**ENVIRONMENTAL MANAGEMENT COMMISSION**
**AIR QUALITY COMMITTEE MEETING SUMMARY**
**January 9, 2019**
**Archdale Building-Ground Floor Hearing Room**
**10:00 AM - 12:00 PM**

## MEETING BRIEF

During their January 9, 2019 meeting, the Air Quality Committee (AQC) of the Environmental Management Commission (EMC):

- Approved DAQ's request to proceed to the EMC for approval to proceed to public hearing on proposed rule revisions of Session Law 2013-413 (H74) Group 5 air quality rules in 15A NCAC 02D .0600-.0615, .2100-.2104, .2300-.2311, and .2600-.2621.
- Provided comments for DAQ staff to consider in the Group 5 readoption package regarding risk management plans for ammonia.
- Received updates on the DAQ's approach to develop an acceptable ambient level (AAL) in consultation with the Secretaries' Science Advisory Board (SAB) for methyl bromide emissions from log fumigation operations.
- Provided comments for DAQ staff to consider as they prepare the fiscal analysis and draft rules to control methyl bromide emissions from log fumigation operations.

| AQC MEMBERS IN ATTENDANCE | |
|---|---|
| Dr. Stan Meiburg, AQC Chairman | Ms. Marion Deerhake |
| Mr. Charles S. Carter, AQC Vice Chair | Dr. Suzanne Lazorick |
| Mr. Gerard "Jerry" Carroll | Mr. George H. Pettus |

| OTHERS IN ATTENDANCE | |
|---|---|
| Mr. John D. Solomon, EMC Chair | Mr. Michael Pjetraj, DAQ Deputy Director |
| Mr. Bill Puette, EMC | Dr. Sandy Mort, DEQ Toxicologist |
| Dr. Albert R. Rubin, EMC | Members of the public |
| Mr. Philip Reynolds, EMC Counsel | DAQ Staff |
| Mr. Mike Abraczinskas, DAQ Director | |

## PRELIMINARY ITEMS

**Agenda Item #1, Call to Order and the State Government Ethics Act, N.C.G.S. §138A-15(e)**
Chairman Meiburg called the meeting to order and inquired, per General Statute §138A-15(e), as to whether any member knows of any known conflict of interest or appearance of conflict with respect to matters before the EMC's AQC. No conflicts were identified.

**Agenda Item #2, Review and Approval of the November 7, 2018 Meeting Minutes**
Chairman Meiburg noted that a Committee member expressed concerns regarding approvability of the November 7, 2018 meeting minutes. Commissioner Carter specified that the minutes were missing information and requested deferring approval until the next meeting. Chairman Meiburg asked for clarification as to whether Commissioner Carter would be submitting suggested language to the DAQ for incorporation into the November 7, 2018 minutes before the next meeting. Commissioner Carter affirmed that was the case. Chairman Meiburg asked for additional questions or comments, and upon hearing none, noted that the approval of the November 7, 2018 meeting minutes would be deferred until the next meeting.

## RULEMAKING CONCEPTS

None.

## DRAFT RULES

**Agenda Item #4, Request for Approval of Proposed Rule Revisions and to Proceed to EMC for Approval to Proceed to Public Hearing on Readoption of Group 5 Rules - 15A NCAC 02D .0600-.0615, .2100-.2104, .2300-.2311, .2600-.2621 (547) (Joelle Burleson, DAQ)**

**Presentation:**
Ms. Burleson, DAQ Regulatory Advisor, requested AQC approval of the proposed rule revisions for the readoption of several rules in the Group 5 package pursuant to Session Law 2013-413.

**15A NCAC 02D .0600, *Monitoring: Recordkeeping: Reporting***
15A NCAC 02D .0601 and .0607 are proposed for readoption without change. 15A NCAC 02D .0602, .0604, .0605, .0606, .0608, .0610, .0611, .0612, .0613, .0614, and .0615 are proposed for readoption without substantive changes to clarify requirements that were promulgated in previous rule actions.

**15A NCAC 02D .2100, *Risk Management Program***
15A NCAC 02D .2102 is proposed for readoption without change. 15A NCAC 02D .2101, .2103, and .2104 are proposed for readoption without substantive change to make minor revisions for consistency with the federal requirements.

**15A NCAC 02D .2300, *Banking Emission Reduction Credits***
15A NCAC 02D .2304, .2308, .2309, and .2311 are proposed for readoption without change. 15A NCAC 02D .2301, .2302, .2303, .2305, .2306, .2307, and .2310 are proposed for readoption without substantive changes to reflect that North Carolina does not contain nonattainment areas pursuant to 40 CFR 81.334. In addition, several provisions were removed since they are addressed in other air quality rules.

