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September 27, 2018

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Project No.: 18-0056
Location: Christwood Cognitive Care Unit
Subject: Indoor Air Quality (IAQ) Screening Assessment

Dear Mr. Morrison:

On the dates of 09/28/2018 and 09/29/18, Air Testing Associates, LLC performed a limited Indoor Air Quality (IAQ) Screening Assessment at Christwood Cognitive Care Unit located at 100 Christwood Blvd., Covington, LA 70433. The primary focus of this effort was to qualify and quantify the absence or presence of defined contaminates within the indoor air environment as it pertained to Airborne Mold Spores, Formaldehyde and Volatile Organic Compounds (VOCs), Sulfur Group Compounds, SEM/EDX Suspect Corrosion Products, Particulate Counts, Carbon Monoxide and Carbon Dioxide.

Mr. William Feaheny served as Senior Environmental Scientist for this project. His duties included field data collection, data interpretation, and project documentation. Mr. Feaheny is a degreed Microbiologist, has an M.S. degree in Environmental Science and has over 25 years of experience in the safety and environmental fields. He has completed both residential and commercial IAQ assessments.

EMSL Analytical Inc. of Cinnaminson, New Jersey performed applicable laboratory analyses.

Maintenance or remedial activities should address all areas where water damage has occurred, where mold growth is present, where water staining and/or moisture intrusion has been identified and conditions that can promote moisture, mold growth, allergen or

related IAQ concerns. Prior to maintenance or remedial activities, all sources of water intrusion shall be identified, remedied and eliminated. Throughout the maintenance or remedial process, any additional sources of potential water infiltration should be monitored, identified, eliminated and controlled.

Water-damaged materials (water-soaked or with greater than 20% moisture) can be expected to have active growing and potentially highly elevated levels of microorganisms (bacterial and fungi), if corrective action is delayed more than 48 hours. Microbiological growth could reoccur if the source of moisture is not remedied. Regardless of the source, both water damage and mold growth must be addressed and remedied.

General Recommendations to address potential concerns are included on pages 12 to 15 of this report.

Sampling Activities and Analyses:

- Five (5) Air-O-Cell samples for mold spore quantification and identification were drawn using one 15 liter/minute calibrated pump. Three (3) samples were collected within the building and two (2) sample were obtained from outside the building*. Temperature and humidity measurements were also obtained in the areas tested.
- Humidity readings obtained within the building on 8/8/18 indicated a relative humidity between 35% and 60% within the building. EPA suggests that indoor humidity should be maintained below 60% relative humidity, and if possible, ideally 30-50%.
- Formaldehyde was determined by Passive Monitoring Badges via NIOSH Method 2016.
- Volatile Organic Compounds (VOCs) and Sulfur Group Compounds were collected and determined via EPA TO-15 “whole-air” sampling methodology. Two (2), TO-15 whole air samples were obtained. Samples were obtained within Room 802 and Room 833. The laboratory analysis also included a Library Compound search for tentatively identified compounds not included within the EPA target list.
- An alcohol prep wipe samples were obtained from exposed A/C coils within Room 802 and Room 833. Samples SEM-802 and SEM-803 were submitted to EMSL Analytical Inc. for analysis of those surfaces sampled by SEM/EDX for the suspected corrosion products due to sulfur-containing gases.
- On 8/29/18, particle count measurements were obtained within representative indoor areas. Background measurements were obtained from outdoor areas adjacent to the building. The particle count survey was performed using a Fluke Model 983 Particle Counter.

- On 8/29/18, Carbon Monoxide (CO) measurements were obtained within representative locations throughout the building. Background measurements were obtained from outdoors. CO was determined by real-time monitoring instrument methodology (Fluke Model CO-220 Carbon Monoxide Meter).

- On 8/29/18, Carbon Dioxide (CO2) measurements were obtained within representative locations throughout the building. Background measurements were obtained from outdoors. CO2 was determined by real-time monitoring instrument methodology (Extech Model CO250).
- EMSL Analytical, Inc. (EMLAP # 100194; NJDEP Cert # 04653) of Cinnaminson, NJ performed the laboratory analyses

Temperature and Relative Humidity Measurements:

Relative humidity in excess of 60% can promote or facilitate mold growth. In an effort to access the general efficiency of the facility's HVAC system, humidity measurements were obtained within those representative areas sampled. The five performance requirements the HVAC system does to controls moisture are:

Control temperature
Control humidity
Ventilate occupied areas
Pressurize the building
Filter / clean the air

The American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) have published guidelines describing thermal environmental conditions, (ASHRAE Standard 55-1981, Thermal Environmental Conditions for Human Occupancy). These guidelines are intended to achieve thermal conditions in a given environment that at least 80% of the persons who occupy that environment will find acceptable or "comfortable." ASHRAE recommendations suggest when a building environment is occupied by sedentary or slightly active persons, and when the relative humidity is at 50%: The operating temperature to achieve thermal acceptability (comfort zone) should be 68° to 74° F in winter and 73° to 79° F in summer. If the operating temperature is outside this range, (at either end-point), then more than 20% of healthy people occupying the area are likely to experience some degree of discomfort. ASHRAE recommendations suggest that relative humidity ranges from 20-60% present a comfort zone considered to be both comfortable and healthful. ASHRAE's recommended design conditions are an effective temperature and dry bulb temperature of 76° F (24.5° C), a relative humidity of 40 percent, and an air circulation rate of less than 45 feet per minute. Relative humidity levels below 20 percent are associated with increased discomfort and drying of the mucous membranes, which brings about coughing, itching, and sore throats. High humidity may possibly provide a growth medium for bacteria and fungi.

Relative humidity readings, which were obtained on 8/29/18, from those interior locations sampled, ranged between 35% and 60%. Though the readings varied between specific locations sampled, overall relative humidity was within recommended ASHRAE and EPA parameters (30 to 60% relative humidity) within those interior areas sampled. See Chain of Custodies included in Appendix 2 of this report for temperature and humidity data gathered within specific locations.

Air-O-Cell Mold Spore Analyses:

Air-O-Cell cassette analysis of fungal spores by optical microscopy (EMSL Method M001) indicated that the total indoor mold spore counts within the five indoor areas (AC-3 to AC-5; (764 to 1,420 count/m3 air) were significantly lower than the total outdoor spore counts (AC-1 & AC-2**;** 42,730 & 22,257 count/m3 air). The specific spore types and quantities identified indoors were similar to the samples obtained outdoors. No significant elevations of specific spore types were noted indoors as compared to outdoors. The airborne mold spore counts and types were considered to be within normal parameters*.

* *Note: EAA's document*, "AIR-O-CELL Method Interpretation Guide", states that interior areas sampled meet the criteria for a "Clean Building" of less than 2,000 sp/m3 total for all spore types and less than 700 sp/m3 of Penicillium/Aspergillus spore types. AIR-O-CELL Method Interpretation Guide was published in January 2011 by Daniel Baxter of Environmental Analysis Associates, Inc. (EAA), a commercial laboratory in San Diego, CA. Mr. Baxter is the creator of the AIR-O-CELL spore trap, which is manufactured by Zefon International*.

See the attached EMSL Analytical, Inc.'s report in Appendix 2 for specific details pertaining to the Air-O-Cell fungal identification and quantification.

Formaldehyde Sampling:

On 8/29/18, formaldehyde was determined by Passive Monitoring Badges via NIOSH Method 2016. Indoor formaldehyde samples were obtained within Room 802 and Room 833.

Formaldehyde is an important chemical used widely by industry to manufacture building materials and numerous household products. It is also a by-product of combustion and certain other natural processes. Thus, it may be present in substantial concentrations both indoors and outdoors. Formaldehyde can cause irritation of the skin, eyes, nose, and throat. High levels of exposure may cause some types of cancers. Nasal and eye irritation, neurological effects, and increased risk of asthma and/or allergy have been observed in humans breathing 0.1 to 0.5 ppm. Eczema and changes in lung function have been observed at 0.6 to 1.9 ppm.

Formaldehyde is usually found in the air, and levels are usually higher indoors than outdoors. Opening windows and using fans to bring fresh air indoors are the easiest ways to lower levels in the house. Not smoking and not using unvented heaters indoors can lower the formaldehyde levels. Formaldehyde is given off from a number of products used in the

home. Removing formaldehyde sources in the home can reduce exposure. Providing fresh air, sealing unfinished manufactured wood surfaces, and washing new permanent-press clothing before wearing are measures that can help lower exposure.

The permissible exposure limits (PELs) for formaldehyde in the workplace covered by the standard are 0.75 parts formaldehyde per million parts of air (0.75 ppm) measured as an 8-hour time-weighted average (TWA). The action level, which is the threshold for increased industrial hygiene monitoring and initiation of employee medical surveillance, is 0.5 ppm when calculated as an 8-hour TWA. The most common guideline for acceptable formaldehyde levels within residential settings is 0.10 ppm (*Minnesota Dept. of Public Health*). Few people will have health problems at levels below 0.10 ppm. However, some people are sensitive to formaldehyde and may experience health effects at levels below 0.10 ppm. Based upon current information, it is advisable to mitigate formaldehyde that is present at levels higher than 0.10 ppm. If you have levels of formaldehyde that exceed 0.10 ppm it is recommended that steps be taken to reduce the levels by removing the source if feasible and increase ventilation to bring in more air from the outdoors.

Indoor measurements indicated formaldehyde levels of 0.0055 within Room 802 and 0.025 ppm within Room 833. The formaldehyde levels identified were well below the OSHA permissible exposure level of 0.75 ppm as well as the recommended action level of 0.5 ppm. The levels were below those cited mitigation levels of 0.10 ppm for residential settings and were considered to be within normal indoor parameters (<0.03 ppm).

See the attached EMSL Analytical, Inc.'s report (Appendix 3) for specific details pertaining to those levels identified by the formaldehyde analysis.

TO-15 VOCs and Sulfur Compounds Analyses:

The term TVOC encompasses a very large and diverse group of carbon-containing compounds, including aliphatic, aromatic and halogenated hydrocarbons, aldehydes, ethers, esters, acids, alcohols and ketones. Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.

EPA's Total Exposure Assessment Methodology (TEAM) studies found levels of about a dozen common organic pollutants to be 2 to 5 times higher inside homes than outside,

regardless of whether the homes were located in rural or highly industrial areas. Additional TEAM studies indicate that while people are using products containing organic chemicals, they can expose themselves and others to very high pollutant levels, and elevated concentrations can persist in the air long after the activity is completed.

At present there are few standards governing exposures to specific VOC contaminants in non-industrial buildings. No standards have been set for VOCs in non-industrial settings. The NHMRC recommends that total VOCs have a maximum permissible level of 500 micrograms/m^3 with the recommended limit for acceptable indoor air quality of a single compound should not contribute more than 250 micrograms/m^3.OSHA regulates formaldehyde, a specific VOC, as a carcinogen. OSHA has adopted a Permissible Exposure Level (PEL) of .75 ppm, and an action level of 0.5 ppm. HUD has established a level of .4 ppm for mobile homes. Based upon current information, it is advisable to mitigate formaldehyde that is present at levels higher than 0.1 ppm. Global consensus has resulted in the emergence of preliminary guidelines for tVOC standards for IAQ (Australian NHMRC, 1993; Finnish Society of IAQ, 1995; Seifert, 1999; Hong Kong EPA, 1999; Japan MoH, 2000). Depending on location (home, school, etc.), recommended levels range from 200 to 1300 ug/m3 or about 50 to 325 ppb (Toluene units) or approximately 100 to 650 ppb isobutylene units. By all accounts, the IAQ tVOC threshold for normal environments should not exceed 500 ppb (0.5 ppm) toluene units, which is equivalent to 1000 ppb (1 ppm) isobutylene units.

Two (2) “whole air” TO-15 samples were obtained within Rooms 802 and 833 in the building. The samples were analyzed according to EPA Compendium TO-15 for both VOCs and Sulfur Compounds. In addition, a “Library Search” for other target chemical compounds was also performed. Identified chemical compounds are included within the Sample Summaries of Appendix 4.

Room 802 Sample:

The total value of calculated VOCs (3100 ug/m3; 3.1 ppm) within Room 802 Living Area was in excess of the considered threshold for normal 500 ppb (0.5 ppm) toluene units within normal indoor environments.

A number of different EPA Target List Compounds were identified within Room 802 area sampled and accounted for 2100 ug/m3 of the total value of calculated VOCs or 68% of the VOCs identified. The predominant (>100 ug/m3) EPA Target List Compounds included Ethanol (1400 ug/m3), Isopropyl alcohol (2-Propanol) (220 ug/m3) and Acetone (330 ug/m3). These specific compounds accounted for 1950 ug/m3 (1.95 ppm) or 63% of the VOCs identified within the Room 802.

A number of other tentatively identified organic compounds (TICs) identified within Room 802 accounted for 1000 ug/m3 of the total value of calculated VOCs or 32% of the VOCs identified. The predominant (>100 ug/m3) tentatively identified organic compounds included Hexanal (120 ug/m3), .alpha.-Pinene (410 ug/mg), .beta.-Pinene (110 ug/mg3), D-Limonene (110 ug/mg3). These specific compounds accounted for 750 ug/m3 (0.75 ppm) or 24% of the VOCs identified within Room 802.

None of those specific compounds identified were in excess of NIOSH or OSHA permissible exposure levels (Appendix 4).

No sulfur compounds which included Hydrogen Sulfide, Carbonyl Sulfide, Methyl Mercaptan, Ethyl Mercaptan and Dimethyl Sulfide were detected within the airborne environment of Room 802.

See the attached EMSL Analytical, Inc.'s report (Appendix 4) for specific details pertaining to those chemical compounds identified by the TO-15 analysis. Additional information pertaining to possible background sources of those contaminants identified are also attached to the laboratory data.

Room 833 Sample:

The total value of calculated VOCs (5500 ug/m3; 5.5 ppm) within Room 833 was above the considered threshold for normal 500 ppb (0.5 ppm) toluene units within normal indoor environments.

A number of different EPA Target List Compounds were identified within Room 833 area sampled and accounted for 3300 ug/m3 of the total value of calculated VOCs or 60% of the VOCs identified. The predominant (>100 ug/m3) EPA Target List Compounds included n-Butane (150 ug/m3), Ethanol (2400 ug/m3), Isopropyl alcohol (2-Propanol) (190 ug/m3) and Acetone (490 ug/m3). These specific compounds accounted for 3230 ug/m3 (3.23 ppm) or 59% of the VOCs identified within Room 833.

A number of other tentatively identified organic compounds (TICs) identified within Room 833 area sampled and accounted for 2200 ug/m3 of the total value of calculated VOCs or 40% of the VOCs identified. The predominant (>100 ug/m3) tentatively identified organic compounds included Ethane, 1,1-difluoro- (730 ug/m3), Isobutane (120 ug/mg), Hexanal (150 ug/m3), .alpha.-Pinene (520 ug/mg), .beta.-Pinene (140 ug/mg), D-Limonene (120 ug/mg) and .beta.-Phellandrene (120 ug/mg). These specific compounds accounted for 1900 ug/m3 (1/9 ppm) or 35% of the VOCs identified within Room 833.

None of those specific compounds identified were in excess of NIOSH or OSHA permissible exposure levels (Appendix 4).

No sulfur compounds, which included Hydrogen Sulfide, Carbonyl Sulfide, Methyl Mercaptan, Ethyl Mercaptan and Dimethyl Sulfide, were detected within the airborne environment of Room 833.

See the attached EMSL Analytical, Inc.'s report (Appendix 4) for specific details pertaining to those chemical compounds identified by the TO-15 analysis. Additional information pertaining to possible background sources of those contaminants identified are also attached to the laboratory data.

SEM/EDX Analyses:

Room 802 Sample:

An alcohol prep wipe sample (SEM-802) was obtained from exposed A/C coils within Room 802. Sample SEM-3 was submitted to EMSL Analytical Inc. for analysis of surfaces by SEM/EDX. As per EMSL Analytical Inc.'s attached report (Figures 1; Page 2 of 4), elemental spectrum of material from 361802224-0001 showing copper (Cu), oxygen(O) and sulfur (S) as major components. The presence of copper (Cu) and oxygen (O) is presumptive evidence of the presence of copper oxides. The presence of sulfur (S) in the spectrum is presumptive evidence of [Cu+S]-based compounds. The sample was mounted on a carbon adhesive tab and coated with gold (Au) to minimize electron charging.

