633	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	39.911465	40.8229486497343		12455110	Salisbury
9/8/2020	XMSAL00021979	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.798079	35.9470650682617		12455110	Salisbury
9/8/2020	XMSAL00020013	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	36.605115	38.1070053649763		12455110	Salisbury
9/8/2020	XMSAL00022006	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	30.085911	30.2540196550103		12455110	Salisbury
9/8/2020	XMSAL00020378	9/9/2020	DETECTED	LabGun using E Gene and RdRp Gene	28.743933	28.612340284704		17705628	Salisbury
9/9/2020	XMSAL00020916	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			36.101410 34.432912 26.101493	12455110	Salisbury
9/9/2020	XMSAL00018650	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			31.454736 33.046146 28.629165	12455110	Salisbury
9/9/2020	XMSAL00021453	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			35.718458 35.101775 26.770611	12455110	Salisbury
9/9/2020	XMSAL00022371	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			34.585158 35.641099 27.148992	12455110	Salisbury
9/9/2020	XMSAL00020076	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			19.950255 21.541155 26.316610	12455110	Salisbury
9/9/2020	XMSAL00020687	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			22.769138 25.674672 26.145159	12455110	Salisbury
9/9/2020	XMSAL00017821	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			27.263375 29.828540 30.108189	12455110	Salisbury
9/9/2020	XMSAL00023265	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			25.175137 27.949101 27.257667	12455110	Salisbury
9/9/2020	XMSAL00019911	9/17/2020	DETECTED	CDC Assay using N1/N3 genes			16.809425 18.780985 27.277473	12455110	Salisbury
9/9/2020	XMSAL00022698	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			37.198955 36.669508 28.729612	12455110	Salisbury
9/9/2020	XMSAL00019791	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			27.148870 29.498097 28.744728	12455110	Salisbury
9/9/2020	XMSAL00020285	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			22.132510 25.676257 29.250499	12455110	Salisbury
9/9/2020	XMSAL00022491	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			34.012782 35.712368 29.895522	12455110	Salisbury
9/9/2020	XMSAL00018778	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			20.833859 22.427005 27.902513	12455110	Salisbury
9/9/2020	XMSAL00022125	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			28.448445 32.355460 24.013906	12455110	Salisbury
9/9/2020	XMSAL00021869	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			27.092839 30.132740 29.131960	12455110	Salisbury
9/9/2020	XMSAL00017996	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			24.736234 26.369655 28.089086	12455110	Salisbury
9/9/2020	XMSAL00020197	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			36.813281 35.193468 27.575505	12455110	Salisbury
9/9/2020	XMSAL00019182	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			34.941579 34.981057 27.747299	12455110	Salisbury
9/9/2020	XMSAL00018876	9/17/2020	DETECTED	CDC Assay using N1/N3 genes			15.481276 17.763420 27.575149	12455110	Salisbury
9/9/2020	XMSAL00020688	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			37.437994 35.626214 27.984406	12455110	Salisbury
9/9/2020	XMSAL00019730	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			38.171122 37.022139 27.355307	12455110	Salisbury
9/9/2020	XMSAL00019822	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			24.224834 27.700566 27.030984	12455110	Salisbury
9/9/2020	XMSAL00022275	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			36.283535 36.932510 26.875520	12455110	Salisbury
9/9/2020	XMSAL00021167	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			32.638204 34.820236 28.485414	12455110	Salisbury
9/9/2020	XMSAL00020728	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			31.901293 37.675967 25.658987	12455110	Salisbury
9/9/2020	XMSAL00019860	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			38.289665 35.458068 29.210334	12455110	Salisbury
9/9/2020	XMSAL00018074	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			37.466194 36.743761 28.066734	12455110	Salisbury
9/9/2020	XMSAL00023402	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			31.860011 34.417748 27.133452	12455110	Salisbury
9/9/2020	XMSAL00021700	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			33.748361 33.651987 27.452997	12455110	Salisbury
9/9/2020	XMSAL00018528	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			23.054638 24.880221 27.459075	12455110	Salisbury
9/9/2020	XMSAL00021745	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			23.332783 25.539997 27.877171	12455110	Salisbury
9/9/2020	XMSAL00020299	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			36.330181 34.784576 27.064938	12455110	Salisbury
9/9/2020	XMSAL00021943	9/17/2020	DETECTED	CDC Assay using N1/N3 genes			15.685911 17.758654 26.681361	12455110	Salisbury
9/9/2020	XMSAL00017875	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			30.715483 32.839956 27.709570	12455110	Salisbury
9/9/2020	XMSAL00022385	9/17/2020	DETECTED	CDC Assay using N1/N3 genes			17.371363 19.238870 28.003575	12455110	Salisbury
9/9/2020	XMSAL00020257	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			31.575231 34.476872 26.341592	12455110	Salisbury
9/9/2020	XMSAL00022467	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			23.903117 26.195537 26.637982	12455110	Salisbury
9/9/2020	XMSAL00018474	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			32.501075 34.612451 28.252506	12455110	Salisbury
9/9/2020	XMSAL00019949	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			34.092507 34.441023 28.600091	12455110	Salisbury
9/9/2020	XMSAL00022949	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			17.091375 18.693849 27.139901	12455110	Salisbury
9/9/2020	XMSAL00020128	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			29.032405 30.729445 27.789559	12455110	Salisbury
9/9/2020	XMSAL00022195	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			31.692788 32.518801 26.318520	12455110	Salisbury
9/9/2020	XMSAL00021117	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			19.029513 22.666840 26.716293	12455110	Salisbury
9/9/2020	XMSAL00019626	9/13/2020	DETECTED	CDC Assay using N1/N3 genes			37.820399 37.134675 27.961692	12455110	Salisbury
9/9/2020	XMSAL00022438	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			35.129050 36.637773 28.257648	12455110	Salisbury
9/9/2020	XMSAL00017098	9/15/2020	DETECTED	CDC Assay using N1/N3 genes			36.107171 36.045984 30.022172	17705628	Salisbury

Attachment 9

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Specimens for COVID serology testing 2020-250

1 message

Emily Luckman -MDH- <emily.luckman@maryland.gov> Fri, Sep 11, 2020 at 2:04 PM
To: "Myers, Robert" <Robert.myers-phd@maryland.gov>, "Ami A. Patel -MDH-" <Amia.patel@maryland.gov>, "Venkata R. Vepachedu -MDH-" <Venkata.vepachedu@maryland.gov>, Sarah Langtry -DHMH- <Sarah.langtry@maryland.gov>, "Keith A. Perkins Jr. (DHMH)" <Keith.perkins@maryland.gov>, "Liore H. Klein -MDH-" <Liore.klein@maryland.gov>
Cc: David Blythe -MDH- <david.blythe@maryland.gov>, Brian Bachaus -MDH- <brian.bachaus@maryland.gov>

Good afternoon,
Please see the attached list of staff members of [redacted] who submitted had blood drawn today for serology testing. I requested a few specimens, but they collected 18.
These individuals tested positive on 9/1 at the UM Pathology lab, but they subsequently tested negative or have tests pending.
Thank you,
Emily

Emily Luckman, MPH, BSN, CIC
Epidemiologist
Maryland Department of Health
Division of Outbreak Investigation
Infectious Disease Epidemiology and Outbreak Response Bureau
201 West Preston Street, 3rd Floor
Baltimore, MD 21201
phone: 410-767-5778
fax: 410-669-4215
email: Emily.Luckman@maryland.gov

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Staff from [redacted] with positive test result from 9.docx
14K

Attachment 12

Patient Identifiers Redacted RM

Staff from [redacted] with positive test result on 9/1/2020 from UMPA who retested with Maryland Department of Health

Name	DOB	Date MDH Retest	Result	COVID-19 Serology	Result
		9/10/20	9/11 pending	9/11/20	
		9/10/20	9/11 pending		
		9/10/20	9/11 pending	9/11/20	
		9/10/20	9/11 pending		
		9/8/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/8/20	Neg	9/11/20	
		9/8/20	Neg		
		9/8/20	Neg	9/11/20	
		9/8/20	Neg		
		9/8/20	Neg		
		9/9/20	Neg		
		9/8/20	Neg	9/11/20	
		9/8/20	Neg	9/11/20	
		9/8/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/8/20	Neg	9/11/20	
		9/9/20	Neg		
		9/9/20	Neg		
		9/9/20	Neg		
		9/8/20	Neg	9/11/20	
		9/9/20	Neg	9/11/20	
		9/8/20	Neg	9/11/20	

Staff from [redacted] with positive test result from 9/1/2020 who retested elsewhere:

Patient A received negative result from 9/6/2020 test with Lab Corp

Patient B results pending

Patient C results pending

Patient Identifiers Redacted RM

Attachment 12

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Re: Time Sensitive SARS-COV-2 Serology Testing Event Tomorrow (09/11)

1 message

Yvette C. Washington -MDH- <yvette.washington@maryland.gov> Wed, Sep 16, 2020 at 1:16 PM
To: Robert Myers -MDH- <robert.myers-phd@maryland.gov>
Cc: Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>, "Venkata R. Vepachedu -MDH-" <venkata.vepachedu@maryland.gov>, David Blythe -MDH- <david.blythe@maryland.gov>

Dr. Myers,

I had outfit's [redacted] the supplies to [redacted]. They will coordinate with Howard County Health Department to get the specimens to central lab next week.

Yvette Washington, M.S.
Public Health Laboratory Scientist Supervisor
Division of Virology and Immunology
Maryland Department of Health, Laboratories Administration
1770 Ashland Avenue
Baltimore, MD 21205

443-681-3931

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On Wed, Sep 16, 2020 at 12:54 PM Robert Myers -MDH- <robert.myers-phd@maryland.gov> wrote:

> Jake,
>
> Please see the forwarded email from Yvette . We are planning to re-test the staff from [redacted] in Columbia that received the weak SARS-CoV-2 RNA positive results from the UMPA lab for SARS-CoV-2 IgG antibodies again. Can your group assist with this? We are also scheduling to test another group of nursing home ([redacted]) patients for SARS-CoV-2 IgG antibodies that received similar results from the UMPA Lab .
>
> Best regards,
>
> Bob
>
> ***Robert A. Myers PhD***
> ***Director***
> ***Maryland Department of Health Laboratories Administration***
> ***1770 Ashland Avenue***
> ***Baltimore, Maryland 21205***
>
> ***Phone: 443-681-3800 Fax: 443-681-4501***

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On Wed, Sep 16, 2020 at 11:25 AM Yvette C. Washington -MDH- <yvette.washington@maryland.gov> wrote:
I was contacted this morning by [redacted] stating she needs to coordinate serological re-testing of the 18 people who were tested from [redacted]. Was advised to re-test after 2 weeks. Would like to arrange the delivery of supplies and arrangement of a courier that Jake set up last week. Please advise.

Yvette Washington, M.S.
Public Health Laboratory Scientist Supervisor
Division of Virology and Immunology
Maryland Department of Health, Laboratories Administration
1770 Ashland Avenue
Baltimore, MD 21205

443-681-3931

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On Thu, Sep 10, 2020 at 7:57 PM Robert Myers -MDH- <robert.myers-phd@maryland.gov> wrote:
Everyone,

We were called upon to support a request by the Department to quickly perform SARS-CVoV-2 Serology testing for the staff of a Howard County nursing home. Per Jake's request I have placed 30 red-top tubes, 30 biobags and 30 MDH Lab Serology test request forms on the loading dock for pick-up early on Friday(09/11) morning by a courier assigned by Jake. The box of collection supplies and accompanying cooler with cold packs is labeled "Howard County SARS-CoV-2 Serology testing".

Yvette, Jake is planning to have collected specimens for SARS-CoV-2 serology testing to be delivered back to us by a special courier by midday tomorrow (09/11). Please do what is necessary to expedite the testing of these specimens tomorrow if possible .

Closely coordinate the logistical details of this event with Jake or his designees and contact me if you have any additional questions or concerns. and thank you for your cooperation in this matter.

Best regards,

Bob

Robert A. Myers PhD
Director
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, Maryland 21205

Phone: 443-681-3800 Fax: 443-681-4501

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Attachment 12

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Re: Asymptomatic COVID-19 Cluster Investigations

1 message

David Blythe -MDH- <david.blythe@maryland.gov> Fri, Sep 18, 2020 at 6:29 PM
To: Robert Myers -MDH- <robert.myers-phd@maryland.gov>
Cc: Brian Bachaus -MDH- <brian.bachaus@maryland.gov>, "Liore H. Klein -MDH-" <liore.klein@maryland.gov>

Super helpful - thanks. I think all the collection dates were September 1, but we will confirm.

Have not received anything back from UMPA. Will let you know as soon as we do.

On Fri, Sep 18, 2020 at 6:21 PM Robert Myers -MDH- <robert.myers-phd@maryland.gov> wrote:

David and Brian,

Attached is the data table we created for the [redacted] asymptomatic COVID-19 cluster investigation. Can your group fill in the collection dates for the UMP specimens? We would like to use a standard data table format for the investigations for this and the other asymptomatic COVID-19 Cluster investigations . Will this format work ? Revise and edit as needed.
Has UMPA Lab provided you with the COVID-19 PCR Ct values for the asymptomatic COVID-19 infections associated with the other clusters under investigation?