**15A NCAC 02D .2600, *Source Testing***
15A NCAC 02D .2604, .2605, .2606, .2607, .2612, .2613, .2617, .2619, and .2620 are proposed for readoption without substantive changes to update rule references, clarifications, and other general formatting. 15A NCAC 02D .2601, .2602, .2603, .2608, .2609, .2610, .2611, .2614, .2615, .2616, .2618, and .2621 are proposed for readoption with substantive change to reformat paragraphs, revise language for clarity, add references to current Environmental Protection Agency (EPA) requirements, and by adding new test methods by the American Society for Testing and Materials and EPA.

The Group 5 package also includes the utilization of gender neutral language and updates to formatting in accordance with Rules Review Commission and Administrative Procedures Act requirements.

A stakeholder meeting was held on June 28, 2018. The DAQ received verbal comments during the meeting that were subsequently incorporated into the rules; however, no written comments were received.

A regulatory impact analysis was approved by the Office of State Budget and Management on November 26, 2018, as having little to no impact on state or local governments and no substantial economic impact to the regulated community or other parties. It is important to note that the revisions to 15A NCAC 02D .2602 has an estimated $5,076/yr. cost over the next five years for the preparation and submittal of a written plan to achieve compliance.

**Discussion:**
Chairman Meiburg noted that the Group 5 package represents continued progress on behalf of the DAQ for H74 and commended staff for clarifying administratively-complex programs.

Commissioner Deerhake recommended that staff revise a typo in 15A NCAC 02D .0613(c)(3) for the term "checks". She also asked for clarification regarding the agricultural ammonia exemption in 15A NCAC 02D Section .2100, *Risk Management Program*. Commissioner Deerhake noted that she was aware of recent legislation from Congress exempting agricultural ammonia from threshold exceedances pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Chairman Meiburg specified that he recalled recent discussions of the CERCLA reporting requirements.

Commissioner Deerhake asked for clarification regarding the exemption conditions in 15A NCAC 02D .2101(b)(1). The provisions of 40 CFR 68.125 that are incorporated by reference in Paragraph (b)(1) fall under Subpart F for *Regulated Substances for Accidental Release Prevention*; however, it does not incorporate other provisions of Part 68. Commissioner Deerhake asked whether agricultural ammonia is exempt from risk management planning under 40 CFR, Part 68, Subpart G, *Risk Management Plan*. Chairman Meiburg stated that the Chemical Emergency Preparedness and Prevention (CEPP) provisions contained in CERCLA are different than those in the Section 112(r) requirements for risk management planning, so there may be a jurisdiction difference in statute. Commissioner Deerhake asked whether agricultural ammonia should be considered under 40 CFR, Part 68, Subpart G, although the farms are exempt from accidental release prevention rules. She also noted that if that type of ammonia were exempt from all accident prevention and risk management provisions, it would have been at the Part 68 level, not at the Subpart F level. Ms. Burleson specified that the DAQ will follow-up with a response to the questions. Chairman Meiburg noted that this particular issue should not necessarily stop the Group 5 package from advancing to the March EMC meeting. The DAQ should answer the question to the EMC before final action to proceed to public hearing. Commissioner Deerhake noted a nuance that ammonia is referred to as a nutrient used by agriculture, while there is also ammonia that is released from animal operations. Essentially, it would be nice to know the type of role the different types of ammonia have for risk management programs.

Chairman Meiburg asked whether there was a state law regulating the way agricultural emissions are considered. Commissioner Deerhake specified that ammonia is a state air toxic pollutant. EMC Chairman Solomon specified that risk management plans should be for storage and use, not the emissions. Chairman Meiburg asked the DAQ to provide more detail to the full Commission regarding these matters.

**Motion:**
Chairman Meiburg asked if there were any other questions for Ms. Burleson. No questions were identified. Chairman Meiburg asked for a motion to proceed to the EMC to request to proceed to public hearing. Commissioner Carter made a motion to approve and Commissioner Carroll seconded. Agenda item four was unanimously approved.

**JANUARY EMC AGENDA ITEMS**

***Agenda Item #5, Overview of Governor Cooper's Executive Order No. 80: North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy (Sushma Masemore, DEQ)**

***Agenda Item #6, Update on Methyl Bromide Log Fumigation Rulemaking (Patrick Knowlson, DAQ)**

Due to time constraints, Chairman Meiburg stated that the Committee may choose to wait to hear the agenda items containing an asterisk (*****) during the full Commission. The Committee affirmed to hear the asterisked items during the full Commission meeting on January 10, 2019.