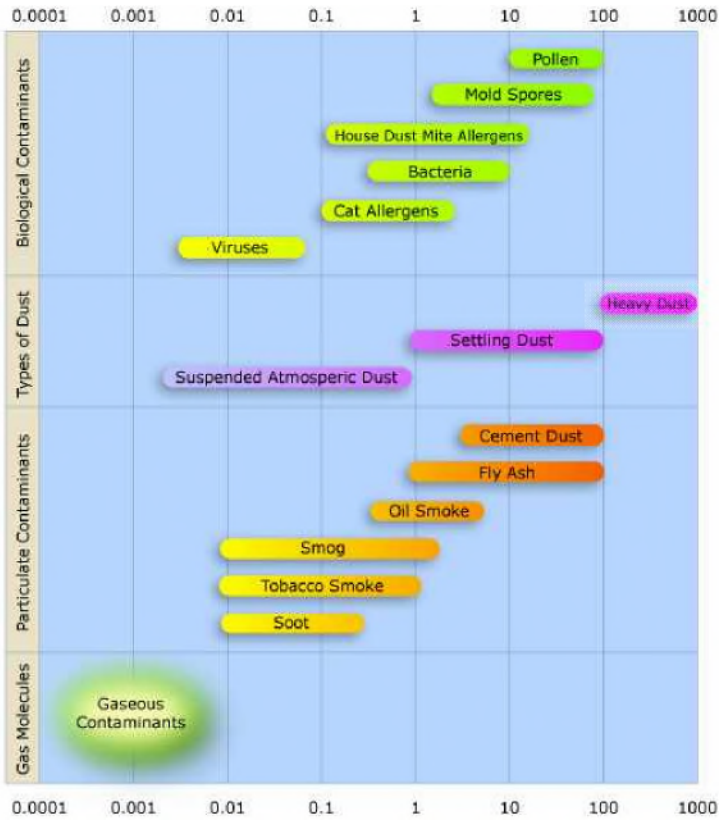
Room 833 Sample:

An alcohol prep wipe sample (SEM-833) was obtained from exposed A/C coils within Room 833. Sample SEM-3 was submitted to EMSL Analytical Inc. for analysis of surfaces by SEM/EDX. As per EMSL Analytical Inc.'s attached report (Figures 2; Page 3 of 4), elemental spectrum of material from 361802224-0002 showing silicon (Si) and oxygen (O) as the main components, most likely as quartz (SiO2). Aluminum (Al), iron (Fe), and zinc (Zn) are present in their metal and oxide forms. Calcium (Ca), potassium (K), magnesium (mg) and sodium (Na) are also present in lower amounts, most likely associated with clays/feldspars. The absence of copper (Cu) and sulfur (S) in the spectrum is presumptive evidence of the absence of copper oxides and [Cu+S]-based compounds. The sample was mounted on a carbon adhesive tab and coated with gold (Au) to minimize electron charging.

See the attached EMSL Analytical, Inc.'s report (Appendix 5) for specific details pertaining to the analyses.

Particle Count Survey:

Sources of airborne particulates are numerous and include clothing, paper, combustion products, tobacco smoke, and many other sources. Generally, particulates do not significantly contribute to indoor air quality complaints, but in elevated concentrations can be irritating to the eyes, nose, throat, and respiratory system. The majority of harmful particles are 3 microns or less in size. Particulates with diameters greater than 5 micrometers are usually deposited in the nose, mouth, and throat while particulates smaller than 5 micrometers may be deposited deeper in the lungs. The figure below illustrates the range of particulates commonly encountered:



A limited particle count survey was performed using a Fluke Model 893 Particle Counter. Representative locations were sampled throughout the building. Particle counts were obtained within the middle of each room sampled as well as in the immediate vicinity of accessible air returns. A representative number of outdoor background counts were also obtained.

The indoor particle counts within areas sampled were lower or similar as compared outdoor locations sampled on 8/29/18. The overall the air quality in regards to "fine" particles (< 2.5 microns) within the indoor areas appears to be within normal parameters for a typical building. Those indoor areas sampled had lower or similar "coarse" particle counts within the 5.0 and 10.0 micron range as compared to those areas sampled outdoors. When compared to outdoors, the overall particle counts within those indoor areas sampled appear to be within normal parameters. A particle count log of those areas sampled on 8/29/18 is included in Appendix 6.

Carbon monoxide (CO) Monitoring:

Carbon monoxide is a colorless, odorless gas that interferes with the delivery of oxygen throughout the body. Carbon monoxide is a combustion product from smoking, heaters, fireplaces and stoves. At low concentrations, it can cause fatigue in healthy people and episodes of increased chest pain in people with chronic heart disease. At higher

concentrations, carbon monoxide can cause headaches, dizziness, weakness, nausea, confusion, and disorientation. The symptoms of carbon monoxide poisoning are sometimes confused with flu or food poisoning. At very high concentrations carbon monoxide can cause unconsciousness and death. Fetuses, infants, pregnant women, elderly people, and people with anemia or with a history of heart or respiratory disease can be especially sensitive to carbon monoxide exposures. Prolonged exposure to high levels of CO can lead to brain damage and even death. Adequate ventilation is an important control measure. The OSHA Permissible Exposure Limit (PEL) for CO is 50 parts per million (ppm) as an 8-hour time-weighted average (TWA); the National Institute for Occupational Safety and Health has a Recommended Exposure Limit (REL) of 35 ppm as a 10-hour TWA. According to the American Conference of Governmental Industrial Hygienists (ACGIH), the threshold limit value for CO is 25 ppm as an 8-hour TWA.

Carbon Monoxide (CO) was not was detected (0 ppm) within those interior locations sampled within the Christwood Cognitive Care building. A log of those areas sampled for CO on 8/29/18 is included in Appendix 7.

Carbon Dioxide (CO2) Monitoring:

CO2 is a colorless, odorless, and tasteless gas. It is a product of completed carbon combustion and the by-product of biological respiration. Adverse health effects from CO2 may occur since it is an asphyxiant gas. The most widely recognized exposure limits for CO2 reference an 8-hour Time-Weighted Average (TWA) of 5,000 ppm, with a 15-minute Short-Term Exposure Limit (STEL) of either 15,000 ppm or 30,000 ppm. According to NIOSH, concentrations of 40,000 ppm or higher should be regarded as immediately dangerous to life and health. The OSHA Permissible Exposure Limit (PEL) is 5,000 ppm as an 8-hour TWA (Time Weighted Average). The CO2 levels can be used as a rough indicator of the effectiveness of ventilation, and excessive population density in a structure. CO2 increases in buildings with higher occupant densities and is diluted and removed from buildings based on outdoor air ventilation rates. Therefore, examining levels of CO2 in indoor air can reveal information regarding occupant densities and outdoor air ventilation rates. High CO2 levels may indicate a problem with overcrowding or inadequate outdoor air ventilation rates.

ASHRAE Standard 62-1989 had recommended that CO2 “comfort level” concentration in an occupied building should not exceed 1000 ppm. The 1989 ASHRAE had also stated that CO2 concentrations in acceptable outdoor air typically range from 300-500 ppm. A later standard, ASRAEASHRAE 62-2001 recommended that CO2 levels be less than 700 ppm above the outdoor air concentration. The most recent ASHRAE Standard 62.1-2013 does not prescribe a specific comfort level for CO2. The following was cited in a published ASHRAE Technical FAQ response that referred to ASHRAE Standard 62.1-2013: *CO2 at very high concentrations (e.g. greater than 5000 ppm) can pose a health risk. Refer to Appendix B, Summary of Selected Air Quality Guidelines in* ASHRAE Standard 62.1-2013, *"Ventilation for Acceptable Indoor Air Quality". However, in most buildings, concentrations almost never rise to these levels. CO2 at the concentrations commonly found in buildings is*

not a direct health risk, but CO2 concentrations can be used as an indicator of occupant odors (odorous bioeffluents) and occupant acceptance of these odors. At the activity levels found in typical office buildings, steady-state CO2 concentrations of about 700 ppm above outdoor air levels indicate an outdoor air ventilation rate of about 7.5 L/s/person (15 cfm/person). Laboratory and field studies have shown that this rate of ventilation will dilute odors from human bioeffluents to levels that will satisfy a substantial majority (about 80%) of unadapted persons (visitors) in a space. CO2 concentrations in outdoor air typically range from 300 to 500 ppm. Thus indoor CO2 concentrations of 1000 to 1200 ppm in spaces housing sedentary people is an indicator that a substantial majority of visitors entering the space will be satisfied with respect to human bioeffluents (body odor). Note however that CO2 concentration is not a good indicator of the concentration and occupant acceptance of other indoor contaminants, such as volatile organic compounds off-gassing from furnishings and building materials. Thus CO2 concentration is not a reliable indicator of overall building air quality.

Elevated carbon dioxide levels in significant concentrations above background outdoor levels (i.e. > 700 ppm above outdoors) may be a possible indication of an inadequate amount of outside air being brought into a building. Though the most recent 2013 ASHRAE Standard did not prescribe a specific comfort level for CO2, it has been reported by other sources and literature that when carbon dioxide levels of greater than a 1,000 ppm “comfort level”* may correlate with occupant complaints. Though carbon dioxide itself may not be responsible for the complaints, a high level of carbon dioxide may indicate that a ventilation issue which could be allowing other contaminants in the building to be present at elevated levels and could be responsible for those occupant complaints.

**Note: The “comfort levels” cited should only be used as a guideline to determine the amount of fresh outside air entering a building. Therefore, 1,000 ppm or other suggested CO2 levels should be used as a guideline for improving ventilation. If a building exceeds this guideline, it should not be interpreted as a hazardous or life-threatening situation but as a “comfort level”.*

Carbon Dioxide (CO2) levels outdoors on 8/29/18 ranged between 624 and 850 ppm. CO2 levels within those interior areas sampled ranged between 1312 ppm and 1601 ppm. The CO2 STEL (15 min short term exposure) and CO2 TWA (8-hour weighted average) within the building ranged between 648 and 1551 ppm. CO2 levels within those indoor areas sampled were less than the OSHA PEL (5,000 ppm) 8-hour, TWA exposure limit. Based upon current regulatory standards and industry guidelines, the CO2 levels within those locations sampled are not considered to be hazardous or life-threatening situation. However, the CO2 indoor levels within may be considered in excess of “comfort levels” for a typical indoor environment (>1000 ppm). A log of those areas sampled for CO2 on 8/29/18 is included in Appendix 7.

Conclusions/ Recommendations

Air-O-Cell cassette analysis of fungal spores by optical microscopy (EMSL Method M001) indicated that the total indoor mold spore counts within the five indoor areas (AC-3 to AC-5; (764 to 1,420 count/m3 air) were significantly lower than the total outdoor spore counts (AC-1 & AC-2; 42,730 & 22,257 count/m3 air). The specific spore types and quantities identified indoors were similar to the samples obtained outdoors. No significant elevations of specific spore types were noted indoors as compared to outdoors. The airborne mold spore counts and types were considered to be within normal parameters*.

Relative humidity readings, which were obtained on 8/29/18, from those interior locations sampled, ranged between 35% and 60%. Though the readings varied between specific locations sampled, overall relative humidity was within recommended ASHRAE and EPA parameters (30 to 60% relative humidity) within those interior areas sampled.

Indoor measurements indicated formaldehyde levels of 0.0055 within Room 802 and 0.025 ppm within Room 833. The formaldehyde levels identified were well below the OSHA permissible exposure level of 0.75 ppm as well as the recommended action level of 0.5 ppm. The levels were below those cited mitigation levels of 0.10 ppm for residential settings and were considered to be within normal indoor parameters (<0.03 ppm).

Though no specific VOCs compounds identified within Rooms 802 (3100 ug/m3; 3.1 ppm) and 833 (5500 ug/m3; 5.5 ppm) were in excess of NIOSH or OSHA permissible exposure levels, the total calculated VOCs within Room 802 and Room 833 were in excess of the considered threshold for normal 500 ppb (0.5 ppm) toluene units within normal indoor environments. The predominant VOCs identified within Rooms 802 and 833, which included compounds such as Ethanol, Isopropyl alcohol, Acetone, Hexanal, .alpha.-Pinene, .beta.-Pinene, and D-Limonene, are usually associated with such items as personal care products hand sanitizers, rubbing alcohol, and various cleaning products .

No sulfur compounds, which included Hydrogen Sulfide, Carbonyl Sulfide, Methyl Mercaptan, Ethyl Mercaptan and Dimethyl Sulfide were detected within the airborne environment of Rooms 802 and 833.

The presence of copper (Cu) and oxygen (O), which is presumptive evidence of the presence of copper oxides as well as the presence of sulfur (S) in the spectrum, which is presumptive evidence of [Cu+S]-based compounds, was associated with the wipe sample obtained from the exposed coils of the mini-split A/C unit located within Room 802 and analyzed via SEM/EDX methodology. As such, any conditions or materials that may promote corrosive conditions should be identified. As noted by the TO-15 sampling performed, no airborne sulfur compounds were identified at the time of the sampling performed between 8/28/18 and 8/29/18 within Room802.

The absence of copper (Cu) and sulfur (S) in the spectrum is presumptive evidence of the absence of copper oxides and [Cu+S]-based compounds. As such, the analysis of the wipe sample, which was obtained from the exposed coils of the mini-split A/C unit located within Room 833, did not identify corrosion products due to sulfur-containing gases.

The indoor particle counts within areas sampled were lower or similar as compared outdoor locations sampled on 8/29/18. The overall the air quality in regards to “fine” particles (< 2.5 microns) within the indoor areas appears to be within normal parameters for a typical building. Those indoor areas sampled had lower or similar “coarse” particle counts within the 5.0 and 10.0 micron range as compared to those areas sampled outdoors. When compared to outdoors, the overall particle counts within those indoor areas sampled appear to be within normal parameters.

Carbon Monoxide (CO) was not was detected (0 ppm) within those interior locations sampled within the Christwood Cognitive Care building.

Carbon Dioxide (CO2) levels outdoors on 8/29/18 ranged between 624 and 850 ppm. CO2 levels within those interior areas sampled ranged between 1312 ppm and 1601 ppm. The CO2 STEL (15 min short term exposure) and CO2 TWA (8-hour weighted average) within the building ranged between 648 and 1551 ppm. CO2 levels within those indoor areas sampled were less than the OSHA PEL (5,000 ppm) 8-hour, TWA exposure limit. Based upon current regulatory standards and industry guidelines, the CO2 levels within those locations sampled are not considered to be hazardous or life-threatening situation. However, the CO2 indoor levels within the building may be considered in excess of “comfort levels” for a typical indoor environment (>1000 ppm).

Based upon evidence of elevated VOCs and Carbon Dioxide (CO2) within those specific areas sampled, conditions that are indicative of ventilation deficiencies likely exist within the building. As such, it is recommended that a qualified professional(s) evaluate the building envelope and HVAC system(s) in an effort to determine and correct any existing mechanical or design deficiencies associated with the building (i.e. HVAC sizing, balance, pressurization of the building, ventilation, , etc.).

The following are recommendations to be considered in an effort to resolve VOC and Carbon Dioxide related concerns within the building.

- **Source management:**

  This includes removal, substitution, and enclosure of sources. It is the most effective control method when it can be applied practically. Remove or reduce the number of products in your home that give off VOCs. Only purchase amounts of chemicals that you know you will use and carefully follow directions on product labels. Remove unused chemicals from the home because stored chemicals in closed containers can sometimes “leak” and release VOCs into indoor air. Check with the city or county for household

hazardous waste collection sites.

For new items consider purchasing:

Floor models that have been allowed to off-gas in the store

Solid wood items with low emitting finishes

New products that contain low or no VOCs (environmentally preferable products)

As a last resort, airtight sealers have been used to minimize VOC emissions. Check with vendors of composite wood products to choose a non-toxic sealant to reduce exposure to VOCs.

- **Engineering controls:**

  Ventilation and climate control can be used to reduce exposure to VOCs. Keep both the temperature and relative humidity as low as possible or comfortable. Chemicals will off-gas more under warmer conditions with high humidity; and A well-designed and functioning HVAC system controls temperature and relative humidity levels to provide thermal comfort, distributes adequate amounts of outdoor air to meet the ventilation needs of building occupants, and also dilutes and removes odors and other contaminants. Testing and rebalancing of HVAC systems may be necessary.

  If you have a choice, perform renovations when home is unoccupied or during seasons that will allow for additional ventilation. In summary, the most effective way to limit VOCs indoors is to limit the potential sources of VOCs. Increasing the amount of outdoor "fresh air" into a space can also dilute and reduce VOC levels.