Please let us when we need to perform serology testing and/ or repeat PCR testing for the patients associated with these cluster investigations

Best regards,

Bob

Robert A. Myers PhD
Director
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, Maryland 21205

Phone: 443-681-3800 Fax: 443-681-4501

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--
David Blythe, MD, MPH
State Epidemiologist and Director

Attachment 12

Infectious Disease Epidemiology and Outbreak Response Bureau
Maryland Department of Health
ph: 410-767-6685
fax: 410-669-4215

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Attachment 12

Initial MDH Lab Findings

redacted
↓ Patient identifiers

[redacted]

09/16/20

[redacted] Asymptomatic COVID-19 Cluster Investigation

UMPA Lab SARS-COV-2 PCR Results Lab Genomics Lab Gun COVID-19 PCR Kit						MDH Lab SARS-CoV-2 NAAT(Hologic TMA) and Abbott(Diasorin) IgG Serology Results			
PCR Swab Collection date	accession	e gene	RdRP	MMS2 E	Ms2	PCR Swab Collection date	MDH Lab Results (Hologic COVID-19 TMA)	Serology Collection Date	09/11/20 SARS-CoV-2 Antibody Results
Unknown	7340	37.4	39.95	28.5	28.7	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7290	36.9	37.3	29.6	29.7	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7160	36.4	38.3	29.1	29.2	09/09/2020	Neg.	9/11/2020	Pos.(+)
Unknown	7664	32.1	31.5	29	29	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7643	30.1	30.1	28.8	28.8	09/09/2020	Neg.		Not received?
Unknown	7611	36	35.2	20.6	20.7		Not received		Not received?
Unknown	7597	36.3	35.6	28.8	28.6	09/08/2020	Neg.		Not received?
Unknown	7570	36.9	36.9	28.6	28.7	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7559	38.6	37	28.5	28.5	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7551	n/a	39.9	29.5	29.5	09/10/2020	Neg.		Not received?
Unknown	7475	36.8	35.2	28.5	28.5	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7462	39	37.3	28.8	29	09/10/2020	Neg.	9/11/2020	Neg.
Unknown	7449	29.5	29.6	27.7	27.7	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7439	36.7	36	27.6	28	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7424	35.6	35.1	28.4	28.3	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7415	35.3	34.7	28.6	28.4	09/08/2020	Neg.	9/11/2020	Neg.
Unknown	7408	35.9	35.2	28.5	28.5	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7402	36.9	35.5	28	28	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7392	37.8	36.6	28.7	28.9		Not received		Not received?
Unknown	7382	35.7	35.4	28.1	28		Not received		Not received?
Unknown	7372	37.2	38.6	28.6	28.7	09/09/2020	Neg.		Not received?
Unknown	7363	36.3	35.7	28.8	28.8	09/09/2020	Neg.		Not received?
Unknown	7354	35.8	35.1	27.9	27.7	09/08/2020	Neg.		Not received?
Unknown	7348	40.7	38	29.4	29.6	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7334	37.2	36.8	30.8	30.7	09/09/2020	Neg.	9/11/2020	Neg.
Unknown	7170	42.3	39.5	28.8	28.6		Not received		Not received?
Unknown	7152	37.6	38.6	28.6	28.8	09/09/2020	Neg.		Not received?
Unknown	7157	39.9	39.4	28.4	28.3	09/08/2020	Neg.	9/11/2020	Pos.(+)
Unknown	8152	n/a	39.8	29.7	29.7	09/10/2020	Neg.		Not received?
Unknown	8112	39.2	39.2	29.4	29.3	09/10/2020	Neg.	9/11/2020	Neg.

MDH Laboratories Administration 2019 LabGun COVID-19 RT-PCR Kit - RESULTS (10/23/20 to 11/11/20)

SUBMITTER_NAME	FOLDERNO	ORDNO	DATE_RECEIVED	DATE_REPORTED	RESULT
[redacted]	A20201364	A20201364002	10/22/2020	10/23/2020	Not Detected
	A20201365	A20201365002	10/22/2020	10/23/2020	Not Detected
	A20201366	A20201366002	10/22/2020	10/23/2020	Not Detected
	A20201367	A20201367002	10/22/2020	10/23/2020	Not Detected
	A20201371	A20201371002	10/22/2020	10/23/2020	Not Detected
	A20201372	A20201372002	10/22/2020	10/23/2020	Not Detected
	A20201373	A20201373002	10/22/2020	10/23/2020	Not Detected
	A20201374	A20201374002	10/22/2020	10/23/2020	Not Detected
	A20201375	A20201375002	10/22/2020	10/23/2020	Not Detected
	A20201376	A20201376002	10/22/2020	10/23/2020	Not Detected
	A20201377	A20201377002	10/22/2020	10/23/2020	Not Detected
	A20201378	A20201378002	10/22/2020	10/23/2020	Not Detected
	A20201379	A20201379002	10/22/2020	10/23/2020	Not Detected
	A20201380	A20201380002	10/22/2020	10/23/2020	Not Detected
	A20201381	A20201381002	10/22/2020	10/23/2020	Not Detected
	A20201382	A20201382002	10/22/2020	10/23/2020	Not Detected
	A20201383	A20201383002	10/22/2020	10/23/2020	Not Detected
	A20201384	A20201384002	10/22/2020	10/23/2020	Not Detected
	A20201385	A20201385002	10/22/2020	10/23/2020	Not Detected
	A20201386	A20201386002	10/22/2020	10/23/2020	Not Detected
	A20201387	A20201387002	10/22/2020	10/23/2020	Not Detected
	A20201388	A20201388002	10/22/2020	10/23/2020	Not Detected
	A20201389	A20201389002	10/22/2020	10/23/2020	Not Detected
	A20201390	A20201390002	10/22/2020	10/23/2020	Not Detected
	A20201391	A20201391002	10/22/2020	10/23/2020	Not Detected
	A20201392	A20201392002	10/22/2020	10/23/2020	Not Detected
	A20201393	A20201393002	10/22/2020	10/23/2020	Not Detected
	A20201394	A20201394002	10/22/2020	10/23/2020	Not Detected
	A20201395	A20201395002	10/22/2020	10/23/2020	Not Detected
	A20201396	A20201396002	10/22/2020	10/23/2020	Not Detected
	A20201397	A20201397002	10/22/2020	10/23/2020	Not Detected
	A20201398	A20201398002	10/22/2020	10/23/2020	Not Detected
	A20201399	A20201399002	10/22/2020	10/23/2020	Not Detected
	A20201400	A20201400002	10/22/2020	10/23/2020	Not Detected
	A20201401	A20201401002	10/22/2020	10/23/2020	Not Detected
	A20201402	A20201402002	10/22/2020	10/23/2020	Not Detected
	A20201403	A20201403002	10/22/2020	10/23/2020	Not Detected
	A20201404	A20201404002	10/22/2020	10/23/2020	Not Detected
	A20201405	A20201405002	10/22/2020	10/23/2020	Not Detected
	A20201406	A20201406002	10/22/2020	10/23/2020	Not Detected
	A20203416	A20203416002	10/26/2020	10/27/2020	Not Detected
	A20203417	A20203417002	10/26/2020	10/27/2020	Not Detected
	A20203418	A20203418002	10/26/2020	10/27/2020	Not Detected
	A20203486	A20203486002	10/26/2020	10/27/2020	Not Detected
	A20203914	A20203914002	10/26/2020	10/27/2020	Not Detected
	A20203915	A20203915002	10/26/2020	10/27/2020	Not Detected
	A20203916	A20203916002	10/26/2020	10/27/2020	Not Detected
	A20203917	A20203917002	10/26/2020	10/27/2020	Not Detected
	A20203918	A20203918002	10/26/2020	10/27/2020	Not Detected
	A20203919	A20203919002	10/26/2020	10/27/2020	Not Detected
	A20203920	A20203920002	10/26/2020	10/27/2020	Not Detected
	A20203921	A20203921002	10/26/2020	10/27/2020	Not Detected
	A20203922	A20203922002	10/26/2020	10/27/2020	Not Detected
	A20203923	A20203923002	10/26/2020	10/27/2020	Not Detected
	A20203924	A20203924002	10/26/2020	10/27/2020	Not Detected
	A20203925	A20203925002	10/26/2020	10/27/2020	Not Detected
	A20203926	A20203926002	10/26/2020	10/27/2020	Not Detected
	A20203927	A20203927002	10/26/2020	10/27/2020	Not Detected
	A20203928	A20203928002	10/26/2020	10/27/2020	Not Detected
	A20203929	A20203929002	10/26/2020	10/27/2020	Not Detected
	A20203930	A20203930002	10/26/2020	10/27/2020	Not Detected
	A20203931	A20203931002	10/26/2020	10/27/2020	Not Detected

Attachment 16

[redacted]

A20203932	A20203932002	10/26/2020	10/27/2020 Not Detected
A20203933	A20203933002	10/26/2020	10/27/2020 Not Detected
A20203934	A20203934002	10/26/2020	10/27/2020 Not Detected
A20203935	A20203935002	10/26/2020	10/27/2020 Not Detected
A20203936	A20203936002	10/26/2020	10/27/2020 Not Detected
A20203937	A20203937002	10/26/2020	10/27/2020 Not Detected
A20203938	A20203938002	10/26/2020	10/27/2020 Not Detected
A20203939	A20203939002	10/26/2020	10/27/2020 Not Detected
A20203940	A20203940002	10/26/2020	10/27/2020 Not Detected
A20203941	A20203941002	10/26/2020	10/27/2020 Not Detected
A20203942	A20203942002	10/26/2020	10/27/2020 Not Detected
A20203943	A20203943002	10/26/2020	10/27/2020 Not Detected
A20203944	A20203944002	10/26/2020	10/27/2020 Not Detected
A20203945	A20203945002	10/26/2020	10/27/2020 Not Detected
A20203946	A20203946002	10/26/2020	10/27/2020 Not Detected
A20203947	A20203947002	10/26/2020	10/27/2020 Not Detected
A20203948	A20203948002	10/26/2020	10/27/2020 Not Detected
A20203949	A20203949002	10/26/2020	10/27/2020 Not Detected
A20203950	A20203950002	10/26/2020	10/27/2020 Not Detected
A20203951	A20203951002	10/26/2020	10/27/2020 Not Detected
A20203952	A20203952002	10/26/2020	10/27/2020 Not Detected
A20203953	A20203953002	10/26/2020	10/27/2020 Not Detected
A20203954	A20203954002	10/26/2020	10/27/2020 Not Detected
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A20213313	A20213313002	11/3/2020	11/4/2020 Not Detected

Attachment 16

[redacted]

A20213314	A20213314002	11/3/2020	11/4/2020 Not Detected
A20213315	A20213315002	11/3/2020	11/4/2020 Not Detected
A20213316	A20213316002	11/3/2020	11/4/2020 Not Detected
A20213317	A20213317002	11/3/2020	11/4/2020 Not Detected
A20214365	A20214365002	11/4/2020	11/5/2020 Not Detected
A20214383	A20214383002	11/4/2020	11/5/2020 Not Detected
A20214384	A20214384002	11/4/2020	11/5/2020 Not Detected
A20214385	A20214385002	11/4/2020	11/5/2020 Not Detected
A20214367	A20214367002	11/4/2020	11/5/2020 Not Detected
A20214368	A20214368002	11/4/2020	11/5/2020 Not Detected
A20214369	A20214369002	11/4/2020	11/5/2020 Not Detected
A20214370	A20214370002	11/4/2020	11/5/2020 Not Detected
A20214371	A20214371002	11/4/2020	11/5/2020 Not Detected
A20214373	A20214373002	11/4/2020	11/5/2020 Not Detected
A20214374	A20214374002	11/4/2020	11/5/2020 Not Detected
A20214375	A20214375002	11/4/2020	11/5/2020 Not Detected
A20214377	A20214377002	11/4/2020	11/5/2020 Not Detected
A20214378	A20214378002	11/4/2020	11/5/2020 Not Detected
A20214379	A20214379002	11/4/2020	11/5/2020 Not Detected
A20214380	A20214380002	11/4/2020	11/5/2020 Not Detected
A20214382	A20214382002	11/4/2020	11/5/2020 Not Detected
A20214386	A20214386002	11/4/2020	11/5/2020 Not Detected
A20214387	A20214387002	11/4/2020	11/5/2020 Not Detected
A20214344	A20214344002	11/4/2020	11/5/2020 Not Detected
A20214345	A20214345002	11/4/2020	11/5/2020 Not Detected
A20214346	A20214346002	11/4/2020	11/5/2020 Not Detected
A20214347	A20214347002	11/4/2020	11/5/2020 Not Detected
A20214348	A20214348002	11/4/2020	11/5/2020 Not Detected
A20214349	A20214349002	11/4/2020	11/5/2020 Not Detected
A20214350	A20214350002	11/4/2020	11/5/2020 Not Detected
A20214351	A20214351002	11/4/2020	11/5/2020 Not Detected
A20214352	A20214352002	11/4/2020	11/5/2020 Not Detected
A20214353	A20214353002	11/4/2020	11/5/2020 Not Detected
A20214354	A20214354002	11/4/2020	11/5/2020 Not Detected
A20214355	A20214355002	11/4/2020	11/5/2020 Not Detected
A20216838	A20216838002	11/5/2020	11/6/2020 Not Detected
A20216839	A20216839002	11/5/2020	11/6/2020 Not Detected
A20216840	A20216840002	11/5/2020	11/6/2020 Not Detected
A20216841	A20216841002	11/5/2020	11/6/2020 Not Detected
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A20216852	A20216852002	11/5/2020	11/6/2020 Not Detected
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A20216854	A20216854002	11/5/2020	11/6/2020 Not Detected
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A20216856	A20216856002	11/5/2020	11/6/2020 Not Detected
A20216857	A20216857002	11/5/2020	11/6/2020 Not Detected
A20216858	A20216858002	11/5/2020	11/6/2020 Not Detected
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A20216860	A20216860002	11/5/2020	11/6/2020 Not Detected
A20216861	A20216861002	11/5/2020	11/6/2020 Not Detected
A20216862	A20216862002	11/5/2020	11/6/2020 Not Detected
A20216863	A20216863002	11/5/2020	11/6/2020 Not Detected
A20216864	A20216864002	11/5/2020	11/6/2020 Not Detected
A20216865	A20216865002	11/5/2020	11/6/2020 Not Detected
A20216866	A20216866002	11/5/2020	11/6/2020 Not Detected
A20216867	A20216867002	11/5/2020	11/6/2020 Not Detected
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A20216869	A20216869002	11/5/2020	11/6/2020 Detected
A20216870	A20216870002	11/5/2020	11/6/2020 Not Detected

Attachment 16

[redacted]

