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Via Electronic Mail (Urva.Patel@ncdenr.gov)(publiccomments@ncdenr.gov)

Urva Patel
Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

**Re: Comments on the Draft Air Quality Permit for Malec Brothers Transport,
LLC Fumigation Yard (Permit No. 10560R00)**

Dear Ms. Patel:

The Southern Environmental Law Center, on behalf of itself, Clean Air Carolina, Medical Advocates for Healthy Air, Cape Fear River Watch, Sierra Club North Carolina Chapter, and the North Carolina Conservation Network, respectfully submits the following comments on the draft air permit proposed by the North Carolina Department of Environmental Quality (“NCDEQ”) for a new methyl bromide fumigation yard in Delco, North Carolina, which is owned and operated by Malec Brothers Transport, LLC (“Malec”).

The draft permit does not protect the people of Delco and surrounding communities from the harmful effects of the unenforceable and excessive release of methyl bromide, a highly toxic chemical and hazardous air pollutant. Instead, under this proposed permit Malec will become the largest methyl bromide air pollution source in North Carolina and one of the largest sources in the United States.¹ Despite widely known environmental and public health hazards associated with methyl bromide exposure, NCDEQ’s proposed permit contains insufficient enforceable

¹ Currently, NCDEQ permits the release of up to 10.6 tons of methyl bromide each year, including Tima Capital’s Wilmington facility that has recently indicated its intent to stop fumigating with methyl bromide once its current permit expires. Attachment 1, Lisa Sorg, *Monday Numbers: More Bad News About Methyl Bromide*, NC Policy Watch (May 7, 2018). NCDEQ’s proposed permit allows for an additionally 249 tpy of methyl bromide emission in North Carolina alone. See Section II.b. (discussing Malec’s actual versus potential emissions). Additionally, the proposed permit allows Malec to emit almost 150 tons per year more than the total amount of methyl bromide used in the United States in 2010 for quarantine purposes for tile, steel, and logs. Attachment 2, Judy A. Johnson, et al., *Status of Alternatives for Methyl Bromide in the United States* at Table 2 (2012) (depicting 93.1 metric tons (102.62 tons) of methyl bromide use in 2010 for “other” commodities, which includes tile, steel, and logs); see also Attachment 3, EPA TRINA Database: Bromomethane Facilities (May 7, 2018) (screenshot) (indicating that the largest emitter of methyl bromide from reporting industries (not including fumigation operations) is a facility that emitted 51.37 tons (102,755 lbs)).

controls and inadequate monitoring to protect against exposure to the surrounding community, including chronic, low-level exposure.

As discussed more fully below, the proposed permit does not require the use of demonstrated control technologies that would minimize or eliminate methyl bromide emissions; it does not limit actual or potential emissions from the fumigation source; and it lacks monitoring and reporting requirements that are needed to protect nearby communities.² NCDEQ must address deficiencies in the proposed permit and must conduct an environmental justice analysis before moving forward with the permit. Additionally, NCDEQ should undertake a comprehensive review of the public health and environmental impacts of methyl bromide fumigation use before issuing this or any other similar permits.

I. NCDEQ's Proposed Permit Allows Malec to Use a Substance with Known Public Health and Environmental Impacts

Methyl bromide is a “highly toxic” chemical³ and organic compound that readily diffuses in the air. It is dangerous to people even in small doses and for short durations, causing central nervous system and respiratory system failures. Methyl bromide is also a controlled stratospheric ozone-depleting substance under the Montreal Protocol. Because of the dangers it poses to people and the environment, methyl bromide is regulated under the Clean Air Act (“CAA”) as a hazardous air pollutant.

Despite the potential public health and environmental impacts of methyl bromide, NCDEQ’s proposed permit allows Malec to use and emit large amounts of methyl bromide less than a mile from a middle school, without sufficient, enforceable controls and inadequate monitoring to ensure the safety of those who work, live, go to school, or recreate near the fumigation site.

a. Methyl bromide exposure causes serious health problems, including respiratory and neurological issues.

Methyl bromide, also called Bromomethane, is a known “developmental, neurological, and respiratory toxin,” with both “acute and chronic toxicity.”⁴ Exposure to methyl bromide occurs primarily through inhalation or dermal absorption (i.e., contact with skin).⁵ Acute inhalation of methyl bromide can cause severe injury to the lungs, impairment of respiratory functions, and neurological symptoms, including headaches, dizziness, fainting, weakness, confusion, speech impairment, visual effects, numbness, twitching, seizures, and tremors.⁶

² NCDEQ, Draft Air Quality Permit for Malec Brothers Transport’s Log Fumigation Yard, No. 10560R00 (hereinafter, Malec Proposed Permit).

³ Attachment 4, EPA, *Methyl Bromide (Bromomethane)* at 1 (Apr. 1992, updated Jan. 2000).

⁴ Attachment 5, Lygia T. Budnik, et al., *Prostate Cancer and Toxicity from Critical Use Exemptions of Methyl Bromide: Environmental Protection Helps Protect Against Human Health Risks* at 3, *Envtl. Health* (2012).

⁵ *Id.* at 2. There is also a potential for “off gassing” exposure because methyl bromide persists on clothing and other items. This type of “transient exposure” can cause “nervous system symptoms, including headache, nausea, vomiting, dizziness, blurred vision, impairment of coordination and twitching.” *Id.*

⁶ See EPA, *Methyl Bromide (Bromomethane)*, *supra* note 3, at 1–2; Attachment 6, Robert B. Gunier, et al. *Residential Proximity to Agricultural Fumigant Used and IQ, Attention and Hyperactivity in 7-Year Old Children*,

Methyl bromide exposure can also irritate the eyes and skin, causing itching, redness, and blisters.⁷ In cases of severe exposure, methyl bromide can cause paralysis, convulsions, kidney damage, and death from respiratory or cardiovascular failure.⁸ More recent data has also demonstrated a link between methyl bromide exposure, both on- and off-site of the fumigation activity, and developmental and reproductive issues and risk of prostate cancer.⁹

Numerous studies indicate public health concerns from chronic, low-level exposure to methyl bromide that has drifted from the fumigation site.¹⁰ “Since [methyl bromide] is three times heavier than air, it diffuses outward and downward readily,”¹¹ causing potential exposure problems for the surrounding community. Specifically, Gunier (2017) found a “direct relationship between nearby agricultural use [of methyl bromide] and potential community exposure” within a 5 mile radius of the fumigation site.¹²

b. Chronic, low-level exposure to methyl bromide is particularly harmful to children and other sensitive populations surrounding the fumigation site.

