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<td>138</td>
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I. Permit Application:

On August 18, 2011, the Aquifer Protection Section’s Land Application Unit received a permit application for a major modification to The University of North Carolina at Chapel Hill’s (UNC-CH) Bingham Facility wastewater irrigation system (Permit No. WQ0023896) located in southwest Orange County. The major modification request proposes to:

- Decommission an existing 8-inch gravity sewer; the ultraviolet (UV) disinfection system; the secondary effluent storage basin pump station; the 75,843 gallon lined effluent storage lagoon; and the 2.12 acre irrigation area composed of one field with 16 nozzles.

- Refurbish an existing 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined secondary effluent storage basin.

- Reconstruct an existing animal wastewater treatment system storage basin and irrigation pump station, and incorporate them into the subject non-discharge permit.

- Construct and operate an 8-inch gravity sewer system, a liquid sodium hypochlorite disinfection system, a 525 gallon chlorine contact tank; a secondary effluent pump station and 5.72 acres of irrigation area.

The existing wastewater treatment and irrigation facility serves the Bingham Facility, which is a biomedical animal research center. The existing wastewater treatment system is for domestic waste only, and secondary treated effluent is spray irrigated. This permit was originally issued December 17, 2004 and the most recent permit issuance was for a modification issued on February 12, 2007. The current permit modification request has been reviewed by both the Aquifer Protection Section’s Central and Raleigh Regional Staff, with additional information requested October 14, 2011. The subsequent additional information response was received November 14, 2011 and a draft permit was approved by the Division of Water Quality (DWQ) and UNC-CH on March 19, 2012.

It should be noted that the Bingham Facility also included an animal wastewater treatment and irrigation system that was deemed permitted under the Animal Waste Management System rules [15A NCAC 02T .1303(a)(1)]. After several water quality violations, the deemed permit status for the animal wastewater treatment and irrigation system was revoked on February 1, 2010. These water quality violations also resulted in an enforcement case and penalty assessment that was settled on May 25, 2010. While this animal wastewater treatment and irrigation system is not part of Permit No. WQ0023896, two components of this system are being reconstructed and repurposed for inclusion in the subject permit, while the remaining animal wastewater treatment and irrigation system components are being decommissioned. Accordingly, since the Bingham Facility is converting to a dry-bedding system, only a small amount of animal waste resulting from wash-down water will now be included in the waste stream for Permit No. WQ0023896.
II. Public Hearing Request:

On September 29, 2011, a public hearing request was sent to former Director Coleen Sullins. The request communicated public concerns “regarding the proposed infrastructure’s impact on groundwater, surface waters, the surrounding environment and public health…” Concerns specific to water quality included: the proposed increased spray irrigation area footprint; proposed average daily wastewater flows and annual irrigation limits; treated wastewater storage; disposal of domestic/animal waste; and potential impacts to Collins Creek, adjacent properties and groundwater supply wells. The request was a joint document from two non-profit citizen groups, Preserve Rural Orange and Haw River Assembly. The document was also endorsed by 56 neighbors and community members.

A copy of the public hearing request may be found in Appendix A.

III. Public Hearing Approval:

Division review of the submitted public hearing request determined that there were legitimate public concerns regarding water quality and public health due to the proposed modifications to the subject permit. Therefore, in accordance with 15A NCAC 02T .0108(b)(4), the Director determined that a public meeting was necessary to obtain additional information from the public in order to complete the Division review of the subject application. Both UNC-CH and Preserve Rural Orange were verbally notified of the Director’s decision in early October 2011. A formal letter was sent to UNC-CH on October 24, 2011 notifying the Applicant of the Division’s intent to hold a hearing to address public concerns and obtain additional information.

A copy of this letter may be found in Appendix B.

IV. Hearing Officer Selection:

As noted in the Public Hearing Approval letter, once the Division determined that the application submitted August 18, 2011 and subsequent additional information received November 14, 2011 were complete, a draft permit would be provided to UNC-CH for their review. This draft permit (Appendix C) was sent to UNC-CH on January 25, 2012 for an administrative review. UNC-CH notified the Division of their acceptance of the draft permit on March 15, 2012. A copy of UNC-CH’s acceptance email may be found in Appendix D.

Upon UNC-CH’s acceptance of the draft permit, the Division began the process of selecting a hearing officer to conduct the public meeting and provide the Division’s response to raised public concerns about water quality and public health impacts associated with the proposed facility modifications. On March 19, 2012, a memorandum was sent to the new Division Director, Chuck Wakild, for his selection of a public hearing officer. A copy of this memorandum may be found in Appendix E.

In early May 2012, Jeff Manning, supervisor of the Basinwide Planning Unit, was selected as the hearing officer.
V. Public Hearing Scheduling:

Upon selection of Jeff Manning as the Hearing Officer, the Division moved forward with selecting a location and date for the public hearing, as well as providing public notice. The Division originally intended on holding the public hearing in June 2012. However, the hearing requestor, Preserve Rural Orange, lobbied the Division to move the hearing date until the end of summer due to schedule conflicts with many organization members. The Division verbally contacted UNC-CH to confirm that they did not oppose holding the public hearing in late August 2012. UNC-CH did not object to Preserve Rural Orange’s request, and hearing preparations were postponed until July 31, 2012.

VI. Public Notification:

In accordance with General Statute 143-215.1(c)(3), public notice regarding the Division’s intent to hold a hearing for the subject facility was published in the News & Observer on August 5, 2012. A copy of the News & Observer’s Affidavit of Publication may be found in Appendix F.

In addition to notifying the public via the newspaper, the Division also included public notification on the DWQ Event Calendar (http://portal.ncdenr.org/web/wq/event-calendar/-/journal_content/56_INSTANCE_pFx2/38364/8217241). This webpage provided the public with detailed information about the proposed permit modifications, hearing date and location, as well as provided the public with a copy of the draft permit and an information fact sheet (Appendix G).

VII. Public Hearing:

The public hearing was held on August 22, 2012 at the White Cross Recreation Center located in southwest Orange County at 1800 White Cross Rd., Chapel Hill, NC 27519. Registration began at 6:30 p.m., with the hearing convening shortly after 7:00 p.m.

The hearing was attended by 80 members of the public, and there were 10 Division of Water Quality representatives present.

Following the Hearing Officer’s introductory remarks, Nathaniel Thornburg of the Division’s Land Application Unit provided an overview of the proposed permit modifications, as well as a brief synopsis of the draft permit. Next, Bob Lowman, an Associate Vice Chancellor for Research at UNC-CH, presented a statement on behalf of the University (Appendix H).

Next, 11 registered speakers provided comments regarding water quality and public health concerns about the subject facility:

Castro, Jr., Alex  Chiosso, Elaine  Earhart, Floyd  Gurganus, Earl
Hilborn, Elizabeth  Holt, Nancy  Leath, Cliff  Runkle, John
Schopler, Tom  Streitfeld, Laura

Transcripts of the 11 public presentations may be found in Appendix I. For an audio recording of the public hearing in its entirety, please contact Nathaniel Thornburg at (919) 807-6453 or nathaniel.thornburg@ncdenr.gov.

The hearing was adjourned at 8:15 p.m.
VIII. Public Comment Period:

The 30-day public comment period was opened on Sunday, August 5, 2012, and ended at the close of business on Tuesday, September 4, 2012. During the public comment period, the Division received 47 comments via e-mail, and five written comments.

Below is a list of all individuals who provided comments:

Commented via Electronic Mail:

<table>
<thead>
<tr>
<th>Allen, James</th>
<th>Bearman, Nathan</th>
<th>Bose, Allen</th>
<th>Buehler, Georg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash, Margaret</td>
<td>Castro, Maria</td>
<td>Cole, Carolyn</td>
<td>Demby, Hiawatha</td>
</tr>
<tr>
<td>Dlugo, Darren</td>
<td>Dotson, Myra</td>
<td>Durham, Kitchin</td>
<td>Freeland, J. J.</td>
</tr>
<tr>
<td>Gallagher, Robin</td>
<td>Green, Larry</td>
<td>Greenbaum, Lisa</td>
<td>Hammock, Linda</td>
</tr>
<tr>
<td>Heath, Margaret</td>
<td>Hernandez, Ricardo</td>
<td>Hernandez, Santiago</td>
<td>Hilborn, Elizabeth</td>
</tr>
<tr>
<td>Holt, Nancy</td>
<td>Horn, Tali</td>
<td>Hoyt, Howard</td>
<td>Ikenberry, Laura</td>
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<tr>
<td>Kilzer, Susan</td>
<td>Leath, Clifford</td>
<td>Leath, Lynn</td>
<td>Leslie, Virginia</td>
</tr>
<tr>
<td>Longest, Ryke</td>
<td>Macomson, Rhett</td>
<td>Main, Heather</td>
<td>O’Connell, Meagan</td>
</tr>
<tr>
<td>Petrochuk, Lyn</td>
<td>Pless, Jack</td>
<td>Rapp, Bryna</td>
<td>Rowan, Deanna</td>
</tr>
<tr>
<td>Scarborough, Savannah</td>
<td>Schopler, Tom</td>
<td>Simpson, Gary</td>
<td>Streitfeld, Laura</td>
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<tr>
<td>Tapper, Helen</td>
<td>Tapper, Richard</td>
<td>Thomas, Kate</td>
<td>Unknown (2)</td>
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<tr>
<td>Williams, Wallace</td>
<td>Wilshire-Eshelman, Sherry</td>
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</table>

Commented via Mail:

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<tr>
<th>Hernandez, Ricardo</th>
<th>Hernandez, Santiago</th>
<th>Meadows, Mary Jane</th>
<th>Sinatra, Christina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streitfeld, Laura</td>
<td></td>
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</tr>
</tbody>
</table>

Please note that copies of all e-mail comments may be found in Appendix K, and copies of all mailed comments may be found in Appendix L.

Please also note that while all submitted comments are considered public information and are subject to the North Carolina Public Records Law, all email and physical addresses were redacted from this document to protect the privacy of the commenters.
IX. Summary of Public Concerns:

After reviewing the 11 public hearing speakers’ comments and the 52 received written comments, the Division determined that there are four major areas of concern that can be addressed by the Division. These major concerns being:

1. The lack of an Environmental Impact Statement (EIS) for the subject facility.
2. The characteristics/constituents of the secondary treated effluent.
3. The proximity of spray irrigation to nearby residences and places of public assembly.
4. The amount of wastewater generated.

Each of these four major areas of concern, as well as other miscellaneous comments are addressed in detail in Section X.

In addition to these major concerns, the Division also identified three other areas that the Division of Water Quality does not have the authority to address. The first being potential fire hazards associated with the storage of dry-bedding onsite and water availability to fight a potential fire; the second being the location of the bulk propane tank system; and the third being whether or not UNC-CH’s use of up to 3,556 gallons per day of groundwater could impact private well water supply.

Regarding potential fire hazards and fire fighting-water availability, the Division suggests that concerned citizens contact the North Carolina Department of Insurance’s Office of State Fire Marshal (http://www.ncdoi.com/osfm/) to determine if the subject facility meets all state requirements.

As for the location of the bulk propane tank system, it is the Division’s understanding that this system has been permitted under the North Carolina Department of Agriculture and Consumer Service (NCDA&CS). The Division suggests that concerned citizens contact the NCDA&CS Standards Division’s – LP Gas Section (http://www.ncagr.gov/standard/LP/).

Lastly, comments regarding the quantity of groundwater withdrawn by UNC-CH at the Bingham facility and its potential impact on private wells should be directed to the Division of Water Resources (http://www.ncwater.org/).
X. Division Response to Public Concerns:

This section includes a detailed response to public concerns about water quality issues that were identified during the public hearing and the public comment period.