A20216871	A20216871002	11/5/2020	11/6/2020 Not Detected
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A20216873	A20216873002	11/5/2020	11/6/2020 Not Detected
A20216874	A20216874002	11/5/2020	11/6/2020 Not Detected
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A20216876	A20216876002	11/5/2020	11/6/2020 Not Detected
A20216878	A20216878002	11/5/2020	11/6/2020 Not Detected
A20216881	A20216881002	11/5/2020	11/6/2020 Not Detected
A20216882	A20216882002	11/5/2020	11/6/2020 Not Detected
A20214332	A20214332002	11/4/2020	11/6/2020 Not Detected
A20214333	A20214333002	11/4/2020	11/6/2020 Not Detected
A20214335	A20214335002	11/4/2020	11/6/2020 Not Detected
A20214336	A20214336002	11/4/2020	11/6/2020 Not Detected
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A20214342	A20214342002	11/4/2020	11/6/2020 Not Detected
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A20219900	A20219900002	11/9/2020	11/10/2020 Not Detected
A20219901	A20219901002	11/9/2020	11/10/2020 Not Detected
A20219902	A20219902002	11/9/2020	11/10/2020 Not Detected
A20219903	A20219903002	11/9/2020	11/10/2020 Not Detected
A20219904	A20219904002	11/9/2020	11/10/2020 Not Detected
A20219905	A20219905002	11/9/2020	11/10/2020 Not Detected
A20219906	A20219906002	11/9/2020	11/10/2020 Not Detected
A20219907	A20219907002	11/9/2020	11/10/2020 Not Detected
A20219909	A20219909002	11/9/2020	11/10/2020 Not Detected
A20219807	A20219807002	11/9/2020	11/10/2020 Not Detected
A20219752	A20219752002	11/9/2020	11/10/2020 Not Detected
A20219753	A20219753002	11/9/2020	11/10/2020 Not Detected
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A20219755	A20219755002	11/9/2020	11/10/2020 Not Detected
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A20219757	A20219757002	11/9/2020	11/10/2020 Not Detected
A20219758	A20219758002	11/9/2020	11/10/2020 Not Detected
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A20219760	A20219760002	11/9/2020	11/10/2020 Not Detected
A20219801	A20219801002	11/9/2020	11/10/2020 Not Detected
A20219805	A20219805002	11/9/2020	11/10/2020 Not Detected
A20219806	A20219806002	11/9/2020	11/10/2020 Not Detected
A20219849	A20219849002	11/9/2020	11/10/2020 Not Detected
A20219850	A20219850002	11/9/2020	11/10/2020 Not Detected
A20219851	A20219851002	11/9/2020	11/10/2020 Not Detected
A20219852	A20219852002	11/9/2020	11/10/2020 Not Detected
A20219853	A20219853002	11/9/2020	11/10/2020 Not Detected
A20219854	A20219854002	11/9/2020	11/10/2020 Not Detected
A20219889	A20219889004	11/9/2020	11/10/2020 Not Detected
A20219749	A20219749002	11/9/2020	11/11/2020 Not Detected
A20220321	A20220321002	11/9/2020	11/11/2020 Not Detected
A20220322	A20220322002	11/9/2020	11/11/2020 Not Detected
A20220274	A20220274002	11/9/2020	11/11/2020 Not Detected
A20220275	A20220275002	11/9/2020	11/11/2020 Not Detected
A20220276	A20220276002	11/9/2020	11/11/2020 Not Detected
A20220277	A20220277002	11/9/2020	11/11/2020 Not Detected
A20220285	A20220285002	11/9/2020	11/11/2020 Not Detected
A20220286	A20220286002	11/9/2020	11/11/2020 Not Detected
A20220287	A20220287002	11/9/2020	11/11/2020 Not Detected
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A20220289	A20220289002	11/9/2020	11/11/2020 Not Detected
A20220290	A20220290002	11/9/2020	11/11/2020 Not Detected
A20220291	A20220291002	11/9/2020	11/11/2020 Not Detected

[redacted]

A20220292	A20220292002	11/9/2020	11/11/2020 Not Detected
A20220293	A20220293002	11/9/2020	11/11/2020 Not Detected
A20220294	A20220294002	11/9/2020	11/11/2020 Not Detected
A20220295	A20220295002	11/9/2020	11/11/2020 Not Detected
A20220296	A20220296002	11/9/2020	11/11/2020 Not Detected
A20220297	A20220297002	11/9/2020	11/11/2020 Not Detected
A20220298	A20220298002	11/9/2020	11/11/2020 Not Detected
A20220299	A20220299002	11/9/2020	11/11/2020 Not Detected
A20220300	A20220300002	11/9/2020	11/11/2020 Not Detected
A20220301	A20220301002	11/9/2020	11/11/2020 Not Detected
A20220302	A20220302002	11/9/2020	11/11/2020 Not Detected
A20220303	A20220303002	11/9/2020	11/11/2020 Not Detected
A20220304	A20220304002	11/9/2020	11/11/2020 Not Detected
A20220305	A20220305002	11/9/2020	11/11/2020 Not Detected
A20220306	A20220306002	11/9/2020	11/11/2020 Not Detected
A20220307	A20220307002	11/9/2020	11/11/2020 Not Detected
A20220308	A20220308002	11/9/2020	11/11/2020 Not Detected
A20220309	A20220309002	11/9/2020	11/11/2020 Not Detected
A20220310	A20220310002	11/9/2020	11/11/2020 Not Detected
A20220311	A20220311002	11/9/2020	11/11/2020 Not Detected
A20220312	A20220312002	11/9/2020	11/11/2020 Not Detected
A20220313	A20220313002	11/9/2020	11/11/2020 Not Detected
A20220314	A20220314002	11/9/2020	11/11/2020 Not Detected
A20220315	A20220315002	11/9/2020	11/11/2020 Not Detected
A20220316	A20220316002	11/9/2020	11/11/2020 Not Detected
A20220317	A20220317002	11/9/2020	11/11/2020 Not Detected
A20220318	A20220318002	11/9/2020	11/11/2020 Not Detected
A20220319	A20220319002	11/9/2020	11/11/2020 Not Detected
A20220320	A20220320002	11/9/2020	11/11/2020 Not Detected

Re: [redacted] UMPA PCR Serology Spreadsheet

Liore H. Klein -MDH- <liore.klein@maryland.gov> Sep 30, 2020, 3:51 PM
to me

Malagasy English Translate message Turn off for: Malagasy

You are reading a secure message, protected by Virtru

No expiration date

See attached for updates and notes from CRISP.

UMPA SARS-CoV-2 PCRNursing Home Inv… .tdf (28.8 Kb)

On Wed, Sep 30, 2020 at 3:08 PM Liore H. Klein -MDH- <liore.klein@maryland.gov> wrote:

Show last secure message

Attachment 22

--
Liore Klein, MSPH (she/her/hers)
Sr. Epidemiologist
Lab-Epidemiology Coordinator, ARLN Program
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, MD 21205
Phone: 443-681-3945
Email: liore.klein@maryland.gov

[redacted] Asymptomatic COVID-19 Cluster Investigation

Name	UMPA Lab SARS-COV-2 PCR Results Lab Genetics COVID-19 PCR Kit						MDH Lab SARS-CoV-2 NAAT(Hologic TMA) and Abbott(Diasorin) IgG Serology Results						
	PCR Swab Collection date	Accession #	E gene	RdRP	MMS2 E	MS2	PCR Swab Collection date	MDH NAAT Accession # (SARS-CoV-2 NAAT performed)	MDH Lab SARSCoV-2 NAAT Results	MDH Serology Accession #	Serology Collection Date	09/24/20 SARS CoV-2 Antibody Results	Notes
	9/1/2020	01-20-245-07240	31.74	32.05	29.24	29.24		**No MDH NAAT Results**	**N/A**	A20162457	9/23/2020	Positive/Positive	No previous positives in CRISP
	9/4/2020	01-20-248-07252	33.76	34.36	28.92	28.84		No MDH NAAT Results	N/A	A20162458	9/23/2020	Negative	
	9/4/2020	01-20-248-07282	37.72	38.10	29.36	29.09	06/01, 06/23,07/14, 8/23/2020	A200059279 (CDC), A20071299 (Hologic), A20093369(CDC), A20134044 (CDC)	Not Detected (4X)	A20162459	9/23/2020	Negative	
	9/4/2020	01-20-248-06653	33.64	33.95	30.02	29.73	04/17, 04/30, 05/29, 06/13/20	A20037759 (CDC), A20043265 (CDC), A20058277(CDC), A20066858(Hologic),	Not Detected (4X)	A20162460	9/23/2020	Negative	
	9/4/2020	01-20-248-07247	36.05	36.36	29.65	29.61		No MDH NAAT Results	N/A	A20162461	9/23/2020	Negative	
	9/4/2020	01-20-248-06685	36.42	36.13	29.73	29.47		No MDH NAAT Results	N/A	A20162462	9/23/2020	Negative	
	9/4/2020	01-20-248-07416	37.38	36.61	35.63	33.76		No MDH NAAT Results	N/A	A20162463	9/23/2020	Negative	
	9/4/2020	01-20-248-07387	34.78	34.55	30.14	29.53	7/15/, 08/25/2020	A20093376(CDC), A20137412(CDC)	Not detected (2X)	A20162464	9/23/2020	Negative	
								No UMPA PCR Results?		A20162465	9/23/2020	Negative	UMPA Detected collected on 08/31 and released 09/03 Last name spelled [redacted] in CRISP Several other negative results in CRISP
	9/4/2020	01-20-248-07486	38.72	37.73	29.37	29.30		No MDH NAAT Results	N/A	A20162466	9/23/2020	Negative	
	9/4/2020	01-20-248-07515	31.83	31.84	28.98	28.37	06/20, 07/25, 8/24/2020	A20071154(Hologic), A20106430(Hologic), A20134048 (CDC) A20050112(Abbott), A20143237(CDC), A20154814 (Hologic),	Not Detected (3X)	A20162467	9/23/2020	Negative	
	9/4/2020	01-20-248-07166	36.69	36.98	29.20	29.00	05/14, 08/31/20, 09/12,09/25/2020	A20168927(Hologic)	Not detected (4X)	A20162468	9/23/2020	Negative	
	9/4/2020	01-20-248-07215	37.80	39.13	28.65	28.73		No MDH NAAT Results	N/A	A20162469	9/23/2020	Negative	
	9/4/2020	01-20-248-07730	38.18	38.57	28.51	28.54		No MDH NAAT Results	N/A	A20162470	9/23/2020	Negative	
	9/4/2020	01-20-248-07680	[redacted]	[redacted]	29.46	29.49		No MDH NAAT Results	N/A	A20162471	9/23/2020	Negative	
	9/4/2020	01-20-248-07597	38.68	37.43	30.33	30.02		No MDH NAAT Results	N/A	A20162472	9/23/2020	Negative	
	9/1/2020	01-20-245-07234	[redacted]	[redacted]	29.07	28.89		No MDH NAAT Results	N/A	A20162473	9/23/2020	Negative	
	9/4/2020	01-20-248-07705	37.80	36.41	29.36	29.27	7/9/2020	A20087759 (Hologic)	Not Detected	A20162474	9/23/2020	Negative	
	9/4/2020	01-20-248-06646	36.06	36.87	31.12	30.09	5/3/2020	A20046568 (CDC)	Not Detected	A20162475	9/23/2020	Positive/Positive	
	9/4/2020	01-20-248-07186	37.69	37.18	32.08	30.54	04/26,06/20, 08/23/2020	A20041422 (CDC), A20141258 (Hologic), A20134056(CDC)	Not Detected 3X	A20164514	9/23/2020	Negative	
	9/4/2020	01-20-248-07229	38.60	38.70	30.52	30.52		No MDH NAAT Results	N/A	A20164515	9/23/2020	Negative	
	9/4/2020	01-20-248-07226	35.64	36.78	28.91	28.58		No MDH NAAT Results	N/A	A20164516	9/23/2020	Negative	
	9/4/2020	01-20-248-06642	36.00	36.04	29.72	29.31		No MDH NAAT Results	N/A	A20164517	9/23/2020	Negative	
	9/4/2020	01-20-248-07196	35.60	35.64	29.70	29.53	04/03, 04/20, 05/16,06/20, 8/23/2020	A20033108 (CDC), A20038447(CDC) A20051715 (CDC),A20071153 (Hologic),A20134058 (CDC)	Not detected (5X)	A20164518	9/23/2020	Negative	
	9/4/2020	**01-20-248-07174**	**33.66**	**33.11**	**31.23**	**31.28**	03/31/20 (CDC), 08/05, 9/4/2020	A20032131(CDC), **A20116216 (CDC),A20147400 (CDC)**	Not detected(2X), but has PCR+ 03/31/2020 at MDH	**A20164519**	**9/23/2020**	Positive/Positive	
								No UMPA PCR Results?		A20164520	9/23/2020	Negative	UMPA Detected collected on 08/31 and released 09/03
	9/4/2020	01-20-248-07455	[redacted]	[redacted]	30.85	30.26	07/11, 8/4/2020	A20089165 (CDC),A20115700 (Abbott)	Not Detected 2X	A20164521	9/23/2020	Negative	
	9/4/2020	01-20-248-07193	35.21	36.25	30.60	30.01	8/23/2020	No MDH NAAT Results	N/A	A20164522	9/23/2020	Negative	
	9/4/2020	01-20-248-06701	35.22	35.94	29.85	29.42	8/4/2020	A2011569 (Abbott)	Not Detected	A20164523	9/23/2020	Negative	
	9/4/2020	01-20-248-07604	37.67	37.74	29.07	29.070		No MDH NAAT Results	N/A	A20164524	9/23/2020	Negative	
	9/4/2020	01-20-248-07200	35.18	35.10	30.75	30.39	06/20, 8/23/2020	A20071156 (Hologic), A20134057 (CDC)	Not Detected (2X)	A20164525	9/23/2020	Negative	
	9/1/2020	01-20-245-07159	37.26	36.63	29.35	29.12		No MDH NAAT Results	N/A	A20164526	9/23/2020	Negative	
	9/4/2020	01-20-248-07718	37.51	38.88	28.43	28.47	5/14/2020	A20050331(CDC)	Not detected	A20164527	9/23/2020	Negative	
	9/4/2020	01-20-248-06690	37.28	38.83	29.80	29.50	9/3/2020	A20146783 (Hologic)	Not detected	A20164528	9/23/2020	Negative	
	9/4/2020	01-20-248-07204	36.35	36.07	31.35	30.51	5/22/, 06/20, 07/16, 08/03, 08/23/2020	A20054397 (CDC), A20071157(Hologic), A20096492 (CDC), A20113776 (CDC), A20134060 (CDC)	Not Detected (5X)	A20164529	9/23/2020	Negative	
	9/4/2020	01-20-248-07209	36.05	35.62	29.10	28.88	8/29/2020	A20141257 (CDC)	Not detected	A20164530	9/23/2020	Negative	
	9/4/2020	**01-20-248-07222**	**36.72**	**36.04**	**30.36**	**30.18**		**No MDH NAAT Results**	**N/A**	**A20164531**	9/23/2020	Positive/**Negative**	previous positives in CRISP, negative result 08/21
	9/4/2020	01-20-248-06662	35.45	35.16	29.80	29.52	5/13/2020	A20049992 (CDC)	Not Detected	A20164532	9/23/2020	Negative	
	9/4/2020	01-20-248-07341	38.08	37.89	29.92	29.82		**No MDH NAAT Results**	N/A	A20164533	9/23/2020	Positive/Positive	Note: has second positive collected 09/21 and tested by UMPA CDC assay
	9/4/2020	01-20-248-07137	37.53	38.61	29.87	29.62	06/22, 8/23/2020	A20071585(Abbott) , A20154059(CDC)	Not Detected (2X)	A20164534	9/23/2020	Negative	

Attachment 22

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

UMPA Case clusters Investigations

1 message

Yvette C. Washington -MDH- <yvette.washington@maryland.gov> Fri, Oct 2, 2020 at 8:59 AM
To: Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Dr. Myers,

I tested all recent negative samples (collected 9/22-9/23) from [redacted] & [redacted] for SARS-CoV-2 IgG antibodies on the DiaSorin assay. All specimens tested negative except A20164524 ([redacted] from [redacted]). There is no previous testing in StarLIMS.