The community exposure limit—known as reference concentration value (“RfC”)—for acute inhalation of methyl bromide is 0.210 parts per million (“ppm”), or 210 parts per billion (“ppb”).¹³ Moreover, the chronic, six-week community exposure limit is estimated at 0.002 ppm (2 ppb) for adults and only 0.001 ppm (1 ppb) for children.¹⁴ As indicated by this extremely low exposure limit, children are considered particularly sensitive to methyl bromide exposure. Methyl bromide use has been known to impact prenatal, postnatal, and childhood development

158 Env'tl. Res. 358, 358 (2017); Attachment 7, Nat'l Res. Council, *Methyl Bromide Risk Characterization in California* at 2, 8, 12–32 (2000) (“Methyl bromide also appears to be a developmental and possibly a reproductive toxicant.”); Budnik, *supra* note 4, at 4 (Table 1 Toxic effects of methyl bromide (data 1990–2011)).

⁷ EPA, *Methyl Bromide (Bromomethane)*, *supra* note 3, at 2; Budnik, *supra* note 4, at 3.

⁸ EPA, *Methyl Bromide (Bromomethane)*, *supra* note 3, at 2; Budnik, *supra* note 4, at 3 (“Throat irritation, chest pain and shortness of breath are the most likely first respiratory symptoms with inflammation of the bronchi or lung edema after severe acute exposure. Death may result from respiratory and cardiovascular failure.”); Attachment 8, U.S. GAO, *Pesticides: The Phaseout of Methyl Bromide in the United States* at 5 (Dec. 1995) (“In severe cases [exposure to methyl bromide] can cause central nervous system and respiratory systems to fail. Gross permanent disabilities or death may result.”).

⁹ Nat'l Res. Council, *supra* note 6, at 1 (“Methyl bromide also appears to be a developmental and possibly a reproductive toxicant.”); Budnik, *supra* note 4, at 1 (“Both the epidemiological evidence and toxicology data suggest a possible link between methyl bromide exposure and serious health problems, including prostate cancer risk from occupational and community exposure.”); *see* Attachment 9, Julia R. Barrett, *Getting the Drift: Methyl Bromide Application and Adverse Birth Outcomes in an Agricultural Area*, 121 Env'tl. Health Perspectives A198 (2013).

¹⁰ Budnik, *supra* note 4, at 9 (“The exposure assessment data and epidemiological analysis indicate health risk concern for both workers and the general public.”); Nat'l Res. Council, *supra* note 6, at 8 (noting that “inhalation exposure to agricultural workers and the general public” of methyl bromide “is of considerable concern”); Gunier, *supra* note 6, at 1 (“Fumigants are more likely than other pesticides to drift from application sites due to their high vapor pressure.”).

¹¹ Attachment 10, USDA APHIS, *Treatment Manual* at 2-3-2 (2013).

¹² Gunier, *supra* note 6, at 1–2. Although this report focused on the use of methyl bromide in agricultural fumigation, the results are also applicable to methyl bromide use for log fumigation as both processes involve the eventual release of methyl bromide emissions into the air.

¹³ Budnik, *supra* note 4, at 9; Nat'l Res. Council, *supra* note 6, at 1. “The RfC is a reference point to gauge potential effects, the incidence of which increases for an exposure greater than RfC.” Budnik, *supra* note 4, at 9.

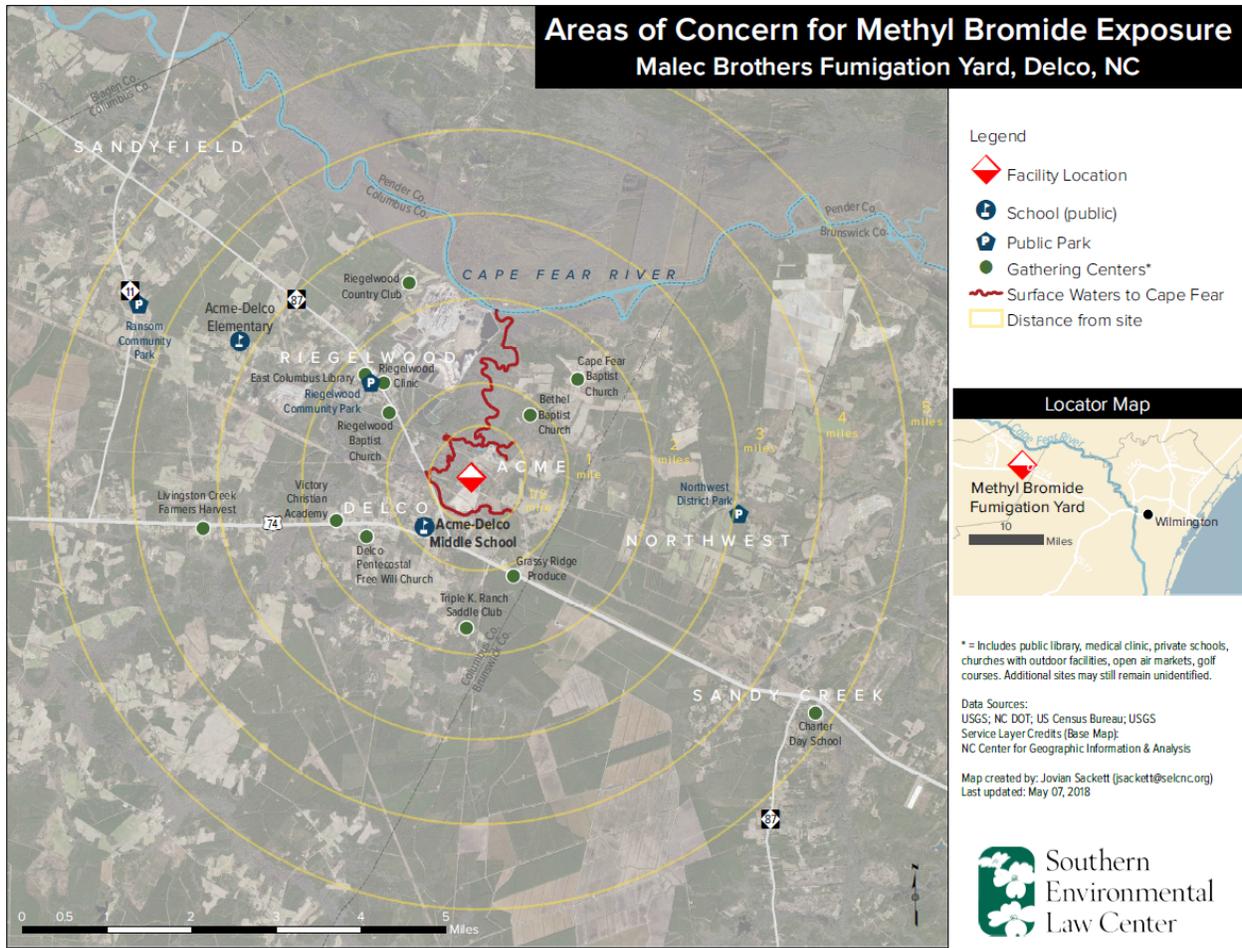
¹⁴ Budnik, *supra* note 4, at 9; Nat'l Res. Council, *supra* note 6, at 1.