1. Why has an Environmental Impact Statement (EIS) not been conducted for this wastewater treatment and irrigation system?

During the August 22nd hearing and included in most of the submitted comments was a request from the public for UNC-CH to conduct an Environmental Impact Statement (EIS) for the Bingham facility. It was noted that since UNC-CH was utilizing public monies to operate and maintain a facility sited on public lands that they were required to comply with the North Carolina Environmental Policy Act (NCEPA). In addition, it was noted that the subject non-discharge modification for Permit No. WQ0023896 could not be issued until a final environmental document (i.e., a Record of Decision or Finding of No Significant Impact) was approved per 15A NCAC 02T .0105(c)(4).

While it is true that facilities utilizing public monies or public lands are subject to NCEPA, 15A NCAC 01C .0405 notes that there is minimum criteria established to determine when environmental documents are not required. Per 15A NCAC 01C .0408, general and specific minimum criteria for construction activities must be exceeded in order for an environmental document to be required.

The general criteria in 15A NCAC 01C .0408(1) that are applicable to the subject facility are:

(b) Land disturbing activity outside the twenty coastal counties that:

(i) is located more than one mile from waters classified as HQW or impacts less than five acres located within one mile of and draining to waters classified as HWQ;

(ii) is located outside of any Outstanding Resource Waters (ORW) watershed or area that requires specific management actions to protect ORW waters as defined in 15A NCAC 02B .0225;

(iii) impacts less than five acres located in any Outstanding Resource Waters (ORW) watershed or in any area that requires specific management actions to protect ORW waters as defined in 15A NCA 02B .0225; and

(iv) is located more than 25 feet from any waters classified as Trout (Tr) waters or impacts less than five acres located all or in part within 25 feet of any waters classified as Trout (Tr) waters.

(c) Channel disturbance and land disturbing activities associated with non-compensatory stream restoration or stream enhancement.

(d) Land disturbing activities impacting wetlands if the activity will result in the loss of one acre or less of Class WL wetlands.

(e) Land disturbing activities impacting streams if the activity will result in channel disturbance of less than 500 linear feet of perennial streams. Land disturbing activities that impact 500 linear feet or more of perennial streams do not require preparation of an environmental document if stream restoration or stream enhancement is performed.
X. Division Response to Public Concerns (continued):

The specific criteria in 15A NCAC 01C .0408(2) that are applicable to the subject facility are:

(a) The following activities related to wastewater treatment systems.

   (iv) New surface irrigation, high rate infiltration, or subsurface waste water systems with a proposed permit capacity not exceeding 100,000 gallons per day;

(c) Groundwater withdrawals of less than 1,000,000 gallons per day where such withdrawals are not expected to cause alterations in established land use patterns, or degradation of groundwater or surface water quality.

Division review of the general criteria in 15A NCAC 01C .0408(1) and the applicable specific criteria in 15A NCAC 01C .0408(2) finds that the UNC-CH facility does not need to conduct an Environmental Impact Statement (EIS) based on the minimum criteria thresholds.

Finally, please note that based on public concerns expressed at the hearing and submitted to the Division during the comment period, UNC-CH, under their own volition, submitted an Environmental Assessment (EA) to the State Environmental Review Clearinghouse. This EA is currently under review, but since a final environmental document is not required for Permit No. WQ0023896 based on the minimum criteria thresholds mentioned above, UNC-CH does not have to comply with 15A NCAC 02T .0105(c)(4) in order to modify their non-discharge permit. A copy of this EA may be obtained by contacting Nathaniel Thornburg at (919) 807-6453 or nathaniel.thornburg@ncdenr.gov.

2. Did DWQ revoke Permit No. WQ0023896 in 2010?

No. Permit No. WQ0023896 is an active permit, and was not revoked in 2010. This confusion arises from the fact that this facility had two non-discharge permits for two entirely separate treatment and disposal systems. Permit No. WQ0023896 was reviewed and originally approved by the Division of Water Quality on December 17, 2004 as an individual permit for the treatment and disposal of domestic wastewater. In contrast, the second treatment and disposal system was not required to be reviewed and approved by the Division of Water Quality because the system was deemed permitted under 15A NCAC 02T .1303(a)(1). After several water quality violations, the deemed permit status for the second wastewater treatment and irrigation system was revoked on February 1, 2010.

3. What is the status of the construction within the wetlands on the site?

The Division’s Raleigh Regional Office Surface Water Protection Section (RRO-SWPS) resolved this violation during a site visit in March 2012. UNC-CH restored the wetland areas impacted during the construction of the new lagoon by removing fill and replanting wetland vegetation. As for the irrigation equipment, the RRO-SWPS is allowing UNC-CH to remove the equipment by hand or they could use machinery provided they obtain permission from the Corps of Engineers and restore the affected area. During the March 2012 meeting, UNC-CH agreed to remove the irrigation equipment by hand and is awaiting issuance of this permit to complete the restoration. Finally, UNC-CH obtained a permit for a utility crossing from the wastewater treatment plant to the newest lagoon, which resolved violations regarding fill in the stream where rip rap was installed to protect the utility.
X. Division Response to Public Concerns (continued):

4. **Is the UNC-CH Bingham Facility expanding?**

   The current permit modification does not request any additional treatment or disposal flow beyond the 3,556 gallons per day (GPD) that was originally permitted in the February 12, 2007 issuance.

   As for the wastewater irrigation system, yes, the field area is expanding, but the amount of water that can be irrigated is not increasing. Field A, which is 2.12 acres with an annual loading rate of 24.09 inches will be decommissioned and four new irrigation zones, Fields 1 through 4 will be constructed. Fields 1 through 4 will have a cumulative area of 5.72 acres, and will be limited to an annual irrigation rate of 10.92 inches. Any increase in treatment capacity (i.e., > 3,556 GPD) or disposal capacity (i.e., > 10.92 in/yr) will require a future major permit modification subject to a complete Division review and public comment.

5. **How can UNC-CH be allowed to use their existing 2.12 acre spray field prior to constructing Fields 1 through 4?**

   The 2.12 acre Field A was originally permitted on December 17, 2004 and is currently an active spray irrigation disposal system for Permit No. WQ0023896. Field A is not part of the animal wastewater treatment and irrigation facility that had its deemed permitted status revoked in 2010. It is the Division’s understanding that UNC-CH is using a Wastewater Pump & Haul System (Permit No. WQ0034607) to transport all generated wastewater from both the revoked deemed permitted animal system and the active wastewater treatment and irrigation system (Permit No. WQ0023896) to an offsite facility for treatment and disposal. Therefore, since Field A is still active and not in violation of its permit, UNC-CH may irrigate on Field A during construction of Fields 1 through 4, or they may elect to continue pumping and hauling their entire effluent offsite during construction.

   Please note that if UNC-CH chooses to irrigate on Field A during construction of Fields 1 through 4, the irrigated effluent shall meet the monitoring requirements in Attachment A of the draft permit.

6. **Who is responsible for testing nearby property owners’ wells to ensure the water is suitable to drink?**

   The Division does not have the legal authority to require the Permittee to test off property wells for possible contamination. However, the Division does have the ability to require an onsite monitoring well network to detect contaminants prior to them moving offsite. This issue is fully addressed in Item #2 in Section XI below.
X. Division Response to Public Concerns (continued):

7. Does UNC-CH sample their effluent?

Yes. The active version of Permit No. WQ0023896 issued on February 12, 2007, requires that the effluent be sampled for the following parameters at the stated frequencies:

<table>
<thead>
<tr>
<th>PCS Code</th>
<th>Parameter Description</th>
<th>Units of Measure</th>
<th>Monthly Average</th>
<th>Monthly Geo. Mean</th>
<th>Daily Min</th>
<th>Daily Max</th>
<th>Measurement Frequency</th>
<th>Sample Type</th>
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<tr>
<td>00310</td>
<td>BOD, 5-Day (20 °C)</td>
<td>mg/L</td>
<td>30</td>
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<td></td>
<td>4 x Year</td>
<td>Grab</td>
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<tr>
<td>00940</td>
<td>Chloride (as Cl)</td>
<td>mg/L</td>
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<td></td>
<td></td>
<td></td>
<td>4 x Year</td>
<td>Grab</td>
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<tr>
<td>31616</td>
<td>Coliform, Fecal MF, M-FC Broth, 44.5 °C//100 mL</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 x Year</td>
<td>Grab</td>
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<tr>
<td>50050</td>
<td>Flow, in conduit or thru treatment plant</td>
<td>GPD</td>
<td>3,556</td>
<td></td>
<td></td>
<td></td>
<td>Monthly Estimate</td>
<td></td>
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<tr>
<td>00610</td>
<td>Nitrogen, Ammonia Total (as N)</td>
<td>mg/L</td>
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<td></td>
<td>4 x Year</td>
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<tr>
<td>00625</td>
<td>Nitrogen, Kjeldahl, Total (as N)</td>
<td>mg/L</td>
<td>4 x Year</td>
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<tr>
<td>00620</td>
<td>Nitrogen, Nitrate Total (as N)</td>
<td>mg/L</td>
<td>4 x Year</td>
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<td></td>
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<tr>
<td>00400</td>
<td>pH</td>
<td>su</td>
<td>6</td>
<td>9</td>
<td></td>
<td></td>
<td>Weekly</td>
<td>Grab</td>
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<tr>
<td>70300</td>
<td>Solids, Total Dissolved – 180 °C</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 x Year</td>
<td>Grab</td>
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<tr>
<td>00530</td>
<td>Solids, Total Suspended</td>
<td>mg/L</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year</td>
<td>Grab</td>
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a. 4 x Year sampling shall be conducted in March, June, September and December.
b. Fecal Coliform sampling shall be a geometric mean.

The draft permit proposes that two additional parameters be added to the sampling regimen: Total Residual Chlorine (50060) and Total Phosphorus (00665). Total Residual Chlorine will be sampled weekly because disinfection will be achieved using a liquid sodium hypochlorite system. In addition, at the request of UNC-CH, sampling for Total Phosphorus and most remaining parameters will increase from three times per year to quarterly.
X. Division Response to Public Concerns (continued):

8. *Since the university is a public/government institution, does UNC-CH adhere to all water quality standards that apply to the general population and private industry?*

Yes, UNC-CH must adhere to all water quality standards regardless of their public/government status. Some rules and regulations that are specifically related to this non-discharge permit include complying with:

- Article 21, Chapter 143 of the General Statutes
- 15A NCAC 02L .0100
- 15A NCAC 02T .0100 and .0500
- Applicable Division Policies
- Good Engineering Practices

9. *Is the effluent classified as domestic or industrial wastewater?*

Under the draft permit, the entire wastewater flow is classified as domestic. However, the Division agrees that classifying the entire wastewater treatment flow as domestic is not adequately informative. The nature of the wastewater would be better described as a mixture of domestic and non-industrial wastewater.

15A NCAC 02T .0103(20) defines industrial wastewater as:

“…all wastewater other than sewage or animal waste and includes:

(a) wastewater resulting from any process of industry or manufacture, or the development of any natural resource;
(b) wastewater resulting from process of trade or business, including wastewater from Laundromats and vehicle/equipment washes, but not wastewater from restaurants;
(c) stormwater that is contaminated with an industrial wastewater;
(d) any combination of sewage and industrial wastewater;
(e) municipal wastewater unless it can be demonstrated to the satisfaction of the Division that the wastewater contains no industrial wastewater;
(f) contaminated groundwater extracted as part of an approved groundwater remediation system approved by the Division in accordance with 15A NCAC 02L .0100.”