- **Air cleaning:**

  Air cleaning primarily involves the removal of particles from the air as the air passes through the HVAC equipment. Most HVAC system filtration is provided to keep dirt off of coil surfaces to promote heat transfer efficiency. Most smudging observed around air supply diffusers in a ceiling result from entrainment (trapping) of dirt particles in the space that accumulate there because of poor housekeeping. Additional equipment (i.e. air purifiers) or specific control technologies (i.e. carbon filtration) may be applicable to control VOCs that are not captured by other source management or engineering controls.

Should problems reoccur or symptoms persist, additional testing or long-term monitoring may be prudent in order to ascertain whether levels of potential indoor contaminants are adequately controlled. If additional sampling is deemed necessary,

sample methodology to further quantify and identify chemicals or bio aerosols (mold, fungi, bacteria, etc.) should be applied.

A physician should be consulted to determine if any aliments suffered by the building occupants are related to specific chemical or contaminants identified.

Limitations:

The scope of this limited investigation is to qualify the presence of potential airborne chemical contaminants in specific interior areas of the subject building at the time of the site investigation. If testing has been performed, quantification of samples is limited to comparison of mold spores identified by Air-O-Cell methodology and direct examination. Any sampling effort undertaken can only quantify the air-borne concentrations of bioaerosols at the time of sampling. Any testing is not intended to quantify the absolute airborne concentration of biological contaminants or identify all biological contaminants present throughout the entire building. These tests are no guarantee that mold does not exist in other areas of the building. The scope of the surface swab or bulk sampling of materials is to qualify the presence mold associated with the sample submitted. Identification of Air-O-Cells, swab samples, tape lift samples and carpet samples is limited to spore-type identification analysis by direct examination. It is not possible to differentiate Aspergillus/Penicillium spores through direct examination methodology.

The sampling effort undertaken can only qualify those mold types present and accessible at the time of sampling. This report or protocol is not warranted or guaranteed in any way. Only a qualified physician can determine whether health effects are associated with biological organisms/pathogens or bio aerosol exposure.

Microbiological growth could reoccur if the source of moisture is not remedied. No responsibility is assumed that the sources of excessive moisture resulting in fungal growth at the subject property have been or will be appropriately corrected, or that mold growth will not recur as a result of inappropriate repair and periodic maintenance of the same.

Any and all statements, opinions and/or recommendations, expressed or implied, made by Air Testing Associates, LLC, either written or verbal, are based solely upon the service provided in accordance with the assigned scope of the investigation as presented by our client, and have not been based upon scientific tasks or procedures beyond the assigned scope of services or the time and budgetary constraints imposed upon Air Testing Associates, LLC by its client. Furthermore, any and all statements, opinions and/or recommendations, expressed or implied, made by Air Testing Associates, LLC, either written or verbal, are for the sole use of our client only, and shall not be used by any other party, for any reason. Should any other party elect to interpret and/or rely upon any of the conclusions reached or recommendations rendered by Air Testing Associates, LLC, it shall do so at its own risk and without recourse in any manner against Air Testing Associates, LLC.

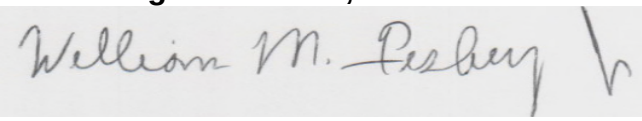
The scope of this report does not include identification of specific structural components or engineering controls to determine delineate or correct sources of water intrusion. No responsibility is assumed that the sources of excessive moisture resulting in fungal growth at the subject property have been or will be appropriately corrected, or that mold growth will not recur as a result of inappropriate repair and periodic maintenance of the same.

This report is based on the information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, of the new information on our opinions and conclusions, and to revise our opinions and conclusions if necessary and warranted. The scope of this report is limited to the above items and is not warranted or guaranteed in any way.

Please feel free to contact me, should you have any comments regarding the above report or any additional questions arise regarding this matter.

Respectfully submitted,

Air Testing Associates, LLC



William M. Feaheny, Jr
Microbiologist/Senior Environmental Scientist

/wmfjr
Enclosures

Appendix 1

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

07/06/18, 08/28/18, 08/29/18

Photo Log & Photos

Photo 3

Photo 6

Photo 9

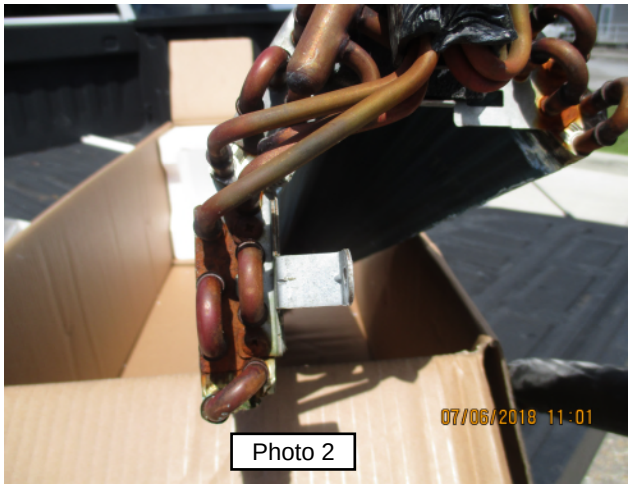


Photo 2

Photo 5

Photo 8

Photo 1

Photo 4

Photo 7

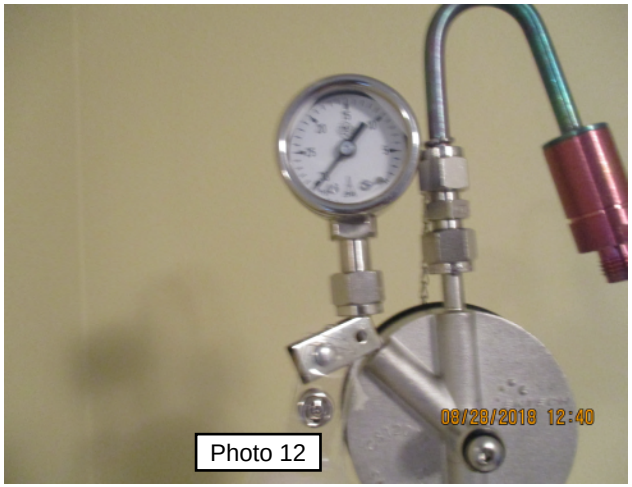


Photo 12

Photo 15

Photo 18

Photo 11

Photo 14

Photo 17

Photo 10

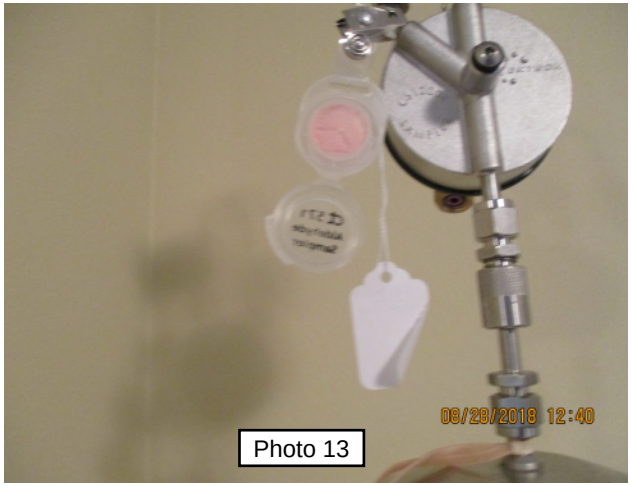


Photo 13

Photo 16

Photo 21

Photo 24

Photo 27

Photo 20

Photo 23

Photo 26

Photo 19

Photo 22

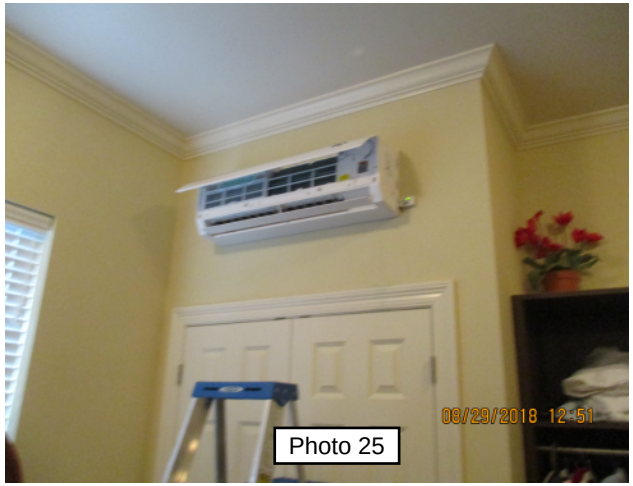


Photo 25

Photo 30

Photo 33

Photo 29

Photo 32

Photo 28

Photo 31

Photo 34

Appendix 2

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

EMSL Analytical, Inc.
Mold Spore Quantification & Identification Results

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 371814965
Customer ID: AIRE25
Customer PO: 18-0056
Project ID:

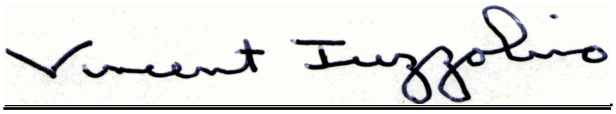
Attn: Bill Feaheny
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001
Project: Christwood Cognitive Care / 18-0056

Phone: (504) 813-5580
Fax: (504) 734-3386
Collected: 08/29/2018
Received: 08/30/2018
Analyzed: 09/07/2018

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	371814965-0001			371814965-0002			371814965-0003		
Client Sample ID:	AC-1 (26537754)			AC-2 (26537704)			AC-3 (26537778)		
Volume (L):	150			150			150		
Sample Location	Outside (SW) - 87F 71%H			Outside (NE) - 86F 72%H			Middle Common Reception Area - 80F		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	5	100	0.2	-	-	-	-	-	-
Ascospores	46	1000	2.3	51	1100	4.7	4	90	6.3
Aspergillus/Penicillium	49	1100	2.6	40	870	3.7	15	330	23.2
Basidiospores	1800	39300	92	919	20100	86.4	26	570	40.1
Bipolaris++	1	20	0	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	35	760	1.8	37	810	3.5	2	40	2.8
Curvularia	3	70	0.2	1	20	0.1	1	20	1.4
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	2	40	0.2	-	-	-
Ganoderma	2	40	0.1	6	100	0.4	-	-	-
Myxomycetes++	4	90	0.2	3	70	0.3	-	-	-
Pithomyces++	-	-	-	-	-	-	1	20	1.4
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	3	70	0.2	-	-	-	-	-	-
Cercospora++	2	40	0.1	5	100	0.4	-	-	-
Nigrospora	5	100	0.2	1	20	0.1	-	-	-
Paecilomyces-like	-	-	-	-	-	-	15	330	23.2
Pestalotia/Pestalotiopsis	-	-	-	1*	7*	0	-	-	-
Pyricularia	-	-	-	-	-	-	1	20	1.4
Stemphylium	-	-	-	1	20	0.1	-	-	-
Zygophiala/Schizothyrium	2	40	0.1	-	-	-	-	-	-
Total Fungi	**1957**	**42730**	**100**	**1067**	**23257**	**100**	**65**	**1420**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	1	20	-	-	-	-
Analyt. Sensitivity 600x	-	22	-	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fiungal glossary fior each specific category.



Vincent Iuzzolino, M.S., Laboratory Manager
or other approved signatory

No discernable field blank was submitted with this group of samples.

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC--EMLAP Lab 100194

Initial report from: 09/07/2018 10:52:44

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 371814965
Customer ID: AIRE25
Customer PO: 18-0056
Project ID:

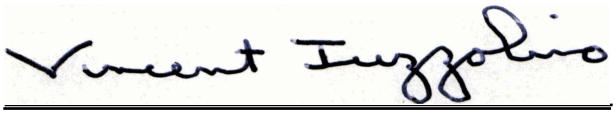
Attn: Bill Feaheny
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001
Project: Christwood Cognitive Care / 18-0056

Phone: (504) 813-5580
Fax: (504) 734-3386
Collected: 08/29/2018
Received: 08/30/2018
Analyzed: 09/07/2018

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	371814965-0004			371814965-0005		
Client Sample ID:	AC-4 (26537699)			AC-5 (26537690)		
Volume (L):	150			150		
Sample Location	Room 802 - 74F 60%H			Room 833 - 74F 53%H		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	2	40	5.2	-	-	-
Ascospores	-	-	-	10	220	18.3
Aspergillus/Penicillium	16	350	45.8	20	440	36.7
Basidiospores	6	100	13.1	17	370	30.8
Bipolaris++	1*	7*	0.9	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	3	70	9.2	3	70	5.8
Curvularia	5	100	13.1	2	40	3.3
Epicoccum	1*	7*	0.9	-	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	3	70	9.2	2	40	3.3
Pithomyces++	-	-	-	1	20	1.7
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-
Nigrospora	1	20	2.6	-	-	-
Paecilomyces-like	-	-	-	-	-	-
Pestalotia/Pestalotiopsis	-	-	-	-	-	-
Pyricularia	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-
Zygophiala/Schizothyrium	-	-	-	-	-	-
Total Fungi	**38**	**764**	**100**	**55**	**1200**	**100**
Hyphal Fragment	3	70	-	1	20	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	22	-	-	22	-
Analyt. Sensitivity 300x	-	7*	-	-	7*	-
Skin Fragments (1-4)	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	3	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fiungal glossary fior each specific category.



Vincent Iuzzolino, M.S., Laboratory Manager
or other approved signatory

No discernable field blank was submitted with this group of samples.

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC--EMLAP Lab 100194

Initial report from: 09/07/2018 10:52:44

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

OrderID: 371814965

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 371814965

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Company Name: Air Testing Associates, LLC.	**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 110 Athania Pkwy. Suite B	
City: Metairie **State/Province:** LA	**Zip/Postal Code:** 70001 **Country:** US
Report To (Name): Bill Feaheny	**Telephone #:** 504-813-5580 18-0056
Email Address: bfeaheny@msn.com 18-0056	**Fax #:** 504-734-3386 **Purchase Order:** N
Project Name/Number: Christwood Cognitive Care/N	**Please Provide Results:** ☐ Fax ☒ Email
U.S. State Samples Taken: LA **Zip Code Sample Taken:** 70433	**Connecticut Samples:** ☐ Commercial ☐ Residential

*Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** _____ ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options * - Please Check

☐ 3 Hour	☐ 6 Hour	☐ 24 Hour	☐ 48 Hour	☐ 72 Hour	☐ 96 Hour	☒ 1 Week	☐ 2 Week

Microbiology Test Codes

M001 Air-O-Cell
M030 Micro 5
M174 MoldSnap
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent
M012 Pseudomonas aeruginosa (P/A***)

M024 Pseudomonas aeruginosa (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & E. coli (Colilert P/A***)
M018 Total Coliform & E. coli (MFT*)
M114 Total Coliform & E. coli Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal Streptococcus (MFT*)
M029 Enterococci (MFT*)
M129 Enterococci (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 Methicillin-resistant Staph. aureus (MRSA)
M031 Rapid-growing non-TB Mycobacteria Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
Legionella Analysis Please use EMSL Legionella COC

RECEIVED AUG 30 2018 EMSL CINNAMINSON, N.J. 08077

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

Name of Sampler: William M. Feaheny Jr. **Signature of Sampler:** William M. Feaheny Jr.