for pregnant women and children living within 5 miles of fumigation sites.¹⁵ In particular, prenatal exposure has been associated with decreased birth weight and postnatal and childhood exposure has been linked to decreased IQ.¹⁶

NCDEQ's proposed permit, however, would allow one the largest source of methyl bromide air pollution in the United States to operate less than a mile from a middle school and only three miles from an elementary school. The proposed permit lacks sufficient controls or monitoring requirements to ensure that harmful concentrations of methyl bromide are not reaching these schools and other sensitive populations. As depicted in the following map, several areas where children live, play, or go to school are located within a five-mile radius. Specifically, there are two public schools; three public parks; and twelve areas where people gather, including a public library, a medical center, private schools, churches with outdoor facilities, open air markets, and golf courses. Of those seventeen areas of exposure concern areas, eleven are less than two miles from the proposed fumigation site.

¹⁵ See generally Gunier, *supra* note 6 (examining the relationship between residential proximity to agricultural fumigation, including methyl bromide, and neurodevelopment in 7-year old children); Attachment 11, Alison Gemmill, et al., *Residential Proximity to Methyl Bromide Use and Birth Outcomes in an Agricultural Population in California*, 121 *Env'tl. Health Perspectives* 737 (2013) (concluding that "[r]esidential proximity to methyl bromide use during the second trimester was associated with markers of restricted fetal growth").

¹⁶ Gunier, *supra* note 6, at 2 ("We previously found that living within 5 km of methyl bromide use in the second trimester of pregnancy was associated with decreased birth weight, length, and head circumference."), 364 ("We observed decreases in Full-Scale intelligence quotient with increased methyl bromide . . . use within 8 km of residences during the child's lifetime.").



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c. Methyl bromide has known environmental impacts, including its ozone-depleting potential.

Methyl bromide is a Class I ozone-depleting substance regulated by the Montreal Protocol and the CAA. The Montreal Protocol provided for the complete phase-out of methyl bromide by 2005 except in certain circumstances, including what is referred to as “quarantine and pre-shipment uses” (“QPS”).¹⁷ Accordingly, EPA only allows methyl bromide use in limited circumstances, including QPS uses such as the fumigation of logs for export.¹⁹ Although methyl bromide is permitted for QPS uses, that does not change the fumigant’s “remarkable potency as a depletory of atmospheric ozone.”²⁰ Moreover, some countries have indicated a concern with pollution of surface and ground water and effects on soil biodiversity from methyl

¹⁷ For a full-page PDF, see Attachment 12, Southern Environmental Law Center, *Areas of Concern for Methyl Bromide Exposure: Malec Brothers Fumigation Yard, Delco, NC* (May 7, 2018) (hereinafter, Exposure Concern Map).

¹⁸ EPA, *Methyl Bromide* (last visited May 2, 2018), <https://www.epa.gov/ods-phaseout/methyl-bromide>.

¹⁹ *Id.*

²⁰ Budnik, *supra* note 4, at 2.

bromide uses.²¹ Potential water contamination is of particular concern for Malec’s proposed operations, as almost the entire half-mile radius around the proposed operation contains surface waters to the nearby Cape Fear River.²²

NCDEQ, as the state agency charged with protecting North Carolina’s natural resources, should ensure that it is not allowing new industries that are potentially harmful to the environment. In light of the known and potential environmental harms, NCDEQ should undertake a comprehensive study on the environmental impacts of using methyl bromide in log fumigation.

II. NCDEQ’s Proposed Permit Lacks Sufficient, Enforceable Provisions to Protect Nearby Communities

Despite the widely known health and environmental hazards discussed above, NCDEQ’s proposed permit allows Malec to use and emit large amounts of methyl bromide without adequate controls or monitoring requirements. Specifically, the proposed permit does not require the use of demonstrated control technologies that would minimize or eliminate methyl bromide emissions; it does not limit actual or potential emissions from the fumigation source; and it lacks monitoring and reporting requirements that are needed to protect nearby communities. NCDEQ must modify Malec’s permit to require maximum pollution controls and rigorous monitoring to ensure compliance with hazardous air pollution reduction and health protection safeguards.

a. NCDEQ’s proposed permit does not require the use of demonstrated control technologies.

Methyl bromide is a hazardous air pollutant (“HAP”) under Section 112 of the CAA. Because Malec’s operation has the potential to emit more than 10 tpy of a HAP—i.e., methyl bromide—it is considered a “major source” of HAP emissions and is required to install the maximum achievable control technology (“MACT”).²³ In this case, since EPA has not promulgated MACT standards for fumigation facilities, Malec is subject to a case-by-case MACT determination pursuant to Section 112(g) of the CAA.²⁴ Emission controls established through case-by-case MACT “shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source,” and, considering available technologies, costs, non-air quality health and environmental impacts, and energy requirements, control levels must be tightened as much as possible beyond that level.²⁵ Emission controls can include “measures, processes, methods, systems, or techniques to limit the emissions of hazardous air pollutants through process changes, substitution of materials or other modifications.”²⁶ Thus, to comply with the CAA, NCDEQ must require Malec to install control

²¹ Attachment 13, UN Environmental Programme, *Report of the Methyl Bromide Technical Options Committee* at 15 (2014).

²² See SELC, Exposure Concern Map.

²³ 42 U.S.C. § 7412(a)(1), (g)(2)(B).