For this facility, none of the above six sub-definitions apply. The UNC-CH Bingham facility is a research facility, and is not a process or manufacturing industry, nor a trade/business process. In addition, research is not classified as the “development of a natural resource,” which would be more akin to timber logging, or ore mining for example.

Furthermore, 15A NCAC 02T .0103(2) defines animal waste as “livestock or poultry excreta or a mixture of excreta with feed, bedding, litter or other materials generated at a feedlot.” Since livestock and poultry are not at the facility, nor is the facility classified as a “feedlot,” this wastewater is not classified as animal waste.

Therefore, the Hearing Officer will recommend that the Division amend the draft permit to classify the generated wastewater as a mixture of domestic and non-industrial wastewater.
X. Division Response to Public Concerns (continued):

10. Does the effluent contain radio-isotopes, pharmaceuticals, triclosans or known carcinogens?

Since the wastewater is a mixture of domestic and non-industrial wastewater (See Response #9), the effluent is not subject to a complete chemical analysis per 15A NCAC 02T .0504(h). However, due to the unique nature of this wastewater, the Hearing Officer will recommend that the Division require advanced sampling in the form of a Priority Pollutant Analysis in order to completely satisfy 15A NCAC 02T .0105(c)(7). This issue is fully addressed in Items #4 and #5 in Section XI below.

11. What type of surfactants/cleaners will be used?

The Division does not know what surfactants will be used in the washing and laboratory facilities. However, the Division intends on requesting this information. This issue is fully addressed in Item #6 in Section XI below.

12. Has a Toxicity Characteristic Leaching Procedure (TCLP) or Whole Effluent Toxicity (WET) test been conducted on the effluent?

To the Division’s knowledge neither one of these procedures have been conducted on the UNC-CH Bingham facility effluent. Condition IV.1. of the draft permit reserves the Division’s right to require these tests based on the results of the Priority Pollutant Analysis noted in Response #10.

13. Why does the treatment facility only treat to secondary standards, and not tertiary?

In order to comply with the wastewater irrigation system design criteria in 15A NCAC 02T .0505, the UNC-CH facility is required to achieve secondary effluent standards in order to obtain the setbacks defined in 15A NCAC 02T .0506(a).

14. Is the proposed wastewater treatment system adequate based on the effluent’s characteristics?

The Division will determine if the proposed wastewater treatment system is adequate to treat the effluent once results from a Priority Pollutant Analysis are submitted as part of an additional information request. This issue is fully addressed in Item #7 in Section XI below.

15. Why hasn’t a hydrogeologic investigation been conducted at this site?

Since the wastewater has been classified as a mixture of domestic and non-industrial wastewater (See Response #9), the facility is not subject to a hydrogeologic investigation per 15A NCAC 02T .0504(e).
X. Division Response to Public Concerns (continued):

16. Is the UNC-CH Bingham Facility located on a site that has been labeled as “high-risk for groundwater contamination” by the USGS?

The USGS publication "Susceptibility of Ground Water to Surface and Shallow Sources of Contamination, Orange County, North Carolina" by Silvia Terziotti and Jo Leslie Eimers, 1999. USGS Open file report 99-179 is a map showing the relative vulnerability of Orange County to groundwater contamination using available digital data on soil type (hydraulic conductivity), slope, and land use/cover. The map provides a qualitative assessment of the degree of vulnerability with warmer colors corresponding to higher relative vulnerability, and cooler colors corresponding to lower groundwater vulnerability. This map is not intended to be a substitute for actual on-site data on these factors collected by a professional engineer, soil scientist or licensed geologist. The permit application for the subject facility required that a soil evaluation be performed for the particular application site by a NC licensed engineer, soil scientist or geologist, and contain site specific information on the factors affecting its suitability for wastewater irrigation such as soil type, slope, hydraulic conductivity, and land cover.

The USGS Open File report 99-179 did not contain geo-referenced data that could be used to accurately overlay the Bingham facility on top of the map; however the Division attempted to do so based on the relative approximate location of the facility from the county boundaries. This resulted in the following figure:
X. Division Response to Public Concerns (continued):

This above figure indicates that the majority of the land at the Bingham facility would belong to the “moderate” classification of the USGS Open File 99-179 report. The Division obtained digital files from the author of this report that contain the relative groundwater vulnerability assessment for the entire state, which includes the same data from Orange County that was used to generate the map contained in the USGS Open File 99-179 report. Since this data was georeferenced, we were able to overlay the property boundary for the UNC Bingham facility on top of the relative groundwater vulnerability layer to produce the following figure:

The color ramp that was used to generate this figure is not identical to the USGS Open File 99-179 map, and this figure has not been processed to remove the artifacts created by roadways, but areas of elevated relative groundwater vulnerability (and roadways) are indicated by warmer colors. This figure also suggests that the UNC-CH Bingham facility is also within an area of “moderate” to average relative groundwater vulnerability.

It is important to note that these types of maps are not intended to be used for assessing the suitability of sites for wastewater application, they are intended to be used to show relative patterns associated with factors affecting potential vulnerability to groundwater contamination on a large scale. Individual site investigations are a much more accurate means to assess the suitability of a site for wastewater irrigation, and the soil evaluation performed on the UNC-CH Bingham site indicates that the area subjected to wastewater irrigation is suitable for such purposes.
X. Division Response to Public Concerns (continued):

17. Is UNC-CH allowed to irrigate treated effluent on land within the Haw River watershed to Jordan Lake?

The nearest surface water to the UNC-CH Bingham facility is an unnamed tributary (UT) to Collins Creek, which is located in Sub-Basin 03-06-04 and is currently classified as WS-V; NSW (i.e., Water Supply V – Upstream / Nutrient Sensitive Waters). Collins Creek is also upstream of the Haw River and Jordan Lake.

 Currently, there are no prohibitions for the irrigation of treated wastewater effluent on land located within the Haw River watershed. Please note that under 15A NCAC 02B .0212, the land application of residuals on newly permitted sites are not allowed within the critical area of the watershed.

18. Will runoff from rainfall carry wastewater-sodden soil to Collins Creek?

The intent of a non-discharge wastewater irrigation system is to allow for the application of wastewater effluent onto the land surface without any discharge to surface waters. The proposed draft permit includes several conditions designed to protect nearby surface waters. These conditions include:

- Condition II.1. – “The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or irrigation facilities.”

- Condition II.2. – “This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility.”

- Condition II.4. – “Effluent limitations shall not exceed those specified in Attachment A.”

- Condition II.5. – “Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in Attachment B.”

- Condition II.6. – “The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit.”

- Condition III.1. – “The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .0507, which at a minimum shall include operational functions, maintenance schedules, safety measures and a spill response plan.”

- Condition III.3. – “A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system.”

- Condition III.4. – “Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Attachment B.”
X. Division Response to Public Concerns (continued):

- Condition III.5. – “Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff.”

- Condition III.6. – “All irrigation equipment shall be tested and calibrated at least once per permit cycle. Calibration records shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request.”

- Condition III.8. – “No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed.”

- Condition IV.13. – “An annual representative soils analysis (i.e., Standard Soil Fertility Analysis) shall be conducted on each irrigation site listed in Attachment B. These results shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request. At a minimum, the Standard Soil Fertility Analysis shall include the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Standard Soil Fertility Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acidity</td>
<td></td>
</tr>
<tr>
<td>Exchangeable Sodium</td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Base Saturation (by</td>
<td></td>
</tr>
<tr>
<td>calculation)</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td></td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>Cation Exchange Capacity</td>
<td></td>
</tr>
<tr>
<td>Percent Humic Matter</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>pH</td>
</tr>
<tr>
<td>pH</td>
<td></td>
</tr>
</tbody>
</table>

The Division will require that UNC-CH comply with all of the aforementioned permit conditions or be subject to Notice of Violations (NOVs), civil penalties, and possible permit revocation. That being said, the Division realizes that manmade systems are subject to failure either through poor operation and maintenance, facility age, or catastrophic acts of nature. Accordingly, the Division intends on requiring upstream and downstream surface water monitoring to determine whether or not the land application of wastewater effluent at this facility is degrading on-property surface waters. This issue is fully addressed in Item #3 in Section XI below.

19. Can UNC-CH irrigate near the road?

Per 15A NCAC 02T.0506(a), UNC-CH can spray irrigate treated wastewater up to 150 feet from a property line or up to 50 feet from a public right-of-way. For this facility, spray irrigation is proposed to be at least 150 feet from Orange Chapel Clover Garden Rd. (SR 1776). If UNC-CH elects to install a drip irrigation system, wastewater can be irrigated up to 50 feet from both a property line and public right-of-way.
X. Division Response to Public Concerns (continued):

20. Can the proposed spray field be located this close to a public school bus stop?

15A NCAC 02T .0506(a) states that spray irrigation and drip irrigation sites shall be 400 and 100 feet, respectively, from “any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site.” As a result of concerns expressed at the public hearing, the Division revisited whether or not a public school bus stop is considered a “place of public assembly” and consulted with the North Carolina Attorney General’s Office for assistance. The following is the response received from the Special Deputy Attorney General of the Water and Land Section Environmental Division:

“What types of things are included as a place of public assembly (see 15A NCAC 02T .0506(a))?"

“Place of public assembly” is not defined in N.C. Gen. Stat. §143-212 or 213. Likewise, “place of public assembly” is not defined in the EMC’s rules, including 15A NCAC 2T.0103. Under rules of statutory construction, if words are not defined, they are to be given their ordinary meaning.

The American Heritage College Dictionary, 3rd ed., defines “school bus” as a vehicle for taking schoolchildren to and from school or school-related activities.” “Stop” is defined as “a place at which someone or something stops.” “Place” is defined as “a bounded area; a portion of space,” as “the given portion of space occupied by or allocated to a person or thing,” or as “a setting in which one person… can sit or stand.” “Public” is defined as “of, concerning, or affecting the community or the people.” “Assembly” is defined as “a group gathered for a common reason.” Putting all of this together, a school bus stop could be considered a place of public assembly since school children are people in the community who gather together in the mornings for a common reason – to take the bus to school.

Although “place of public assembly” is not defined in Chapter 143 or the 2T rules, by way of illustration, “place of public assembly” is defined in the Solid Waste Management rules adopted pursuant to N.C. Gen. Stat. §130A-290 in 15A NCAC 13B.0831(10) and in the wastewater collection, treatment and disposal statute in N.C. Gen. Stat. §130A-334(7) as “a fairground, auditorium, stadium, church, campground, theater or any other place where people assemble.” Again, a school bus stop could be considered a place where people assemble.

In our research of school bus routes, this is what we found in N.C. Gen. Stat. §115C-246:

(a) The superintendent of the local school administrative unit shall, prior to the commencement of each regular school year, prepare a plan for a definite route, including stops for receiving and discharging pupils, for each school bus so as to assure the most efficient use of such bus and the safety and convenience of the pupils assigned thereto. The superintendent may, in his discretion, obtain the advice of the State Board of Education with reference to the plan. The buses shall be operated upon the route so established and not otherwise, except as provided in this Article. From time to time the principal may suggest changes in any such bus route as he shall deem proper for the said purposes, and the same shall be effective when approved by the superintendent of the local school administrative unit.
X. Division Response to Public Concerns (continued):

(b) Unless road or other conditions shall make it inadvisable to do so, public school buses shall be so routed on state-maintained highways that the school bus, to which such pupil is assigned, shall pass within one mile of the residence of each pupil, who lives one and one half miles or more from the school to which such pupil is assigned.