Yvette Washington, M.S.
Public Health Laboratory Scientist Supervisor
Division of Virology and Immunology
Maryland Department of Health, Laboratories Administration
1770 Ashland Avenue
Baltimore, MD 21205

443-681-3931

DHMH is committed to customer service. Click here to take the Customer Satisfaction Survey.

Attachment 22

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Re: Updated [redacted] SARSCoV Serology Spreadsheet

1 message

Liore H. Klein -MDH- <liore.klein@maryland.gov> Wed, Sep 30, 2020 at 5:05 PM
To: Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Here you go!

On Wed, Sep 30, 2020 at 4:05 PM Robert Myers -MDH- <robert.myers-phd@maryland.gov> wrote:
Everyone,

I up-dated the [redacted] /UMPA Lab PCR (+) SARS-CoV-2 IgG serology spreadsheet with additional serology results that Yvette provided late last week. It appears that we have serology tested 24 of 30 PCR (+) patients from the facility and found only 2 of the 24 to be IgG positive . David can someone from your group fill in the dates of collection for the UMPA PCR specimens? Also I noticed 4 new names on the second list of serology results that Yvette provided last week(see non-highlighted name on the smaller table). Can someone confirm who they and if UPMA PCR results are available for those individuals ?

Best regards,

Bob

Robert A. Myers PhD
Director
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, Maryland 21205

Phone: 443-681-3800 Fax: 443-681-4501

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--
Liore Klein, MSPH (she/her/hers)
Sr. Epidemiologist
Lab-Epidemiology Coordinator, ARLN Program
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, MD 21205
Phone: 443-681-3945
Email: liore.klein@maryland.gov

Attachment 23

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[redacted]**UMPA SARS-CoV-2 PCR (+) Serolgy Results (09-30-20).xlsx**
18K

Attachment 23

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

Updated [redacted] SARSCoV Serology Spreadsheet

1 message

Robert Myers -MDH- <robert.myers-phd@maryland.gov> Wed, Sep 30, 2020 at 4:06 PM
To: "Liore H. Klein -MDH-" <liore.klein@maryland.gov>, David Blythe -MDH- <david.blythe@maryland.gov>, "Yvette C. Washington -MDH-" <yvette.washington@maryland.gov>

Everyone,

I up-dated the [redacted] /UMPA Lab PCR (+) SARS-CoV-2 IgG serology spreadsheet with additional serology results that Yvette provided late last week. It appears that we have serology tested 24 of 30 PCR (+) patients from the facility and found only 2 of the 24 to be IgG positive . David can someone from your group fill in the dates of collection for the UMPA PCR specimens? Also I noticed 4 new names on the second list of serology results that Yvette provided last week(see non-highlighted name on the smaller table). Can someone confirm who they and if UPMA PCR results are available for those individuals ?

Best regards,

Bob

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[redacted] **UMPA SARS-CoV-2 PCR (+) Serolgy Results (09-30-20).xlsx**
18K

Attachment 23

[redacted] Asymptomatic COVID-19 Cluster Investigation

UMPA Lab SARS-COV-2 PCR Results Lab Genomics Lab Gun COVID-19 PCR Kit						MDH Lab SARS-CoV-2 NAAT(Hologic TMA) and Abbott(Diasorin) IgG Serology Results					
PCR Swab Collection date	accession	e gene	RdRP	MMS2 E	Ms2	PCR Swab Collection date	MDH Lab Results (Hologic COVID-19 TMA)	Serology Collection Date	09/11/20 SARS-CoV-2 Antibody Results	Serology Collection Date	09/23/20 SARS-CoV-2 Antibody Results
Unknown	7340	37.4	39.95	28.5	28.7	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7290	36.9	37.3	29.6	29.7	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7160	36.4	38.3	29.1	29.2	09/09/2020	Neg.	9/11/2020	Pos (+)		
Unknown	7664	32.1	31.5	29.0	29.0	09/09/2020	Neg.	9/11/2020	Negative		
Unknown	7643	30.1	30.1	28.8	28.8	09/09/2020	Neg.		Not received?		
Unknown	7611	36.0	35.2	20.6	20.7		Not received		Not received?		
Unknown	7597	36.3	35.6	28.8	28.6	09/08/2020	Neg.		Not received?	9/22/2020	Negative
Unknown	7570	36.9	36.9	28.6	28.7	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7559	38.6	37	28.5	28.5	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7551	n/a	39.9	29.5	29.5	09/10/2020	Neg.		Not received?		
Unknown	7475	36.8	35.2	28.5	28.5	09/09/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7462	39.0	37.3	28.8	29	09/10/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7449	29.5	29.6	27.7	27.7	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7439	36.7	36	27.6	28	09/08/2020	Neg	9/11/2020	Negative	9/22/2020	Negative
Unknown	7424	35.6	35.1	28.4	28.3	09/08/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7415	35.3	34.7	28.6	28.4	09/08/2020	Neg	9/11/2020	Negative	9/22/2020	Negative
Unknown	7408	35.9	35.2	28.5	28.5	09/09/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7402	36.9	35.5	28	28	09/09/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7392	37.8	36.6	28.7	28.9		Not received		Not received?		
Unknown	7382	35.7	35.4	28.1	28		Not received		Not received?	9/22/2020	Negative
Unknown	7372	37.2	38.6	28.6	28.7	09/09/2020	Neg.		Not received?	9/22/2020	Negative
Unknown	7363	36.3	35.7	28.8	28.8	09/09/2020	Neg.		Not received?	9/22/2020	Negative
Unknown	7354	35.8	35.1	27.9	27.7	09/08/2020	Neg.		Not received?	9/22/2020	Negative
Unknown	7348	40.7	38.0	29.4	29.6	09/09/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7334	37.2	36.8	30.8	30.7	09/09/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative
Unknown	7170	42.3	39.5	28.8	28.6		Not received		Not received?		
Unknown	7152	37.6	38.6	28.6	28.8	09/09/2020	Neg.		Not received?		
Unknown	7157	39.9	39.4	28.4	28.3	09/08/2020	Neg.	9/11/2020	Pos.(+)		
Unknown	8152	n/a	39.8	29.7	29.7	09/10/2020	Neg.		Not received?	9/22/2020	Negative
Unknown	8112	39.2	39.2	29.4	29.3	09/10/2020	Neg.	9/11/2020	Negative	9/22/2020	Negative

Patient Name	Serology Collection Date	SARS-CoV-2 Antibody Results	
[redacted]	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	Only CDC-ish pos 09/09 by UMPA, reported 09/21
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	LabGun pos 09/01
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	
	9/22/2020	Negative	Only CDC-ish pos 09/09 by UMPA, reported 09/21
	9/22/2020	Negative	LabGun pos 09/01
	9/22/2020	Negative	

Maryland

Robert Myers -MDH- <robert.myers-phd@maryland.gov>

MDH Lab: LabGenomics LabGun™ PCR Kit Verification Study

1 message

Robert Myers -MDH- <robert.myers-phd@maryland.gov>
To: Jake Whitaker -MDH- <jake.whitaker1@maryland.gov>

Mon, Jun 8, 2020 at 7:19 PM

Jake,

Attached verification study was performed MDH Laboratory to evaluate the limit of detection, accuracy, precision, reproducibility, and clinical sensitivity/specificity of FDA Emergency Use Authorized (EUA) LabGenomics LabGun™ COVID-19 RT-PCR Kit (LabGun PCR) in direct comparison to the CDC FDA EUA 2019 -Novel Coronavirus (2019-n-CoV) Real-time RT-PCR(CDC PCR) that has been routinely performed at the MDH Laboratory. Both assays were performed per procedures specified in FDA EUA "The Instructions Use" for each assay using manual nucleic acid extraction methods per the manufacturer's instructions.

Our study indicated that the performance of LabGun PCR was nearly comparable to that of CDC PCR assay. The LabGun™ COVID-19 RT-PCR assay demonstrated a slightly narrower range ($2x10^6$ – 2,070 genome copies/mL) of detection compared to the CDC PCR ($2 x10^6$ – 207 genome copies/mL). The LabGun PCR assay consistently detected 2,070 SARS CoV-2 genomes per ml vs. 207 SARS CoV-2 genomes per ml with the CDC PCR assay. The LabGun™ COVID-19 RT-PCR showed to be both reproducible and precise. When testing the 53 clinical specimens, LabGun™ COVID-19 RT-PCR Assay testing method displayed 95.5 % clinical sensitivity and 100% specificity in comparison to CDC Coronavirus (2019-n-CoV) Real-time RT -PCR

No attempts were made to perform bridging studies from the specified manual extractions method to higher throughput automated nucleic acid extraction platforms.

Please contact me if you have any questions or concerns about this performance verification study.

Best regards,

Bob

Robert A. Myers PhD
Director
Maryland Department of Health Laboratories Administration
1770 Ashland Avenue
Baltimore, Maryland 21205

Phone: 443-681-3800 Fax: 443-681-4501

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MDH Laboratory LabGun Performance Verification (06-2020).pdf

Attachment 25

539K

Attachment 25

Verification of LabGun™ COVID-19 RT-PCR Assay for the testing of 2019 Novel Coronavirus (2019-nCoV)

Background:

An outbreak of respiratory disease now designated "Coronavirus Disease 2019" (COVID-19) caused by a newly discovered novel coronavirus (SARS-CoV-2) was first detected in Wuhan City, Hubei Province, China in December of 2019. Cases of COVID-I9 were soon identified globally, resulting in significant impacts on healthcare systems and subsequent societal disruptions. The World Health Organization (WHO) has designated COVID-19 as a pandemic public health threat. Nucleic acid amplification tests that can quickly and accurately detect SARS-CoV-2 viral RNA gene targets in symptomaticCOVID-19 patients are vitally important tools needed to manage the COVID-19 pandemic effectively. Accurate results generated by these tests are used to promptly identify acutely infected patients, guiding appropriate clinical management and infection control practices for healthcare providers. Results of SARS-CoV-2 RNA testing can also provide epidemiologists with valuable insights into the dynamics of COVID-19 disease transmissions during case/contact and outbreak investigations leading to the implementation of appropriate community mitigation efforts.

The LabGun™ COVID-19 RT-PCR Kit is a real-time reverse transcription-polymerase chain reaction (rRT-PCR) test. The test was designed to amplify and detect nucleotide sequences encoding RNA dependent RNA polymerase and Envelope (E-Sarbecovirus specific) genes of the SARS-CoV-2 in respiratory tract specimens collected from infected symptomatic COVID-19 patients. A verification study was performed at Maryland Department of Health (MDH) Laboratory to evaluate the limit of detection, accuracy, precision, reproducibility, and clinical sensitivity/specificity of FDA Emergency Use Authorized (EUA) LabGun™ COVID-19 RT-PCR Kit (LabGun PCR) as a testing platform for the detection of SARS-CoV-2 RNA and to access the performance of the LabGun assay in direct comparison to the CDC FDA EUA 2019 - Novel Coronavirus (2019-n-CoV) Real-time RT-PCR(CDC PCR) that has been routinely performed at the MDH Laboratory. Both assays were performed per procedures specified in FDA EUA "The Instructions Use" for each assay using manual nucleic acid extraction methods per the manufacturer's instructions (LabGun PCR: QIAamp Viral RNA Mini kit QIAGEN cat. No. 52904 and CDC PCR: QIAmp DSP Viral RNA MiniKit DSP kit QIAGEN cat. No. 61904). The PCR reactions were performed per the manufacturer's thermocycling conditions using Thermo Fisher ABI 7500 Dx instruments run in the Standard mode, and results were analyzed using available ABI software (version 1.4) and interpreted per the manufacturer's FDA approved procedure.

Attachment 25

Validation/Verification Summary

Limit of Detection (Analytical Sensitivity) and PCR Efficiency

A quantitated preparation (2.07 x 10^9 genomes/mL or 2.08 x10^5 $TCID_{50}$/mL) of the SARS CoV-2 virus was obtained from the National Institutes of Health (NIH) via Biodefense and Emerging Infections Research Resources Repository (BEI). This virus stock was serially diluted in pooled SARS-CoV-2 RNA negative remnant clinical specimens (Nasopharyngeal [NP] swabs collected in Viral Transport Media [VTM)]) to produce concentrations of the virus that ranged from 2x10^6 to 2 genomes/ml.

To determine and compare each assay's limit of detection (LOD) and PCR efficiency, each dilution was extracted with both the QIAamp DSP Viral RNA Mini Kit (QIAGEN, cat#61904; for CDC-PCR) and the QIAamp Viral RNA Mini kit (QIAGEN, cat# 17013794; for LabGun-PCR). RNA isolations were analyzed once using the CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel assay (CDC PCR) and three or more times using the LabGun™ COVID-19 RT-PCR Assay (LabGun PCR).The resulting Ct values or Ct value averages were plotted against the sample starting concentration (SARS-CoV-2 genomes/mL), in a log scale, to generate a standard curve for each gene target. The slope of each curve was then used to calculate PCR Efficiency(E) for each assay using the equation $E = -1+10^{(-1/slope)}$.