²⁴ 42 U.S.C. § 7412(g)(2)(B); 40 C.F.R. § 63.42(b); 15A NCAC 02D .112.

²⁵ 42 U.S.C. § 7412(d)(2), (d)(3), (g)(2)(B); 40 C.F.R. § 63.43(d)(1).

²⁶ “Control technology means measures, processes, methods, systems, or techniques to limit the emission of hazardous air pollutants through process changes, substitution of materials or other modifications that:

technologies that are at least as stringent as those utilized in other methyl bromide fumigation facilities.

The proposed permit does not require the addition of any add-on control technology, but instead purports to set “a series of work practices and operating limits to minimize potential impacts from methyl bromide emissions.”²⁷ These operational limits include a basic procedure for setting a maximum daily amount of methyl bromide to be used at the facility.²⁸ Under these procedures, Malec must conduct a test run of its fumigation operations to determine the amount of methyl bromide that results in a concentration of 0 ppm of the fumigant at the downwind property boundary. This maximum daily charge limit will be subsequently incorporated into Malec’s permit via administrative amendment, a process which does not provide for public participation. If concentrations are measured exceeding 0 ppm at the downwind boundary line, then the proposed permit requires Malec to “[t]ake immediate measures to minimize the emissions,” including by incrementally decreasing the amount of methyl bromide used in each subsequent fumigation event until a concentration of 0 ppm is achieved.²⁹ These requirements, however, are exceedingly less stringent than demonstrated control technologies and thus do not represent MACT for methyl bromide fumigation facilities.

First, the proposed permit does not require Malec to install any add-on control devices to capture or otherwise control methyl bromide emissions, such as a scrubber or a filter, despite the fact that such devices exist and have been utilized by other fumigation facilities. According to Malec’s permit application, “[t]here is no viable option for an add-on methyl bromide capture and control system for the large-scale log QPS fumigation.”³⁰ However, according to Value Recovery, an engineering service that provides large-scale emissions controls,³¹ since 2006, it has “offered systems and technology to remove and destroy methyl bromide from fumigation vent streams from Quarantine and Preshipment fumigation enclosures up to 300,000 cubic feet,” which is “the equivalent of 100 (the average size) shipping containers.”³² Specifically, Value Recovery’s system employs a “scrubbing technology” to remove and destroy methyl bromide

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- (1) Reduce the quantity of, or eliminate emissions of, such pollutants through process changes, substitution of materials or other modifications;
 - (2) Enclose systems or processes to eliminate emissions;
 - (3) Collect, capture, or treat such pollutants when released from a process, stack, storage or fugitive emissions point;
 - (4) Are design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in 42 U.S.C. 7412(h); or
 - (5) Are a combination of paragraphs (1) through (4) of this definition.”

40 C.F.R. § 63.41.

²⁷ Malec Brothers Transport, LLC – Air Quality Permit Application, Delco Fumigation Yard at PDF 25 (Nov. 20, 2017) (hereinafter, Malec Permit Application).

²⁸ Malec Proposed Permit at 2.1(A)(6)(c).

²⁹ *Id.* at (c)(V)(1), (3).

³⁰ Malec Permit Application at PDF 27.

³¹ Value Recovery, *Home*, <http://www.valuerecovery.net/Home.html> (“We provide the largest methyl bromide emissions controls systems in the world.”) (last visited May 4, 2018).

³² Attachment 14, Letter from Daniel P. Bernstein, Attorney for Value Recovery Inc., to Gina McCarthy, Administrator, EPA at 4 (Aug. 6, 2015) (“Notice Pursuant to 40 C.F.R. Part 54 Prior to Filing of Civil Action under 42 U.S.C. § 7604(a)(2) for Failure to Take Nondiscretionary Actions”) (hereinafter, Value Recovery NOI).

from fumigation ventilation streams in common QPS operations.³³ Independent testing demonstrates that such technology can remove over 90% of methyl bromide used in fumigation.³⁴ According to Value Recovery, its technology was demonstrated at small scale in 2004 and has more recently “been installed at two commercial operations—one in California and the other in Florida.”³⁵ Additionally, some countries, such as New Zealand, have called for mandatory recapture of all methyl bromide emissions instead of releasing the gas into the air after fumigations, indicating that such technology can be scaled-up for log fumigation.³⁶

Although Malec addressed Value Recovery’s technology in its application, Malec simply stated that it could find no information on the company’s website “regarding full-scale commercial systems” nor could it locate a “list of clients or facilities employing such systems.”³⁷ It is unclear if Malec undertook any effort other than reviewing Value Recovery’s website to determine the possible scale at which the technology can be employed.³⁸ Similarly, Malec’s application discusses other capture and control technologies and concludes in passing that those technologies are not feasible in large-scale QPS fumigation. Malec does not provide any detailed analysis about the possibility of scaling-up demonstrated technologies or otherwise altering its operations to allow for installation of adequate controls.

Second, the proposed permit does not require Malec to use an aeration discharge stack and accompanying fans, despite such equipment being used at other methyl bromide fumigation facilities. For example, in Georgia, Royal Pest Solutions’ methyl bromide log fumigation case-by-case MACT analysis detailed “work practices and operating limits”³⁹ that included using “ductwork and one or more portable, powerful blowers that will discharge emissions through a

³³ *Id.* at 5.

³⁴ *Id.* at 4.

³⁵ *Id.*; see also Attachment 15, *Special Report: Biosecurity, Quarantine & Fumigation*, Daily Cargo News (Dec. 18, 2017) (“Proven and efficient fumigant recapture technologies are increasingly being mandated and implemented to protect the environment and health and safety of workers, neighbours and the community from being exposed as these gases otherwise can spread over a large area as shown by plume modeling.”).

³⁶ See Attachment 16, *Ports of Auckland to Eliminate Methyl Bromide Emissions* (May 25, 2017) (requiring the “total recapture of methyl bromide gas used for container fumigation by September 1, 2017, and for all cargoes by the end of the year”); Attachment 17, *Auckland Acts on Methyl Bromide Emissions*, The Maritime Executive (May 30, 2017) (“The move to fully recapture the toxic gas after fumigation sets a new benchmark for industry best practices, says the [Maritime] Union [of New Zealand].”); Attachment 18, Opus International Consultants Ltd., *Controls on Use of Methyl Bromide Fumigant: Review of Bay of Plenty Regional Air Plan* at 6 (2015) (hereinafter, OPUS) (“Under the current HSNO regulations recapture rather than venting to the air of the methyl bromide gas at the end of fumigation will be mandatory from 2020.”). With the recapture system current used in New Zealand,

at the end of the fumigation, the gas is pumped out of the fumigation enclosure into a device where the methyl bromide is retained. The systems currently used in New Zealand trap the methyl bromide on activated carbon. They methyl bromide is then destroyed (this can be done chemically, or by burial which breaks down the gas into harmless products).