(c) All bus routes when established pursuant to this section shall be filed in the office of the board of education of the local school administrative unit, and all changes made therein shall be filed in the office of such board within 10 days after such change shall become effective.

While bus stops may be at regular locations, it would appear that the locations can change in each school district from year to year. Rural bus stops would most likely be located at least at a person’s residence.

So for the purpose of the 15A NCAC 2T.0506 setbacks, a school bus stop, if identified as such, could be considered a “place of public assembly” such that the setbacks would apply. If the school bus stop is located in a rural area, the residence and the bus stop could be the same location, for purposes of the setback rule.”

Accordingly, UNC-CH shall provide the appropriate setback distance between the irrigation system and the public school bus stop. This issue is fully addressed in Item #1 in Section XI below.
X. Division Response to Public Concerns (continued):

21. What wastewater sources will comprise the 3,556 gallons per day of effluent generated?

Application Item III.3. of the additional information received on November 14, 2011 states that the wastewater effluent will be generated from the following sources:

<table>
<thead>
<tr>
<th>Wastewater Source</th>
<th>Unit Flow (GPD)</th>
<th>No. of Units</th>
<th>Total Flow (GPD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>35</td>
<td>15</td>
<td>525</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>375</td>
<td>1</td>
<td>375</td>
</tr>
<tr>
<td>Laundry Washer</td>
<td>500</td>
<td>2</td>
<td>1,000</td>
</tr>
<tr>
<td>Cage Washer</td>
<td>140</td>
<td>1</td>
<td>140</td>
</tr>
<tr>
<td>Wet Lab</td>
<td>200</td>
<td>2</td>
<td>400</td>
</tr>
<tr>
<td>Water Softener Brine</td>
<td>80</td>
<td>2</td>
<td>160</td>
</tr>
<tr>
<td>Boiler Blow-down Water</td>
<td>25</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total Flow (GPD)</strong></td>
<td><strong>2,650</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore, the anticipated amount of wastewater effluent generated is 2,650 GPD. The existing wastewater system, permitted on February 12, 2007, is designed and approved for a maximum treatment capacity of 3,556 GPD, leaving approximately 900 GPD in reserve capacity.

Please note that while the Division does not deem it necessary to require that the treatment and disposal capacity be reduced to 2,650 GPD, it may be in UNC-CH’s best interest to evaluate whether or not to reduce their permitted flow based on a flow reduction request per 15A NCAC 02T .0114(f) in order to alleviate field size and location concerns associated with Response #20. This issue is fully addressed in Item #1 in Section XI below.

22. Is the use of 3,556 gallons per day of groundwater excessive for this facility given nearby private wells?

Please note that the 3,556 gallons per day (GPD) is the maximum monthly average of wastewater effluent that UNC-CH is allowed to treat per month, and is not necessarily indicate of the amount of groundwater used. Therefore, the Division will request that UNC-CH provide water usage records for the last 12 months to demonstrate to the public how much groundwater is withdrawn. This issue is fully addressed in Item #8 in Section XI below.
X. Division Response to Public Concerns (continued):

23. Why hasn’t UNC-CH provided standard operating procedures, notification and safety protocols and emergency plans in case of future incidents at the site?

Condition III.1. of UNC-CH’s existing permit, as well as 15A NCAC 02T .0507 require that the Bingham facility keep and maintain an Operation and Maintenance (O&M) Plan for all treatment and disposal systems.

Please note that 15A NCAC 02T .0507 requires the following:

- Description of the operation of the system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted.
- Description of anticipated maintenance of the system.
- Include provisions for safety measures including restriction of access to the site and equipment.
- Include spill control provisions such as response to upsets and bypasses including control, containment and remediation, as well as contact information for plant personnel, emergency responders and regulatory agencies.

In its recommendations, the Division will require that UNC-CH submit a recently updated O&M Plan to reflect the proposed system design that specifically addresses at a minimum: safety and notification protocols; emergency plans associated with the chlorine disinfection system; emergency contacts; and operation and maintenance of the facility during severe weather related events. This issue is addressed in Item #9 in Section XI below.

24. Can the Division of Water Quality use existing regulations to hold UNC-CH accountable for providing transparency to the public?

There are existing General Statutes that can require UNC-CH to be held accountable for providing transparency to the public-at-large, Preserve Rural Orange, or neighbors to the UNC-CH Bingham facility. In addition, it can be required that UNC-CH be transparent with the Division, which is itself a government agency that is required to provide public access to documents under North Carolina Public Records Law. Actions for this item are addressed in Items #6 and #7 in Section XII below.
XI. Additional Information Recommendations:

Based on the responses noted in Section X above, the Division shall obtain the following information from UNC-CH in the form of an additional information request prior to making a permit decision. This additional information request shall follow the requirements in 15A NCAC 02T .0107(e).

Accordingly, UNC-CH shall submit the following information to the Division:

1. Per the Attorney General’s Office determination that a public school bus stop is a “place of public assembly,” UNC-CH shall determine the exact location of this bus stop and provide setbacks accordingly. If UNC-CH intends to continue to use spray irrigation as a disposal method, then a minimum setback of 400 feet shall be provided to this bus stop. If UNC-CH elects to use drip irrigation as a disposal method in this affected area, then the setback shall be at least 100 feet. Please note that while the Division will not require a flow reduction, it is suggested that UNC-CH’s reevaluate the amount of wastewater generated at this facility, and potentially submit a flow reduction request in order to reduce the facility’s permitted flow and subsequently the amount of irrigation area needed.

2. An amended proposed monitoring well network to include additional wells on the review boundary to the southwest and south of the irrigation field to help ensure that any groundwater contamination flow in the direction of adjacent residences is detected prior to reaching the Bingham facility’s compliance boundary located within the property boundary.

3. An amended monitoring plan to include upstream and downstream surface water monitoring stations for all surface waters located on the property. Each monitoring location shall be at the upstream and downstream sites closest to UNC-CH’s property line with adjoining neighbors. These stations shall monitor for BOD$_5$, pH, Dissolved Oxygen, Total Nitrogen and Total Phosphorus, and are meant to quantify UNC-CH’s impacts (if any) on surface waters while on their property.

4. A Priority Pollutant Analysis on a representative sample of the Bingham Facility’s generated wastewater due to the unique nature of the wastewater.

5. A disclosure and identification of any radio-isotopes or known carcinogens that may be present in the wastewater, as well as a discussion about the treatment effectiveness of these contaminants (if present) by the proposed wastewater treatment system.

6. A description of the type(s) and amount(s) of surfactants used in the dishwasher, laundry washer, cage washer and wet lab facilities.

7. Based on Items #4, 5 and 6 above, a verification that the proposed wastewater treatment system is capable of treating to secondary standards, as well as its effectiveness at removing any identified pollutants of concern.

8. Provide at least one year’s worth of groundwater usage flows from the onsite water supply well. If these values are not available, UNC-CH shall at a minimum provide one year’s worth of wastewater effluent flow records.

9. An amended Operation and Maintenance (O&M) plan to address the concerns noted in Response #23 in Section X.
XII. Draft Permit Recommendations:

Based on the responses noted in Section X, as well as received additional information required in Section XI, the Division shall modify the draft permit as follows:

1. The wastewater shall be classified as a mixture of domestic and non-industrial wastewater.

2. If UNC-CH elects to reduce their permitted flow, then amend the permit description and Attachment A accordingly.

3. Amend Section IV and Appendix A to include the surface water monitoring stations.

4. If field area(s) and loading rates are revised, then these changes shall be reflected in the permit description and Attachment B.

5. Amend Sections I and IV, as well as Appendix C to include the additional monitoring wells.

6. UNC-CH shall provide to the Division an annual report summarizing the performance of the wastewater treatment and irrigation facility, and the extent to which the facility has violated its permit, or federal or State laws, regulations, or rules related to the protection of water quality. This report shall be prepared on a calendar year basis and shall be provided no later than March 1st of the following calendar year. Two electronic copies of the annual report shall be submitted to the Division and at a minimum shall include:
   - All effluent and surface water monitoring data (NDMRs); all irrigation loading data and weekly freeboard records (NDAR-1s); and all groundwater monitoring data (GW-59s);
   - Testing and calibration records from Condition III.6.
   - Records of all residuals removed from the facility in accordance with Condition IV.8.
   - Copies of the maintenance log(s) as required in Condition IV.9.
   - Copies of the annual representative soil analysis conducted on each irrigation field as required in Condition IV.13.
   - Copies of the inspection log(s) required under Condition V.2.
   - Copies of all correspondence to and from the Division.
   - Priority Pollutant Analysis results.

7. Pursuant to §143-215.1C (b), UNC-CH shall provide public notification upon discharge of untreated or partially treated wastewater to surface waters of the State. For discharges of 1,000 gallons or more, UNC-CH shall issue a press release to all print and electronic news media that provide general coverage in Orange County describing details of the discharge. UNC-CH shall issue the press release within 48 hours after determining that the discharge has reached surface waters. UNC-CH shall retain a copy of the press release and a list of the news media to which it was distributed for at least one year after the discharge and include this information in the Annual Report noted in the above recommendation. UNC-CH shall provide a copy of the press release and the list of the news media to which it was distributed to any person upon request.

In conclusion, if UNC-CH submits the requested additional information, and Division review by the Aquifer Protection Section’s Central and Raleigh Regional Offices determines that the additional information completes the application, then it is recommended that the draft for Permit No. WQ0023896 with the aforementioned draft permit modifications be issued. If UNC-CH fails to submit any part of the requested information in accordance with 15A NCAC 02T .0107(e)(2), then it is recommended that the application be returned as incomplete.

/NDT
APPENDIX A

PUBLIC HEARING REQUEST
Coleen Sullins, Director
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1617 Mail Service Center
Raleigh, NC 27699-1617

September 29, 2011

Dear Ms. Sullins:

We are writing to request a public hearing regarding the University of North Carolina’s application submitted on August 16, 2011 for a major modification to NC Division of Water Quality Non-Discharge Permit # WQ0023896 to rebuild and expand wastewater spray irrigation systems at the UNC Research Facility in Bingham Township, Orange County.

Community members have significant concerns regarding the proposed infrastructure’s impact on ground water, surface waters, the surrounding environment and public health, and would like an opportunity to comment on UNC’s application before changes are approved. Among the top concerns are the increased footprint of spray irrigation fields, proposed flows and yearly maximums, storage and disposal of domestic and animal waste, and public disclosure of planned discharges.

We, the undersigned*, ask for a public hearing to share these concerns while DWQ is in the process of considering the university’s permit application. We hope the outcome will be a plan that ultimately minimizes adverse impacts on the environmental health of Collins Creek, the watershed, neighboring wells, and properties adjacent to and downstream from the UNC facility. Please send us advance notice when a hearing is scheduled, to the following address: info@preserveruralorange.org

Thank you,

Laura Streitfeld, Chair, Board of Directors, Preserve Rural Orange
& Elaine Chiosso, Haw Riverkeeper, Haw River Assembly

cc: Jay Zimmerman, Aquifer Protection Supervisor, DWQ Raleigh Regional Office
Jon Risgaard, Land Application Unit Supervisor, DWQ Raleigh Regional Office

*See attached list of signatories.

(next page)

Preserve Rural Orange (PRO) is a nonprofit citizen organization established in 2009 to protect watershed land and farms in Orange County, North Carolina. Providing timely public education on potential impacts of development to 500+ subscribers, PRO has been influential in promoting constructive community engagement in issues affecting rural residents, farmers, the environment and public health.