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (only for waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
AC-1	Outside (SW)	Air	☐P ☐NP	M001	150(L)	8-29-18	
(26537954)	87°F 71%H		☐P ☐NP			1119	
			☐P ☐NP				
AC-2	Outside (NE)	Air	☐P ☐NP	M001	150(L)	8-29-18	
(26537704)	86°F 72%H		☐P ☐NP			1132	
			☐P ☐NP				
			☐P ☐NP				

Client Sample # (s): AC-1 to AC-5 **Total # of Samples:** 5 **Samples Received Chilled? Yes / No**

Relinquished (Client): William M Feaheny **Date:** 8/29/18 **Time:** 1800

Received (Lab): FEDEX FED EX **Date:** 8/30/18 **Time:** 10:30

Comments/Special Instructions: 18-0056
Christwood Cognitive Care Unit
100 Christwood Blvd., Covington, LA 70433

Controlled Document – COC-34 Microbiology R7 1 3/22/2017

OrderID: 371814965

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

371814965
EMSL Order Number (*Lab Use Only*):

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
AC-3	Middle Common	Air	M001	150 (L)	8-29-18
(26537798)	Reception Area				1211
	80°F 35% H				
AC-4	Room 802	Air	M001	150(L)	8-29-18
(26537699)	74 F 60% H				1235
AC-5	Room 833	Air	M001	150 (L)	8-29-18
(26537690)	74°F 53% H				1314

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EMSL
CINNAMINSON, N.J.
2018 AUG 30 AM 11:00

**Comments/Special Instructions 18-0056

Page 2 of 2 pages

Controlled Document – Microbiology COC – FL 10/2010

Appendix 3

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

EMSL Analytical, Inc.
Formaldehyde Analyses

EMSL Analytical - Industrial Hygiene
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800)220-3675 /
www.EMSL.com www.formaldehydetesting.com

EMSL Order #:	**281803924**
Customer ID:	**AIRE25**
Customer PO:	**18-0056**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**

Project: **Christwood Cognitive Care Unit**

Date Received: **8/30/2018**
Date Analyzed: **9/1/2018**

Reported Date: **9/14/2018** *Current Rev:* **R0**

Formaldehyde Analysis by HPLC/UV of Passive Monitoring Badges via modified NIOSH 2016, Issue 2, 3/15/03

Lab Sample #: 281803924-0001
Sample Identification: MT9298/ Room 802

Test Parameter	Sampling Time (Min)	Reporting Limit (ug)	Reporting Limit (ppm)	Sample Concentration (ug)	Sample Concentration (ppm)	Comments
Formaldehyde	1440	0.050	0.0017	0.16	0.0055	

Lab Sample #: 281803924-0002
Sample Identification: MT9215/ Room 833

Test Parameter	Sampling Time (Min)	Reporting Limit (ug)	Reporting Limit (ppm)	Sample Concentration (ug)	Sample Concentration (ppm)	Comments
Formaldehyde	1460	0.050	0.0017	0.74	0.025	

Lab Sample #: 281803924-0003
Sample Identification: MT7107/ Field Blank

Test Parameter	Sampling Time (Min)	Reporting Limit (ug)	Reporting Limit (ppm)	Sample Concentration (ug)	Sample Concentration (ppm)	Comments
Formaldehyde		0.050		<0.05		

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

N/A = Not Applicable
Analysts(s): tc/as

Report Date	Report Revision	Revision Comments
9/14/2018	R0	Initial Report

Scott Van Etten, CIH, Laboratory Manager
or other approved signatory

1. Sample were received in acceptable condition unless noted.
2. These results relate only to the sample tested.
3. Sample results are method blank corrected only. Results are not corrected for the Field Blank listed above.
4. A discemable Field Blank was submittesd if listed above as a discrete sample.

EMSL ANALYTICAL, INC.
LABORATORY · PRODUCTS · TRAINING

Industrial Hygiene
Chain of Custody

EMSL Order Number (Lab Use Only): 281803924

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-3502

Report To Contact Name: Bill Feaheny		Bill To Company: SAME	Client ID #: AIRE 25
Company Name: Air Testing Associates		Attention To:	
Street: 110 Athania Pkwy., Suite B		Street:	
City: Metairie	State/Province: LA	Zip/Postal Code:	City:	State/Province:	Zip/Postal Code:
Phone: 504-813-5580 Fax: 504-734-3386		Phone:	Fax:
Project Name: Christwood Cognitive Care Unit		Email Results To: bfeaheny@msn.com	U.S. State where Samples Collected: LA
# Samples in Shipment: 3	Date of Shipment: 8-29-18	Purchase Order: 18-0056	Sampled By (Signature): William M. Feaheny Jr.

Turnaround Time (TAT) – Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

☒ 2 Week ☐ 1 Week ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other (Call Lab)

Media Type: Aldehyde

Manufacturer/Part #: 9064-6 Lot #: 571AT 12D17

Client Sample ID	Location/Description	Analyte / Method	Media	Flow (lpm)	Sample Time On	Sample Time Off	Volume / Area	Sample Type	Sample Date	Comments
MT9298	Room 802	NIOSH 2016	Chem Dist	N/A	8-28-18 1223	8-29-18 1224	N/A	☒ Area ☐ Personal	8-28-18 to 8-29-18	1441 minutes
MT9215	Room 833	↓	↓	↓	8-28-18 1239	8-29-18 1259	↓	☒ Area ☐ Personal	↓	1460 minutes
MT7107	Field Blank	↓	↓	↓	8-28-18 1200	8-29-18 1300	↓	☒ Area ☐ Personal	↓	Field Blank
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		

RECEIVED EMSL CINNAMINSON, N.J. 2018 AUG 30 A 7:47

Note: Most NIOSH and OSHA methods require field blanks. It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.

Released By	Date	Received By	Date
William M. Feaheny Jr.	8-29-18		8/30/18 9am

Comments: 18-0056 Christwood Cognitive Care Unit
100 Christwood Blvd., Covington, LA 70433

3 WP.

OrderID: 281803924

Appendix 4

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

EMSL Analytical, Inc.

TO-15 Analyses

EMSL Analytical
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856)858-4800 / (856)858-4571
http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**

Project: **Christwood C.C.U.**

Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Laboratory Report- Sample Summary

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
491800809-0001	Room 802	8/28/2018	12:23 PM
491800809-0002	Room 833	8/28/2018	12:39 PM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date	Report Revision	Revision Comments
9/14/2018	R0	Initial Report

Marjorie Howley, Laboratory Manager
or other approved signatory

Test results meet all NELAP requirements unless otherwise specified.
NJDEP Certification #: 03036

The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory. The results are not blank corrected unless otherwise noted. Interpretation and use of test results are the responsibility of the client. This report may not be reproduced except in full and without written approval by EMSL Analytical, Inc.

EMSL Analytical
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Fax: **504-734-3386**

Project: **Christwood C.C.U.**

Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Case Narrative

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

Column
Restek RTX-502.2, 60m, 0.25mm ID, 1.4um

Concentrator Traps:
Entech Dual Cold Traps: (1) 1/8” No Packing, (2) 1/8” Tenax.

Gas Standards:
Certified Gas standards were used for all analyses.

Sample Volumes:
Sample volume aliquots for this procedure are 250cc for indoor/ ambient air and 25cc for soil gas. Other volumes for sample dilutions are reflected on each result page.

Holding Times:
Standard holding times of 30 days were met for all samples.

Sampling Pressures:
All samples were received at acceptable pressure/vacuum unless listed below.

Sample Dilutions:
Diluitions reported are designated by the sample # with a "DL" suffix resulting from initial analysis having compounds exceeding calibration as reported with an "E" qualifier. Ethanol and Isopropanol are not diluted for and may be reported with an "E" qualifier on the final result.

QA/QC criteria outside method specifications are listed below (if applicable).

Initial Calibration
All Initial Calibratiion criteria met method specification.

Initial Calibration Verification Standard (ICVS)- Second Source
ICVS met method specification with 70-130% recovery for 100% of compounds.

Laboratory Control Sample (LCS)
LCS met method specification with 70-130% recovery for 100% of compounds.*(If the LCS does not meet criteria but any compounds which have recoveries >130% are not found in the samples, samples may be reported)*

Continuing Calibration Verification Standard (CCVS)
CCVS met method specification with all compounds within 30% deviation.

Ending Calibration Verification Standard (ECVS)
ECVS met method specification with all compounds within 30% deviation.

Method Blanks (MB)
Method Blank met method specification.

Reporting Limit Laboratory Control Samples (RLLCS)
RLLCS met method specification with 90% of compounds within the 60-140% recovery range. Individual compounds outside of the recovery range may be listed below.

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Project: **Christwood C.C.U.**

Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Case Narrative

Manual Integration *: -Listed below if applicable. Before and after documentation provided in extended deliverable packages.*

The following data qualifiers that may have been reported with the data,

ND- Non Detect. This notation would be used in the results column in lieu of a "U" qualifier.

U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.

J- Estimated value reported below adjusted reporting limit for target compounds or estimating a concentration for TICs where a 1:1 response is assumed

B- Compound found in associated method blank as well as in the sample.

E- Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

D- Compound reported from additional diluted analysis.

N- indicates presumptive evidence of a compound based on library search match.

EMSL Analytical, Inc. certifies that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer –readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

Report Date	Report Revision	Revision Comments
9/14/2018	R0	Initial Report

Marjorie Howley

Marjorie Howley, Laboratory Manager
or other approved signatory

Test results meet all NELAP requirements unless otherwise specified.

EMSL Analytical
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EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	1.1	0.50		2.3	1.0	
n-Butane	106-97-8	58.12	39	0.50		94	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	720	5.0	DE	1400	9.4	***Reported Dilution #1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	88	5.0	D	220	12	***Reported Dilution #1***
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	140	5.0	D	330	12	***Reported Dilution #1***
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	0.77	0.50		1.3	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	0.71	0.50		2.2	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	2.4	0.50		7.0	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	6.1	0.50		22	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	0.93	0.50		3.8	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	2.5	0.50		12	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.2**	0.50		**4.6**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	**0.55**	0.50		**2.2**	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	**2.2**	1.0		**10**	4.3	
Xylene (Ortho)	95-47-6	106.2	**0.82**	0.50		**3.6**	2.2	
Styrene	100-42-5	104.1	**1.2**	0.50		**5.2**	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**1000**	**ppbv**		**2100**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	11	10	110%

Qualifier Definitions

ND = Non Detect

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Tentatively Identified Compound Results Summary

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	**19**	JN	**52**	5.6	
Isobutane	000075-28-5	58	**15**	JN	**35**	6.14	
Acetaldehyde	000075-07-0	44	**5.4**	JN	**9.7**	7.20	
Butane, 2-methyl-	000078-78-4	72	**2.5**	JN	**7.5**	8.33	
Pentane	000109-66-0	72	**4.1**	JN	**12**	9.19	
Isoprene	000078-79-5	68	**2.2**	JN	**6.2**	10.13	
Pentanal	000110-62-3	86	**7.5**	JN	**26**	18.65	
1-Pentanol	000071-41-0	88	**8.6**	JN	**31**	20.76	
Hexanal	000066-25-1	100	**30**	JN	**120**	22.00	
2-Heptanone	000110-43-0	114	**2.1**	JN	**9.6**	24.61	
Heptanal	000111-71-7	114	**4.7**	JN	**22**	24.89	
.alpha.-Pinene	000080-56-8	136	**74**	JN	**410**	25.57	
.beta.-Pinene	000127-91-3	136	**20**	JN	**110**	27.08	
Octanal	000124-13-0	128	**7.6**	JN	**40**	27.48	
3-Carene	013466-78-9	136	**4.3**	JN	**24**	27.69	
D-Limonene	005989-27-5	136	**19**	JN	**110**	28.13	
Nonanal	000124-19-6	142	**3.6**	JN	**21**	29.85	
Total TIC Concentrations:			**230**	**ppbv**	**1000**	**ug/m3**	

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

B = Compound also found in method blank.

J= Estimated value based on a 1:1 response to internal standard.

N= Presumptive evidence of compound based on library match.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Chloromethane	74-87-3	50.49	1.1	0.50		2.3	1.0	
n-Butane	106-97-8	58.12	39	0.50		94	1.2	
Ethanol	64-17-5	46.07	720	5.0	DE	1400	9.4	*Reported Dilution #1*
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	88	5.0	D	220	12	*Reported Dilution #1*
Acetone	67-64-1	58.08	140	5.0	D	330	12	*Reported Dilution #1*
Acetonitrile	75-05-8	41.00	0.77	0.50		1.3	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	0.71	0.50		2.2	1.5	
2-Butanone(MEK)	78-93-3	72.10	2.4	0.50		7.0	1.5	
Ethyl acetate	141-78-6	88.10	6.1	0.50		22	1.8	
n-Heptane	142-82-5	100.20	0.93	0.50		3.8	2.0	
1,2-Dichloropropane	78-87-5	113.00	2.5	0.50		12	2.3	
Toluene	108-88-3	92.14	1.2	0.50		4.6	1.9	
2-Hexanone(MBK)	591-78-6	100.10	0.55	0.50		2.2	2.0	
Xylene (p,m)	1330-20-7	106.20	2.2	1.0		10	4.3	
Xylene (Ortho)	95-47-6	106.20	0.82	0.50		3.6	2.2	
Styrene	100-42-5	104.10	1.2	0.50		5.2	2.1	
Total Target Compound Concentrations:			**1000**	**ppbv**		**2100**	**ug/m3**	

Qualifier Definitions

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv		Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	19		JN	52	5.6	
Isobutane	000075-28-5	58	15		JN	35	6.14	
Acetaldehyde	000075-07-0	44	5.4		JN	9.7	7.2	
Butane, 2-methyl-	000078-78-4	72	2.5		JN	7.5	8.33	
Pentane	000109-66-0	72	4.1		JN	12	9.19	
Isoprene	000078-79-5	68	2.2		JN	6.2	10.13	
Pentanal	000110-62-3	86	7.5		JN	26	18.65	
1-Pentanol	000071-41-0	88	8.6		JN	31	20.76	
Hexanal	000066-25-1	100	30		JN	120	22	
2-Heptanone	000110-43-0	114	2.1		JN	9.6	24.61	
Heptanal	000111-71-7	114	4.7		JN	22	24.89	
.alpha.-Pinene	000080-56-8	136	74		JN	410	25.57	
.beta.-Pinene	000127-91-3	136	20		JN	110	27.08	
Octanal	000124-13-0	128	7.6		JN	40	27.48	
3-Carene	013466-78-9	136	4.3		JN	24	27.69	
D-Limonene	005989-27-5	136	19		JN	110	28.13	
Nonanal	000124-19-6	142	3.6		JN	21	29.85	
Total TIC Concentrations:			**230**	**ppbv**		**1000**	**ug/m3**	

EMSL Analytical
200 Route 130 North, Cinnaminson, NJ 08077
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http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Total Volatile Organic Compounds (TVOC) Summary

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.
B = Compound also found in method blank.
J= Estimated value based on a 1:1 response to internal standard.
N= Presumptive evidence of compound based on library match.

Total Volatile Organic Compounds (TVOCs):	1200	ppbv	3100	ug/m3

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http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**1.2**	0.50		**2.4**	1.0	
n-Butane	106-97-8	58.12	**64**	5.0	D	**150**	12	***Reported Dilution #1***
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**1300**	5.0	DE	**2400**	9.4	***Reported Dilution #1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	**76**	5.0	D	**190**	12	***Reported Dilution #1***
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**200**	5.0	D	**490**	12	***Reported Dilution #1***
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	**0.57**	0.50		**0.95**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	**2.8**	0.50		**8.5**	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	**3.9**	0.50		**12**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	**4.8**	0.50		**17**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	**1.1**	0.50		**4.6**	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	**2.7**	0.50		**12**	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.7**	0.50		**6.5**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	**0.68**	0.50		**2.8**	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	**2.0**	1.0		**8.7**	4.3	
Xylene (Ortho)	95-47-6	106.2	**0.77**	0.50		**3.4**	2.2	
Styrene	100-42-5	104.1	**1.0**	0.50		**4.4**	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**1700**	**ppbv**		**3300**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	12	10	120%

Qualifier Definitions

ND = Non Detect

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

EMSL Analytical
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http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Tentatively Identified Compound Results Summary

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	270	JN	730	5.62	
Isobutane	000075-28-5	58	52	JN	120	6.17	
Acetaldehyde	000075-07-0	44	6.9	JN	12	7.22	
Butane, 2-methyl-	000078-78-4	72	3.6	JN	11	8.37	
Pentane	000109-66-0	72	4.1	JN	12	9.20	
Pentanal	000110-62-3	86	10	JN	36	18.65	
1-Pentanol	000071-41-0	88	7.1	JN	25	20.81	
Hexanal	000066-25-1	100	36	JN	150	22.00	
Heptanal	000111-71-7	114	7.6	JN	35	24.91	
.alpha.-Pinene	000080-56-8	136	94	JN	520	25.57	
Decane	000124-18-5	142	4.1	JN	24	26.13	
.beta.-Myrcene	000123-35-3	136	2.9	JN	16	26.65	
.beta.-Pinene	000127-91-3	136	25	JN	140	27.08	
Octanal	000124-13-0	128	10	JN	53	27.50	
3-Carene	013466-78-9	136	8.4	JN	47	27.69	
D-Limonene	005989-27-5	136	22	JN	120	28.13	
.beta.-Phellandrene	000555-10-2	136	21	JN	120	28.36	
Nonanal	000124-19-6	142	4.4	JN	25	29.85	
Total TIC Concentrations:			**590**	**ppbv**	**2200**	**ug/m3**	

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

B = Compound also found in method blank.