**INFORMATIONAL ITEMS**

**Agenda Item #7, Continued Discussion of Acceptable Ambient Level for Methyl Bromide Emissions from Log Fumigation**

**Presentation:**

**Presentation Part 1**

Michael Abraczinskas, Division of Air Quality Director, specified that the log fumigation topic became an informational item for a number of reasons. Specifically, the DAQ wanted to address follow-up questions from the Secretaries' Science Advisory Board (SAB) and the AQC, while also obtaining guidance for next steps.

Dr. Sandy Mort, DEQ Environmental Toxicologist, presented additional information that was provided during the December 3, 2018, SAB meeting. The SAB primarily wanted clarification on the parameters and extrapolation process for deriving the 1992 Integrated Risk Information System (IRIS) reference concentration for the subsequent Agency for Toxic Substances and Disease Registry's (ATSDR) draft 2018 chronic Minimal Risk Level (MRL). The clarification identified that the rodent study, (which was the basis for the ATSDR and IRIS chronic inhalation values), led to similar exposure parameters and derivation processes. The agencies mathematically converted a 6-hours per day, 5-days per week rodent exposure to a 24-hours per day, 7-days per week continuous exposure. Further extrapolation of the 24/7 exposure's point of departure was conducted to convert the critical exposure concentration to a human-equivalent concentration. This involved a mathematical model by the agencies termed "Regional Gas Dose Ration" (RGDR), which relates ventilation rates and surface area of the toxicant in the exposed animal to that of a human. This procedure is detailed in EPA documents that were referenced by the agencies at the time. However, due to the length of time that passed, there is a slight difference in some factors that were utilized for rodent to human extrapolations. This difference influenced a minor effect on the final calculations and concentrations of the health values. Additionally, the expanded documentation provided to the SAB identified that the agencies applied identical Uncertainty Factors to the human-adjusted concentration; however, there was a difference in how the factors were applied. For example, IRIS utilized a square root of three, while the ATSDR utilized a value of three. Also, the combined Uncertainty Factor applied by IRIS was rounded to 100, while the ASTDR utilized the calculated composite value of 90. Both IRIS and ATSDR rounded the final chronic inhalation value to one significant figure. If carried to two significant figures, the calculated lowest-observed-adverse-effect-level for human equivalent concentrations ($LOAEL_{HEC}$) for the two studies are 0.48 $mg/m^3$ for the IRIS and 0.54 $mg/m^3$ for the ATSDR, with the difference attributable to slight differences in the RGDR values and the composite Uncertainty Factors. The agencies went through the same processes and studies to develop their concentrations; however, they had a slightly different approach.

The SAB also wanted clarification as to whether a 24-hour averaging period was protective of acute exposures within the allotted timeframe at higher concentrations. The DEQ researched the question and were not able to find examples of acute levels that were protective of or intended for the public. The IRIS and ATSDR do not provide an acute value in the 2018-year update of their toxic profile for methyl bromide. The ATSDR developed an acute value in their 1992-year review; however, it was removed in the 2018-year update. This is attributed to the fact

that it would not be protective of public health due to the delayed effects and the steep dose-response curve of methyl bromide. Additionally, a member of the SAB discussed that there are acute values developed by the National Research Council (NRC) that identified as Acute Exposure Guideline Levels (AEGL) for hazardous substances. The NRC developed these levels with three tiers: 1) AEGL-1 is the most health-protective and not considered disabling; 2) AEGL-2 is identified as disabling; and 3) AEGL-3 is identified as lethal. Therefore, utilizing an AEGL-2 or AEGL-3 value is not protective of the public. Additionally, as the DEQ reviewed the referenced acute levels, it became apparent that California's Office of Environmental Health Hazard Assessment (OEHHA) 1-hour acute exposure level. The OEHHA value of 1 part per million or 3.9 $mg/m^3$ for the reference exposure level was quoted in the derivation of other ambient or guidance levels and was based on a 1940-year study for 90 workers. The DEQ was not able to obtain a copy of the study; however, a reference discussing the study identified that the exposure concentrations were developed by a general halide detection method. It also identified that there was not a precise concentration or time of exposure resulting in what the study termed "mild effects". These "mild effects" of the were anorexia, headache, and nausea, which are considered too severe for modern protection of the public. The study also made considerable assumptions in extrapolating the timeframe of when the first effects were observed to a 1-hour exposure level. The IRIS and ATSDR did not believe that the 1940's study was appropriate for the basis of an acute level and the DEQ affirmed. It was also noted that the National Institute for Occupational Safety and Health (NIOSH) does not provide a reference exposure level.