The mission of Preserve Rural Orange is to preserve, strengthen and defend the viability of the rural community of watershed land, farms and woodlands in Orange County, North Carolina.
Preserve Rural Orange request for public hearing

We, the undersigned, request a public hearing regarding the University of North Carolina’s August 16, 2011 application for a major modification to NC Division of Water Quality Non-Discharge Permit #WQ0023896 to rebuild and expand wastewater and spray irrigation systems at the UNC Research Facility in Bingham Township, Orange County, North Carolina.

Preserve Rural Orange
Laura Streifeld, Chair
Tom Schopler, Vice-Chair
Alex Castro, Treasurer
Jack Pless, Secretary
Cliff Leath

Haw River Assembly
Elaine Chiosso, Haw Riverkeeper

Neighbors & community members
Nathan Bearman
Allen Bose
Georg & Janet Buehler
Marcia P. Chapman
Tom Cheek
Isa Cheren
Carolyn Cole
Eda Cornish
Wendy, James & Marcus Curtis
Susan Dayton
Lois Ferson
Patricia & Paul Fullagar
John & Robin Gallagher
Larry & Arlene Green
Linda Hammock
Mary C. Harris
Kent Hayes, Jr. & Lesia Hayes
Erin Haygood
Rachel Hoke
Nancy Holt, Carolina Concerned Citizens
Susan Kilzer
Cyril Lance
Lynn Leath
Virginia Leslie
Miriam Lieberman
Walt Lobotsky
David H. Marion
Robert & Shirley Mason
William C. May
Kaylin McGee
S. Marc & Eliana G. Owens

September 29, 2011
APPENDIX B

PUBLIC HEARING APPROVAL
October 24, 2011

RICHARD L. MANN – VICE CHANCELLOR FINANCE & ADMINISTRATION
THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
CB#1000 – 302A SOUTH BUILDING
CHAPEL HILL, NORTH CAROLINA 27599-1000

Subject: Permit No. WQ0023896
Public Hearing Notification
UNC-CH Bingham Facility
Wastewater Irrigation System
Orange County

Dear Vice Chancellor Mann:

On September 29, 2011, the Division received a written request (attached) from Preserve Rural Orange (PRO), the Haw River Assembly, and neighbors and community members requesting a public hearing for the proposed permit modification to the subject facility received on August 18, 2011. Accordingly, the Division has decided to hold a public hearing at a yet to be determined date.

The major permit modification request proposes to conduct the following:

➢ Improve the gravity sewer collection system to deliver raw wastewater generated from all three existing buildings to the existing 8,000 gallon domestic wastewater septic tank.

➢ Refurbish the existing Advantex® domestic wastewater treatment facility to provide secondary treatment in accordance with the wastewater irrigation rules (i.e., 15A NCAC 02T .0590).

➢ Replacement of the existing ultraviolet (UV) disinfection system with a chlorine contact tank and chlorine chemical feed system.

➢ Installation of a new secondary effluent pump station to convey treated effluent to the wet weather storage basin.

➢ Refurbishment of the existing animal wastewater treatment system effluent upset storage basin into an emergency 125,000 gallon effluent storage basin.

➢ Reconstruction of the existing 1.6 million gallon (MG) wet weather storage basin to create a 936,000 gallon cement stabilized compacted clay lined wet weather storage basin.

➢ Refurbishment of the existing irrigation pump station with new irrigation pumps, piping, valves and electrical equipment.

➢ Construction of a new 5.7 acre spray irrigation area consisting of four separate irrigation zones.
Decommissioning of the existing animal wastewater treatment system, as well as the small wet weather storage basin, the animal wastewater gravity sewer collection system, and effluent pump station.

Decommissioning of the existing animal wastewater irrigation system.

Decommissioning of a majority of the existing wastewater irrigation system permitted under WQ0023896, save for a small portion thereof that is proposed to be refurbished and included in the proposed 5.7 acre spray irrigation area.

Please note that the Applicant has not requested to increase the average daily flow (ADF) beyond the already permitted ADF of 3,556 gallons per day (GPD).

The existing wastewater treatment facility serves the UNCH-CH Bingham facility with a permitted ADF of 3,556 GPD, and the effluent is irrigated onto a 2.12 acre spray irrigation field. This permit was originally issued December 17, 2004, and the most recent issuance was on February 12, 2007. The permit modification request is currently under review, and an additional information request was generated October 14, 2011. This information is due to the Division no later than the close of business on November 13, 2011.

Once the requested additional information is received, and the Division determines that the application package is complete, the Division will provide you with a draft permit to review. Once the draft permit is finalized, the public hearing officer, date and location will be selected shortly thereafter.

If you have any questions regarding this notification, please contact Nathaniel Thornburg at (919) 715-6160 or nathaniel.thornburg@ncdot.gov.

Sincerely,

[Signature]

Colleen H. Sullivan

cc: Laura Streitfeld, Chair – Preserve Rural Orange
Elaine Chioso, Haw Riverkeeper – Haw River Assembly
Matthew D. Fleahman, PG – Raleigh Regional Office, Aquifer Protection Section
Charles D. Riley, Jr., PE – McKim & Creed
Scott J. Frederick, LSS – Soil, Water & Environmental Group, PLLC
Permit Application File WQ0023896
APPENDIX C

DRAFT PERMIT NO. WQ0023896
Dear Vice Chancellor Gray:

In accordance with your permit major modification request received August 18, 2011, and subsequent additional information received November 14, 2011, we are forwarding herewith Permit No. WQ0023896 dated DATE OF PERMIT, to The University of North Carolina at Chapel Hill for the operation of the subject wastewater treatment and irrigation facilities.

The modifications to the subject permit are as follows:

- Decommissioning of the existing 8-inch gravity sewer; the ultraviolet (UV) disinfection system; the secondary effluent storage basin pump station; the 75,843 gallon lined effluent storage lagoon; and the 2.12 acre irrigation area composed of one field with 16 nozzles.
- Refurbishment of the 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined secondary effluent storage basin.
- Reconstruction of the existing animal wastewater treatment system storage basin and irrigation pump station.
- Construction and operation of an 8-inch gravity sewer system, a liquid sodium hypochlorite disinfection system, a 525 gallon chlorine contact tank, a secondary effluent pump station and 5.72 acres of irrigation area.

Please note that on August 5, 2009, Session Law 2009-406, entitled “An Act to Extend Certain Government Approvals Affecting the Development of Real Property Within the State,” was enacted by the General Assembly and signed into law. The Act, known as the Permit Extension Act of 2009, extends the expiration date of certain government approvals and permits. In addition, Session Law 2010-177 extended the Act by another year. Permit No. WQ0023896 falls within the scope of this Act and is therefore being extended until September 30, 2015. A renewal application must still be submitted six months in advance of the extended expiration date.
This permit shall be effective from the date of issuance until September 30, 2015, shall void Permit No. WQ0023896 issued February 12, 2007, and shall be subject to the conditions and limitations as specified therein. Please pay particular attention to the monitoring requirements listed in Attachments A, B and C for they may differ from the previous permit issuance. Failure to establish an adequate system for collecting and maintaining the required operational information shall result in future compliance problems.

For your convenience, customized electronic copies of your facility’s NDMR and NDAR-I reporting forms are available for download at: http://portal.nedmr.org/web/wq/apps/lau/reporting.

Please note the following permit conditions have been removed since the last permit issuance dated February 12, 2007:

- Old Condition I.1. – This condition has been removed because it is no longer needed.
- Old Condition I.2. – This condition has been removed because it is inherently covered under new Condition III.1.
- Attachment A – PPI 001 has been removed because the previously permitted modifications were certified as complete on May 28, 2009.

Please note the following permit conditions have been modified since the last permit issuance dated February 12, 2007:

- Condition I.4. (Old Condition I.5.) – This condition has been modified to require submission of the scaled site map within 60 days of construction of monitoring wells MW-3 and MW-4.
- Condition I.6. (Old Condition I.6.) – This condition has been modified to require waste level gauges in both the wet weather storage and secondary effluent storage basins.
- Condition III.6. (Old Condition III.6.) – This condition has been modified to require that all irrigation equipment shall be tested and calibrated at least once per permit cycle.
- Attachment A – This attachment has been modified to include two new sampling parameters for PPI 002, Total Residual Chlorine and Total Phosphorus, which shall be sampled weekly and four times per year, respectively. In addition, the sampling frequency for BOD<sub>5</sub>, Chloride, Fecal Coliform, Ammonia, Nitrate, Total Kjeldahl Nitrogen, Total Dissolved Solids and Total Suspended Solids has increased from three times per year to four times per year.
- Attachment B – This attachment has been modified to include the four proposed irrigation fields.
- Attachment C – This attachment has been modified to include the two new monitoring wells, MW-3 and MW-4. In addition, at the Permittee’s request, the sampling frequencies have increased from three times per year to four times per year. Please note that the annual sampling requirement for Volatile Organic Compounds (78732) remains, however, this parameter shall now be sampled in December.
Please note the following permit conditions are new to your permit and require your attention:

- **Condition 1.3.** – This condition requires the Permittee to install two new monitoring wells, MW-3 and MW-4, prior to operation of the modified permitted facilities.

- **Condition 1.5.** – This condition requires the Permittee to temporarily abandon monitoring wells MW-1 and MW-2 within 60 days of completion of construction and initial sampling of monitoring wells MW-3 and MW-4.

- **Condition 1.11.** – This condition requires any landowner who owns land within the compliance boundary, but who is not the Permittee, to execute and file with the County Register of Deeds an easement with the requirements listed in the said Condition. Please note the previous permit was subject to this requirement under 15A NCAC 02T .0107(f), therefore, this condition is intended to voice this rule.

- **Condition 4.8.** – This condition requires the Permittee to keep a record of all residuals removed from this facility.

- **Condition 4.9.** – This condition requires the Permittee to keep a log of all maintenance at the facility.

- **Condition 6.8.** – This condition notes that this permit is subject to revocation or unilateral modification within 60 days notice from the Division if the terms in 15A NCAC 02T .0110 are violated.

- **Condition 6.9.** – This condition notes that this facilities in this permit may not be expanded if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b).

If any parts, requirements or limitations contained in this permit are unacceptable, the Permittee has the right to request an adjudicatory hearing upon written request within 30 days following receipt of this permit. This request shall be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings at 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made, this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this permit, please contact Nathaniel Thornburg at (919) 807-6453 or nathaniel.thornburg@ncdenr.gov.