OPUS at 6. This recapture technology is “now being up-scaled to deal with timber stack fumigations.” *Id.*

³⁷ Malec Permit Application at PDF 26.

³⁸ See Attachment 19, Comment by Peter Joyce, President, Value Recovery, to Lisa Sorg, *Go Backstage: Delco, Methyl Bromide and How to Make People Care About Somewhere They’ve Never Been* (May 3, 2018) (“No one from [Malec] contacted me” about Value Recovery’s recapture technology).

³⁹ Attachment 20, Royal Pest Solutions – Title V Permit Application, Port Wentworth, Georgia at PDF 13 (May 28, 2015) (hereinafter, RPS Ga. Permit Application).

60-ft stack” located near the center of the property.⁴⁰ According to Royal Pest Solutions, a 60-foot aeration discharge stack “results in faster and better dispersion, and the methyl bromide concentrations are quickly reduced before reaching the ambient air at the facility’s boundary line.”⁴¹ Although Malec’s permitting documents claim that the aeration process will include a 30-foot stack and fans,⁴² there is nothing in the proposed permit requiring that such devices be used. As such, the proposed permit lacks any legally enforceable conditions requiring Malec to utilize an aeration discharge stack.

Finally, NCDEQ’s proposed permit should explicitly set forth that Malec’s fumigation operation must be conducted in accordance with USDA’s Animal and Plant Health Inspection Service’s (APHIS) protocols,⁴³ as has been done in other methyl bromide fumigation permits. For example, a permit for methyl bromide log fumigation in West Virginia explicitly included the requirement that the facility be “designed and operated” in compliance with APHIS guidelines and that “treatment processes” will be dictated by APHIS’s Treatment Manual.⁴⁴ Once again, although Malec’s permitting documents contain such claims, there is nothing in the proposed permit ensuring that these claims are followed and thus they are not legally enforceable conditions.

b. NCDEQ’s proposed permit does not limit actual or potential emissions from the fumigation source.

As discussed above, the proposed facility will constitute a “major source” of HAP emissions because it has the potential to emit well over 10 tpy methyl bromide, a HAP. Notably, a facility’s *potential* emissions are different than its *actual* emissions. Under the CAA, “potential to emit” is defined as “the maximum capacity of a stationary source to emit a pollutant under its physical and operational design.”⁴⁵ For purposes of methyl bromide fumigation operations, it is “conservatively assumed” that “all methyl bromide projected to be applied as a fumigant is assumed to be emitted during the aeration phase of the fumigation process.”⁴⁶ Thus, the potential to emit for a methyl bromide fumigation facility is the total amount of methyl bromide to be applied annually at the facility, based on any operational or physical limitations set forth in the facility’s permit.

⁴⁰ *Id.* at 4; *see also* Attachment 21, Georgia Department of Natural Resources, East Coast Terminal Co. – Amendment to Air Quality Permit, Permit Application No. 4491-051-0208-S-05-1, at 4.4 (Apr. 24, 2014) (“The Permittee shall, during all periods of the operation of the log fumigation process, operate the log fumigation stack that meets the minimum standards of height of 40 feet and an exit velocity of 40 feet/second.”).

⁴¹ RPS Ga. Permit Application at PDF 15.

⁴² Malec Permit Application at PDF 31; NCDEQ, Malec Draft Air Quality Permit, Application Review at 2, 7 (hereinafter Malec Application Review).

⁴³ *See* USDA APHIS, *Treatment Manual*, *supra* note 11.

⁴⁴ Attachment 22, West Virginia Department of Environmental Protection, Allegheny Wood Products, Inc. – Temporary Air Quality Permit at 14 (Mar. 13, 2018) (hereinafter, W.Va. Allegheny Permit).

⁴⁵ 40 C.F.R. § 63.2. “Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.” *Id.*

⁴⁶ RPS Ga. Permit Application at PDF 5.

Here, NCDEQ’s proposed permit sets no enforceable limitation on actual or potential methyl bromide emissions from Malec’s fumigation operations. The only emissions limitation contained in the entire proposed permit is a blanket statement that the facility’s volatile organic compound (“VOC”) emissions, in this case methyl bromide, “shall be less than 250 tons per consecutive 12-month period.”⁴⁷ According to the terms of the proposed permit, Malec is permitted to emit up to 249 tpy of methyl bromide, over 100 tpy more than what Malec represented in its application materials. Although Malec’s application documents claim that the facility’s potential emissions are 140 tpy, there are no conditions—either physical or operational—to ensure that the facility’s methyl bromide emissions do not exceed that amount.

In fact, the calculations used to determine Malec’s potential methyl bromide emissions are based on various factors, such as the number and size of fumigation containers used and the outside temperature at the time of fumigation, that are not included in the proposed permit as physical or operational conditions. NCDEQ’s application review calculated Malec’s potential emissions using 300 containers a week (1,200 containers a month), 40 foot long containers with a capacity of 2,700 cubic feet, and methyl bromide charge rates based on whether the temperature is above or below 70 degrees.⁴⁸ Each of these factors impacts the overall amount of methyl bromide used at the facility, yet none of these factors are present in the proposed permit as a physical or operational condition and therefore do not act to limit Malec’s potential emissions. For example, pursuant to the proposed permit, Malec is not limited in the number of containers it can fumigate each week. NCDEQ relied on an estimate of 300 containers per week to estimate a range of potential emissions of 63.18 to 105.3 tpy. However, if Malec actually fumigates 400 containers per week (as is allowed under the proposed permit), its potential