The SAB discussed amongst themselves that hourly monitoring over a 24-hour period at the reference level concentration would result in protective levels.

**Presentation Part 2**

Director Abraczinskas stated that the SAB formally requested that the DAQ provide them with the basis of other states' methyl bromide AAL's for their February 4, 2019 meeting. The DAQ had provided the SAB with numerical tabulations on December 3, 2018, showcasing differing values across the United States; however, the methodology and reasoning why the values were developed was not provided. A preliminary assessment of their request determined that other states have differing factors, circumstances, averaging times, and assumptions for their values. However, this occurrence is not unlike prior reviews for other state toxic air pollutants.

**Presentation Part 3**

Patrick Knowlson, Rules Development Branch Supervisor, presented the outline for the proposed 15A NCAC 02D .0546, *Control of Emissions from Log Fumigation Operations*. Below is an outline for the current rule.

| RULE SECTION | DESCRIPTION |
|---|---|
| Purpose | To establish emission control requirements for hazardous air pollutants and toxic air pollutants from log fumigation operations. |
| Definitions | To specify the meaning of terms utilized in the rule. |
| Applicability | The rule applies to new, existing and modified bulk, chamber, and container log fumigation operations that utilize a hazardous air pollutant or toxic air pollutant as a fumigant. |
| Emission Control Requirements | Follow an AAL approach by adding methyl bromide to 15A NCAC 02D .1104, and will follow the procedures in 15A NCAC 02D .1106, along with 15A NCAC 02Q .0709 and .0710. |
| Monitoring, Recordkeeping, and Reporting | Comply with the provisions in 15A NCAC 02D Section .0600. |
| Compliance Schedule | Existing sources are to comply within 60 days from the rule's effective date or by a Director-approved alternate schedule based on the purchase and installation of controls. Also, new or modified facilities must comply upon startup. |

The proposed next steps for this rule action will be to attend the February 4, 2019, SAB meeting, along with formally presenting the draft rule to the AQC in March 2019. Director Abraczinskas noted that the aforementioned references to other rules are making use of the current air toxics program framework and structure. This is especially true for the reference to 15A NCAC 02D Section .0600, since it grants the DAQ flexibility to tailor necessary requirements during the permitting process.

**Presentation Part 4**

Brad Nelson, DAQ Engineer, specified that there are three options for meeting the proposed AAL: 1) expanding the property area; 2) limiting the number fumigated containers per day; or 3) installing a control technology. For option 1, the DAQ conducted modeling exercises to determine what distance from the emissions source was needed to achieve the proposed AAL. The modeled area was compared to each of the current properties to determine an estimated cost to lease or purchase additional land, if needed. For option 3, the DAQ assessed the cost of controls from three prevalent vendors and applied that value to one synthetic minor facility (less than 10 tons per year) and two major sources (each at 20 tons and 140 tons per year, respectively).

**Presentation Part 5**

Michael Pjetraj, DAQ Deputy Director, provided the update for existing facilities. There are five existing permitted methyl bromide fumigation facilities. There is a facility on Burnett Boulevard in Wilmington, a facility on River Road in Wilmington, a facility in Chadbourn, a facility near Elizabethtown (the aforementioned facilities are permitted under the Royal Pest Solutions name), and a facility near Indian Springs (permitted under Flowers Lumber, but Royal Pest Solutions is fumigating). The affected facilities have synthetic minor permits to keep their emissions under 10 tons of hazardous air pollutants per year. Of the mentioned facilities, the only active facility is at Burnett Boulevard in Wilmington. The other facilities are permitted; however, they are not currently conducting fumigation operations. At least two of the other facilities are not fumigating due to temperature concerns since fumigation must take place for 16 to 72 hours at temperatures above 40 degrees Fahrenheit. Once the temperature dips below 40 degrees, the fumigant leaves the vapor phase.

The DAQ communicated twice with Royal Pest Solutions via telephone in December 2018 and requested additional information. Next, the DAQ requested additional feedback in January 2019. Royal Pest Solutions provided electronic feedback and the DAQ unsuccessfully pursued a telephone conversation regarding the electronic feedback.