Table: 1 The Ct values of Limit of Detection (LOD) assay

SARS-CoV-2 Particles spiked into VTM Negative NP Swab Matrix (genomes/mL)	CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel (Ct values)		LabGun™ COVID-19 RT-PCR (Ct values)	
	N1 Gene Target	N2 Gene Target	RdRP Gene Target (Avg.)	E Gene Target (Avg.)
2070000	21.3	21.3	22.5	22.8
207000	24.8	25.8	26.9	25.3
20700	27.7	28.8	31.7	30.5
2070	31.1	32.2	35.9	34.8
207	35.3	36.6	40.4	38.5
20.7	Undetected	Undetected	41.2	42.0
2.07	Undetected	Undetected	Undetected	Undetected
0	Undetected	Undetected	Undetected	Undetected

Limit of detection, or dilution with the lowest concentration to consistently produce a positive result, was 2,070 genomes/ml for LabGun PCR. Although 2 of 3 PCR replicates produced positive results (Ct≤40.0) at 207 genomes for the E gene target of the LabGun assay, positive results (Ct≤40.0) for RdRP gene target of this assay were only detected in one of PCR replicates at this dilution.

Attachment 25

Table 2: The Ct values of Limit of Detection (LOD) Replicate Testing

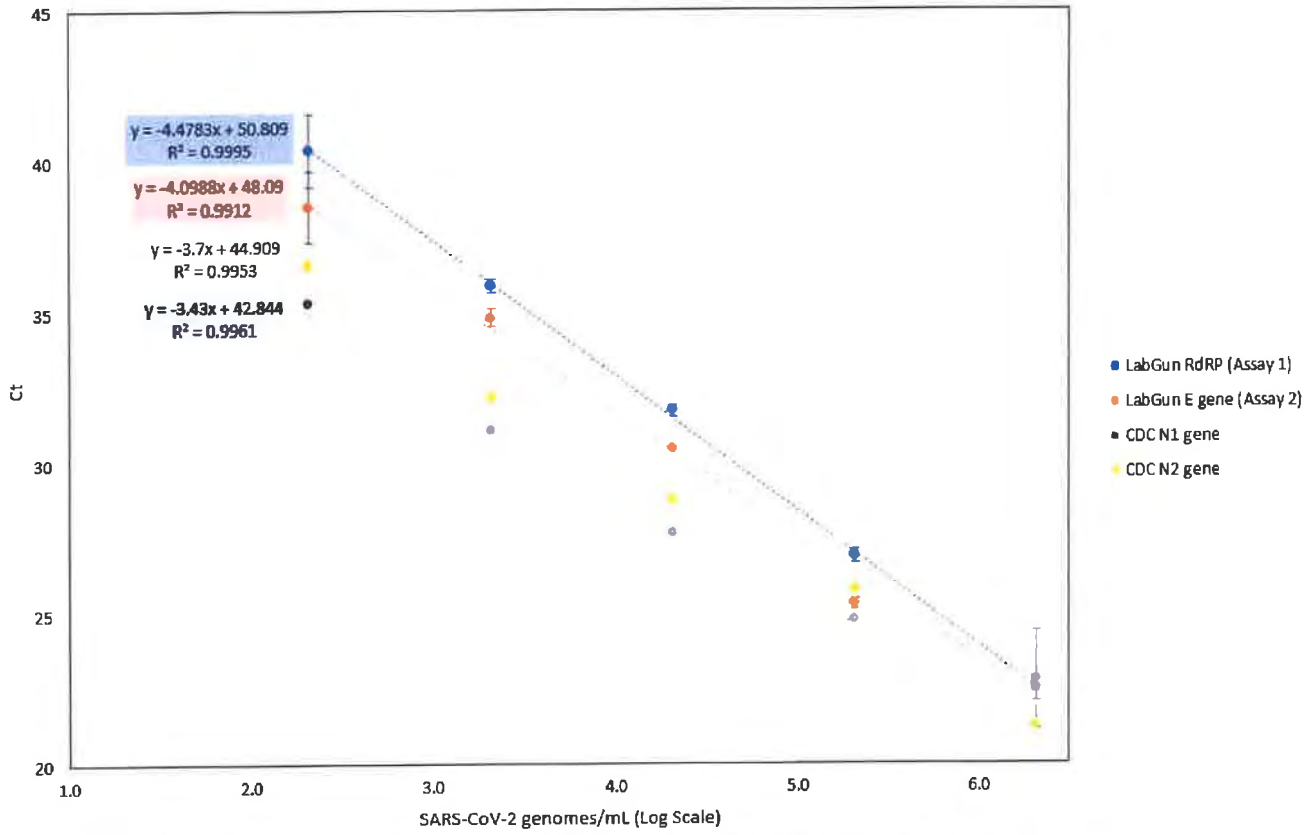
SARS-CoV-2 cells in a VTM Negative NP Swab Matrix (genomes/mL)	LabGun™ COVID-19 RT-PCR	
	RdRP Gene Target (Ct)	E Gene Target (Ct)
2.1E+03	35.7, 35.8, 35.8	34.5, 35.0, 35.2
2.1E+02	42.1, 40.2, 38.5	Undet., 39.5, 37.6
2.1E+01	40.4, 43.1, 42.3	42.6, Undet., Undet.
2.1E+00	Undetected	Undetected
0.0E+00	Undetected	Undetected

In comparsion, when limit of detection experiments were previously performed using the CDC 2019-nCoV Real-Time RT-PCR Diagnostic Panel assay (CDC PCR) with the same quantitated virus stock it consistently demonstrated reactivity for both the N1 and N2 targets at 207 gemone copies/ml and occasional reactivity of the N1 primer/probe set at 20.7 genome copies/ml indicating that the CDC PCR assay has slightly better analytical sensitivity than the Lab Gun PCR.

Attachment 25

PCR Efficiencies:

Chart1: LabGun PCR and CDC PCR Primer Probe Set Efficiencies



Assay	Slope	Efficiency
CDC N1 Gene	-3.4	96.84%
CDC N2 Gene	-3.7	86.32%
Lab Gun RdRp Gene	-4.5	66.81%
Lab Gun E Gene	-4.1	75.35%

The LabGun RdRP gene assay and the LabGun E gene assay displayed a 66.81% and 75.35% PCR efficiency, respectively. While the CDC PCR produced an efficiency of 95.68% for the N1 assay and an efficiency of 86.32% for the N2 assay.

We speculate that LabGun PCR is less efficient when analyzing dilutions with lower SARS-CoV-2 concentrations due to competition between the much more abundant internal control molecules and the lesser number of SARS-CoV-2 RNA molecules. Lowering the concentration of the internal control, that is spiked in during extraction, or further optimizing primer concentrations during PCR analysis, could increase the PCR efficiency in samples with lower concentrations of SARS-CoV-2, to ultimately increasing assay sensitivity. The specimen input volume per PCR reaction is higher in the Lab Gun Assay (11.6µl/reaction) in comparison to the

input volume in the CDC PCR assay (5.0µl/reaction) which could help compensate for the reduced analytical sensitivity of the LabGun assay when testing specimens containing lower viral loads of SARSCoV-2 (See below: Clinical Sensitivity). The LabGun PCR uses this internal control (MS2 Bacteriophage) in each PCR reaction to control for the quality of nucleic acid extraction and for possible inhibitors of the PCR reactions present in the patient specimens that could lead to false negative results. In contrast the CDC PCR assay use an additional primer/probe set to control to identify a human "house-keeping gene" (RNase P gene-RP) that is present in every human cell to control for the extraction quality and possible PCR inhibitors. Testing for this house- keeping gene (RP) also assures that a specimen has been collected from the patient and a tube of VTM without a collected swab has not be submitted which could result in a false negative result.

Reproducibility & Precision (Inter-run and Intra-run)

Table 3: Intra-Run Reproducibility:

Intra-Run Reproducibility: Replicate SARSCoV-2 RNA Positive and Negative Clinical Specimens						
Lab Gun SARS-CoV-2 gene target	**Run#1 Scientist (A) 05/20/20**		**Run# 2 Scientist (B) 05/19/20**		**Run#3 Scientist (C) 05/20/20**	
	Positive Sample	**Negative Sample**	**Positive Sample**	**Negative Sample**	**Positive Sample**	**Negative Sample**
RdRP	22.5	Und.	22.9	Und.	23.1	Und.
	22.5	Und.	22.1	Und.	22.7	Und.*
Intra-assay mean	22.5	N/A	22.5	N/A	22.9	N/A
Intra-assay range	22.5	N/A	(22.9-22.1)	N/A	(23.1-22.7)	N/A
E	21.8	Und.	22.1	Und.	22.0	Und.
	21.8	Und.	22.1	Und.*	22.0	Und.*
Intra-assay mean	21.8	N/A	22.1	N/A	22.0	N/A
Intra-assay range	21.8	N/A	22.1	N/A	22.0	N/A

Und. - Undetectable

**Note: The result of this samples during the original extraction was suggestive of a potential cross-contamination of SARS-CoV-2 RNA with weak signals. However, when the same sample was re-extracted and re-tested showed non-reactive (05/29/2020).*

The Intra-run (within run) reproducibility of the assay LabGun™ COVID-19 RT-PCR was assessed by two replicates of a previously identified SARSCoV-2 RNA positive and negative clinical samples within the same run by 3 different scientists. The results were 100% reproducible and highly precise (< 1 Ct variations) when the replicates of a positive specimen were tested.

Table 4: Inter-Run Reproducibility

Inter-Run Reproducibility at the limit of detection (2070 genomic RNA copies/ml)						
Lab Gun SARS-CoV-2 gene target	**Run#1 Scientist (A) 05/20/20**	**Run# 2 Scientist (B) 05/19/20**	**Run# 3 Scientist (C) 05/21/20**	**Inter Assay Mean**	**Std. Deviation**	**Range**
RdRP	35.8	35.7	35.8	35.77	0.06	(35.7-35.8)
E	35.2	34.5	35.2	34.96	0.40	(35.2-34.5)
Inter-Run Reproducibility of a SARS-CoV-2 RNA (+) and SARS-CoV-2 RNA (-) Clinical specimens						
Specimen type/Lab Gun SARS-CoV-2 gene target	**Run #1 Scientist :(A) 05/20/20**	**Run # 2 Scientist :(B) 05/19/20**	**Run #3 Scientist :(C) 05/20/20**	**Inter Assay Mean**	**Std. Deviation**	**Range**
Positive Specimen: RdRP	22.5 22.5	22.9 22.1	23.1 22.7	22.8 22.4	0.31	(22.5-23.1)
Positive Specimen: E	21.8 21.8	22.1 22.1	22 22	22 22	0.15	(21.8-22.1)
Negative Specimen: RdRP	Und. Und.	Und. Und.	Und. Und.	N/A	N/A	N/A
Negative Specimen: E	Und. Und.	Und. Und.*	Und. Und.	N/A	N/A	N/A

Und. - Undetectable

**Note: The negative specimen initially demonstrated a negative but weak signal (Ct 42.1), retesting of this specimen resulted in an undetected (Und.) >45 0 Ct finding*

The Inter-run (between runs) reproducibility of the assay LabGun™ COVID-19 RT-PCR was assessed by repeatedly testing three replicates of one spiked NP/VTM sample containing 2,070 genomes copies/mL of SARS-CoV-2 virus and a positive and a negative clinical specimen by three scientists on three separate days. The results were 100% reproducible and highly precise (<1 Ct variations) when the replicates were tested.

Attachment 25

Clinical Sensitivity and Clinical Specificity

A panel of 53 remnant frozen (-80°C) nasopharyngeal swab specimens collected in VTM that had been previously submitted to MDH Laboratory for SARSCoV-2 RNA testing were tested again in parallel in the CDC FDA EUA 2019-Novel Coronavirus (2019-n-CoV) Real-time RT–PCR (CDC PCR) assay and the LabGun™ COVID-19 RT-PCR (LabGun PCR) to determine clinical sensitivity/specificity of the LabGun PCR assay. These specimens were previously determined to be either SARS-CoV-2 RNA positive or SARS-CoV-2 RNA negative using the CDC PCR assay. Results of clinical specimens on the LabGun PCR were then classified as true positive, true negative (TN), false positive (FP), or false negative (FP) when benchmarked to the standard CDC PCR method (Table 5). The assay sensitivity was estimated by dividing the number of true-positives by the sum of true-positives and false-negatives (TPs/(TPs+FNs)). The assay specificity was estimated by dividing the number of true negatives by the sum of true-negatives and false-positives (TNs/(TNs+FPs)).

The LabGun™ COVID-19 RT-PCR displayed a 95.5% sensitivity and 100% specificity when identifying 42 true panel positives, 2 false panel negatives, and 9 true panel negatives (See attached data table Appendix A).

Table 5: LabGun™ COVID-19 RT-PCR Clinical Sensitivity and Specificity

LabGun PCR	**CDC PCR** Positive	Negative
Positive	42	0
Negative	2	9
Clinical Sensitivity	**95.50%**	
Clinical Specificity	**100%**	

Attachment 25

Conclusion:

In this initial study performed at the MDH Laboratory we characterized the performance of LabGun™ COVID-19 RT-PCR Assay for the detection of nCOV-19 from nasopharyngeal swabs. The LabGun™ COVID-19 RT-PCR Assay demonstrated a slightly narrower range ($2x10^6$ – 2,070 genome copies/mL) of detection compared to the CDC Coronavirus (2019-nCoV) Real-time RT –PCR ($2 x10^6$ – 207 genome copies/mL). The LabGun PCR assay consistantly detected 2,070 SARS CoV-2 genomes per ml vs. 207 SARS CoV-2 genomes per ml with the CDC PCR assay. The LabGun™ COVID-19 RT-PCR showed to be both reproducible and precise. When testing the 53 clinical specimens, LabGun™ COVID-19 RT-PCR Assay testing method displayed a 95.5 % clinical sensitivity and a 100% specificity in comparison to CDC Coronavirus (2019-n-CoV) Real-time RT -PCR.