J= Estimated value based on a 1:1 response to internal standard.

N= Presumptive evidence of compound based on library match.

Method Reference

USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

EMSL Analytical
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http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Chloromethane	74-87-3	50.49	1.2	0.50		2.4	1.0	
n-Butane	106-97-8	58.12	64	5.0	D	150	12	*Reported Dilution #1*
Ethanol	64-17-5	46.07	1300	5.0	DE	2400	9.4	*Reported Dilution #1*
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	76	5.0	D	190	12	*Reported Dilution #1*
Acetone	67-64-1	58.08	200	5.0	D	490	12	*Reported Dilution #1*
Acetonitrile	75-05-8	41.00	0.57	0.50		0.95	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	2.8	0.50		8.5	1.5	
2-Butanone(MEK)	78-93-3	72.10	3.9	0.50		12	1.5	
Ethyl acetate	141-78-6	88.10	4.8	0.50		17	1.8	
n-Heptane	142-82-5	100.20	1.1	0.50		4.6	2.0	
1,2-Dichloropropane	78-87-5	113.00	2.7	0.50		12	2.3	
Toluene	108-88-3	92.14	1.7	0.50		6.5	1.9	
2-Hexanone(MBK)	591-78-6	100.10	0.68	0.50		2.8	2.0	
Xylene (p,m)	1330-20-7	106.20	2.0	1.0		8.7	4.3	
Xylene (Ortho)	95-47-6	106.20	0.77	0.50		3.4	2.2	
Styrene	100-42-5	104.10	1.0	0.50		4.4	2.1	
Total Target Compound Concentrations:			**1700**	**ppbv**		**3300**	**ug/m3**	

Qualifier Definitions

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv		Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	270		JN	730	5.62	
Isobutane	000075-28-5	58	52		JN	120	6.17	
Acetaldehyde	000075-07-0	44	6.9		JN	12	7.22	
Butane, 2-methyl-	000078-78-4	72	3.6		JN	11	8.37	
Pentane	000109-66-0	72	4.1		JN	12	9.2	
Pentanal	000110-62-3	86	10		JN	36	18.65	
1-Pentanol	000071-41-0	88	7.1		JN	25	20.81	
Hexanal	000066-25-1	100	36		JN	150	22	
Heptanal	000111-71-7	114	7.6		JN	35	24.91	
.alpha.-Pinene	000080-56-8	136	94		JN	520	25.57	
Decane	000124-18-5	142	4.1		JN	24	26.13	
.beta.-Myrcene	000123-35-3	136	2.9		JN	16	26.65	
.beta.-Pinene	000127-91-3	136	25		JN	140	27.08	
Octanal	000124-13-0	128	10		JN	53	27.5	
3-Carene	013466-78-9	136	8.4		JN	47	27.69	
D-Limonene	005989-27-5	136	22		JN	120	28.13	
.beta.-Phellandrene	000555-10-2	136	21		JN	120	28.36	
Nonanal	000124-19-6	142	4.4		JN	25	29.85	
Total TIC Concentrations:			**590**	**ppbv**		**2200**	**ug/m3**	

EMSL Analytical
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http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Total Volatile Organic Compounds (TVOC) Summary

Qualifier Definitions
(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.
B = Compound also found in method blank.
J= Estimated value based on a 1:1 response to internal standard.
N= Presumptive evidence of compound based on library match.

Total Volatile Organic Compounds (TVOCs):	2300 ppbv	5500 ug/m3

USEPA TO-15

External Chain of Custody/ Field Test Data Sheet

EMSL ANALYTICAL, INC.
LABORATORY · PRODUCTS · TRAINING

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Ph. (800) 220-3675
Fax (856) 786-0327

EMSL Order Number (Lab Use Only): 491800809

Report To Contact Name: Bill Feaheny	Bill To Company: SAME (AIRE 25)	Sampled By (Sign): William M. Feahey Jr.
Company Name: Air Testing Associates LLC	Attention To:	Sampled By (Name): William M. Feahey Jr.
Address 1: 110 Athania Pkwy. Suite B	Address 1:	Total # of Samples: 2
Address 2: Metairie, LA 70001	Address 2:	Date Shipped: 8-29-18
Phone No.: 504-813-5580 Fax: 504-734-3386	Phone No.: Fax:	Sample Collection Zip Code: 70433
Email Results To: bfeaheny@msn.com	Project Name: Christwood C.C.U.	Purchase Order: 18-0058

Turnaround Time (in Business Days): ☒ 10 Day Standard ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other

Reporting Format: ☒ Results Only (Standard Lab Report) ☐ Full Deliverables (Surcharge may apply) ☐ Other

EMSL Sample Identifier	Client Field Sample Identification	Field Use - All Information Required! Sampling Start Information Start Date	Start Time (24 hr clock)	Start Canister Pressure ("Hg)	Start Interior Temp. (F)	Sampling Stop Information Stop Date	Stop Time (24 hr clock)	Stop Canister Pressure ("Hg)	Stop Interior Temp. (F)	Lab Use Only Canister Information Canister ID	Size (L)	Can Cert Batch ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Contoller Reg. ID	Cal Flow (ml/min)	Analysis USEPA TO-15	NJDEP LLTO-15	LIBRARY SEARCH	Other (Specify)	Matrix Indoor/ Ambient Air	Soil Gas	Landfill/ Vent
	Room 802	8/28/18	1223	-30	72	8/29/18	1224	-5	74	HD 7190	1.4	HD472	-30.0	-6.0	5986	6.8	X		X		X		
	Room 833	8/28/18	1239	-30	73	8/29/18	1259	-4	74	↓ 2756	↓	↓	↓	-4.5	7977	↓	X		X		X		

Comments: Project: 18-0058 Christwood Cognitive Care Unit * Also perform Sulfur Scan for both Samples

Lab Canister Certification
Analyst Signature (TO-15):

Relinquished by:	Date/ Time	Received by:	Date/ Time	Seal #/Intact	Reason for Exchange (circle appropriate)
[signature]	8.23.18 1523			631	(Shipping) Courier Receiving Sampling Other:
		William M. Feahey	8-24-18/1000	631	Shipping Courier (Receiving) Sampling Other:
William M. Feahey	8-29-18/1930	[signature]	8-30-18 9A	630	(Shipping) Courier (Receiving) Sampling Other:
[signature]	8-30-18 9A	[signature]	8/30/18/0741		Shipping Courier Receiving Sampling (Other)
					Shipping Courier Receiving Sampling Other:

491800809

RECEIVED
EMSL
CINNAMINSON, N.J.

2018 AUG 30 A 7:24

TO-FM-12 Sample Information
Revision 10
Effective Date: May 25, 2018

TO-15 Sample Information

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

Company: Air Testing Associates LLC

Contact Person:

Name: William M. Feaheny Jr.

E-mail: bfeaheny@msn.com

Additional E-mails: bill@airtestingassociates.com

Telephone #: 504-813-5580

Library Search requested: [X] YES [ ] NO

A library search (*aka Tentatively Identified Compounds*) will identify up to 20 of the largest, non-target peaks that are not part of the standard TO-15 list of 74 compounds. If you are performing an Indoor Air Quality or odor investigation, the library search is recommended to provide you with all available information for your sample.

Sample Type:

[X] **Indoor Air Quality (Home/Office)** [ ] **Soil Gas/Sub Slab**
[ ] **IAQ (Industrial)**
[ ] **Other:**
Sample Description: Indoor Air Samples from Cognitive Care Rooms 802 and 833

PLEASE NOTE: The result forms we provide will not indicate whether your results have exceeded any Exposure Limit criteria established by any regulatory agency. If you would like that information, please check off below which regulatory comparison forms you would like to receive.

[X] **OSHA PELs/NIOSH RELs**	*combined form*		[X] **Potential Sources of Compounds found in your IAQ sample**		
[ ] **EPA RSLs** - *11/2017; default is THQ 0.1*	Residential	Industrial	[X] **TVOC (Library Search Required for this format)**		
[ ] **EPA VISLs** - *3/2012*	IA/SG		[ ] **NH DES_WMD** - *2/2012*	Indoor Air	Soil Gas
[ ] **NJ DEP** - *1/2018* - **Circle one:**	VI-Indoor AQ	VI-Soil Gas	[ ] **Ohio** - *4/2013* - **Circle one:**	Residential	Commercial
[ ] **NC DENR** - *4/2014* - **Circle one:**	Residential	Non-residential	[ ] **Indiana Dept Env Mgmt Screeening Levels** - *3/2016*		
[ ] **PA DEP** - *11/2016*	Indoor Air		[ ] **Vermont DEP IROCP** - *4/2012* **(soil gas only)**		
[ ] **PA DEP** - 11/2016: Sub Slab Soil Gas **OR** Near Source Soil Gas			[ ] **California OEHHA** - *2/2012*		
[ ] **CA HHSL** - *11/2004* - **Circle one:**	Indoor Air	Soil Gas	[ ] **Other; these are the compounds I want reported:**		

Please note: There is an additional charge for any of the tests below. **USEPA TO-3 AND ASTM 5504 analyses can be performed from your canister at the Cinnaminson NJ Laboratory.**

US EPA TO-3 via GC/FID **(choose one below):**
[ ] **C_1-C_6 hydrocarbons**
[ ] **Methane only**

ASTM-D5504 *via GC/SCD* **(choose one below):***
[X] **Sulfur Scan (H_2S, COS, MeSH, EtSH, DMS)**
[ ] **H_2S only**

Note** : **Hold time for sulfur gases is 1 day from collection. Please schedule your sample collection so samples are received in the lab prior to noon on Friday. Analysis performed out of hold time will have a notation in the report.

We can provide the following CMS tests from your canisters at the **Cinnaminson and Huntington Beach** laboratories. Please note these tests are to be used for IAQ/Screening purposes ONLY. EMSL recommends alternate field sampling techniques for these parameters (with the exception of water vapor); please contact your sales rep for the proper media. Please note: There is an additional charge for any of the tests below.

Draeger CMS Analyzer:
[ ] **CO** [ ] **CO_2** [ ] **NH_3** [ ] **O2** [ ] **Water Vapor**

Sample Retention Policy: All canisters are guaranteed to be retained for one day after results are reported. Please review your results promptly to ensure your project scope is fully addressed. Cans may be retained for a longer period of time, but arrangements to hold your cans must be made through your customer account representative quickly. Thank you.

EMSL Analytical
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856)858-4800 / (856)858-4571
http://www.EMSL.com to15lab@EMSL.com

EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	>	OSHA PEL ug/m3	>
Propylene	NC	115-07-1	42.08	ND		ND	N.E.		N.E.	
Freon 12(Dichlorodifluoromethane)	NC	75-71-8	120.90	ND		ND	4900000		4900000	
Freon 114(1,2-Dichlorotetrafluoroethan	--	76-14-2	170.90	ND		ND	7000000		7000000	
Chloromethane	NC	74-87-3	50.49	1.1		2.3	LFC		210000	
n-Butane	--	106-97-8	58.12	39		94	1900000		1900000	
Vinyl chloride	C	75-01-4	62.50	ND		ND	LFC		2600	
1,3-Butadiene	C	106-99-0	54.09	ND		ND	LFC		2200	
Bromomethane	NC	74-83-9	94.94	ND		ND	LFC		78000	
Chloroethane	NC	75-00-3	64.52	ND		ND	LFC		2600000	
Ethanol	--	64-17-5	46.07	720	DE	1400	1900000		1900000	
Bromoethene(Vinyl bromide)	C	593-60-2	106.90	ND		ND	LFC		N.E.	
Freon 11(Trichlorofluoromethane)	--	75-69-4	137.40	ND		ND	5600000		5600000	
Isopropyl alcohol(2-Propanol)	NC	67-63-0	60.10	88	D	220	980000		980000	
Freon 113(1,1,2-Trichlorotrifluoroethan	NC	76-13-1	187.40	ND		ND	7700000		7700000	
Acetone	NC	67-64-1	58.08	140	D	330	590000		2400000	
1,1-Dichloroethene	NC	75-35-4	96.94	ND		ND	790000		790000	
Acetonitrile	NC	75-05-8	41.00	0.77		1.3	34000		67000	
Tertiary butyl alcohol(TBA)	--	75-65-0	74.12	0.71		2.2	300000		300000	
Bromoethane(Ethyl bromide)	--	74-96-4	108.00	ND		ND	880000		880000	
3-Chloropropene(Allyl chloride)	C	107-05-1	76.53	ND		ND	3100		3100	
Carbon disulfide	NC	75-15-0	76.14	ND		ND	3100		62000	
Methylene chloride	C	75-09-2	84.94	ND		ND	LFC		87000	
Acrylonitrile	C	107-13-1	53.00	ND		ND	2200		4300	
Methyl-tert-butyl ether(MTBE)	C	1634-04-4	88.15	ND		ND	N.E.		N.E.	
trans-1,2-Dichloroethene	--	156-60-5	96.94	ND		ND	790000		790000	
n-Hexane	NC	110-54-3	86.17	ND		ND	180000		1800000	
1,1-Dichloroethane	C	75-34-3	98.96	ND		ND	400000		400000	
Vinyl acetate	NC	108-05-4	86.00	ND		ND	14000		N.E.	
2-Butanone(MEK)	NC	78-93-3	72.10	2.4		7.0	590000		590000	
cis-1,2-Dichloroethene	--	156-59-2	96.94	ND		ND	790000		790000	
Ethyl acetate	NC	141-78-6	88.10	6.1		22	1400000		1400000	
Chloroform	C	67-66-3	119.40	ND		ND	9800		240000	
Tetrahydrofuran	NC	109-99-9	72.11	ND		ND	590000		590000	
1,1,1-Trichloroethane	NC	71-55-6	133.40	ND		ND	1900000		1900000	
Cyclohexane	NC	110-82-7	84.16	ND		ND	1000000		1000000	
2,2,4-Trimethylpentane(Isooctane)	--	540-84-1	114.20	ND		ND	N.E.		N.E.	
Carbon tetrachloride	C	56-23-5	153.80	ND		ND	13000		63000	
n-Heptane	NC	142-82-5	100.20	0.93		3.8	350000		2000000	
1,2-Dichloroethane	C	107-06-2	98.96	ND		ND	4000		200000	
Benzene	C	71-43-2	78.11	ND		ND	320		3200	
Trichloroethene	C	79-01-6	131.40	ND		ND	130000		540000	
1,2-Dichloropropane	C	78-87-5	113.00	2.5		12	LFC		350000	
Methyl Methacrylate	NC	80-62-6	100.12	ND		ND	410000		410000	
Bromodichloromethane	C	75-27-4	163.80	ND		ND	N.E.		N.E.	

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
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110 Athania Pkwy
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Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	>	OSHA PEL ug/m3	>
1,4-Dioxane	C	123-91-1	88.12	ND		ND	3600		360000	
4-Methyl-2-pentanone(MIBK)	NC	108-10-1	100.20	ND		ND	200000		410000	
cis-1,3-Dichloropropene**	C	10061-01-5	111.00	ND		ND	4500		N.E.	
Toluene	NC	108-88-3	92.14	1.2		4.6	380000		750000	
trans-1,3-Dichloropropene**	C	10061-02-6	111.00	ND		ND	4500		N.E.	
1,1,2-Trichloroethane	C	79-00-5	133.40	ND		ND	55000		55000	
2-Hexanone(MBK)	NC	591-78-6	100.10	0.55		2.2	4100		410000	
Tetrachloroethene	C	127-18-4	165.80	ND		ND	LFC		680000	
Dibromochloromethane	--	124-48-1	208.30	ND		ND	N.E.		N.E.	
1,2-Dibromoethane	C	106-93-4	187.80	ND		ND	350		150000	
Chlorobenzene	NC	108-90-7	112.60	ND		ND	N.E.		350000	
Ethylbenzene	C	100-41-4	106.20	ND		ND	430000		430000	
Xylene (p,m)	NC	1330-20-7	106.20	2.2		10	430000		430000	
Xylene (Ortho)	NC	95-47-6	106.20	0.82		3.6	430000		430000	
Styrene	NC	100-42-5	104.10	1.2		5.2	210000		430000	
Isopropylbenzene (cumene)	NC	98-82-8	120.19	ND		ND	250000		250000	
Bromoform	C	75-25-2	252.80	ND		ND	5200		5200	
1,1,2,2-Tetrachloroethane	C	79-34-5	167.90	ND		ND	6900		34000	
4-Ethyltoluene	--	622-96-8	120.20	ND		ND	N.E.		N.E.	
1,3,5-Trimethylbenzene	NC	108-67-8	120.20	ND		ND	120000		120000	
2-Chlorotoluene	--	95-49-8	126.60	ND		ND	260000		N.E.	
1,2,4-Trimethylbenzene	NC	95-63-6	120.20	ND		ND	120000		120000	
1,3-Dichlorobenzene	--	541-73-1	147.00	ND		ND	N.E.		N.E.	
1,4-Dichlorobenzene	C	106-46-7	147.00	ND		ND	LFC		450000	
Benzyl chloride	C	100-44-7	126.00	ND		ND	5200		5200	
1,2-Dichlorobenzene	NC	95-50-1	147.00	ND		ND	300000		300000	
1,2,4-Trichlorobenzene	NC	120-82-1	181.50	ND		ND	37000		N.E.	
Hexachloro-1,3-butadiene	C	87-68-3	260.80	ND		ND	210		N.E.	
Naphthalene	C	91-20-3	128.17	ND		ND	52000		52000	

**The concentrations of each isomer should be added if multiple isomers are present and compared to the total screening level.