The initial communication in December 2018 discussed what the company would be willing to do in the interim to control or mitigate methyl bromide emissions. This conversation also included the utilization of stacks and operational controls. The feedback was that they would need to contact Ecolab since Royal Pest Solutions was purchased by them. The electronic communication was a proposal to create a perimeter monitoring plan at the Port of Wilmington site. The proposal suggested that they could submit a protocol by the end of January 2019. This perimeter monitoring plan would be related to a maximum daily charge rate for the site. The DAQ has not received the plan or evaluated it.

The last discussion mentioned the status of control technologies, namely carbon controls and a gas destruction unit. The DAQ continues to have discussions with a company named Nordiko, which has employed carbon controls for methyl bromide in other international locations. With regards to the gas destruction unit, this unit was planned to be shipped from Australia to the Port of Wilmington in December 2018. The DAQ received information that there were issues in shipping the gas destruction unit, and the DAQ most recently received an email indicating it was directed from New Zealand to Australia to be configured with additional components. An additional unit is being constructed in Australia with the latest upgrades and it will be shipped to the United States in February 2019 in Fresno, California for testing by the United States Department of Agriculture. This unit was recently approved by the United Nations as a methyl bromide destruction method.

It was also noted that there were earlier conversations discussing batch process and their emissions being intermittent. While this is accurate, it depends on the operations themselves. The 10-ton limit for synthetic minor facilities may not be dispersed evenly throughout the year. In addition, a few applications were of such levels where the emissions would be continuous.

**Presentation Part 6**

Director Abraczinskas specified that there are follow up items at the SAB and the DAQ will provide them with their requested information. The DAQ will also provide them with additional information requested by the AQC, while also communicating the SAB's results and conclusions to the AQC. The DAQ will continue dialogue with the existing facilities regarding interim measures. The DAQ would like to proceed to the March AQC meeting with draft rules if all goes well with the SAB and the AQC's requested information.

**Discussion:**

**Discussion Part 1**

Chairman Meiburg noted that this topic is a continuation of discussions from the November 2018 AQC meeting. It became apparent that it would be beneficial for the AQC to discuss the topic and its assumptions without the need to take formal action. There are four existing facilities across the state conducting methyl bromide log fumigation operations, and the only regulation they must comply with is emitting less than 10 tons per year of the fumigant. He then outlined three questions that were presented for the methyl bromide topic: 1) whether current practice for log fumigation operations creates a risk to surrounding populations; 2) whether significant numbers of new/modified/expanded operations had the potential to significantly increase the releases of methyl bromide; and 3) although not under the purview of the committee, whether exiting facilities are remaining in compliance with currently-issued air quality permits.

Chairman Meiburg believed that none of the AQC members wanted inaction on the methyl bromide topic. He also specified that the AQC members did not want to present themselves as experts in risk assessment. It was later noted that the AQC wanted to procedurally follow the correct methods for resolving this topic.

EMC Chairman Solomon noted that he had originally planned for a permanent rule to be an action item for the January 2019 AQC meeting; however, the AQC was not ready to move forward with the current information.

EMC Chairman Solomon asked for clarification as to whether the SAB wanted more monitoring data after their internal discussions. Dr. Mort specified that the SAB did not want more monitoring data; however, they were discussing whether the 24-hour averaging period would be protective of acute exposures. Chairman Meiburg stated that the SAB's concern was whether a 24-hour averaging time would be protective if the effect of concern occurred during 1-hour exposures. Dr. Mort affirmed and stated that the SAB was concerned that the proposed 24-hour averaging time would not be protective for exposures at less than a 24-hour duration. Chairman Meiburg noted that chronic and acute exposures are significantly different for neurotoxicants. Many occupational studies tend to focus on the health effects from acute exposures as the primary concern. For example, the EPA's 1998 Guidelines for Neurotoxicity Risk Assessment note the difficulties of developing chronic values. These chronic values will invariably be lower because of the potential delayed effects that are not immediately seen from acute exposures. Also, there are different types of uncertainty amongst human populations for sensitivity that must be extrapolated from less than lifetime to lifetime exposures, and there will only be a LOAEL since there is not a no-observed-adverse-effect-level (NOAEL). All of these factors argue for an additional margin of safety for developing a conservative reference dose concentration number. EMC Chairman Solomon stated that the last point is argumentative and noted that it is one way to assess the issue if North Carolina is to be overly-regulatory and overly-conservative. Also, there is nothing to state that "twice is more" makes the value better. Chairman Meiburg stated that he was simply stating that standard risk assessment procedures add a margin of uncertainty. EMC Chairman Solomon stated that another route that risk assessors utilize is to obtain the current data. The state is currently assessing 1992 values that were mathematically extracted upwards. Chairman Meiburg noted that human