Prepared by Dr. Heather Goux _____ Date 6/5/2020
Developmental Scientist I, Division of Molecular Biology

Reviewed by Dr. Murugan Subbiah _____ Date 6/5/2020
Principal Developmental Scientist, Division of Molecular Biology

Approved by Robert Myers, PhD _____ Date 06/05/2020
Director, Laboratories Administration

Attachment 25

Appendix A:

MDH Laboratories: LabGun™COVID-19 RT-PCR(LabGun PCR) Performance Verification (Clinical Specificity and Sensitivity Study)

Study Sample#	Tech	Date of PCR	LabGun COVID-19 Real-time PCR Results			CDC 2019 nCoV Real-time PCR Results			Original CDC 2019nCoV PCR Results	
			RdRP:Ct Value (≤ 40 positive)	E: Ct Value (≤40 positive)	Test Interpretation	N1: Ct Value (≤ 40 positive)	N2: Value (<40 positive)	Test Interpretation	N1- Ct Value (≤40 positive)	N2- Ct Value (≤40 positive)
1	A	5/20/2020	16.7	16.0	Positive	17.7	17.9	Positive	16.9	17
2	B	5/27/2020	18.6	18.5	Positive	18.2	18.3	Positive	19.5	20
3	B	5/19/2020	18.1	17.1	Positive	16.5	17.7	Positive	19.9	20.2
4	C	5/28/2020	20.3	20.7	Positive	20	20.1	Positive	20.3	20.2
5	C	5/28/2020	22.4	22.9	Positive	23.0	23.0	Positive	22.2	22.2
6	A	5/20/2020	21.8	21.3	Positive	22.2	23.1	Positive	22.5	22.7
7	C	5/28/2020	20.7	20.5	Positive	23.4	23.5	Positive	23.1	21.9
8	C	5/28/2020	23.1	23.3	Positive	22.5	23.3	Positive	23.3	23.4
9	B	5/19/2020	24.0	23.0	Positive	21.4	23.0	Positive	24.1	24.4
10	A	5/20/2020	25.3	24.1	Positive	23.5	24.5	Positive	24.4	23.8
11	B	5/19/2020	24.6	23.1	Positive	22.7	22.2	Positive	25.0	24.6
12	C	5/28/2020	31.7	29.7	Positive	26.1	27.3	Positive	26.2	26.9
13	B	5/19/2020	28.1	26.9	Positive	24.9	22.9	Positive	26.4	26.6
14	B	5/19/2020	25.7	24.3	Positive	23.4	24.1	Positive	26.8	27.3
15	C	5/28/2020	26.6	26.2	Positive	27.4	27.8	Positive	27.1	27.1
16	B	5/27/2020	26.0	25.3	Positive	25.0	25.1	Positive	27.2	26.5
17	B	5/27/2020	29.3	28.5	Positive	26.2	27.0	Positive	27.4	26.3
18	A	5/20/2020	30.3	29.5	Positive	27.2	27.9	Positive	27.4	27.6
19	C	5/28/2020	28.8	28.1	Positive	27.7	28.7	Positive	27.5	26.7
20	C	5/28/2020	30.3	29.2	Positive	26.6	27.3	Positive	27.9	28.4
21	C	5/28/2020	26.5	26.0	Positive	25.7	26.4	Positive	28.6	28.7
22	A	5/20/2020	32.7	31.5	Positive	29.6	29.8	Positive	28.7	29
23	A	5/20/2020	29.8	29.3	Positive	28.4	29.1	Positive	28.8	29.2
24	B	5/27/2020	30.0	29.0	Positive	27.3	27.7	Positive	28.8	29.9
25	B	5/27/2020	30.9	30.2	Positive	27.1	28.2	Positive	29	28.5
26	B	5/19/2020	28.9	27.3	Positive	25.4	26.3	Positive	29.4	29.7
27	B	5/19/2020	32.3	30.8	Positive	28.2	28.9	Positive	30.9	32.3
28	B	5/27/2020	34.4	33.4	Positive	30.1	30.9	Positive	31.0	31.9
29	B	5/19/2020	34.4	32.7	Positive	31.1	33.3	Positive	31.2	32.6
30	A	5/20/2020	34.6	35.0	Positive	31.2	33.7	Positive	31.9	33.3
31	C	5/28/2020	32.3	31.4	Positive	32.4	33.1	Positive	32.3	31.4
32	C	5/28/2020	34.3	33.1	Positive	29.6	30.6	Positive	32.5	33.1
33	B	5/19/2020	33.7	31.8	Positive	29.6	30.3	Positive	33.2	34.4
34	C	5/28/2020	39.3	38.2	Positive	36.3	37.5	Positive	33.3	32.2
35	B	5/27/2020	35.2	34.0	Positive	31.8	32.2	Positive	33.9	33.1
36	B	5/27/2020	38.5	37.8	Positive	33.9	34.6	Positive	34.5	35.5
37	B	5/27/2020	36.2	34.4	Positive	31.1	32.4	Positive	34.7	34.5
38	C	5/28/2020	40.7	40.4	Negative	35	36.6	Positive	36.4	36.5
39	A/C	5/28/29/2020	38.1	38.8	Positive	37.1	36.2	Positive	35.7	35.8
40	C	5/28/2020	38.6	37.0	Positive	36.3	35.4	Positive	35.8	38
41	B	5/29/2020	36.9	36.5	Positive	35.0	39.97	Positive	35.9	38.3
42	A	5/20/2020	39.1	37.5	Positive	34.0	36.6	Positive	36.1	36.3
43	C	5/28/2020	38.0	37.0	Positive	36.3	37.0	Positive	37.2	38.2
44	C	5/28/2020	41.0	40.1	Negative	36.1	39.0	Positive	37.8	39.6
45	B	5/19/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
46	B	5/19/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
47	B	5/27/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
48	B	5/27/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
49	C	5/28/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
50	C	5/28/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
51	C	5/28/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
52	A	5/20/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected
53	A	5/20/2020	Undected	Undected	Negative	Undected	Undected	Negative	Undected	Undected

Original CDC 2019 NCoV PCR Results	
Key:	Strong PCR Positive (Ct≤30.0)
	Moderate PCR Positive (Ct >30 to ≤35)
	Weak PCR Positive (Ct >35 to ≤40)
	PCR: Negative

Maryland

Rodney E. Hargraves -MDH- <rodney.hargraves@maryland.gov>

LABGun COVID Test Kit

5 messages

Rodney E. Hargraves -MDH- <rodney.hargraves@maryland.gov> Tue, May 26, 2020 at 10:30 AM
To: "Humphrys, Mike" <MHumphrys@som.umaryland.edu>
Cc: Heather Goux -MDH- <heather.goux@maryland.gov>, Robert Myers -DHMH- <robert.myers-phd@maryland.gov>

Mike: Good Morning, would you have an additional kit we could use for some high priority testing today? We would arrange to pick up today, if available.

Regards, Rod

--
Rodney E. Hargraves, MBA
Deputy Director of Administrative and Support Services

Maryland Department of Health- Laboratories Administration
1770 Ashland Ave.
Baltimore, MD 21205
office ph: 443-681-3802
fax: 443-681-4501
email: rodney.hargraves@maryland.gov
DHMH is committed to customer service. Click here to take the Customer Satisfaction Survey.

Humphrys, Mike <MHumphrys@som.umaryland.edu> Tue, May 26, 2020 at 11:02 AM
To: "Rodney E. Hargraves -MDH-" <rodney.hargraves@maryland.gov>
Cc: Heather Goux -MDH- <heather.goux@maryland.gov>, Robert Myers -DHMH- <robert.myers-phd@maryland.gov>

Absolutely, just let me know how many kits you need and you can pick them up any time.

Mike
On May 26, 2020, 10:31 AM -0400, Rodney E. Hargraves -MDH- <rodney.hargraves@maryland.gov>, wrote:

> CAUTION: This message originated from a non UMB, UMSOM, FPI, or UMMS email system. Whether the sender is known or not known, hover over any links before clicking and use caution opening attachments.
>
> [Quoted text hidden]
>

Rodney E. Hargraves -MDH- <rodney.hargraves@maryland.gov> Tue, May 26, 2020 at 11:14 AM
To: "Humphrys, Mike" <MHumphrys@som.umaryland.edu>

is 12:00 ok?
[Quoted text hidden]

Humphrys, Mike <MHumphrys@som.umaryland.edu> Tue, May 26, 2020 at 11:15 AM
To: "Rodney E. Hargraves -MDH-" <rodney.hargraves@maryland.gov>

Sure, just one kit of 100 reactions?

Mike

Attachment 27

[Quoted text hidden]

Rodney E. Hargraves -MDH- <rodney.hargraves@maryland.gov> Tue, May 26, 2020 at 11:26 AM
To: "Humphrys, Mike" <MHumphrys@som.umaryland.edu>

2 if you can spare.
[Quoted text hidden]

Attachment 27

ATTACHMENT B

- **Warren to feds: Why did you take Massachusetts' medical supplies?**
  - The Boston Globe, Matt Stout Globe Staff,Updated March 31, 2020
- **Hospitals say feds are seizing masks and other coronavirus supplies without a word**
  - Los Angeles Times, APRIL 7, 2020 2:07 PM PT
- **"Either be in or out": Feds swooped in on Colorado's ventilator order, Polis says.**
  - The Denver Post, By SAM TABACHNIK, PUBLISHED: April 4, 2020 at 12:12 p.m
- **A 'War' For Medical Supplies: States Say FEMA Wins By Poaching Orders**
  - NPR, April 15, 20204:18 PM ET, Heard on All Things Considered
- **Officials in at least 6 states are accusing the federal government of quietly diverting their orders for coronavirus medical equipment**
  - Business Insider, Mia Jankowicz Apr 8, 2020, 7:58 AM

APPENDIX D

TOWSON.EDU

TOWSON UNIVERSITY

See Appendix A for Auditor's Comments regarding response

Office of the
General Counsel
8000 York Road
Towson, MD 21252

March 26, 2021

Mr. Gregory A. Hook, CPA
Legislative Auditor
Department of Legislative Services
Office of Legislative Audits
301 West Preston Street, Room 1202
Baltimore, MD 21201
Via: email at Response@ola.state.md.us

Re: Response to Special Review of Procurement of Certain of COVID Tests

Dear Mr. Hook:

On behalf of Towson University, I would like to thank you for this opportunity to review and comment on the March 2021 draft Report of the Office of Legislative Audits ("OLA"), Department of Legislative Services ("DLS") entitled "Review of Procurement of Certain COVID Tests."

For purposes of clarity and context, the University respectfully requests that it be noted in the final Report that neither Towson University nor any of its employees had any role related to the procurement and use of any COVID-19 ("COVID") tests from LabGenomics, or any other COVID test manufacturer. As part of its COVID testing program for students, faculty, and staff, the University, like many other Universities within the University System of Maryland ("USM"), contracted with University of Maryland Pathology Associates ("UMPA"),[1] a not-for-profit entity, to provide COVID testing services.

The University's Agreement with UMPA, which is attached hereto, sets forth the specific duties performed by UMPA as well as the scope of the contractual relationship. This Agreement was not requested from the University by DLS during its investigation. As set forth in the Agreement, the University's role regarding COVID testing is generally limited to specimen collection on swabs (collection kits) received from UMPA, and receipt of final testing results from UMPA after UMPA had analyzed the collected specimens. (*See* Attachment A to the contract for the list of services provided by UMPA.) Any questions regarding the procurement or use of the specific test kits used should have been directed to UMPA, not the University.

With respect to references in the draft Report surrounding concerns raised with COVID testing results by the former Director of the University Health Center (UHC), the University strongly disagrees with any implied or express assertion in

[1] UMPA is clinical practice group that is not a part of USM, or the University, but is a separate legal entity.

O| 410.704.4003 F 410.704.3205
generalcounsel@towson.edu
www.towson.edu/counsel/

the draft Report that it took inadequate action after receiving a spike in positive COVID test results in August 2020. When the batch of positive test results were received in August 2020 from UMPA, the University did not discourage the former Director from expressing his concerns, but instead encouraged communication and discourse both internally and externally.

As acknowledged in the draft Report, the former Director raised his concerns with not only the University and USM, but also with the Baltimore County Health Department and the State Epidemiologist. Such collaboration with University and USM leadership and with outside state and local health agencies was (and still is) encouraged by the University as proper analysis of testing results is critical in assessing the safety of returning students, faculty and staff to campus, and determining the safest and most scientifically sound next steps.[2] The former Director engaged in such discourse. Moreover, as noted in the draft Report, the University's Medical Staff Supervisor reported that UHC contacted UMPA to determine if the samples from the University during this time period were processed by UMPA using the LabGenomics' tests and was unable to obtain such information from UMPA. There was no indication from UMPA that the batch of positive test results were, in fact, false positives. In light of the testing results received and in consultation with scientific experts, the University made the difficult, but safest decision to move in-person student instruction for the Fall of 2020 to remote learning.

The University also disagrees with the implied or express assertion in the draft Report that the former Director was terminated because he raised concerns regarding the cause of a spike in positive COVID test results at the University in August 2020. As reflected in the draft Report, the Associate Vice President of Human Resources/Chief HR Officer stated that the termination was not the result of a singular event, but a pattern of behavior that was addressed from a performance perspective. Additionally, the former Director's direct supervisor (the Associate Vice President for Student Affairs/Dean of Students) and the Vice President for Student Affairs (who made the ultimate termination decision) reported that the former Director was terminated on October 1, 2020 due to significant performance issues related to a pattern of behaviors that had a direct impact on his overall management of the COVID testing program during the

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[2] The University disagrees with the characterization in the draft Report that the Vice President for Administration and Finance (A&F) denied that there were any concerns with the accuracy of the test results. In his interview with DLS staff, he indicated that he was not aware of such complaints and had no reason to believe the tests were inaccurate. The University also disagrees with the characterization that President Schatzel refused to meet with DLS. DLS sent an inquiry for information concerning procurement of certain COVID Tests. The President referred the investigator to our Vice President for A&F and CFO who oversees procurements. The University has made every effort to respond to all DLS requests for documents and interviews.

July-September 2020 timeframe, and not any alleged disagreement regarding the reasons behind the positive COVID cases the University received in August 2020.

The former Director was responsible for overseeing the collection of specimens, aggregation of the collected material, and reporting the test results received from UMPA. As stated above, neither he nor the University had any role in procurement of the type of test used, analyzing the actual specimens utilizing the COVID test kits in question, or making the actual determination of the accuracy of the test results. Thus, the former Director's termination could not have been, and was not, associated with the procurement and use of the COVID tests that are the focus of the DLS investigation.

For additional clarity and context, it is important to note that the draft Report does not fully explain or discuss the employment status of this "at-will" position, the policies covering the position, or the process for notice termination. As a Regular Exempt Employee, the former Director was subject to both University Policy 07-01.22, and USM Policy VII-1.22. Pursuant to these policies, the University may terminate the employment relationship at any time in accordance with the provisions of the policies. (A copy of both of these policies is attached.)