⁴⁷ Malec Proposed Permit at 4. A blanket 250 tpy VOC limit in a facility’s permit is insufficient to restrict the facility’s VOC potential to emit below the major source threshold for purposes of the CAA’s prevention of significant deterioration (“PSD”) provision. *See* 42 U.S.C. § 7475; 40 C.F.R. § 52.21. According to relevant caselaw and longstanding EPA guidance, this type of blanket limit on facility-wide emissions is unenforceable and cannot be relied on for purposes of determining PSD applicability. *See* Attachment 23, *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1141, 1160 (D. Colo. 1988) (holding that “[r]estrictions contained in state permits which limit specific types and amounts of actual emissions (‘blanket’ restrictions on emissions) are not properly considered in the determination of a source’s potential to emit”); Attachment 24, *United States v. Louisiana-Pacific Corp.*, 682 F. Supp. 1122, 1133 (D. Colo. 1987) (“[N]ot all federally enforceable restrictions are properly considered in the calculation of a source’s potential to emit. While restrictions on hours of operation and on the amount of materials combusted or produced are properly included, blanket restrictions on actual emissions are not.”); Attachment 25, EPA, *Guidance on Limiting Potential to Emit in New Source Permitting* at 5 (June 13, 1989) (hereinafter, EPA PTE Guidance) (“To appropriately limit potential to emit consistent with the opinion in *Louisiana-Pacific*, all permits issued pursuant to 40 C.F.R. Sections 51.160, 51.166, 52.21 and 51.165 must contain a production or operational limitation in addition to the emission limitations in cases where the emission limitation does not reflect the maximum emissions of the source operating at full design capacity without pollution control equipment.”). As discussed further below, in relation to Malec’s potential to emit HAPs, the proposed permit contains no production or operational limitations ensuring that the facility’s potential to emit will not exceed the relevant threshold—10 tpy for HAPs and 250 tpy for VOCs. “When a permit contains no limits on capacity utilization or hours of operation, the potential to emit calculations should assume operation at maximum design or achievable capacity (whichever is higher) and continuous operation (8760 hours per year.)” EPA PTE Guidance at 5–6. Thus, for Malec’s proposed permit to legally limit the company’s VOC potential to emit, the permit must contain enforceable production or operational limits, such as limitations on the hours of operation or the number of containers to be fumigated per week.

⁴⁸ Malec Application Review at 3.

methyl bromide emissions would increase to between 84.24 tpy (at over 70 degrees Fahrenheit) and 140.4 tpy (at less than 70 degrees Fahrenheit).⁴⁹

To legally decrease Malec's potential methyl bromide emissions under the CAA to 140 tpy, NCDEQ must set conditions sufficient to limit the amount of methyl bromide used at the facility annually. These conditions could include limitations on the number of containers fumigated every week or a limitation on the facility's hours of operation. For example, a permit for a methyl bromide fumigation facility in West Virginia explicitly described the emissions unit as including up to 10 shipping containers per weekly treatment cycle, at 40 feet long and 2,720 cubic feet capacity, and a maximum of 26 weekly treatment cycles.⁵⁰

c. NCDEQ's proposed permit lacks sufficient monitoring and reporting requirements.

Not only has NCDEQ failed to require any operational or functional limitations on the facility, the monitoring and reporting requirements in the proposed permit are wholly inadequate to protect the surrounding community from harmful low-level, chronic exposure to methyl bromide. Specifically, the monitoring requirements set forth in the proposed permit are inadequate in terms of location, frequency, and sensitivity.

First, the proposed permit only provides for ambient monitoring "downwind of the emission source and at a distance no greater than the distance between the emission source and

⁴⁹ The following equations were used by NCDEQ to calculate Malec's potential annual emissions of methyl bromide. See Malec Application Review at 3. Here, the number of weekly containers has been increased from NCDEQ's 300 containers to 400 containers:

Over 70 °F

$$\begin{aligned} \text{MB Charge Rate} &= 400 \text{ containers per week} * (3 \text{ lb of MB per } 1000 \text{ ft}^3 * 2700 \text{ ft}^3) \\ &= 400 \text{ containers per week} * 8.1 \text{ lb of MB} \\ &= 3,240 \text{ lb MB per week} \\ &= (3,240 \text{ lb MB per week} * 52 \text{ weeks/year}) / (2000 \text{ lb/ton}) \\ &= 84.24 \text{ tons MB/year} \end{aligned}$$

Under 70 °F

$$\begin{aligned} \text{MB Charge Rate} &= 400 \text{ containers per week} * (5 \text{ lb of MB per } 1000 \text{ ft}^3 * 2700 \text{ ft}^3) \\ &= 400 \text{ containers per week} * 13.5 \text{ lb of MB} \\ &= 5,400 \text{ lb MB per week} \\ &= (5,400 \text{ lb MB per week} * 52 \text{ weeks/year}) / (2000 \text{ lb/ton}) \\ &= 140.4 \text{ tons MB/year} \end{aligned}$$

As is demonstrated by these calculations, the number of containers fumigated each week directly impacts Malec's potential methyl bromide emissions. Without a cap or limitation on the number of containers to be fumigated each week, Malec can drastically increase its methyl bromide emissions to amounts larger than what it currently represents as its potential annual emissions. Furthermore, Malec's permit application requests an annual limitation of 20,000 containers. Malec Permit Application at PDF 8. An annual limitation of 20,000 containers (or any other amount) is also absent from the proposed permit. It is worth noting, however, that an annual limitation of 20,000 as requested by Malec is inconsistent with NCDEQ's potential emissions equations that assume 300 containers a week. At 300 containers per week, Malec would fumigate a total of 15,600 containers in a year. Thus, NCDEQ's proposed permit underestimates Malec's potential annual emissions.

⁵⁰ W.Va. Allegheny Permit at 4, 4.1.24.

the closest property boundary.”⁵¹ Other provisions also refer to monitoring at the “downwind property boundary”⁵² and the “property boundary,”⁵³ creating ambiguity about where monitoring events must occur. Furthermore, if Malec utilizes an aeration stack, as claimed in their application, then monitoring at the downwind boundary line may be insufficient to accurately gauge the methyl bromide concentrations reaching nearby communities. Because methyl bromide has a tendency to disperse downward and outward, the height and location of a potential stack and the wind speed at the time of aeration can drastically impact where the methyl bromide emissions will eventually settle. The emissions may pass over the boundary line, resulting in a concentration of 0 ppm on the ground at the boundary line, and descend somewhere on the other side of the property line and within the nearby communities. NCDEQ must set a clear and unambiguous location for ambient monitoring that can accurately capture concentrations that the community will be exposed to.