The > column is used to flag exceedences as marked

Exposure Limit Definitions
REL= Recommended Exposure Limit, PEL= Permissable Exposure Limit

Agency Definitions
NIOSH= The National Institute for Occupational Safety and Health

Reference
Occupational Safety and Health Administration (OSHA) General Industry Air Contaminants Standard (29 CFR 1910.1000)

Toxicity Class (EPA Regionional Screening Levels (RSL) Table, Nov 2017)

Carcinogenic (C) Exceedence
Value exceeds the theoretical risk that 1 additional case of cancer will occur in a population of 1 million than statistically expected. Thus is a theoretical risk and not an actual epidemiological one.

NonCarcinogenic (NC) Exceedence

Value exceeds the theoretical risk that 1 in a population of 100,000 will experience deliterious health effects. Thus is a theoretical risk and not an actual epidemiological one.

Compound Exposure Definitions
NE= No Limit Established
LFC= Lowest Feasible Concentration
NS= No Sscreening Value

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.

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EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
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Metairie, LA 70001

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Fax: **504-734-3386**
Date Collected: **8/28/2018**
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Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Possible Background Sources of Contaminants

Target Compounds	CAS#	Result ppbv	Q	Result ug/m3	Use and Possible Sources
Chloromethane	74-87-3	1.1		2.3	Most (99%) of the chloromethane in the environment comes from natural sources. Because chloromethane is made in the oceans by natural processes, it is present in air all over the world. In most areas, the outside air contains less than 1 part of chloromethane in a billion parts of air (ppb). In cities, human activities, mostly combustion and manufacturing, add to the chloromethane in the air, resulting in somewhat higher levels, up to 1 ppb. Cigarette smoke, polystyrene insulation, and aerosol propellants; home burning of wood, coal, or certain plastics; and chlorinated swimming pools.[4]
n-Butane	106-97-8	39		94	Aerosol spray products for some paints, cosmetics, automotive products, leather treatments, pesticides.[2]
Ethanol	64-17-5	720	DE	1400	Hand sanitizers, disinfecting wipes. Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray. [2]
Isopropyl alcohol(2-Propanol)	67-63-0	88	D	220	Eye Glass Cleaners. Disinfecting wipes. Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray.[2]
Acetone	67-64-1	140	D	330	Rubber cement, cleaning fluids, scented candles and nail polish remover.[1]
Acetonitrile	75-05-8	0.77		1.3	Predominantly used as a solvent in the manufacture of pharmaceuticals and in chemical laboratories for the detection of materials such as pesticide residues.[6]
Tertiary butyl alcohol(TBA)	75-65-0	0.71		2.2	Gasoline (oxygenating agent).[1]
2-Butanone(MEK)	78-93-3	2.4		7.0	2-Butanone is produced in large quantities. Nearly half of its use is in paints and other coatings because it will quickly evaporate into the air and it dissolves many substances.[4] Can occur from automobile exhaust, printing inks, fragrance/flavoring agent in candy and perfume, paint, glue, cleaning agents and cigarette smoke.[1]
Ethyl acetate	141-78-6	6.1		22	Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray.[2]
n-Heptane	142-82-5	0.93		3.8	It is used as an industrial solvent and in gasoline and petroleum products refining processes.Also may be in nail polishes and wood office furniture.[1]
1,2-Dichloropropane	78-87-5	2.5		12	It was used in the past as a soil fumigant, chemical intermediate and industrial solvent and was found in paint strippers, varnishes, and furniture finish removers. Most of these uses were discontinued. Today, almost all of the 1,2-dichloropropane is used as a chemical intermediate to make perchloroethylene and several other related chlorinated chemicals.[4]
Toluene	108-88-3	1.2		4.6	Toluene is produced in the process of making gasoline and other fuels from crude oil and making coke from coal. Will occur in gasoline exhaust. Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.[4]

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Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4377.D	HD2190	307.5 cc	1
Dilution1	09/14/2018	KW	J4394.D	HD2190	31 cc	10

Possible Background Sources of Contaminants

Target Compounds	CAS#	Result ppbv	Q	Result ug/m3	Use and Possible Sources
2-Hexanone(MBK)	591-78-6	**0.55**		**2.2**	It was used in the past in paint and paint thinner, to make other chemical substances, and to dissolve oils and waxes. No longer used or produced in the US. It is formed as a waste product resulting from industrial activities such as making wood pulp and producing gas from coal, and in oil shale operations.[4]
Xylene (p,m)	1330-20-7	**2.2**		**10**	It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.[4] Water sealer, gasoline, automobile exhaust, markers, paint, floor polish and cigarette smoke.[1]
Xylene (Ortho)	95-47-6	**0.82**		**3.6**	It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.[4] Water sealer, gasoline, automobile exhaust, markers, paint, floor polish and cigarette smoke.[1]
Styrene	100-42-5	**1.2**		**5.2**	Billions of pounds are produced each year to make products such as rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing. Most of these products contain styrene linked together in a long chain (polystyrene) as well as unlinked styrene.[4] Cigarette smoke, automobile exhaust, fiberglass, rubber and epoxy adhesives, occurs naturally in various fruits, vegetables, nuts and meats.[1]

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.

Sources References
(1) NJDEP "Common Household Sources of Background Indoor Air Contamination". June 26, 2012
(2) NYSDOH "Volatile Organic Compounds (VOCs) in Commonly Used Products", 2007
(3) EPA, Air & Radiation, TTN Web - Technology Transfer NetworkAir Toxics Web site, various years.
(4) Agency for Toxic Substances and Disease Registry (ATSDR). U.S. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1998.
(5) OFFICE OF POLLUTION PREVENTION AND TOXICS, U.S. ENVIRONMENTAL PROTECTION AGENCY, August 1994, EPA 749-F-94-012a
(6) U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH. 1985.
(7) World Health Organization,
(8) Product Safety Assessment, Revised: November 19, 2010 The Dow Chemical Company
(9) California Office of Environmental Health Hazard Assessment, PROPOSED ACTION LEVEL FOR 2-CHLOROTOLUENE
(10) Delaware Health and Social Services, Division of Public Health, Revised: 01/2010
(11) USEPA, Envirofacts Master Chemical Integrator (EMCI), Scorecard, 4/10/2009

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	>	OSHA PEL ug/m3	>
Propylene	NC	115-07-1	42.08	ND		ND	N.E.		N.E.	
Freon 12(Dichlorodifluoromethane)	NC	75-71-8	120.90	ND		ND	4900000		4900000	
Freon 114(1,2-Dichlorotetrafluoroethan	--	76-14-2	170.90	ND		ND	7000000		7000000	
Chloromethane	NC	74-87-3	50.49	1.2		2.4	LFC		210000	
n-Butane	--	106-97-8	58.12	64	D	150	1900000		1900000	
Vinyl chloride	C	75-01-4	62.50	ND		ND	LFC		2600	
1,3-Butadiene	C	106-99-0	54.09	ND		ND	LFC		2200	
Bromomethane	NC	74-83-9	94.94	ND		ND	LFC		78000	
Chloroethane	NC	75-00-3	64.52	ND		ND	LFC		2600000	
Ethanol	--	64-17-5	46.07	1300	DE	2400	1900000		1900000	
Bromoethene(Vinyl bromide)	C	593-60-2	106.90	ND		ND	LFC		N.E.	
Freon 11(Trichlorofluoromethane)	--	75-69-4	137.40	ND		ND	5600000		5600000	
Isopropyl alcohol(2-Propanol)	NC	67-63-0	60.10	76	D	190	980000		980000	
Freon 113(1,1,2-Trichlorotrifluoroethan	NC	76-13-1	187.40	ND		ND	7700000		7700000	
Acetone	NC	67-64-1	58.08	200	D	490	590000		2400000	
1,1-Dichloroethene	NC	75-35-4	96.94	ND		ND	790000		790000	
Acetonitrile	NC	75-05-8	41.00	0.57		0.95	34000		67000	
Tertiary butyl alcohol(TBA)	--	75-65-0	74.12	2.8		8.5	300000		300000	
Bromoethane(Ethyl bromide)	--	74-96-4	108.00	ND		ND	880000		880000	
3-Chloropropene(Allyl chloride)	C	107-05-1	76.53	ND		ND	3100		3100	
Carbon disulfide	NC	75-15-0	76.14	ND		ND	3100		62000	
Methylene chloride	C	75-09-2	84.94	ND		ND	LFC		87000	
Acrylonitrile	C	107-13-1	53.00	ND		ND	2200		4300	
Methyl-tert-butyl ether(MTBE)	C	1634-04-4	88.15	ND		ND	N.E.		N.E.	
trans-1,2-Dichloroethene	--	156-60-5	96.94	ND		ND	790000		790000	
n-Hexane	NC	110-54-3	86.17	ND		ND	180000		1800000	
1,1-Dichloroethane	C	75-34-3	98.96	ND		ND	400000		400000	
Vinyl acetate	NC	108-05-4	86.00	ND		ND	14000		N.E.	
2-Butanone(MEK)	NC	78-93-3	72.10	3.9		12	590000		590000	
cis-1,2-Dichloroethene	--	156-59-2	96.94	ND		ND	790000		790000	
Ethyl acetate	NC	141-78-6	88.10	4.8		17	1400000		1400000	
Chloroform	C	67-66-3	119.40	ND		ND	9800		240000	
Tetrahydrofuran	NC	109-99-9	72.11	ND		ND	590000		590000	
1,1,1-Trichloroethane	NC	71-55-6	133.40	ND		ND	1900000		1900000	
Cyclohexane	NC	110-82-7	84.16	ND		ND	1000000		1000000	
2,2,4-Trimethylpentane(Isooctane)	--	540-84-1	114.20	ND		ND	N.E.		N.E.	
Carbon tetrachloride	C	56-23-5	153.80	ND		ND	13000		63000	
n-Heptane	NC	142-82-5	100.20	1.1		4.6	350000		2000000	
1,2-Dichloroethane	C	107-06-2	98.96	ND		ND	4000		200000	
Benzene	C	71-43-2	78.11	ND		ND	320		3200	
Trichloroethene	C	79-01-6	131.40	ND		ND	130000		540000	
1,2-Dichloropropane	C	78-87-5	113.00	2.7		12	LFC		350000	
Methyl Methacrylate	NC	80-62-6	100.12	ND		ND	410000		410000	
Bromodichloromethane	C	75-27-4	163.80	ND		ND	N.E.		N.E.	

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
Ste B
Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

NIOSH and OSHA Exposure Limit Comparisons

Target Compounds	Tox. Basis	CAS#	MW	Result ppbv	Q	Result ug/m3	NIOSH REL ug/m3	>	OSHA PEL ug/m3	>
1,4-Dioxane	C	123-91-1	88.12	ND		ND	3600		360000	
4-Methyl-2-pentanone(MIBK)	NC	108-10-1	100.20	ND		ND	200000		410000	
cis-1,3-Dichloropropene**	C	10061-01-5	111.00	ND		ND	4500		N.E.	
Toluene	NC	108-88-3	92.14	**1.7**		**6.5**	380000		750000	
trans-1,3-Dichloropropene**	C	10061-02-6	111.00	ND		ND	4500		N.E.	
1,1,2-Trichloroethane	C	79-00-5	133.40	ND		ND	55000		55000	
2-Hexanone(MBK)	NC	591-78-6	100.10	**0.68**		**2.8**	4100		410000	
Tetrachloroethene	C	127-18-4	165.80	ND		ND	LFC		680000	
Dibromochloromethane	--	124-48-1	208.30	ND		ND	N.E.		N.E.	
1,2-Dibromoethane	C	106-93-4	187.80	ND		ND	350		150000	
Chlorobenzene	NC	108-90-7	112.60	ND		ND	N.E.		350000	
Ethylbenzene	C	100-41-4	106.20	ND		ND	430000		430000	
Xylene (p,m)	NC	1330-20-7	106.20	**2.0**		**8.7**	430000		430000	
Xylene (Ortho)	NC	95-47-6	106.20	**0.77**		**3.4**	430000		430000	
Styrene	NC	100-42-5	104.10	**1.0**		**4.4**	210000		430000	
Isopropylbenzene (cumene)	NC	98-82-8	120.19	ND		ND	250000		250000	
Bromoform	C	75-25-2	252.80	ND		ND	5200		5200	
1,1,2,2-Tetrachloroethane	C	79-34-5	167.90	ND		ND	6900		34000	
4-Ethyltoluene	--	622-96-8	120.20	ND		ND	N.E.		N.E.	
1,3,5-Trimethylbenzene	NC	108-67-8	120.20	ND		ND	120000		120000	
2-Chlorotoluene	--	95-49-8	126.60	ND		ND	260000		N.E.	
1,2,4-Trimethylbenzene	NC	95-63-6	120.20	ND		ND	120000		120000	
1,3-Dichlorobenzene	--	541-73-1	147.00	ND		ND	N.E.		N.E.	
1,4-Dichlorobenzene	C	106-46-7	147.00	ND		ND	LFC		450000	
Benzyl chloride	C	100-44-7	126.00	ND		ND	5200		5200	
1,2-Dichlorobenzene	NC	95-50-1	147.00	ND		ND	300000		300000	
1,2,4-Trichlorobenzene	NC	120-82-1	181.50	ND		ND	37000		N.E.	
Hexachloro-1,3-butadiene	C	87-68-3	260.80	ND		ND	210		N.E.	
Naphthalene	C	91-20-3	128.17	ND		ND	52000		52000	

**The concentrations of each isomer should be added if multiple isomers are present and compared to the total screening level.

The > column is used to flag exceedences as marked

Exposure Limit Definitions
REL= Recommended Exposure Limit, PEL= Permissable Exposure Limit

Agency Definitions
NIOSH= The National Institute for Occupational Safety and Health

Reference
Occupational Safety and Health Administration (OSHA) General Industry Air Contaminants Standard (29 CFR 1910.1000)

Toxicity Class (EPA Regionional Screening Levels (RSL) Table, Nov 2017)

Carcinogenic (C) Exceedence
Value exceeds the theoretical risk that 1 additional case of cancer will occur in a population of 1 million than statistically expected. Thus is a theoretical risk and not an actual epidemiological one.

NonCarcinogenic (NC) Exceedence

Value exceeds the theoretical risk that 1 in a population of 100,000 will experience deliterious health effects. Thus is a theoretical risk and not an actual epidemiological one.