The performance issues that ultimately led the Vice President of Student Affairs to terminate the former Director took place in July-September of 2020, which occurred after his last written performance evaluation. These performance issues were shared by University leadership in interviews with DLS during its investigation, and provide appropriate justification for the notice termination decision. Pursuant to University policy, the documentation required for a notice termination is a separation form accompanied by a letter of termination, both of which were present in the former Director's personnel file and provided to DLS. While the University can include written performance plans or other documentation in a personnel file should such documentation exist, notice termination requires no such documentation. It is also noteworthy that USM policy does not require written documentation providing the reason for termination of an "at will" employee who was terminated by a period of notice.

The University maintains that it fully complied with both University and USM policy regarding (a) the decision to notice terminate the former Director, and (b) the maintenance of the required documentation of that decision. The University respectfully requests that the final Report reflect that appropriate documentation as required by policy was in the former Director's personnel file and was provided to DLS.

Thank you again for the opportunity to respond to the draft Report. Please feel free to contact me if you have any questions.

Sincerely,

Sara Slaff

Sara Slaff
Vice President of Legal Affairs and General Counsel, Towson University

Enclosures

UNIVERSITY OF MARYLAND PATHOLOGY ASSOCIATES, P.A.
LABORATORY SERVICES AGREEMENT
FOR COVID-19 TESTING SERVICES

THIS LABORATORY SERVICES AGREEMENT ("Agreement") made as of the date of the last signature set forth on the signature page below (the "Effective Date"), between the University of Maryland Pathology Associates, P.A. ("UMPA") and Towson University ("Referring Entity" or "TU") (referred to as each a "Party" and collectively the "Parties").

BACKGROUND

WHEREAS, UMPA is the not-for-profit corporation that operates as a clinical practice group for the Department of Pathology at the University of Maryland School of Medicine and provides, among other services, diagnostic laboratory services. UMPA is a separate legal entity from the University of Maryland School of Medicine.

WHEREAS, Referring Entity is a public agency and instrumentality of the State of Maryland requiring certain COVID-19 related diagnostic laboratory services for its students, faculty, staff and TU affiliates.

WHEREAS, UMPA is qualified and willing to provide such services, as further defined herein, to Referring Entity on the terms and conditions of this Agreement.

WHEREAS, UMPA is a covered entity as defined by the Health Insurance Portability and Accountability Act ("HIPAA") and its implementing regulations.

WHEREAS, Referring Entity is a HIPAA hybrid entity under which Referring Entity partners with the TU Institute for Well-Being (IWB), a HIPAA covered entity when providing services to non-students and operates pursuant to the Family Educational Rights and Privacy Act ("FERPA") when providing services to students, and where all other units and divisions of the Referring Entity are not HIPAA covered entities.

In consideration of the foregoing premises and mutual promises contained herein, and intending to be bound legally hereby, Referring Entity and UMPA agree as follows:

1. **SERVICES.**

   a. UMPA shall provide laboratory services as described in **Attachment A** (the "Services").

   b. Referring Entity shall perform those duties described in **Attachment B** which are necessary for the provision of Services.

2. **TERM AND TERMINATION.** This Agreement shall commence on the Effective Date and shall continue for a period of one (1) year unless terminated earlier as set forth in this Agreement (the "Initial Term"). This Agreement shall be renewed automatically for additional, successive one-year terms (each a "Renewal Term"), upon the expiration of the Initial Term, subject to the termination provisions herein.

   The Parties may voluntarily terminate this Agreement at any time by mutual written agreement. Either Party may voluntarily terminate this Agreement by providing written notice of termination to the other

Party at least sixty (60) days prior notice to the effective date of termination. In the event that either Party breaches a material term of this Agreement or a material representation or warranty, the non-breaching Party will issue a notice of breach; if the breaching Party does not cure its breach within thirty (30) days, the non-breaching Party may terminate the Agreement.

The Parties shall continue to fulfill their obligations under this Agreement relating to the Services requested and/or performed prior to the effective date of termination, including, without limitation, Referring Entity's payment for Services provided up and until the date of termination. Notwithstanding anything to the contrary, upon expiration or termination of this Agreement, neither Party shall have any further rights or obligations hereunder except for rights and obligations accruing prior to the date of expiration or termination or arising as a result of any breach or expiration or termination of this Agreement.

3. **PAYMENT.** In consideration for the Services, Referring Entity agrees to pay UMPA the fees specified on **Attachment A**. UMPA will generate an invoice for services rendered the previous month at rates indicated in **Attachment A**. The invoice summary will include a summary of tests and associated volume, charges per test and total charges. Upon request, a list of patient's tests performed by patient, charges per test and total charges will be available. The invoice shall be paid by the Referring Entity within 30 days of receipt of proper invoice. UMPA and Referring Entity will review the scope of laboratory operations at least quarterly to determine the level of service and financial funding for the agreed upon services.

   For the avoidance of any doubt, the Parties acknowledge and agree that UMPA will not bill patients or patient's insurance for Services performed hereunder.

4. **CONFIDENTIALITY**. Unless inconsistent with the Maryland Public Information Act, Maryland Code Annotated, State Government, Title 10, Subtitle 6, as amended from time to time, each Party agrees to treat confidentially all of the information marked or designated as confidential at the time of disclosure and provided to such Party by the other Party in connection with this Agreement and to return such information to the providing Party upon termination of this Agreement.

5. **MEDICAL RECORDS**. To any extent applicable, the Parties will comply with the privacy, security and confidentiality requirements of the Health Insurance Portability and Accountability Act, as amended, ("HIPAA") and Maryland law governing the confidentiality of patient information and medical records. Without limiting the generality of the foregoing, each Party will only disclose laboratory test results or other information generated in connection with providing the Services as required by these or other applicable laws. Both Parties agree to comply, and cause each of their respective employees and contractors to comply, with applicable provisions of HIPAA, as amended, any regulations promulgated thereunder, and any applicable state laws protecting the privacy of patient information.

6. **INSURANCE.**

   a. UMPA agrees to procure and maintain in effect during the Term adequate professional liability insurance in the amounts of at least One Million ($1,000,000) Dollars per occurrence and Three Million ($3,000,000) Dollars in the aggregate for all negligent acts or omissions of its employees and agents providing services pursuant to this Agreement. In furtherance of the foregoing, the Parties agree to procure and maintain during the Term professional liability insurance covering their employees in the performance of professional services while acting within the scope of this Agreement. These insurance requirements may be satisfied with a policy of commercial insurance from an insurance carrier registered to write insurance policies in Maryland, or a self-insurance trust fund or captive insurance company which is consistent with Medicare self-insurance

requirements. This insurance shall apply to claims asserted for contribution and indemnification, contractual, statutory or under common law, as well as claims by or on behalf of patients. In the event any insurance described in this Section is purchased on a claims-made basis, tail coverage for prior acts shall be obtained so as to continue coverage for a minimum of three (3) years following expiration or termination of this Agreement under any circumstance.

b. Referring Entity is self-insured pursuant to the State of Maryland self-insurance plan.

c. Each Party shall provide the other with at least thirty (30) days' advance written notice of any adverse change in its total program of liability insurance coverage. The Parties agree to provide prompt notice to each other of any potential claim or suit relating to the provision of services under this Agreement as soon as possible and to cooperate with each other in the investigation and settlement of such claims or suits. Each Party further agrees to provide prompt notice of any such claim or suit to its carrier and to provide evidence of such notice to the other Party upon request.

d. Each Party is responsible for covering its own employees.

e. Each Party shall furnish the other, upon request, a current and valid Certificate of Insurance or verification of the existence and relevant terms of its program for self-insurance satisfying the requirements set forth in this Article.

7. **HEALTH CARE REGULATORY COMPLIANCE**. To any extent applicable, each Party hereby represents to the other that, to the best of its actual knowledge, neither it nor any employee, contractor, or agent now or hereafter engaged by such Party to provide services under this Agreement (collectively, a "Representative") is, or at any time has been, excluded from participation in any federally funded health care program, including the Medicare and Medicaid programs. Each Party hereby agrees to promptly notify the other of any threatened, proposed, or actual exclusion of such Party or any of its Representatives from any federally funded health care program, including the Medicare and Medicaid programs. In the event that a Party or any of its Representatives is excluded from participation in any federally funded health care program during the term of this Agreement, or if at any time after the Effective Date it is determined that a Party or any of its Representatives is in breach of this Section, this Agreement shall automatically terminate as of the date of such exclusion or breach unless the breaching Party cures its breach by removing any Representative who is so excluded or has otherwise breached the provisions of this Section from the performance of services under this Agreement.

8. **COMPLIANCE WITH APPLICABLE LICENSING, CERTIFICATION STANDARDS AND LAW.** UMPA and its personnel shall perform the Services in accordance with all applicable regulatory, licensure, and accreditation requirements including those of The Joint Commission, the Maryland Department of Health, the Federal Drug Administration, College of American Pathologists, CLIA, and the AABB. Further, UMPA shall maintain all applicable licenses, certifications and accreditations in good standing.

   To any extent applicable, both Parties acknowledge and agree at all times during the term of this Agreement to comply with all applicable federal, state, and local laws in performing its obligations hereunder, including but not limited to Family Educational Rights and Privacy Act ("FERPA"), the Deficit Reduction Act of 2005, the Federal False Claims Act and other federal and state laws addressing anti-kickback, self-referral, fraud, abuse and waste, as well as whistleblower protections for those reporting violations of such laws.

9. **OTHER PRIVILEGES AND REFERRALS NOT AFFECTED.** Nothing in this Agreement affects or

precludes either Party's ability to engage in a similar service arrangement and/or make referrals to any other laboratory in any manner, whether located within or outside the Referring Entity's service area.

10. **MAINTENANCE OF BOOKS, DOCUMENTS AND RECORDS.** If and to the extent that this Agreement is subject to Medicare statutes and regulations governing access to books and records of contractors and subcontractors, Referring Entity shall, for a period of four (4) years following the furnishing of Services, maintain and make available, upon written request, to the Secretary of the United States Department of Health and Human Services or the Comptroller General of the United States, or to any of their duly authorized representatives, this Agreement and any of the Referring Entity books, documents and records which are necessary to verify the nature and extent of the cost of the Services provided hereunder. Furthermore, if the Referring Entity carries out any of the Services through any subcontract with a value or cost of Ten Thousand Dollars ($10,000) or more over a twelve (12) month period with related organizations (as that term is defined under federal law), the Referring Entity agrees that each such subcontract shall provide for such access to the subcontract, books, documents and records of the subcontractor. If UMPA is requested to disclose books, documents or records pursuant to this Agreement for purposes of an audit, it shall notify Referring Entity of the nature and scope of such request. These requirements are effective as of the date of execution of this Agreement and pertain to all records, which have or should have been maintained on or after that date. This Agreement pertains solely to the maintenance and disclosure of specified records and shall have no effect on the rights of the Parties to this Agreement to make assignment or delegations.

11. **NOTICES.** All notices or other communications under this Agreement shall be in writing and shall be deemed duly given if delivered in person or upon the earlier of receipt if mailed by certified or registered mail, or three days after certified or registered mailing, return receipt requested, postage prepaid, addressed and sent to:

If UMPA:

University of Maryland Pathology Associates, P.A.
419 W. Redwood Street, Suite 200
Baltimore, Maryland 21201

If REFERRING ENTITY:

Towson University
8000 York Rd, Towson, MD 21252
Attention: Office of General Counsel

12. **MISCELLANEOUS**.

a. **RESPONSIBILITY FOR ACTIONS.** Each Party shall be responsible for its own acts and omissions and the acts and omissions of its employees, officers, directors, and affiliates. A Party shall not be liable for any claims, demands, actions, costs, expenses, and liabilities, including reasonable attorneys' fees, which may arise in connection with the failure of the other party or its employees, officers, directors, or agents to perform any of their obligations under this Agreement.

b. **NON-DISCRIMINATION.** Both Parties warrants that they do not and will not discriminate against any person because of race, creed, color, national origin, gender, veteran status, or handicap, or as otherwise may be prohibited by law. Both Parties warrant that they are in full initial and ongoing compliance with all current applicable federal, state, and local laws, regulations, and ordinances,

included but not limited to:

1. Civil Rights Act of 1964;
2. The Rehabilitation Act of 1973;
3. The Fair Labor Standards Act;
4. Equal Opportunity Clause (41 CFR 60.250.5(a); 41 CFR 60-300.5(a); and 41-CFR 60.741.5(a)
5. Affirmative Action Programs (41 CFR 60-1.40(a)(2)
6. Other laws that may apply from time to time as amended.

c. **INTEGRATION.** This Agreement and all attachments hereto constitute the entire agreement between the Parties with regard to the subject matter hereof and thereof, and all attachments/documents referenced in the Agreement are incorporated by reference. This Agreement supersedes any and all previous agreements between or among the Parties relating to the subject matter hereof. There are no agreements, representations, or warranties between or among the Parties concerning the subject matter hereof other than those set forth in this Agreement.

d. **ASSIGNMENT.** This Agreement may not be assigned by either Party without the other Party's written consent. Subject to the preceding sentence, all rights, privileges, duties and obligations under this Agreement shall inure to the benefit of, and be binding upon, the Parties' successors and permitted assigns.

e. **FORCE MAJEURE**. Neither party will be liable for failure or delay in performing any of its obligations under this Agreement to the extent the failure or delay is required in order to comply with any governmental regulation, request or order, or necessitated by other circumstances beyond the reasonable control of the party so failing or delaying, including but not limited to Acts of God, war (declared or undeclared), insurrection, fire, flood, accident, labor strikes, work stoppage or slowdown (whether or not that labor event is within the reasonable control of the parties), or inability to obtain raw materials, supplies, power or equipment necessary to enable a party to perform its obligations. The party experiencing the event of force majeure shall: (i) promptly notify the other party in writing of an event of force majeure, and describe the event, the expected duration of the event, and its anticipated effect on the ability of the party to perform its obligations; and (ii) make reasonable efforts to mitigate (and to the extent possible, remedy) the event of force majeure.

f. **GOVERNING LAW.** This Agreement shall be governed by, construed and interpreted in accordance with the laws of the State of Maryland without reference to its conflicts of laws principles.

g. **INDEPENDENT CONTRACTOR RELATIONSHIP.** In the performance of all obligations and duties hereunder, UMPA and its employees, agents and subcontractors shall be deemed to be independent contractors with respect to Referring Entity, and the Parties shall not be considered joint ventures or partners.

h. **WAIVER.** All waivers of rights, powers, and remedies by a Party to this Agreement must be in writing. No delay, omission, or failure by a Party to exercise any right, power, or remedy to which a Party may be entitled shall impair any such right, power, or remedy, nor shall such be construed as a release by a Party of such right, power, or remedy or as a waiver of or acquiescence in any such action, unless such action shall have been cured in accordance with the terms of this Agreement. A waiver by a Party of any right, power, or remedy in any one instance shall not constitute a waiver of the same or any other right, power, or remedy in any other instance.

i. **COUNTERPARTS.** This Agreement may be executed in two or more counterparts, each of which

shall be deemed an original but all of which shall constitute one and the same instrument.

j. **AMENDMENTS.** This Agreement may be amended at any time by mutual agreement of the Parties without additional consideration, provided that before any amendment shall become effective, it shall be received in writing and signed by each of the Parties.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement effective as of the Effective Date.