Sincerely,

**DRAFT**

Charles Wakild, P.E.

cc: Orange County Health Department  
Raleigh Regional Office, Aquifer Protection Section  
Charles D. Riley, Jr., PE – McKim & Creed  
Technical Assistance and Certification Unit  
Permit File WQ0023896  
Notebook File WQ0023896
NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
WASTEWATER IRRIGATION SYSTEM PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

The University of North Carolina at Chapel Hill
Orange County

FOR THE

operation of a 3,556 gallon per day (GPD) wastewater treatment and irrigation facility consisting of the:
continued operation of a well filter treatment system consisting of: a 3,240 gallon hydro-pneumatic storage tank, a 2,250 gallon manganese oxidation tank; a potassium permanganate tank; an 86 gallon diaphragm tank; three manganese filters; a 4,000 gallon filter backwash tank with two 20 GPM 0.5 hp pumps each rated at 23 feet of TDH; and all associated piping, valves and appurtenances; the
continued operation of: an 8,000 gallon baffled septic tank with an effluent filter, a 2,100 gallon septic tank effluent lift station with two 20 gallon per minute (GPM) 0.5 horsepower (hp) pumps rated at 23 feet of total dynamic head (TDH) and audible/visual high water alarms; a 4,000 gallon recirculation tank with two 55 GPM 0.5 hp pumps rated at 33 feet of TDH; two AdvanTex AX100 textile media packed bed filters; a 60° v-trapezoidal flume with ultrasonic level sensing; and all associated piping, valves and appurtenances; the
continued operation and subsequent decommissioning of: approximately 320 linear feet of 8-inch gravity sewer; an ultraviolet (UV) disinfection system with two lamps; an 80 GPM floating transfer pump station; a 75,843 gallon lined effluent storage lagoon; a 2.12 acre irrigation area composed of one field with 16 nozzles, and all associated piping, valves and appurtenances; the
continued operation and subsequent refurbishment of: a 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined secondary effluent storage basin to be used as supplemental wet weather storage; and all associated piping, valves and appurtenances; the
reconstruction and operation of: the existing animal wastewater treatment system storage basin into a 1,122,440 gallon clay lined wet weather storage basin; the existing animal wastewater treatment system irrigation pump station into a 1,495 gallon domestic wastewater pump station with two 158 GPM submersible pumps and audible/visual high-water alarms; and all associated piping, valves and appurtenances; and the
construction and operation of: approximately 540 linear feet of 8-inch gravity sewer; a liquid sodium hypochlorite disinfection system with a 55 gallon chemical storage tank and two 7.1 gallon per hour (GPH) positive displacement peristaltic chemical feed pumps; a 525 gallon chlorine contact tank; a secondary effluent pump station with two 80 GPM submersible pumps; a 5.72 acre irrigation area composed of four fields with a total of 160 nozzles rated at 3.6 GPM; and all associated piping, valves and appurtenances.
to serve the UNC-CH Bingham Facility, with no discharge of wastes to surface waters, pursuant to the application received August 18, 2011, and subsequent additional information received by the Division of Water Quality, and in conformity with the project plans, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until September 30, 2015, shall void Permit No. WQ0023896 issued February 12, 2007, and shall be subject to the following specified conditions and limitations:

I. SCHEDULES

1. In accordance with 15A NCAC 02T .0116, upon completion of construction and prior to operation of the modified permitted facility, a certification (attached) shall be submitted from a licensed North Carolina Professional Engineer certifying that the modified permitted facility has been installed in accordance with this permit, Division approved plans and specifications, and other supporting documentation, including the location of all monitoring wells as applicable. If this project is to be completed in phases and partially certified, the Permittee shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Division of Water Quality, Aquifer Protection Section, 1636 Mail Service Center, Raleigh, NC 27699-1636.

2. The Raleigh Regional Office, telephone number (919) 791-4200, shall be notified at least 48 hours in advance (excluding weekends and holidays) of operation of the installed modified facilities such that an in-place inspection can be made. Notification to the Aquifer Protection Section's regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays.

3. The Raleigh Regional Office, telephone number (919) 791-4200, shall approve monitoring wells MW-3 and MW-4 prior to installation, and the monitoring wells shall be installed prior to operation of the modified permitted facilities. The regional office shall be notified at least 48 hours prior to the construction of any monitoring well, and such notification to the Aquifer Protection Section's regional supervisor shall be made from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. The monitoring wells shall be constructed such that the water level in the monitoring well is never above or below the screened (open) portion of the well at any time during the year, and in accordance with 15A NCAC 02C .0108. The general location and name for each monitoring well is marked on Figure 1.

4. Within 60 days of completion of monitoring wells MW-3 and MW-4, the Permittee shall submit two original copies of a site map with a scale no greater than 1-inch equals 100 feet; however, special provisions may be granted upon prior approval for large properties. At a minimum, the map shall include the following information:

   a. The location and identity of each monitoring well.
   b. The location of major components of the waste disposal system.
   c. The location of property boundaries within 500 feet of the disposal areas.
   d. The latitude and longitude of the established horizontal control monument.
   e. The elevation of the top of the well casing (i.e., measuring point) relative to a common datum.
   f. The depth of water below the measuring point at the time the measuring point is established.
   g. The location of compliance and review boundaries.
   h. The date the map is prepared and/or revised.

Control monuments shall be installed in such a manner and made of such materials that the monument will not be destroyed due to activities taking place on the property. The map and any supporting documentation shall be sent to the Division of Water Quality, Aquifer Protection Section, 1636 Mail Service Center, Raleigh, NC 27699-1636.
5. Within 60 days of completion of construction and initial sampling of monitoring wells MW-3 and MW-4, monitoring wells MW-1 and MW-2 shall be temporarily abandoned by securing the wellheads to prevent access. In accordance with 15A NCAC 02C .0108(c)(7), each monitoring well shall have a lockable cap in order to reasonably ensure against unauthorized access and use. A compatible watertight cap or seal shall be placed onto the riser pipe of the monitoring wells to prevent potential contamination from entering the wells.

6. Gauges to monitor waste levels in the wet weather storage and secondary effluent storage basins shall be installed after their rehabilitation and prior to their operation. Caution shall be taken not to damage the integrity of the liner when installing the gauges.

7. No later than six months prior to the expiration of this permit, the Permittee shall request renewal of this permit on official Division forms. Upon receipt of the request, the Division will review the adequacy of the facilities described therein, and if warranted, will renew the permit for such period of time and under such conditions and limitations as it may deem appropriate. Please note Rule 15A NCAC 02T .0105(d) requires an updated site map to be submitted with the permit renewal application.

II. PERFORMANCE STANDARDS

1. The subject non-discharge facilities shall be effectively maintained and operated at all times so there is no discharge to surface waters, nor any contravention of groundwater or surface water standards. In the event the facilities fail to perform satisfactorily, including the creation of nuisance conditions due to improper operation and maintenance, or failure of the irrigation areas to adequately assimilate the effluent, the Permittee shall take immediate corrective actions including Division required actions, such as the construction of additional or replacement wastewater treatment or irrigation facilities.

2. This permit shall not relieve the Permittee of their responsibility for damages to groundwater or surface water resulting from the operation of this facility.

3. All wells constructed for purposes of groundwater monitoring shall be constructed in accordance with 15A NCAC 02C .0108 (Standards of Construction for Wells Other than Water Supply), and any other jurisdictional laws and regulations pertaining to well construction.

4. Effluent limitations shall not exceed those specified in Attachment A.

5. Application rates, whether hydraulic, nutrient or other pollutant, shall not exceed those specified in Attachment B.

6. The irrigation system shall be connected to a rain or moisture sensor, which shall indicate when effluent application is not appropriate in accordance with Conditions III.4. and III.5. of this permit.

7. The compliance boundary for the disposal system shall be specified in accordance with 15A NCAC 02L .0107(b). This disposal system was individually permitted on or after December 30, 1983; therefore, the compliance boundary is established at either 250 feet from the effluent disposal area, or 50 feet within the property boundary, whichever is closest to the effluent disposal area. An exceedence of groundwater standards at or beyond the compliance boundary is subject to remediation action according to 15A NCAC 02L .0106(d)(2) as well as enforcement actions in accordance with North Carolina General Statute 143-215.6A through 143-215.6C.

8. In accordance with 15A NCAC 02L .0108, the review boundary is established midway between the compliance boundary and the effluent disposal area. Any exceedence of groundwater standards at the review boundary shall require action in accordance with 15A NCAC 02L .0106.

9. The Permittee shall apply for a permit modification to establish a new compliance boundary prior to any sale or transfer of property affecting a compliance boundary.
10. In accordance with 15A NCAC 02L .0107(d), no wells, excluding Division approved monitoring wells, shall be constructed within the compliance boundary except as provided for in 15A NCAC 02L .0107(g).

11. Except as provided for in 15A NCAC 02L .0107(g), the Permittee shall ensure any landowner who is not the Permittee and owns land within the compliance boundary shall execute and file with the Orange County Register of Deeds an easement running with the land containing the following items:
   a. A notice of the permit and number of other description as allowed in 15A NCAC 02L .0107(f)(1);
   b. Prohibits construction and operation of water supply wells within the compliance boundary; and
   c. Reserves the right of the Permittee or the State to enter the property within the compliance boundary for purposes related to the permit.

The Director may terminate the easement when its purpose has been fulfilled or is no longer needed.

12. The facilities permitted herein shall be constructed according to the following setbacks:
   a. The setbacks for irrigation sites permitted under 15A NCAC 02T .0500 shall be as follows (all distances in feet):
      i. Any habitable residence or place of public assembly under separate ownership: 400
      ii. Any habitable residence or place of public assembly owned by the Permittee: 200
      iii. Any private or public water supply source: 100
      iv. Surface waters: 100
      v. Groundwater lowering ditches: 100
      vi. Surface water diversions: 25
      vii. Any well with exception of monitoring wells: 100
      viii. Any property line: 150
      ix. Top of slope of embankments or cuts of two feet or more in vertical height: 15
      x. Any water line from a disposal system: 10
      xi. Subsurface groundwater lowering drainage systems: 100
      xii. Any swimming pool: 100
      xiii. Public right of way: 50
      xiv. Nitrification field: 20
      xv. Any building foundation or basement: 15
   b. The setbacks for storage and treatment units permitted under 15A NCAC 02T .0500 shall be as follows (all distances in feet):
      i. Any habitable residence or place of public assembly under separate ownership: 100
      ii. Any private or public water supply source: 100
      iii. Surface waters: 50
      iv. Any well with exception of monitoring wells: 100
      v. Any property line: 50
III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T.0507, which at a minimum shall include operational functions, maintenance schedules, safety measures and a spill response plan.

2. Upon the Water Pollution Control System Operators Certification Commission’s (WPCSCC) classification of the subject non-discharge facilities, in accordance with 15A NCAC 08G.0200 the Permittee shall designate and employ a certified operator in responsible charge (ORC) and one or more certified operator(s) as back-up ORC(s). The ORC or their back-up shall visit the facilities in accordance with 15A NCAC 08G.0200, and shall comply with all other conditions specified in the previously cited rules.

3. A suitable year round vegetative cover shall be maintained at all times, such that crop health is optimized, allows for even distribution of effluent and allows inspection of the irrigation system.

4. Adequate measures shall be taken to prevent effluent ponding in or runoff from the irrigation sites listed in Attachment B.

5. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause ponding or runoff.

6. All irrigation equipment shall be tested and calibrated at least once per permit cycle. Calibration records shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request.

7. Only effluent from the UNC-CH Bingham Facility shall be irrigated on the sites listed in Attachment B.

8. No automobiles or machinery shall be allowed on the irrigation sites except during equipment installation or while maintenance is being performed.

9. Public access to the irrigation sites and wastewater treatment facilities shall be prohibited.

10. The residuals generated from the wastewater treatment facilities shall be disposed or utilized in accordance with 15A NCAC 02T.1100. The Permittee shall maintain a residual management plan pursuant to 15A NCAC 02T.0508.

11. Diversion or bypassing of untreated or partially treated wastewater from the treatment facilities is prohibited.

12. Freeboard in the wet weather storage and secondary effluent storage basins shall not be less than two feet at any time.

13. Gauges to monitor waste levels in the wet weather storage and secondary effluent storage basins shall be provided. These gauges shall have readily visible permanent markings, at inch or tenth of a foot increments, indicating the following elevations: maximum liquid level at the top of the temporary liquid storage volume, minimum liquid level at the bottom of the temporary liquid storage volume, and the lowest point on top of the dike.