Compound Exposure Definitions
NE= No Limit Established
LFC= Lowest Feasible Concentration
NS= No Sscreening Value

Qualifier Definitions
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EMSL Order #: **491800809**
EMSL Sample #: **491800809-2**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
Air Testing Associates, LLC.
110 Athania Pkwy
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Metairie, LA 70001

Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Possible Background Sources of Contaminants

Target Compounds	CAS#	Result ppbv	Q	Result ug/m3	Use and Possible Sources
Chloromethane	74-87-3	1.2		2.4	Most (99%) of the chloromethane in the environment comes from natural sources. Because chloromethane is made in the oceans by natural processes, it is present in air all over the world. In most areas, the outside air contains less than 1 part of chloromethane in a billion parts of air (ppb). In cities, human activities, mostly combustion and manufacturing, add to the chloromethane in the air, resulting in somewhat higher levels, up to 1 ppb. Cigarette smoke, polystyrene insulation, and aerosol propellants; home burning of wood, coal, or certain plastics; and chlorinated swimming pools.[4]
n-Butane	106-97-8	64	D	150	Aerosol spray products for some paints, cosmetics, automotive products, leather treatments, pesticides.[2]
Ethanol	64-17-5	1300	DE	2400	Hand sanitizers, disinfecting wipes. Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray. [2]
Isopropyl alcohol(2-Propanol)	67-63-0	76	D	190	Eye Glass Cleaners. Disinfecting wipes. Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray.[2]
Acetone	67-64-1	200	D	490	Rubber cement, cleaning fluids, scented candles and nail polish remover.[1]
Acetonitrile	75-05-8	0.57		0.95	Predominantly used as a solvent in the manufacture of pharmaceuticals and in chemical laboratories for the detection of materials such as pesticide residues.[6]
Tertiary butyl alcohol(TBA)	75-65-0	2.8		8.5	Gasoline (oxygenating agent).[1]
2-Butanone(MEK)	78-93-3	3.9		12	2-Butanone is produced in large quantities. Nearly half of its use is in paints and other coatings because it will quickly evaporate into the air and it dissolves many substances.[4] Can occur from automobile exhaust, printing inks, fragrance/flavoring agent in candy and perfume, paint, glue, cleaning agents and cigarette smoke.[1]
Ethyl acetate	141-78-6	4.8		17	Personal care products: nail polish, nail polish remover, colognes, perfumes, rubbing alcohol, hair spray.[2]
n-Heptane	142-82-5	1.1		4.6	It is used as an industrial solvent and in gasoline and petroleum products refining processes.Also may be in nail polishes and wood office furniture.[1]
1,2-Dichloropropane	78-87-5	2.7		12	It was used in the past as a soil fumigant, chemical intermediate and industrial solvent and was found in paint strippers, varnishes, and furniture finish removers. Most of these uses were discontinued. Today, almost all of the 1,2-dichloropropane is used as a chemical intermediate to make perchloroethylene and several other related chlorinated chemicals.[4]
Toluene	108-88-3	1.7		6.5	Toluene is produced in the process of making gasoline and other fuels from crude oil and making coke from coal. Will occur in gasoline exhaust. Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.[4]

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Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	09/13/2018	KW	J4378.D	HD2756	292.5 cc	1
Dilution1	09/14/2018	KW	J4395.D	HD2756	29 cc	10

Possible Background Sources of Contaminants

Target Compounds	CAS#	Result ppbv	Q	Result ug/m3	Use and Possible Sources
2-Hexanone(MBK)	591-78-6	**0.68**		**2.8**	It was used in the past in paint and paint thinner, to make other chemical substances, and to dissolve oils and waxes. No longer used or produced in the US. It is formed as a waste product resulting from industrial activities such as making wood pulp and producing gas from coal, and in oil shale operations.[4]
Xylene (p,m)	1330-20-7	**2.0**		**8.7**	It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.[4] Water sealer, gasoline, automobile exhaust, markers, paint, floor polish and cigarette smoke.[1]
Xylene (Ortho)	95-47-6	**0.77**		**3.4**	It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.[4] Water sealer, gasoline, automobile exhaust, markers, paint, floor polish and cigarette smoke.[1]
Styrene	100-42-5	**1.0**		**4.4**	Billions of pounds are produced each year to make products such as rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing. Most of these products contain styrene linked together in a long chain (polystyrene) as well as unlinked styrene.[4] Cigarette smoke, automobile exhaust, fiberglass, rubber and epoxy adhesives, occurs naturally in various fruits, vegetables, nuts and meats.[1]

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.

Sources References
(1) NJDEP "Common Household Sources of Background Indoor Air Contamination". June 26, 2012
(2) NYSDOH "Volatile Organic Compounds (VOCs) in Commonly Used Products", 2007
(3) EPA, Air & Radiation, TTN Web - Technology Transfer NetworkAir Toxics Web site, various years.
(4) Agency for Toxic Substances and Disease Registry (ATSDR). U.S. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1998.
(5) OFFICE OF POLLUTION PREVENTION AND TOXICS, U.S. ENVIRONMENTAL PROTECTION AGENCY, August 1994, EPA 749-F-94-012a
(6) U.S. Environmental Protection Agency, Office of Research and Development, Cincinnati, OH. 1985.
(7) World Health Organization,
(8) Product Safety Assessment, Revised: November 19, 2010 The Dow Chemical Company
(9) California Office of Environmental Health Hazard Assessment, PROPOSED ACTION LEVEL FOR 2-CHLOROTOLUENE
(10) Delaware Health and Social Services, Division of Public Health, Revised: 01/2010
(11) USEPA, Envirofacts Master Chemical Integrator (EMCI), Scorecard, 4/10/2009

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EMSL Order #: **491800809**
Customer ID: **AIRE25**
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Phone: **504-813-5580**
Fax: **504-734-3386**

Project: **Christwood C.C.U.**

Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Sulfur Compounds by ASTM D5504-12
Laboratory Report- Sample Summary

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
491800809-0001	Room 802	8/28/2018	12:23 PM
491800809-0002	Room 833	8/28/2018	12:39 PM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date:	Report Revision	Revision Comments
9/14/2018	R0	Initial Report

Marjorie Howley, Laboratory Manager
or other approved signatory

Test results meet all NELAP requirements unless otherwise specified.

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EMSL Order #: **491800809**
EMSL Sample #: **491800809-1**
Customer ID: **AIRE25**
Customer PO: **18-0058**

Attn: **Bill Feaheny**
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Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 802

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	08/30/2018	KW	S4401.D	HD2190	1 cc	1.23

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Hydrogen Sulfide	7783-06-4	34.08	ND	4.9		ND	6.9	
Carbonyl Sulfide	463-58-1	60.1	ND	4.9		ND	12	
Methyl Mercaptan	74-93-1	48.1	ND	4.9		ND	10	
Ethyl Mercaptan	75-08-1	62.13	ND	4.9		ND	13	
Dimethyl Sulfide	75-18-3	62.13	ND	4.9		ND	13	
Total Target Compound Concentrations:			**0.0**	**ppbv**		**0.0**	**ug/m3**	

Qualifier Definitions

B = Compound also found in method blank.

ND = Non Detect

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

J= Indicates estimated value below Reporting Limit (RL).

Threshold References

Analyte	Odor Characteristic[2]	Odor Threshold[2]	industry- ceiling)[1]	NIOSH REL (ceiling)[1]	ACGIH TLV (TWA)[1]
Hydrogen Sulfide	Rotten eggs, flatus	1ppb	20ppm	10ppm	1ppm
Carbonyl Sulfide	Burnt Matches, burnt fireworks	NE	NE	NE	5ppm
Methyl Mercaptan	Rotten cabbage, odorized natural gas	0.0002ppb	10ppm	0.5ppm	0.5ppm
Ethyl Mercaptan	Rotten cabbage, odorized natural gas	0.098ppb	10ppm	0.5ppm	0.5ppm
Dimethyl Sulfide	Garlic-like[3]	8ppb	NE	NE	10ppm

Reference

[1] www.osha.gov

[2] **"O**dor Threshholds for Chemicals with Established Occupational Health Standards", AIHA, Fairfax VA, 1989

[3] MSDS sheet, www.arkema-inc.com

Agency Definitions

OSHA= Occupational Safety and Health Administration

NIOSH=National Institute for Occupational Safety and Health

ACGIH=American Conference of Governmental Industrial Hygienists

Exposure Limit Definitions

PEL= Permissable Exposure Limit

REL=Recommended Exposure Limit

TLV=Threashold Limit Value

TWA=Time Weighted Average

NE= Not established

Method Reference

ASTM D5504-12: Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence

NJDEP Certification #: 03036

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EMSL Sample #: **491800809-2**
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Attn: **Bill Feaheny**
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Phone: **504-813-5580**
Fax: **504-734-3386**
Date Collected: **8/28/2018**
Date Received: **8/30/2018**

Project: **Christwood C.C.U.**

Sample ID: Room 833

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	08/30/2018	KW	S4402.D	HD2756	1 cc	1.17

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Hydrogen Sulfide	7783-06-4	34.08	ND	4.7		ND	6.5	
Carbonyl Sulfide	463-58-1	60.1	ND	4.7		ND	11	
Methyl Mercaptan	74-93-1	48.1	ND	4.7		ND	9.2	
Ethyl Mercaptan	75-08-1	62.13	ND	4.7		ND	12	
Dimethyl Sulfide	75-18-3	62.13	ND	4.7		ND	12	
Total Target Compound Concentrations:			**0.0**	**ppbv**		**0.0**	**ug/m3**	

Qualifier Definitions

B = Compound also found in method blank.

ND = Non Detect

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

J= Indicates estimated value below Reporting Limit (RL).

Threshold References

Analyte	Odor Characteristic[2]	Odor Threshold[2]	industry- ceiling)[1]	NIOSH REL (ceiling)[1]	ACGIH TLV (TWA)[1]
Hydrogen Sulfide	Rotten eggs, flatus	1ppb	20ppm	10ppm	1ppm
Carbonyl Sulfide	Burnt Matches, burnt fireworks	NE	NE	NE	5ppm
Methyl Mercaptan	Rotten cabbage, odorized natural gas	0.0002ppb	10ppm	0.5ppm	0.5ppm
Ethyl Mercaptan	Rotten cabbage, odorized natural gas	0.098ppb	10ppm	0.5ppm	0.5ppm
Dimethyl Sulfide	Garlic-like[3]	8ppb	NE	NE	10ppm

Reference

[1] www.osha.gov

[2] **"O**dor Threshholds for Chemicals with Established Occupational Health Standards", AIHA, Fairfax VA, 1989

[3] MSDS sheet, www.arkema-inc.com

Agency Definitions

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ACGIH=American Conference of Governmental Industrial Hygienists

Exposure Limit Definitions

PEL= Permissable Exposure Limit

REL=Recommended Exposure Limit

TLV=Threashold Limit Value

TWA=Time Weighted Average

NE= Not established

Method Reference

ASTM D5504-12: Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence

NJDEP Certification #: 03036

USEPA TO-15

External Chain of Custody/ Field Test Data Sheet

EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Ph. (800) 220-3675
Fax (856) 786-0327

EMSL Order Number (Lab Use Only): 491800809

Report To Contact Name: Bill Feaheny	Bill To Company: SAME (AIRE 25)	Sampled By (Sign): William M. Feahey Jr.
Company Name: Air Testing Associates LLC	Attention To:	Sampled By (Name): William M. Feahey Jr.
Address 1: 110 Athania Pkwy. Suite B	Address 1:	Total # of Samples: 2
Address 2: Metairie, LA 70001	Address 2:	Date Shipped: 8-29-18
Phone No.: 504-813-5580 Fax: 504-734-3386	Phone No.: Fax:	Sample Collection Zip Code: 70433
Email Results To: bfeaheny@msn.com	Project Name: Christwood C.C.U.	Purchase Order: 18-0058

Turnaround Time (in Business Days): ☒ 10 Day Standard ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other

Reporting Format: ☒ Results Only (Standard Lab Report) ☐ Full Deliverables (Surcharge may apply) ☐ Other

EMSL Sample Identifier	Client Field Sample Identification	Field Use - All Information Required! Sampling Start Information Start Date	Start Time (24 hr clock)	Start Canister Pressure ("Hg)	Start Interior Temp. (F)	Sampling Stop Information Stop Date	Stop Time (24 hr clock)	Stop Canister Pressure ("Hg)	Stop Interior Temp. (F)	Lab Use Only Canister Information Canister ID	Size (L)	Can Cert Batch ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Contoller Reg. ID	Cal Flow (ml/min)	Analysis USEPA TO-15	NJDEP LLTO-15	LIBRARY SEARCH	Other (Specify)	Matrix Indoor/ Ambient Air	Soil Gas	Landfill/ Vent
	Room 802	8/28/18	1223	-30	72	8/29/18	1224	-5	74	HD 7190	1.4	HD472	-30.0	-6.0	5986	6.8	X		X		X		
	Room 833	8/28/18	1239	-30	73	8/29/18	1259	-4	74	↓ 2756	↓	↓	↓	-4.5	7977	↓	X		X		X		

Comments: Project: 18-0058 Christwood Cognitive Care Unit * Also perform Sulfur Scan for both Samples

Lab Canister Certification
Analyst Signature (TO-15):

Relinquished by:	Date/ Time	Received by:	Date/ Time	Seal #/Intact	Reason for Exchange (circle appropriate)
[signature]	8.23.18 1523			631	(Shipping) Courier Receiving Sampling Other:
		William M. Feahey	8-24-18/1000	631	Shipping Courier (Receiving) Sampling Other:
William M. Feahey	8-29-18/1930	[signature]	8-30-18 9A	630	(Shipping) Courier (Receiving) Sampling Other:
[signature]	8-30-18 9A	[signature]	8/30/18/0741		Shipping Courier Receiving Sampling (Other)
					Shipping Courier Receiving Sampling Other:

2018 AUG 30 A 7:24

CINNAMINSON, N.J.

EMSL

RECEIVED

491800809

RECEIVED
EMSL
CINNAMINSON, N.J.

2018 AUG 30 A 7:24

TO-FM-12 Sample Information
Revision 10
Effective Date: May 25, 2018

TO-15 Sample Information

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

Company: Air Testing Associates LLC

Contact Person:

Name: William M. Feaheny Jr.

E-mail: bfeaheny@msn.com

Additional E-mails: bill@airtestingassociates.com

Telephone #: 504-813-5580

Library Search requested: [X] YES [ ] NO

A library search (*aka Tentatively Identified Compounds*) will identify up to 20 of the largest, non-target peaks that are not part of the standard TO-15 list of 74 compounds. If you are performing an Indoor Air Quality or odor investigation, the library search is recommended to provide you with all available information for your sample.

Sample Type:

[X] **Indoor Air Quality (Home/Office)** [ ] **Soil Gas/Sub Slab**
[ ] **IAQ (Industrial)**
[ ] **Other:**
Sample Description: Indoor Air Samples from Cognitive Care Rooms 802 and 833

PLEASE NOTE: The result forms we provide will not indicate whether your results have exceeded any Exposure Limit criteria established by any regulatory agency. If you would like that information, please check off below which regulatory comparison forms you would like to receive.

[X] **OSHA PELs/NIOSH RELs**	*combined form*		[X] **Potential Sources of Compounds found in your IAQ sample**		
[ ] **EPA RSLs** - *11/2017; default is THQ 0.1*	Residential	Industrial	[X] **TVOC (Library Search Required for this format)**		
[ ] **EPA VISLs** - *3/2012*	IA/SG		[ ] **NH DES_WMD** - *2/2012*	Indoor Air	Soil Gas
[ ] **NJ DEP** - *1/2018* - **Circle one:**	VI-Indoor AQ	VI-Soil Gas	[ ] **Ohio** - *4/2013* - **Circle one:**	Residential	Commercial
[ ] **NC DENR** - *4/2014* - **Circle one:**	Residential	Non-residential	[ ] **Indiana Dept Env Mgmt Screeening Levels** - *3/2016*		
[ ] **PA DEP** - *11/2016*	Indoor Air		[ ] **Vermont DEP IROCP** - *4/2012* **(soil gas only)**		
[ ] **PA DEP** - 11/2016: Sub Slab Soil Gas **OR** Near Source Soil Gas			[ ] **California OEHHA** - *2/2012*		
[ ] **CA HHSL** - *11/2004* - **Circle one:**	Indoor Air	Soil Gas	[ ] **Other; these are the compounds I want reported:**		

Please note: There is an additional charge for any of the tests below. **USEPA TO-3 AND ASTM 5504 analyses can be performed from your canister at the Cinnaminson NJ Laboratory.**

US EPA TO-3 via GC/FID **(choose one below):**
[ ] C_1-C_6 **hydrocarbons**
[ ] **Methane only**

ASTM-D5504 *via GC/SCD* **(choose one below):***
[X] **Sulfur Scan (H_2S, COS, MeSH, EtSH, DMS)**
[ ] **H_2S only**

Note** : **Hold time for sulfur gases is 1 day from collection. Please schedule your sample collection so samples are received in the lab prior to noon on Friday. Analysis performed out of hold time will have a notation in the report.