Second, the frequency of ambient monitoring required by the proposed permit does not protect the nearby community from potential methyl bromide exposure. Under the proposed permit, once normal production begins at the facility—i.e., after the maximum daily charge limit (lb/day) is established—Malec is only required to conduct ambient monitoring *once per quarter for four quarters*,⁵⁴ can then subsequently reduce monitoring to *twice, semi-annual* assuming four quarterly monitoring events demonstrate 0 ppm at the downwind property boundary,⁵⁵ and can *discontinue monitoring altogether* once two semi-annual monitoring events demonstrate 0 ppm.⁵⁶ Although the proposed permit provides that monitoring must be conducted during fumigation loads using at least 90% of the maximum daily load of methyl bromide, there are no other requirements to ensure that these monitoring events accurately represent the day-to-day concentrations drifting off from the fumigation site. For example, no conditions are placed on wind speed at the time of monitoring and there are no requirements for external supervision by NCDEQ or APHIS of monitoring events. Moreover, quarterly monitoring alone cannot provide assurance that on any given day, week, or month that the surrounding community is not being exposed to dangerous levels of methyl bromide. Instantaneous and continuous monitoring is required to protect the public.

Finally, the proposed permit sets a 0 ppm limit at the boundary line to be monitored by a device with no less than +/- 0.5 ppm accuracy range.⁵⁷ Ambient monitoring is therefore being conducted at parts per million (ppm) sensitivity, despite known health impacts being demonstrated in parts per billion (ppb) (1 ppb = 1,000 ppm). As discussed above, the community exposure limit for chronic, six-week exposure for children is only 1 ppb (0.001 ppm). NCDEQ should set a boundary line limitation that reflects these community exposure limits and must require Malec to use monitoring devices sensitive enough to reflect concentrations in ppb.⁵⁸

⁵¹ Malec Proposed Permit at 2.1(A)(6)(h)(III).

⁵² *Id.* at (h)(IV).

⁵³ *Id.* at (h)(VI).

⁵⁴ *Id.* at (h)(V).

⁵⁵ *Id.* at (h)(VI).

⁵⁶ *Id.* at (h)(VIII).

⁵⁷ *Id.* at (h)(X).

⁵⁸ On-site monitoring using devices set to detect in ppm has been identified as problematic and insufficient to detect “annual averages” of methyl bromide concentrations from “sustained slow releases.” OPUS at 12 (explaining that

If concentrations are measured above 0 ppm at the downwind boundary line, then Malec is required to notify the Division of Air Quality Regional Supervisor no later than the next day.⁵⁹ The proposed permit contains no requirement to report or notify the surrounding community of such exceedances. Without adequate reporting and notification the surrounding community has no way of knowing if the air they are breathing contains dangerous levels of methyl bromide. Such requirements are necessary for the health and well-being of the public.

III. NCDEQ Must Conduct an Environmental Justice Impact Analysis on this Permit

Malec's proposed log fumigation operation will be located in Delco, Columbus County, North Carolina, a county that recently ranked 96th out of North Carolina's 100 counties for overall health outcomes and 97th for length of life.⁶⁰ Moreover, Columbus County ranked 99th for its physical environment, which includes factors such as air and water quality. Malec's log fumigation operation will add to the cumulative impacts of pollutant sources in the area. According to the Division of Air Quality's permit inventory, there are fourteen facilities with current air permits in Columbus County, several of which are clustered in Delco and Riegelwood, nearby to Malec's proposed fumigation operation.⁶¹

for sustained slow releases “the instrument will record zero The result will indicate compliance when in fact it may not comply.”). Instead, facilities should “undertake continuous ambient compliance monitoring capable of reporting at the 1 parts per billion level, and at both short-scale and annual time periods.”). *Id.* at i.

⁵⁹ Malec Proposed Permit at 2.1(A)(6)(c)(V)(2).

⁶⁰ Attachment 26, County Health Rankings & Roadmaps Program, *North Carolina Summary Report* at 12 (2018) (health outcomes); Attachment 27, County Health Rankings & Roadmaps Program, *North Carolina Data* at tab 3 (2018) (length of life). See generally County Health Rankings & Roadmaps Program, *North Carolina Rankings* <http://www.countyhealthrankings.org/rankings/data/NC> (last visited May 4, 2018).

⁶¹ Attachment 28, Lisa Sorg, *Foreign Company Proposed to Emit 140 Tons of “Super Pollutants” Each Year In Southeastern NC*, NC Policy Watch (May 2, 2018).



THERE ARE 14 FACILITIES WITH STATE AIR PERMITS IN COLUMBUS COUNTY. RED MARKERS INDICATES THOSE HOLDING TITLE V PERMITS, RESERVED FOR COMPANIES EMITTING LARGE AMOUNTS OF POLLUTANTS. THOSE THREE COMPANIES ARE CLUSTERED IN DELCO AND RIEGELWOOD. YELLOW AND BLUE MARKERS INDICATE FACILITIES THAT EMIT SMALLER BUT YET SIGNIFICANT AMOUNTS. (SOURCE: DIVISION OF AIR QUALITY PERMIT INVENTORY)

“In total, these facilities emit more than 11,000 tons of pollution,” including “3,275 tons of hazardous and/or toxic pollutants, including arsenic, benzene, formaldehyde and ammonia; 906 tons of greenhouse gases, such as carbon dioxide; and 7,400 tons of criteria pollutants, including sulfur dioxide, particulate matter and carbon monoxide.”⁶² The three largest emitters in Columbus County, International Paper (a pulp and paper company), West Frasier (a wood products company), and Hexion (a chemical company), are located within a quarter of a mile from Malec’s proposed operation.⁶³

Moreover, Malec’s proposed log fumigation operation is located near a predominantly minority community. The population living directly west of Malec’s proposed operation (an area referred to herein as “West Delco”) is 84 percent minority and 40 percent low-income.⁶⁴ Accordingly, this area’s demographic index is in the 85th percentile when compared to the rest of the state.⁶⁵ EPA’s EJSCREEN, is an environmental justice screening tool that combines environmental and demographic indicators and provides national, regional, and state information on eleven EJ indexes. The EJSCREEN for West Delco showed that the area received almost 70

⁶² *Id.*

⁶³ *Id.*

⁶⁴ Attachment 29, EPA EJSCREEN Report: West Delco (Apr. 30, 2018).