14. A protective vegetative cover shall be established and maintained on all earthen embankments (i.e., outside toe of embankment to maximum allowable temporary storage elevation on the inside of the embankment), berms, pipe runs, erosion control areas, and surface water diversions. Trees, shrubs, and other woody vegetation shall not be allowed to grow on the earthen dikes or embankments. Earthen embankment areas shall be kept mowed or otherwise controlled and accessible.
IV. MONITORING AND REPORTING REQUIREMENTS

1. Any Division required monitoring (including groundwater, plant tissue, soil and surface water analyses) necessary to ensure groundwater and surface water protection shall be established, and an acceptable sampling reporting schedule shall be followed.

2. Per 15A NCAC 02H .0800, a Division certified laboratory shall conduct all laboratory analyses for the required effluent, groundwater or surface water parameters.

3. Flow through the treatment facility shall be continuously monitored, and daily average flow values shall be reported on Form NDMR. Flow may be estimated from water use records, provided the Permittee’s water use is metered. Daily average flow values shall be calculated by dividing the monthly metered water usage by the number of days in the month.

4. The Permittee shall monitor the effluent from the subject facilities at the frequencies and locations for the parameters specified in Attachment A.

5. The Permittee shall maintain adequate records tracking the amount of effluent irrigated. At a minimum, these records shall include the following information for each irrigation site listed in Attachment B:
   a. Date of irrigation;
   b. Volume of effluent irrigated;
   c. Site irrigated;
   d. Length of time site is irrigated;
   e. Continuous weekly, monthly, and year-to-date hydraulic (inches/acre) loadings;
   f. Continuous monthly and year-to-date loadings for any non-hydraulic parameter specifically limited in Attachment B;
   g. Weather conditions; and
   h. Maintenance of cover crops.

6. Freeboard (i.e., waste level to the lowest embankment elevation) in the wet weather storage and secondary effluent storage basins shall be measured to the nearest inch or tenth of a foot, and recorded weekly. Weekly freeboard records shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request.

7. Three copies of all monitoring data (as specified in Conditions IV.3. and IV.4.) on Form NDMR for each PPI and three copies of all operation and disposal records (as specified in Conditions IV.5. and IV.6.) on Form NDAR-1 for every site in Attachment B shall be submitted on or before the last day of the following month. If no activities occurred during the monitoring month, monitoring reports are still required documenting the absence of the activity. All information shall be submitted to the following address:

   Division of Water Quality
   Information Processing Unit
   1617 Mail Service Center
   Raleigh, North Carolina 27699-1617

8. A record shall be maintained of all residuals removed from this facility. This record shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request. At a minimum, this record shall include:
   a. Name of the residuals hauler;
   b. Non-Discharge permit number authorizing the residuals disposal, or a letter from a municipality agreeing to accept the residuals;
   c. Date the residuals were hauled; and
   d. Volume of residuals removed.
9. A maintenance log shall be maintained at this facility. This log shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request. At a minimum, this log shall include:
   a. Visual observations of the plant and plant site; and
   b. Record of preventative maintenance (e.g., changing of equipment, adjustments, testing, inspections and cleanings, etc.).

10. Monitoring wells MW-3 and MW-4 shall be sampled after construction and within 3 months prior to initiating non-discharge disposal operations. Monitoring wells MW-3 and MW-4 shall be sampled thereafter at the frequencies and for the parameters specified in Attachment C. Prior to their temporary abandonment, monitoring wells MW-1 and MW-2 shall be sampled at the frequencies and for the parameters specified in Attachment C. All mapping, well construction forms, well abandonment forms and monitoring data shall refer to the permit number and the well nomenclature as provided in Attachment C and Figure 1.

11. For initial sampling of monitoring wells MW-3 and MW-4, the Permittee shall submit a Compliance Monitoring Form (GW-59) and a Well Construction Record Form (GW-1) listing this permit number and the appropriate monitoring well identification number. Initial Compliance Monitoring Forms (GW-59) without copies of the Well Construction Record Forms (GW-1) are deemed incomplete, and may be returned to the Permittee without being processed.

12. Two copies of the monitoring well sampling and analysis results shall be submitted on a Compliance Monitoring Form (GW-59), along with attached copies of laboratory analyses, on or before the last working day of the month following the sampling month. The Compliance Monitoring Form (GW-59) shall include this permit number, the appropriate well identification number, and one GW-59a certification form shall be submitted with each set of sampling results. All information shall be submitted to the following address:

   Division of Water Quality
   Information Processing Unit
   1617 Mail Service Center
   Raleigh, North Carolina 27699-1617

13. An annual representative soils analysis (i.e., Standard Soil Fertility Analysis) shall be conducted on each irrigation site listed in Attachment B. These results shall be maintained at the facility for a period of no less than five years, and shall be made available to the Division upon request. At a minimum, the Standard Soil Fertility Analysis shall include the following parameters:

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<thead>
<tr>
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<th>Phosphorus</th>
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<td>Zinc</td>
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<tr>
<td>Copper</td>
<td>pH</td>
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</table>
14. Noncompliance Notification:

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours, or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

a. Any occurrence at the facility resulting in the treatment of significant amounts of wastes that is abnormal in quantity or characteristic, including the known passage of a hazardous substance.

b. Any process unit failure (e.g., mechanical, electrical, etc.), due to known or unknown reasons, rendering the facility incapable of adequate wastewater treatment.

c. Any facility failure resulting in a by-pass directly to receiving surface waters.

d. Any time self-monitoring indicates the facility has gone out of compliance with its permit limitations.

e. Ponding in or runoff from the irrigation sites.

Any emergency requiring immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours shall be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to be taken to ensure the problem does not recur.

V. INSPECTIONS

1. The Permittee shall provide adequate inspection and maintenance to ensure proper operation of the wastewater treatment and irrigation facilities.

2. The Permittee or their designee shall inspect the wastewater treatment and irrigation facilities to prevent malfunctions, facility deterioration and operator errors resulting in discharges, which may cause the release of wastes to the environment, a threat to human health or a public nuisance. The Permittee shall maintain an inspection log that includes, at a minimum, the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken. The Permittee shall maintain this inspection log for a period of five years from the date of the inspection, and this log shall be made available to the Division upon request.

3. Any duly authorized Division representative may, upon presentation of credentials, enter and inspect any property, premises or place on or related to the wastewater treatment and irrigation facilities permitted herein at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records required to be maintained under the terms and conditions of this permit; and may collect groundwater, surface water or leachate samples.

VI. GENERAL CONDITIONS

1. Failure to comply with the conditions and limitations contained herein may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C.

2. This permit shall become voidable if the permitted facilities are not constructed in accordance with the conditions of this permit, the Division approved plans and specifications, and other supporting documentation.
3. This permit is effective only with respect to the nature and volume of wastes described in the permit application, Division approved plans and specifications, and other supporting documentation. No variances to applicable rules governing the construction or operation of the permitted facilities are granted, unless specifically requested and approved in this permit pursuant to 15A NCAC 02T .0105(n).

4. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other jurisdictional government agencies (e.g., local, state, and federal). Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division's General Permit NCG010000; any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500, and documentation of compliance with Article 21 Part 6 of Chapter 143 of the General Statutes.

5. In the event the permitted facilities change ownership or the Permittee changes their name, a formal permit modification request shall be submitted to the Division. This request shall be made on official Division forms, and shall include appropriate property ownership documentation and other supporting documentation as necessary. The Permittee of record shall remain fully responsible for maintaining and operating the facilities permitted herein until a permit is issued to the new owner.

6. The Permittee shall retain a set of Division approved plans and specifications for the life of the facilities permitted herein.

7. The Permittee shall maintain this permit until all permitted facilities herein are properly closed or permitted under another permit issued by the appropriate permitting authority pursuant to 15A NCAC 02T .0105(j).

8. This permit is subject to revocation or unilateral modification upon 60 days notice from the Division Director, in whole or part for the requirements listed in 15A NCAC 02T .0110.

9. Unless the Division Director grants a variance, expansion of the permitted facilities contained herein shall not be granted if the Permittee exemplifies any of the criteria in 15A NCAC 02T .0120(b).

10. The Permittee shall pay the annual fee within 30 days after being billed by the Division. Failure to pay the annual fee accordingly shall cause for the Division to revoke this permit pursuant to 15A NCAC 02T .0105(e)(3).

Permit issued this the # day of MONTH YEAR

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

DRAFT

Charles Wakild, Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number WQ0023896
ENGINEERING CERTIFICATION

☐ Partial ☐ Final

In accordance with 15A NCAC 02T.0116, I, as a duly registered Professional Engineer in the State of North Carolina, having the Permittee’s authorization to ☐ periodically ☐ weekly ☐ fully observe the construction of the permitted facility, hereby state to the best of my abilities that due care and diligence was used in the observation of the construction, such that the facility was built within substantial compliance and intent of this permit, the Division approved plans and specifications, and other supporting documentation.

☐ Any variation to this permit, the Division approved plans and specifications, and other supporting documentation has been documented in the attached as-built drawings, and shall serve as the Permittee’s minor modification request to amend the permit accordingly.

Provide a brief narrative description of any variations:

________________________________________________________________________________________
________________________________________________________________________________________

Professional Engineer’s Name

Engineering Firm

Mailing Address

City State Zip

Telephone E-mail NC PE Seal, Signature & Date

THE COMPLETED ENGINEERING CERTIFICATION, INCLUDING ALL SUPPORTING INFORMATION AND MATERIALS, SHALL BE SENT TO THE FOLLOWING ADDRESS:

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY
AQUIFER PROTECTION SECTION
LAND APPLICATION UNIT

By U.S. Postal Service:
1636 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1636

By Courier/Special Delivery:
512 N. SALISBURY ST.
RALEIGH, NORTH CAROLINA 27604
## ATTACHMENT A - LIMITATIONS AND MONITORING REQUIREMENTS

### PPI 002 – WWTP Effluent

<table>
<thead>
<tr>
<th>PCS Code</th>
<th>Parameter Description</th>
<th>Monthly Average</th>
<th>Monthly Limit</th>
<th>Daily Minimum</th>
<th>Daily Maximum</th>
<th>Measurement Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>00310</td>
<td>BOD, 5-Day (20 °C)</td>
<td>30 mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>00940</td>
<td>Chloride (as Cl)</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>51000</td>
<td>Chlorine, Total Residual</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>Weekly</td>
<td>Grab</td>
</tr>
<tr>
<td>31616</td>
<td>Coliform, Fecal MF, M-FC Broth, 44.5 °C</td>
<td>200 #/100 mL</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹,²</td>
<td>Grab</td>
</tr>
<tr>
<td>50050</td>
<td>Flow, in conduit or thru treatment plant</td>
<td>3,556 GPD</td>
<td></td>
<td></td>
<td></td>
<td>Monthly</td>
<td>Estimate</td>
</tr>
<tr>
<td>00610</td>
<td>Nitrogen, Ammonia Total (as N)</td>
<td>15 mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>00625</td>
<td>Nitrogen, Kjeldahl, Total (as N)</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>00620</td>
<td>Nitrogen, Nitrate Total (as N)</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>00400</td>
<td>pH</td>
<td>su</td>
<td>su</td>
<td></td>
<td></td>
<td>Weekly</td>
<td>Grab</td>
</tr>
<tr>
<td>00665</td>
<td>Phosphorus, Total (as P)</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>70300</td>
<td>Solids, Total Dissolved – 180 °C</td>
<td>mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
<tr>
<td>00530</td>
<td>Solids, Total Suspended</td>
<td>30 mg/L</td>
<td></td>
<td></td>
<td></td>
<td>4 x Year¹</td>
<td>Grab</td>
</tr>
</tbody>
</table>