studies are difficult to come by for this particular topic. EMC Chairman Solomon specified that there is testing at the fence line that could be accomplished before a final risk assessment value is presented. Chairman Meiburg argued that it would give the ambient level as opposed to the threshold of uncertainty. Dr. Mort noted that the purpose of presenting the ATSDR 2018 draft profile is because it is an updated review of the best available science. While the ATSDR draft value supports the IRIS reference concentration, the DEQ is not comfortable utilizing it since it is in draft form. She also noted that many occupational values were developed on the basis of dermal effects. They were also developed on the basis of workers being able to escape from the exposures. This presents problems with methyl bromide since it is a colorless and odorless gas that is rapidly absorbed and distributed to the target organs. For a residential situation, questions are posed whether the inhabitants will be aware of hazardous exposures to methyl bromide.

Commissioner Carter asked whether Dr. Mort was aware of the "Acute Dose-Response Values for Screening Risk Assessments" table. He went further to question the consistency of the presentation in regards to the values in the table for the AEGL-2 values. Dr. Mort specified that she did review the referenced table and it does not appear to be up to date. The table does note that there is no AEGL-1 value that has been identified as a non-disabling concentration. It is also noted that there is no mild value (ERPG-1) listed for the United States Department of Energy's Emergency Removal Program guideline (ERPG); however, there is a value for the ERPG-2. This ERPG-2 value is not an appropriate level to utilize for the protection of public health since it is protective of irreversible or serious effects. Next, the entry for the MRL is outdated since the acute value was recently removed by the ATSDR. Finally, the California reference exposure level is based on the 1940's-era study with questionable identification methods. Commissioner Carter asked what the MRL was removed from since it is still in the EPA's table. Dr. Mort specified that the ATSDR's website maintains the updated list of their MRL's and it has been removed. Also, their 2018 toxicological profile's updated review does not include that MRL in the document. Commissioner Carter asked why it was removed. Dr. Mort specified that they believed the database is inadequate and had concerns with protection of acute exposures due to delayed effects, delayed recognition, and no odor/taste recognition.

In the interest of time, Chairman Meiburg asked if there were any other questions for Ms. Mort. No Questions were identified.

**Discussion Part 2**

EMC Chairman Solomon specified that the science is limited and other states have variability for their methodologies and reasoning. This supports the fact that the EMC needs a range of values to consider for proper action. There's a lot of uncertainty and it would be ideal to obtain a range of values and risks from the SAB or DEQ for the EMC to consider. Director Abraczinskas noted that the model narrative outline that would be followed in the final documentation would discuss the range of risks. EMC Chairman Solomon asked how the DEQ will make a deterministic answer when this is a probability distribution.

Commissioner Deerhake stated that past SAB reviews for less-certain chemicals were often due to the lack of an IRIS or ATSDR review. The current situation for methyl bromide has both reviews. The IRIS review specifies that they have high confidence in the derived reference concentration and medium confidence in the animal studies. The AQC should keep in mind that this particular case has reviews by other respected authorities, including the EPA, which the Commission has heavily relied upon in the past. EMC Chairman Solomon asked whether the EPA has an AAL for methyl bromide. Chairman Meiburg specified that the EPA deliberately decided not to utilize an AAL approach, but rather, a technology-based approach when the 1990 limits in the Clean Air Act were developed. Both the IRIS and ATSDR rounded their calculated chronic inhalation value for the LOAEL which was developed from animal studies. Usually, when the EPA made risk assessments, they would not set a reference standard at the level of the LOAEL and would knock it down a couple orders of magnitude for more confidence (which were close to the NOAEL). In essence, the question for the range will be for the Committee to decide. They will need to determine whether to use the same levels of conservatism for the assumptions regarding the difference between the LOAEL and the AAL number. Developing AAL's are difficult because the AAL is

being utilized to address acute and chronic effects. The important question is what the elements that should be taken into account when setting a range.

Commissioner Carter asked for clarification regarding Chairman Meiburg's statement pertaining to the LOAEL and its confidence interval. Chairman Meiburg stated that 0.5 micrograms is calculated as the LOAEL for the IRIS and ATSDR studies. Commissioner Carter specified that if you have 0.5 micrograms and knock it down a couple orders of magnitude, it will be well below the 0.5 micrograms. Chairman Meiburg corrected his previous statement's units and specified that the target should be in milligrams, not micrograms.