⁶⁵ *Id.* “A Demographic Index is based on the average of two demographic indicators; Percent Low-Income and Percent Minority.” EPA, *Overview of Demographic Indicators in EJSCREEN*, <https://www.epa.gov/ejscreen/overview-demographic-indicators-ejscreen> (last visited May 4, 2018).

percentile and above for all eleven EJ indexes. In particular, West Delco is in the 90th percentile in North Carolina for respiratory hazards, an issue that will get worse once Malec's fumigation operation begins.⁶⁶ Additionally, an EJSCREEN for the five-mile radius around Malec's proposed facility showed 48 percent minority, 43 percent low-income, and a state-wide respiratory hazards percentile of 74.⁶⁷

In light of this information, and NCDEQ's newly created Secretary's Environmental Justice and Equity Board,⁶⁸ NCDEQ should undertake an environmental justice analysis in accordance with its 2000 Environmental Equity Initiative Policy, which states that the Department will "[a]ddress environmental equity issues in permitting decisions for projects potentially having disparate impact on communities protected by Title VI of the Civil Rights Act of 1964."⁶⁹ Although NCDEQ has recently stated that an environmental justice analysis is underway, NCDEQ should complete its analysis, incorporate its findings into an updated draft permit, and provide for public participation on the new draft permit.⁷⁰

The people of Delco, Riegelwood, and the surrounding areas are speaking out against yet another large polluting source being located in their backyard.⁷¹ Similar operations proposed in North Carolina, including an operation in Morehead City in 2013⁷² and a proposal to increase use of methyl bromide at an existing fumigation yard in Wilmington just this year, were met with strong public outcry, resulting in the eventual abandonment of the proposed permits.⁷³ In those situations, the companies themselves made the decision to abandon their fumigation operations in light of the public and local government's concerns. Delco and Riegelwood, however, are small communities with "less social and political capital and few economic opportunities."⁷⁴ It is unlikely that Malec Brothers Transport will similarly abandon its plans; NCDEQ must step in to protect the people of Delco and Riegelwood.

IV. Conclusion

⁶⁶ EPA EJSCREEN Report: West Delco.

⁶⁷ Attachment 30, EPA EJSCREEN Report: 5 Mile Buffer (Apr. 30, 2018).

⁶⁸ NCDEQ, *DEQ Announces the Creation of a Secretary's Environmental Justice & Equity Board* (May 2, 2018), <https://deq.nc.gov/news/press-releases/2018/05/02/deq-announces-creation-secretary%E2%80%99s-environmental-justice-equity-board>.

⁶⁹ Attachment 31, NCDEQ, *Environmental Equity Initiative Policy* (Oct. 19, 2000).

⁷⁰ One of the stated goals of the Department's Environmental Equity Initiative Policy is to "provide information for citizens and neighborhood groups to allow meaningful participation in the regulatory process." *Id.* at 2.

⁷¹ Over 300 people attended a public hearing on May 3, 2018, at Acme-Delco Middle School about this proposed permit. Attachment 32, Ben Smart, *Public Outcry at Methyl Bromide Hearing, Company Insists it Would be Safe*, WECT (May 4, 2018); Attachment 33, Diana Matthews, *Emotions High at Air Quality Hearing*, The News Reporter (May 4, 2018); Attachment 34, Lisa Sorg, *A Chaotic Night in Delco: Angry Opposition to Fumigation Plant, Company Reps Shouted Down, DEQ Fumbles, and a Mystery Call to the Fire Marshal*, NC Policy Watch (May 4, 2018).

⁷² Attachment 35, *Company Drops Fumigation Plan*, Coastal Review Online (Sept. 18, 2013).

⁷³ Attachment 36, *Companies to Halt Fumigation Operations*, Coastal Review Online (Mar. 29, 2018); Attachment 37, *Company to Stop Fumigation Operations at Wilmington Site*, WWAY News (Mar. 29, 2018).

⁷⁴ Sorg, NC Policy Watch, *supra* note 61.

Before moving forward with this or any other methyl bromide log fumigation facility, NCDEQ should undertake a comprehensive study on the environmental and public health impacts of such an operation.⁷⁵ Specifically, NCDEQ should work with experts and state epidemiologists to review the current literature and fill any gaps in the literature as it pertains to methyl bromide used for log fumigation. The study should also investigate whether feasible alternatives exist⁷⁶ and what technologies are available to eliminate or drastically reduce methyl bromide emissions. It is time for NCDEQ to change how it approaches fumigation of logs using methyl bromide.

NCDEQ's proposed permit provides for the uncontrolled release of hundreds of tons of a highly toxic chemical into the air every year. The proposed permit is a recipe for disaster. It contains no control technology to eliminate emissions; lacks sufficient, enforceable conditions to prevent emission exceedances; and does not provide effective monitoring to uncover potential air pollution hazards. Working together, these issues can lead to a situation where hazardous concentrations of methyl bromide are not discovered for months or years.

For all of these reasons, NCDEQ must rescind the draft air quality permit, and if NCDEQ issues a new draft permit it must provide opportunity for comment, and the draft permit must require demonstrated control technologies, enforceable limitations on the facility's actual and potential emissions, and stricter monitoring and reporting requirements. The new permit must also take into consideration environmental justice concerns of the surrounding community.

Respectfully submitted,



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⁷⁵ For example, in response to two large methyl bromide log fumigation operations in the state, Virginia's Department of Environmental Quality has initiated a study of the air quality impacts of methyl bromide fumigation around those facilities. Virginia DEQ, *Community Air Monitoring Project – Suffolk*, <http://www.deq.virginia.gov/Programs/Air/AirMonitoring/CommunityAirMonitoringProjectSuffolk.aspx> (last visited May 4, 2018).

⁷⁶ According to conversations with NCDEQ staff, Malec is currently operating under a temporary agreement with China to export un-fumigated logs, which will be fumigated once they arrive in China. Attachment 38, Email from Brad Newland, NCDEQ, to Robert Parr, MD, and Ashby Armistead, NCDEQ (Apr. 23, 2018); *see also* Attachment 39, Goya Bennet, *Residents Angry at Lethal Poison in Suburb*, *The Age* (Aug. 5, 2010) (discussing New Zealand's process of logs being fumigated in containers at sea rather than before leaving the export port). NCDEQ needs to investigate this situation further to determine the exact terms of the agreement. If Malec has the opportunity to continue these operations instead of fumigating in North Carolina, NCDEQ should be aware of this potential alternative operational design.

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