We can provide the following CMS tests from your canisters at the **Cinnaminson and Huntington Beach** laboratories. Please note these tests are to be used for IAQ/Screening purposes ONLY. EMSL recommends alternate field sampling techniques for these parameters (with the exception of water vapor); please contact your sales rep for the proper media. Please note: There is an additional charge for any of the tests below.

Draeger CMS Analyzer:
[ ] **CO** [ ] **CO_2** [ ] **NH_3** [ ] **O2** [ ] **Water Vapor**

Sample Retention Policy: All canisters are guaranteed to be retained for one day after results are reported. Please review your results promptly to ensure your project scope is fully addressed. Cans may be retained for a longer period of time, but arrangements to hold your cans must be made through your customer account representative quickly. Thank you.

Appendix 5

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

EMSL Analytical, Inc.
Full Particle Identification & SEM/EDX Results

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 858-4800

Attn.: *Bill Feaheny*
Air Testing Associates, LLC
110 Athania Parkway, Suite B
Metairie, LA 70001

Phone: (504) 813-5580

EMSL Case No.: 361802224
Sample(s) Received: 8/30/2018
Date of Reporting: 9/14/2018
Date Printed: 9/14/2018
Reported By: D. Macready
email: bfeaheny@msn.com

- Laboratory Report -
Scanning Electron Microscopy/Energy Dispersive X-ray Spectroscopy (SEM/EDX)
(Suspected corrosion products due to sulfur-containing gases)

Project: Christwood Cognitive Care Unit / 18-0056

Conclusions:

- [Copper + sulfur]-based compounds were detected in the sample.
- Copper oxides were detected in the sample.

Procurement of Samples and Analytical Overview:

The samples for analysis (two, wipes) arrived at EMSL Analytical (Cinnaminson, NJ) on August 30, 2018. The package arrived in satisfactory condition with no evidence of damage to the contents. The purpose of the analysis is to determine the identification of the individual components. The data reported herein has been obtained using the following equipment and methodologies.

Methods & Equipment: Scanning Electron Microscopy/Energy Dispersive X-ray Spectroscopy (SEM/EDX)

Analyzed by:

Daniel Macready
Materials Science Engineer

September 14, 2018
Date

Reviewed/Approved:

Virginia Dow
Approved Signatory

September 14, 2018
Date

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 858-4800

Attn.: *Bill Feaheny*
Air Testing Associates, LLC
110 Athania Parkway, Suite B
Metairie, LA 70001

Phone: (504) 813-5580

EMSL Case No.: 361802224
Sample(s) Received: 8/30/2018
Date of Reporting: 9/14/2018
Date Printed: 9/14/2018
Reported By: D. Macready
email: bfeaheny@msn.com

Results:

Table 1. Components found by SEM/EDX

EMSL Sample Number	**361802224-0001**
Client Sample Number	**SEM-802**
Sample Description	**Exposed Coil Wipe / Room 802**
Components	**Comments**
[Cu+S]-Based Compounds	Detected / Presumed (determined by EDX-see Figure 1)
Copper Oxides	Detected / Presumed (determined by EDX-see Figure 1)

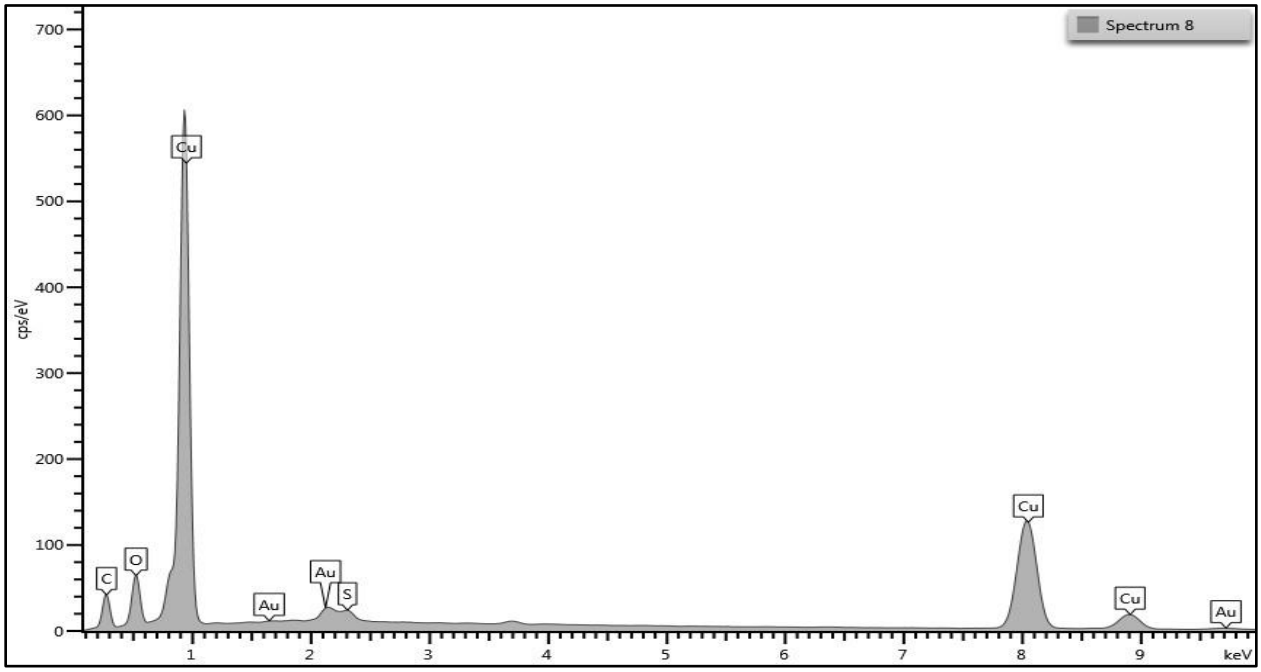

Figure 1: SEM/EDX elemental spectrum of material from 361802224-0001 showing copper (Cu), oxygen (O) and sulfur (S) as major components. The presence of copper (Cu) and oxygen (O) is presumptive evidence of the presence of copper oxides. The presence of sulfur (S) in the spectrum is presumptive evidence of [Cu+S]-based compounds. The sample was mounted on a carbon adhesive tab and coated with gold (Au) to minimize electron charging.

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 858-4800

Attn.: *Bill Feaheny*
Air Testing Associates, LLC
110 Athania Parkway, Suite B
Metairie, LA 70001

Phone: (504) 813-5580

EMSL Case No.: 361802224
Sample(s) Received: 8/30/2018
Date of Reporting: 9/14/2018
Date Printed: 9/14/2018
Reported By: D. Macready
email: bfeaheny@msn.com

Table 2. Components found by SEM/EDX

EMSL Sample Number	**361802224-0002**
Client Sample Number	**SEM-833**
Sample Description	**Exposed Coil Wipe / Room 833**
Components	**Comments**
[Cu+S]-Based Compounds	Not Detected (determined by EDX-see Figure 2)
Copper Oxides	Not Detected (determined by EDX-see Figure 2)

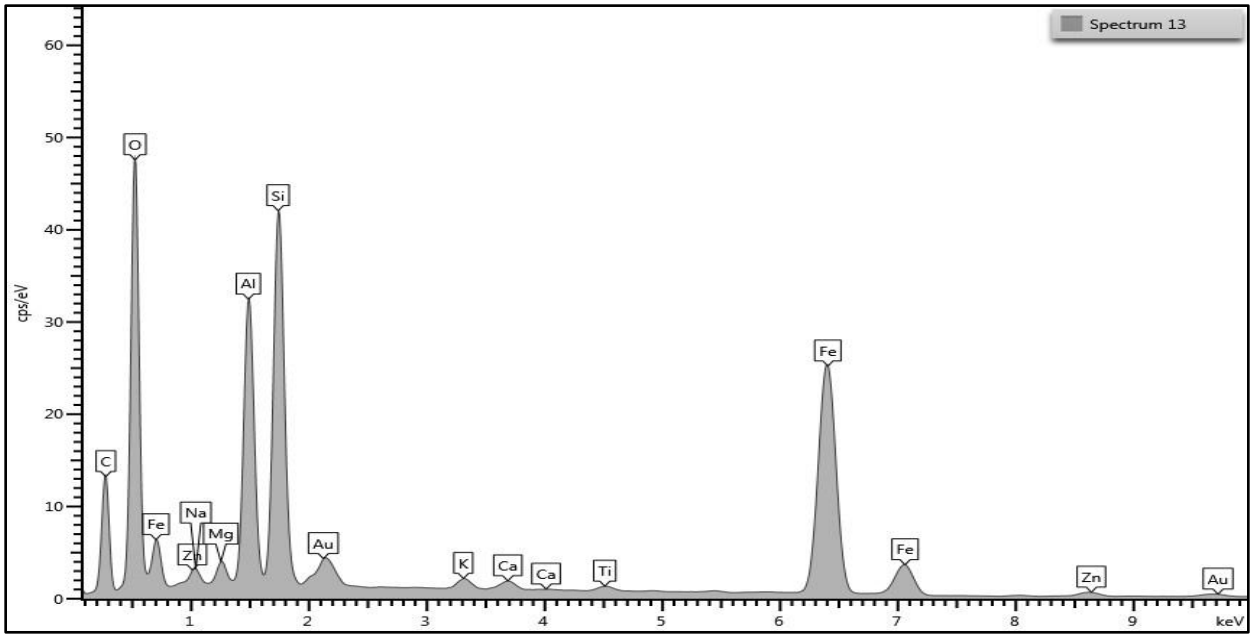

Figure 2: SEM/EDX elemental spectrum of material from 361802224-0002 showing silicon (Si) and oxygen (O) as the main components, most likely as quartz (SiO_2). Aluminum (Al), iron (Fe), and zinc (Zn) are present in their metal and oxide forms. Calcium (Ca), potassium (K), magnesium (mg) and sodium (Na) are also present in lower amounts, most likely associated with clays/feldspars. The absence of copper (Cu) and sulfur (S) in the spectrum is presumptive evidence of the absence of copper oxides and [Cu+S]-based compounds. The sample was mounted on a carbon adhesive tab and coated with gold (Au) to minimize electron charging.

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 858-4800

Attn.: *Bill Feaheny*
Air Testing Associates, LLC
110 Athania Parkway, Suite B
Metairie, LA 70001

Phone: (504) 813-5580

EMSL Case No.: 361802224
Sample(s) Received: 8/30/2018
Date of Reporting: 9/14/2018
Date Printed: 9/14/2018
Reported By: D. Macready
email: bfeaheny@msn.com

Important Terms, Conditions, and Limitations:

Sample Retention: Samples analyzed by EMSL will be retained for 60 days after analysis date. Storage beyond this period is available for a fee with written request prior to the initial 30 day period. Samples containing hazardous/toxic substances which require special handling may be returned to the client immediately. EMSL reserves the right to charge a sample disposal or return shipping fee.

Change Orders and Cancellation: All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for holding times that are exceeded due to such changes.

Warranty: EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures, when available. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.

Limits of Liability: In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to insure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable value of the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client or any third party, whether based upon theories of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.

The data and other information contained in this report, as well as any accompanying documents, represent only the samples analyzed. They are reported upon the condition that they are not to be reproduced wholly or in part for advertising or other purposes without the written approval from the laboratory.

OrderID: 361802224

Materials Science Chain of Custody

EMSL Order Number *(Lab Use Only)*: 361802224

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-1580

Company: Air Testing Associates LLC		**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*	
Street: 110 Athania Pkwy., Suite B			
City: Metairie	**State/Province:** LA	**Zip/Postal Code:** 70001	**Country:**
Report To (Name): Bill Feaheny		**Fax #:** ~~504-813~~ 504-734-3386	
Telephone #: 504-813-5580		**Email Address:** bfeaheny@msn.com	
Project Name/Number: Christwood Cognitive Care Unit / 18-0056			
Please Provide Results: ☐ Fax ☐ Email	**Purchase Order:** 18-0056	**U.S. State Samples Taken In:** LA	

Turnaround Time (TAT) Options – Please Check

☒ 2 Week ☐ Expedited (Please call for information) TAT: _____

Test Type

☐ Common Particle ID (large particles)	☐ Physical Testing (Tensile, Compression, etc.)	☐ MMVF's (fibrous glass, mineral wool, RCF's)
☐ Full Particle ID (environmental dust)	☐ FTIR/NIR (Polymers, Lubricants)	☐ Particle Size (Sieve, Microscopy, or Laser-select one)
☐ Basic Material ID (solids)	☐ X-Ray Fluorescence (elemental analysis)	☐ Combustible Dust (Core Module, MIE, MEC, Kst, etc.)
☐ Advanced Material ID (liquids and solids, industrial residues)	☐ X-Ray Diffraction (Crystalline Particles)	☐ Petrographic Examination of Concrete, Soil, Stone

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Combustion-by-products (soot, char, ash, carbon black)

☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

☒ **Other (Please Explain):** Analysis of Wipe Samples from exposed A/C Coils by SEM/EDX methodology

All orders for clients who do not have established accounts with EMSL Analytical must be accompanied by payment in form of a check or credit card. After your first order, EMSL reserves the right to establish an account and assign credit terms of Net 30 or COD based on credit evaluation and or frequency of sample submittal. To establish a permanent account, you must be able to submit samples on a regular basis at a minimum of five times per year. EMSL reserves the right to make adjustments or changes to this policy as deemed necessary by business requirements.

Samplers Name: William M. Feaheny **Samplers Signature:** William M. Feaheny

	Sample #	Sample Description	Volume	Date/Time Sampled
1	SEM-802	Exposed Coil Wipe / Room 802	~4 sq. inches	8-29-18 1255
2	SEM-833	Exposed Coil Wipe / Room 833	~4 sq. inches	8-29-18 1320

Client Sample # (s): SEM-802, SEM-833 **Total # of Samples:** 2

Relinquished (Client): William M. Feaheny **Date:** 8/29/18 **Time:** 1930

Received (Lab): Bob emse **Date:** 8/30/18 **Time:** 1030

Comments: 18-0056 / Alcohol Prep Wipes for SEM/EDX Analysis
Christwood Cognitive Care Unit / 100 Christwood Blvd. Covington, LA 70433

Page 1 of 1 pages

Controlled Document – Material Science COC – R3 – 9/22/2011

Appendix 6

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

Particle Counts Log

Particle Counts

Location: Christwood Cognitive Care

Date	Time	Location	Vol.	Units	0.3um	0.5um	1.0um	2.0um	5.0um	10.0um
2018-08-29	11:51:04	Outside (SW)	1	L	24357	2566	1002	502	26	3
2018-08-29	11:51:43	Outside (SW)	1	L	24986	2593	1051	555	38	5
2018-08-29	11:55:43	Outside (NE)	1	L	24000	2661	963	506	29	3
2018-08-29	11:56:11	Outside (NE)	1	L	22818	2424	1000	508	36	8
2018-08-29	12:04:43	Reception Area	1	L	15093	1035	289	150	28	10
2018-08-29	12:05:17	Reception Area	1	L	15008	1128	297	137	27	8
2018-08-29	12:28:28	Room 802	1	L	19153	1722	589	336	89	27
2018-08-29	12:29:04	Room 802	1	L	18776	1846	635	384	108	25
2018-08-29	13:09:46	Room 833	1	L	17271	1722	407	165	26	8
2018-08-29	13:10:15	Room 833	1	L	17268	1733	425	196	38	14

Appendix 7

Christwood Cognitive Care
100 Christwood Boulevard
Covington, LA 70433

08/29/18

Carbon Dioxide (CO2) & Carbon Monoxide (CO)
Log

$CO_{2\ \&}$ CO

Client Christwood Cognitive Care Unit

Location 100 Christwood Blvd., Covington, LA 70433

Location	**Date**	**Time**	**CO_{2MIN}** ***(ppm)***	**CO_{2MAX}** ***(ppm)***	**CO_2 STEL** (15 min. short term exp.)	**CO_2 TWA** (8 hr. weighted avg.)	**CO**
Outside (SW)	**8/29/2018**	**11:21**	**650**	**850**	**666**	**666**	**0**
Outside (NE)	**8/29/2018**	**23:37**	**624**	**664**	**648**	**648**	**0**
Middle Common Reception Area	**8/29/2018**	**12:08**	**1312**	**1500**	**1478**	**1478**	**0**
Room 802	**8/29/2018**	**12:32**	**1506**	**1601**	**1551**	**1551**	**0**
Room 833	**8/29/2018**	**13:14**	**1430**	**1444**	**1434**	**1434**	**0**