Commissioner Deerhake specified that her point was that the Commission should rely on the reference concentration finding to derive the AAL.

EMC Chairman Solomon asked why an AAL-approach is being taken since EPA utilized a technology-based approach in the past. Director Abraczinskas noted that the EPA has not listed this topic as a source category pursuant to Section 112 of the Clean Air Act, thus it is not subject to the technology-based standard approach. EMC Chairman Solomon asked whether the AAL approach is being utilized at the back-end to obtain the technology-based approach. Director Abraczinskas specified that the DAQ would not characterize it that way; however, this is simply a gap-filling exercise to ensure that the state is addressing emissions of a toxic air pollutant. As stated earlier, the DAQ believes that the risk-based approach provides more flexibility and was more comprehensive. Commissioner Carter concurred with Chairman Meiburg's statements regarding the history of the risk-based approach in 1990; however, the basic answer for EMC Chairman Solomon is that it is historical since the toxics program was setup in the pre-1990's. He also stated that while the fundamental setup is through the AAL and fence line concentrations, there is a technology feasibility override with respect to the State Statute.

EMC Chairman Solomon asked whether the DAQ still believes that the risk-based method is the best approach. Director Abraczinskas affirmed that it is the best approach. Chairman Meiburg specified that the irony is that the AAL approach gives the sources more flexibility for controls.

Commissioner Deerhake specified that the difference between the North Carolina Air Toxics Program and the federal technology-based standards is that technology can be limited, depending on the pollutant. The current track serves an important role as a gap-filling measure that the federal standards cannot address.

**Discussion Part 3**

Commissioner Deerhake wanted clarification regarding the compliance schedule for existing facilities and when it will become effective for the proposed 15A NCAC 02D .0546. Mr. Knowlson specified that existing facilities have 60 days to come into compliance; however, the Director may approve an alternate schedule based on the time needed to properly install and operate new controls. Director Abraczinskas specified that the path will depend on which path the facilities want to take. For instance, the DAQ is proposing 60 days if a facility does not want a control-technology approach, while others obtaining a control technology may be granted a Director-approved timeline for the purchase and installation of the equipment. The DAQ has been and is welcoming feedback by the facilities regarding these matters. No facilities have provided feedback.

Commissioner Pettus asked whether the DAQ had the number of existing facilities that would possibly have to implement control technologies or those that will not meet the 10 tons per year threshold. Director Abraczinskas specified that it is dependent on the ultimate level that is set by the Commission. It is suspected that it will be a combination of controls, larger facility footprints, and better techniques for dispersing pollutants. Commissioner Pettus specified that some facilities may be able to enlarge their footprint, while others are landlocked. In essence, it will force those that are landlocked to purchase controls. He also asked whether the DAQ would work with the existing facilities in order for them to achieve compliance. Director Abraczinskas affirmed that was the case with the currently proposed rule language. Commissioner Pettus specified that the standards set forth are established on a 24-hour monitoring basis. These types of facilities are not operating on a daily basis, but rather, intermittent

activities having instantaneous releases. He expressed concerns regarding how the standards are derived since the data used to derive it appears incomparable. Chairman Meiburg specified that when having episodic releases from sources, a 24-hour averaging time is fairly conservative. The issue is acute versus chronic effects since there are spikes of emissions from sources. The 24-hour averaging time gives flexibility to the facilities.

Commissioner Carroll asked why the DEQ does not develop standards based on modeled episodic exposures at the fence line. Director Abraczinskas specified that there are two distinct issues: 1) how the facility operates which results in their emissions profile; and 2) which level and averaging time is protective of public health. The answer to one of the issues may not drive the other. Commissioner Carroll asked whether the critical dose in a relatively short period of time is more significant than the minimal dose over a long period of time. EMC Chairman Solomon stated that there is a risk of compounding uncertainty if a model is built to divide orders of magnitude for these batch processes as they occur. Usually models are run with without the factors of safety, then the factors are applied at the end. Commissioner Carroll specified that the concern is the large dose of exposure for an hour. Chairman Meiburg noted that there are different ways to address the problem of interest. There are standards for both acute and chronic effects. In general, chronic effects are of more concern for neurological toxicants.

Commissioner Carroll asked for the metabolic properties of methyl bromide. Dr. Mort specified that the compound is rapidly and efficiently absorbed in to the lung, enters the bloodstream, and is distributed into the body. The target organs of effect are the central nervous system, bone, and heart. It is also relatively rapidly eliminated from the body. The parent compound of methyl bromide can be metabolized into other compounds that are more toxic.