UNIVERSITY OF MARYLAND PATHOLOGY ASSOCIATES, P.A.

Sanford A. Stass, M.D., *President*

Date: 08/10/2020

TOWSON UNIVERSTY

By: _____

Title: Vernon J. Hurte, Ph.D., Vice President for Student Affairs

Date: August 28, 2020

ATTACHMENT A:
DESCRIPTION OF SERVICES AND FEES

UMPA will provide the following Services and, in exchange, Referring Entity shall pay the following Fees:

Services	Fees
SARS-CoV-2 RNA Amplification ("Test"), which shall include: • Provide Referring Entity with collection kits and requisitions for the Test; • Provide Courier Services for transportation of Collection Kits to the testing site and back to UMPA; • Performance of the Test; • Reporting of Test results as follows: o EPIC My Portfolio (if applicable); o Individual patient report to the ordering provider; o Provider access to EPIC Portfolio MD o Reporting of positive and negative Test results to Maryland Department of Health in accordance with the most recent published guidance. • The turn-around time (TAT) for test results is based on receipt of the specimen at UMPA until the test result is reported. If electronic/on-line ordering of tests is utilized, the TAT is 24-48 hours. If electronic/on-line ordering is not used, the TAT is < 72 hours.For the avoidance of doubt, verbal notification of either Detected or Not- Detected SARS-CoV-2 (COVID-19) RNA is not required.	Thirty Five Dollars ($35) per Test performed. • The Parties may change this per Test rate in accordance with Section 12(j) of the Agreement; and. • UMPA may change this per Test rate upon sixty (60) days prior written notice to Referring Entity.

For the avoidance of any doubt, Referring Entity acknowledges and agrees that:

- UMPA shall not perform, control, supervise, or oversee the collection of patient samples for the Test. Referring Entity must separately arrange for the provision of sample collection services, including appropriate training and supervision of any personnel collecting patient samples.
- UMPA shall not be responsible for the storage of the Test kits after delivery to the Referring Entity.
- UMPA shall not be responsible for the collected samples until retrieved by UMPA.
- UMPA will have sole discretion to determine the testing viability of Test samples it receives.
- UMPA shall not be responsible for obtaining patient consent for testing, or notifying families, employers, or other persons of Test results except as may be described herein.

ATTACHMENT B:
DESCRIPTION OF REFERRING ENTITY DUTIES

Referring Entity will provide the following Duties related to the provision of Services:

1. Secure a physician order or other qualified provider order for performance of Services (as may be necessary), containing accurate identifying codes and other diagnostic information as may be necessary and appropriate.

2. Ensure that each patient's essential data, as defined below, is provided to UMPA via a secure file transfer prior to performance of the Test by Contractor. The essential data for each patient is: first and last name, DOB, gender, SSN, race, gender and ethnicity, and insurance information (as needed).

3. Perform specimen collections from patients.

4. Provide patient samples to UMPA that are accurately and correctly labeled, with sufficient patient sample for testing.

5. Upon receipt of the positive or negative Test result from UMPA, the Referring Entity and/or the ordering provider shall be responsible reporting said Test result to the patient as soon as possible.

6. Cooperate with UMPA in establishing monitoring performance improvement programs

7. Maintain electronic distribution records of laboratory test results.

8. Communicate to UMPA requests for supplies, forms, etc., needed by Referring Entity in the performance of said Duties.

07-01.22 – SEPARATION FOR REGULAR EXEMPT EMPLOYEES

I. Policy Statement:

Towson University (the "University") has established implementing procedures pursuant to the USM Policy VII-1.22, Policy on Separation of Regular Exempt Staff Employees, regarding the separation of Regular Exempt employees.

II. Responsible Executive and Office:

Responsible Executive: Associate Vice President of Human Resources

Responsible Office: Office of Human Resources ("OHR")

III. Entities Affected by this Policy: All divisions, colleges, departments and operating units.

IV. Procedures:

A. Applicability

This policy applies to all Regular Exempt Employees except those positions excluded by USM Policy VII-1.22, (Policy on Separation for Regular Exempt Staff Employees) Section I, B and any additional positions excluded by the President of the University and approved by the Chancellor. The Office of Human Resources shall notify, in writing, any employee excluded from this policy.

B. General

1. Regular Exempt Employees at the University are employed on an at-will basis. This means that, subject to applicable laws and policies, either the employee or the University may terminate the employment relationship at any time in accordance with the provisions of this policy.

2. The Separation Policy for Exempt Employees does not apply when an exempt employee is laid off. Layoffs will be in accordance with USM Policy VII-1.32, Policy on Layoff and Recall of Regular Exempt Staff Employees.

3. The provisions for probation and rejection on probation are covered under USM Policy VII-1.21, Policy on Probation for

Regular Nonexempt and Exempt Staff Employees.

C. Process for Voluntary Separation

1. An exempt employee who wishes to end his or her employment with the University should give at least thirty (30) calendar days written notice. This written notice should be given to the employee's Supervisor.

2. The Supervisor completes the Personnel Separation Form and attaches a copy of the letter of resignation or retirement from the employee. The form and attached letter are sent to the Vice President of the respective office or department and OHR. The Separation Form and Separation Checklists can be found on the OHR website.

D. Process for Involuntary Separation

1. Any Supervisor who is contemplating the involuntary separation of a regular exempt employee shall contact the Vice President for the respective office or department, and the Associate Vice President for Human Resources or the Employee/Labor Relations Manager prior to any action to terminate the employee.

2. The Supervisor completes the Personnel Separation Form and attaches a copy of the termination letter from the University or the resignation or retirement letter written by the employee in lieu of termination. The form and the attached letter are sent to the Vice President for the respective office or department, and the Associate Vice President for Human Resources or the Employee/Labor Relations Manager. The Separation Form and Separation Checklists can be found on the OHR website.

3. Termination letters shall be signed by the Vice President for the respective office or department (or their designee) with a copy to the Associate Vice President of Human Resources in accordance with either Sections IV.E or IV.F of this policy, as applicable.

E. Period of Notice for Involuntary Separation

1. An employee may be involuntarily separated and shall be provided with a defined period of notice. Service for determining length of notice is based on service at the University rather than University System of Maryland (USM) service and shall include prior service at the University provided there were no breaks in service longer than three (3) years. An exempt employee at one USM institution who is offered an exempt position at another USM institution may, at the discretion of the offering institution, be credited with prior

USM service for purposes of calculating the required period of notice upon separation. Any such decision to credit prior service at another USM institution shall be noted in the employee's personnel file at the time of appointment and become effective after satisfactory completion of the probation period. The period of notice shall be as follows:

Years of Towson University Service	Period of Notice
Less than one year	One month
One year but less than four years	Three months
Four years but less than seven years	Six months
Seven years but less than ten years	Nine months
Ten years or more	Twelve months

2. At the option of the President or Vice President for the respective area, an employee who has been notified of a separation, may be placed in an administrative leave with pay status for any part or all of the notification period. The employee shall not earn other paid leave (annual, sick, holiday, personal) during the period of administrative leave. The President or Vice President for the respective area may assign alternate duties and responsibilities to an employee who has been notified of separation for any part or all of the period of notice.

3. Failure to provide notice as set forth in this (Period of Notice for Involuntary Separation) section may be appealed in accordance with TU Policy 07-08.05, Policy on Grievances and Special Action Appeals for Regular Exempt Employees.

F. Termination for Cause

Section IV.E above does not apply if the employee is to be terminated for any of the following reasons: moral turpitude, incompetency, willful neglect of duty, illegal actions, gross misconduct, severe safety violations, failure to accept reassignment, or medical condition causing inability to perform essential job duties with or without reasonable accommodations required by law. Termination for cause may be appealed in accordance with TU Policy 07-08.05.

Related Policies:

USM Policy VII-1.21, Policy on Probation for Regular Nonexempt and Exempt Staff Employees

USM Policy VII-1.22 – Policy on Separation for Regular Exempt Employees

USM Policy VII-1.32, Policy on Layoff and Recall of Regular Exempt Staff Employees

TU Policy 07-08.05 – Policy on Grievances and Special Action Appeals for Regular Exempt Employees

Effective Date: 06/07/2004

Amended Date: 04/01/2020

Approved by: President's Council

Approved by: President Kim Schatzel

VII-1.22 - POLICY ON SEPARATION FOR REGULAR EXEMPT STAFF EMPLOYEES

Approved by the Board of Regents on December 3, 1999, EFFECTIVE January 2 and January 12, 2000; Amended, June 27, 2014; Amended October 9, 2015; Amended December 20, 2019)

I. PURPOSE AND APPLICABILITY

A. The purpose of this policy is to establish a separation process for regular Exempt Staff employees in the University System of Maryland (USM).[1]

B. Regular USM employees in the following Exempt positions are excluded specifically from sections III and IV of this policy:

1. Officers: Vice Chancellors, Vice Presidents, Provosts and Academic Deans.

2. Associate and Assistant Vice Chancellors, Associate and Assistant Vice Presidents, Associate and Assistant Provosts, Associate and Assistant Academic Deans.

3. Subject to approval of the Chancellor, the President may designate other key executive positions for this exemption. Appointees to such positions shall be notified of such designation at the time of appointment. Current appointees notified of such designation prior to April 1, 2000, were not required to be notified at the time of appointment.

II. GENERAL

A. Employment for regular USM employees in Exempt positions is on an at-will basis. This means that, subject to applicable laws and policies, the employment relationship may be terminated at any time by either the employee or the Institution, consistent with Section III of this policy.

B. All actions taken under this policy and institutional procedures shall be reviewed by the institution's Chief Human Resources Officer in advance of the action being taken.

C. An employee who wishes to end their employment with the Institution should give at least 14 calendar days written notice.

[1]Sections II.A., II.D.2., II.E., and III of this policy do not apply to exempt employees who are represented by an exclusive representative under the collective bargaining law, Title 3 of the State Personnel & Pensions Article of the Maryland Code. Those employees may be terminated only for cause.

D. Resignation in Lieu of Termination

1. The President or designee has the discretion to permit, but not require, any employee to resign in lieu of involuntary separation. The institution shall maintain records documenting that the resignation was in lieu of involuntary separation, and the employee generally should be required to execute an appropriate release of legal claims.
2. The President or designee may determine an appropriate period of notice to be provided that serves the best interests of the institution. The length of the period of notice provided is not required to conform to the schedule contained in III.B. below.

E. Compensation in Lieu of Notice

In lieu of providing a full period of notice to an employee who is being involuntarily separated, including those permitted to resign in lieu of involuntary separation under section II.D. above, the President or designee may determine that the employee should be separated prior to the end of the notice period. In that case, the employee shall receive alternative compensation to compensate for the loss of salary and benefits that the employee otherwise would have received during the notice period. In consultation with the Office of the Attorney General, the institution will develop an appropriate compensation arrangement for such an employee that complies with applicable laws.

III. TERMINATION BY PERIOD OF NOTICE

A. Determination of Period of Notice

An employee covered by this section III who is involuntarily separated shall be provided with a defined period of notice.

1. Service for determining length of notice period is based on institutional service rather than USM service and shall include prior institutional service, provided there were no breaks in service longer than three years.

2. An Exempt employee at one USM institution who is offered an Exempt position at another USM institution may, at the discretion of the offering institution, be credited with prior USM service for purposes of calculating the required period of notice upon separation. Any such decision to credit prior service at another USM institution shall be noted in the employee's personnel file at the time of appointment and shall be effective after satisfactory completion of the probation period.

B. Length of Period of Notice. The period of notice shall be as follows:

Years of Institutional Service	Period of Notice
Less than one year	One month
One year but less than four years	Three months
Four years but less than seven years	Six months
Seven years but less than ten years	Nine months
Ten years or more	Twelve months

C. Employee Work Assignments During Period of Notice

During the period of notice, the President or designee may:

1. Continue the employee in his or her regular position; or

2. Assign the employee alternate duties and responsibilities at a level of service of at least 25% of their existing average workload over the past thirty-six months.

D. An employee covered by this section III may grieve the institution's failure to comply with section III, except in situations where the employee has resigned in lieu of termination.

IV. TERMINATION FOR CAUSE

With the approval of the President or designee, the period of notice or alternative compensation as set forth in section III above is not required if the employee is to be terminated for cause, including without limitation any of the following reasons:

A. Moral Turpitude

B. Incompetency or Inefficiency in the Performance of the Employee's Duties, including Failure to Meet Performance Expectations as Documented in a Performance Evaluation and/or Disciplinary Action

C. Willful Neglect of Duty or Abandonment of Job

D. Illegal Actions, including Violation of the State Ethics Law

E. Gross Misconduct or Wantonly Offensive Behavior Toward Fellow Employees, Students, Patients, Clients, Users of University Facilities, or the General Public

F. Insubordination or Serious Breach of Discipline

G. Serious Breach of Professional Behavior that Reasonably may be Expected to Result in Lower Morale in the Organization or Loss or Injury to the University or Public

H. Professional or Scholarly Misconduct

I. Severe Safety Violations or Actions that Cause Significant Damage to Public Property or Waste of Public Resources

J. Failure to Accept Reassignment

K. Medical Condition Causing Inability to Perform Essential Job Duties with Reasonable Accommodations Required by Law

IMPLEMENTATION PROCEDURES:

Each President shall identify their designee(s) as appropriate for this policy, develop procedures as necessary to implement this policy, communicate this policy and applicable procedures to their institutional community, and post it on its institutional website.