Commissioner Deerhake asked for other neurological toxicants in the state's AAL table that also have a 24-hour averaging time. Director Abraczinskas stated that the DAQ would follow-up with that information. Commissioner Deerhake specified that phosgene is an example of a compound with a 24-hour chronic AAL.

EMC Chairman Solomon stated that he was hoping that this item would be presented to the full EMC in January; however, with the information provided, it will likely be delayed until May or July. There is still a fiscal note that needs to be approved by the Office of State Budget and Management, a SAB meeting, and a final rule that needs to be developed. There are four to five existing facilities and new facilities are wanting to come to the state. It appears that it will likely be the 2020-year before the rule is adopted.

**Discussion Part 4**

EMC Chairman Solomon asked whether the DAQ would conduct modeling for the existing facilities, whether the facilities can assess the DAQ's modeling, or whether the facilities would need to hire consultants. He expressed concerns whether the fiscal note captures the costs of what the existing facilities need to independently accomplish for this rulemaking. He also asked whether there is a budget in the fiscal note regarding these matters. Director Abraczinskas specified that the DAQ offers to conduct modeling exercises during the permitting process; however, the facilities often choose to conduct the modeling on their own. EMC Chairman Solomon stated that in cases where existing facilities need to purchase more land or control technologies, they will need money for an internal business case. They will likely not trust the regulators to completely accomplish that for them. EMC Chairman Solomon wanted this information in the fiscal note.

**Discussion Part 5**

Commissioner Carroll asked whether the DAQ has had any conversation with the employees of Ecolab. Deputy Director Pjetraj specified that the titles of those that the DAQ is working with have changed to Ecolab, therefore, they are treated as representatives of Ecolab. Commissioner Carroll asked whether Ecolab has operations in other states. Deputy Director Pjetraj specified that the DAQ would follow up with that information.

EMC Chairman Solomon expressed concerns for the existing facilities regarding the fact that they are forestry and agricultural property owners. It is concerning that the perception may be that the DEQ is targeting a single facility and writing a state rule for it. The DEQ needs to pull all the other facilities, industry associations, and the

Department of Agriculture into the discussions. Commissioner Pettus concurred and noted that there are other people that may assist the DEQ to obtain more information. Chairman Meiburg specified that Royal Pest Solutions is conducting the function on all the sites and see themselves as experts in utilizing methyl bromide. Director Abraczinskas noted that the DAQ has conducted productive discussions with a broad group of interested parties and all of the mentioned associations.

Commissioner Deerhake asked for clarification regarding the compliance process and potential need for the Director to extend compliance timelines for existing facilities. She asked whether this is part of a permit modification process and how the public could be involved with it from a participation perspective. Director Abraczinskas specified that the DAQ envisioned the permitting actions would go through the permitting public process. Commissioner Deerhake asked whether 15A NCAC 02D .0546(g) would need to allude to permitting. Director Abraczinskas specified that the DAQ believes it is inherent; however, the DAQ will follow up.

Chairman Meiburg asked whether the cost information for control technologies would be included in the fiscal note. It was affirmed that was the case.

EMC Chairman Solomon stated that the DAQ should be fair with the fiscal note and utilize a proven technology. Chairman Meiburg stated that the United Nations certification should be mentioned in the fiscal note. EMC Chairman Solomon stated that the certification is fine, but he would like to see the cost for the controls.

Commissioner Carroll specified that Ecolab is a large company with over 50,000 employees. It would be wise to contact Ecolab to see if they have encountered this particular issue in other parts of the world or country.

**Discussion Part 5**

Chairman Meiburg specified that the DAQ may want to assume they are proceeding to the March AQC meeting with draft rules. He also closed the meeting by stating this topic is an economic opportunity for the state, while also noting that everyone should be mindful of public health. The conclusions and discussion of timing in the previous meeting was that the AQC was uncomfortable in proceeding with a temporary rule and wanted the DAQ to do a great job on the fiscal note.

**Motion:**
No motion required.

**Agenda Item #8, Director's Remarks (Mike Abraczinskas, DAQ)**
Due to time constraints, the AQC did not hear this item.

**MEETING ADJOURNMENT**

Chairman Meiburg asked for additional questions or comments, and upon hearing none, noted that the next meeting of the AQC would be March 13, 2019. Chairman Meiburg adjourned the meeting.