1. 4 x Year sampling shall be conducted in March, June, September and December.
2. Fecal Coliform sampling shall be a geometric mean.
## IRRIGATION AREA INFORMATION

<table>
<thead>
<tr>
<th>Field</th>
<th>Owner</th>
<th>County</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Net Acreage</th>
<th>Dominant Soil Series</th>
<th>Parameter</th>
<th>Hourly Rate</th>
<th>Yearly Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 1</td>
<td>The University of North Carolina at Chapel Hill</td>
<td>Orange</td>
<td>35.904525°</td>
<td>-79.241811°</td>
<td>2.12</td>
<td>Georgeville</td>
<td>01284 – Non-Discharge Application Rate</td>
<td>0.75</td>
<td>24.09</td>
<td>inches</td>
</tr>
<tr>
<td>1 2</td>
<td>The University of North Carolina at Chapel Hill</td>
<td>Orange</td>
<td>35.904525°</td>
<td>-79.241811°</td>
<td>1.53</td>
<td>Georgeville / Hemdon</td>
<td>01284 – Non-Discharge Application Rate</td>
<td>0.22</td>
<td>10.92</td>
<td>inches</td>
</tr>
<tr>
<td>2 2</td>
<td>The University of North Carolina at Chapel Hill</td>
<td>Orange</td>
<td>35.904294°</td>
<td>-79.240597°</td>
<td>1.55</td>
<td>Georgeville / Hemdon</td>
<td>01284 – Non-Discharge Application Rate</td>
<td>0.22</td>
<td>10.92</td>
<td>inches</td>
</tr>
<tr>
<td>3 2</td>
<td>The University of North Carolina at Chapel Hill</td>
<td>Orange</td>
<td>35.903842°</td>
<td>-79.240758°</td>
<td>1.55</td>
<td>Georgeville / Hemdon</td>
<td>01284 – Non-Discharge Application Rate</td>
<td>0.22</td>
<td>10.92</td>
<td>inches</td>
</tr>
<tr>
<td>4 2</td>
<td>The University of North Carolina at Chapel Hill</td>
<td>Orange</td>
<td>35.903342°</td>
<td>-79.241308°</td>
<td>1.09</td>
<td>Georgeville / Hemdon</td>
<td>01284 – Non-Discharge Application Rate</td>
<td>0.22</td>
<td>10.92</td>
<td>inches</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>2.12</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>5.72</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Prior to construction and operation of Fields 1 through 4, the Permittee shall operate and maintain Field A at the specified rates.
2. After decommissioning Field A, the Permittee shall construct, operate and maintain Fields 1 through 4 at the specified rates.
3. Total acreage prior to decommissioning Field A.
4. Total acreage after decommissioning Field A and upon construction and operation of Fields 1 through 4.
### GROUNDWATER CHARACTERISTICS

<table>
<thead>
<tr>
<th>PCS Code</th>
<th>Parameter Description</th>
<th>GROUNDWATER STANDARDS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>00880</td>
<td>Carbon, Total Organic (TOC)</td>
<td>mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>00940</td>
<td>Chloride (as Cl)</td>
<td>250 mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>31616</td>
<td>Coliform, Fecal MF</td>
<td>#/100mL</td>
<td>4 x Year</td>
</tr>
<tr>
<td>00610</td>
<td>Nitrogen, Ammonia Total (as N)</td>
<td>mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>00620</td>
<td>Nitrogen, Nitrate Total (as N)</td>
<td>10 mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>00490</td>
<td>pH</td>
<td>6.5-8.5 su</td>
<td>4 x Year</td>
</tr>
<tr>
<td>00665</td>
<td>Phosphorus, Total (as P)</td>
<td>mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>70300</td>
<td>Solids, Total Dissolved – 180 °C</td>
<td>500 mg/L</td>
<td>4 x Year</td>
</tr>
<tr>
<td>78732</td>
<td>Volatile Organic Compounds</td>
<td>Presence: Yes/No</td>
<td>Annually</td>
</tr>
<tr>
<td>82546</td>
<td>Water level, distance from measuring point</td>
<td>ft</td>
<td>4 x Year/Calculated</td>
</tr>
</tbody>
</table>

1. 4 x Year monitoring shall be conducted in March, June, September & December; Annual monitoring shall be conducted every December.
2. The measurement of water levels shall be made prior to purging the wells. The depth to water in each well shall be measured from the surveyed point on the top of the casing. The measurement of pH shall be made after purging and prior to sampling for the remaining parameters.
3. The measuring points (top of well casing) of all monitoring wells shall be surveyed to provide the relative elevation of the measuring point for each monitoring well. The measuring points (top of casing) of all monitoring wells shall be surveyed relative to a common datum.
4. Volatile Organic Compounds (VOC) - In December only, analyze by one of the following methods:
   a. Standard Method 6230D, PQL at 0.5 μg/L or less
   b. Standard Method 6210D, PQL at 0.5 μg/L or less
   c. EPA Method 8261, Low Concentration, PQL at 0.5 μg/L or less
   d. EPA Method 8262, Low Concentration, PQL at 0.5 μg/L or less
   e. Another method with prior approval by the Aquifer Protection Section Chief
   Any method used must meet the following qualifications:
   a. A laboratory must be DWQ certified to run any method used.
   b. The method used must, at a minimum, include all the constituents listed in Table VIII of Standard Method 6230D.
   c. The method used must provide a PQL of 0.5 μg/L or less that must be supported by laboratory proficiency studies as required by the DWQ Laboratory Certification Unit. Any constituents detected above the MDL but below the PQL of 0.5 μg/L, must be qualified (estimated) and reported.
5. If any volatile organic compounds (VOC) are detected as a result of monitoring as provided in Attachment C, then the Raleigh Regional Office Aquifer Protection Supervisor, telephone number (919) 791-4200, must be contacted immediately for further instructions regarding any additional follow-up analyses required.
6. If TOC concentrations greater than 10 mg/L are detected in any downgradient monitoring well, additional sampling and analysis must be conducted to identify the individual constituents comprising this TOC concentration. If the TOC concentration as measured in the background monitor well exceeds 10 mg/L, this concentration will be taken to represent the naturally occurring TOC concentration. Any exceedances of this naturally occurring TOC concentration in the downgradient wells shall be subject to the additional sampling and analysis as described above.
7. Monitoring wells shall be reported consistent with the nomenclature and location information provided in Figure 1 and this attachment.
APPENDIX D

UNC-CH DRAFT PERMIT ACCEPTANCE
Thornburg, Nathaniel

From: Koza, Mary Beth (Environment Health & Safety) [MBKOZA@ehs.unc.edu]
Sent: Thursday, March 15, 2012 3:40 PM
To: Thornburg, Nathaniel; criley@mckimcreed.com; andwater@aol.com; sjfrederick@swegrp.com; Gray, Karol
Cc: Zimmerman, Jay; Fleahman, Matthew; Risgaard, Jon; Larick, Keith
Subject: RE: WQ0023896 - UNC-CH Bingham Facility Draft Permit

Thank you for your response and clarifications dated February 22, 2012. UNC is in agreement and accepts the permit as currently drafted. We do request one further confirmation and clarification regarding your response to comment number 9, excerpted below:

On page 4 of the permit, section II.11., the requirement to secure easements from landowners who are not the permittee and who own land within the compliance boundary is stated. The delineated compliance boundary for this project, as presented in the permit application, is located entirely within the property boundary of the UNC Bingham Facility. UNC-Chapel Hill requests concurrence that this permit condition is not applicable to this project or clarification if DENR believes that the permit condition applies.

Condition II.11. is standard boiler plate language, and is applicable to all non-discharge permitted facilities. This condition is now included in all non-discharge permit issuances in order to voice the requirements in 15A NCAC 02L .0107(f).

It is acknowledged that this condition is certainly applicable to this and all other permits. It is our understanding that in our case, since the compliance boundary is entirely within property owned by UNC, there is no requirement to secure any additional easements from any adjoining landowner occasioned by consideration of either compliance boundary or setback requirements, and that the project as proposed and without additional easements or waivers is in full compliance with those boundaries and setbacks. Please confirm this understanding.

Thank you for your attention and consideration.

Mary Beth Koza

From: Thornburg, Nathaniel [mailto:nathaniel.thornburg@ncdenr.gov]
Sent: Wednesday, February 22, 2012 11:02 AM
To: Koza, Mary Beth (Environment Health & Safety); criley@mckimcreed.com; keberle@mckimcreed.com; andwater@aol.com; sjfrederick@swegrp.com; Gray, Karol
Cc: Zimmerman, Jay; Fleahman, Matthew; Risgaard, Jon; Larick, Keith
Subject: WQ0023896 - UNC-CH Bingham Facility Draft Permit

Mary Beth,

The Division’s Central and Raleigh Regional Offices have reviewed UNC-CH’s comments regarding the subject draft permit. Please allow me to address each comment individually.

1. As of December 1, 2011, Ms. Karol Kain Gray assumed the duties of Vice Chancellor of Finance and Administration at UNC-Chapel Hill from the retiring Dr. Richard L. Mann. Her duties include the role of Responsible Official with respect to this permit.

The permit cover letter has been updated to include Vice Chancellor Gray as the point of contact.
Neither the draft permit nor the cover letter reference decommissioning the existing animal wastewater treatment system or the irrigation system. Decommissioning of these systems is included in the proposed modifications to the wastewater treatment system at the Bingham Facility. UNC-Chapel Hill requests additions to the cover letter and draft permit to references.

From: Thornburg, Nathaniel [mailto:nathaniel.thornburg@ncdenr.gov]
Sent: Wednesday, February 22, 2012 11:02 AM
To: Koza, Mary Beth (Environment Health & Safety); criley@mckimcreed.com; keberle@mckimcreed.com; andwater@aol.com; sjfrederick@svengp.com; Gray, Karol
Cc: Zimmerman, Jay; Fleahman, Matthew; Risgaard, Jon; Larick, Keith
Subject: WQ0023896 - UNC-CH Bingham Facility Draft Permit

Mary Beth,

The Division’s Central and Raleigh Regional Offices have reviewed UNC-CH’s comments regarding the subject draft permit. Please allow me to address each comment individually.

1. As of December 1, 2011, Ms. Karol Kain Gray assumed the duties of Vice Chancellor of Finance and Administration at UNC-Chapel Hill from the retiring Dr. Richard L. Mann. Her duties include the role of Responsible Official with respect to this permit.

   The permit cover letter has been updated to include Vice Chancellor Gray as the point of contact.

2. Neither the draft permit nor the cover letter reference decommissioning the existing animal wastewater treatment system or the irrigation system. Decommissioning of these systems is included in the proposed modifications to the wastewater treatment system at the Bingham Facility. UNC-Chapel Hill requests additions to the cover letter and draft permit to references these proposed activities.

   The Division did not include references to the planned decommissioning of the animal wastewater treatment and associated irrigation system in the cover letter and draft permit because these facilities were not permitted under Permit No. WQ0023896. Please note that the inclusion of the animal wastewater treatment system storage basin and pump station into the cover letter and permit description was necessary because these facilities are being reconstructed and subsequently permitted as part of the wastewater irrigation facility under Permit No. WQ0023896.

   Please note that during the investigation phase of the Division’s Civil Penalty Assessment for the animal wastewater treatment and irrigation system violations, it was determined that portions of the irrigation field were constructed within a wetland. Accordingly, it will be required that the Raleigh Regional Office’s Surface Water Protection Section become involved to help determine how to decommission the irrigation system without adversely affecting the wetland, and to determine if the wetland will need to be restored.

   Therefore, in order to facilitate the proposed animal system decommissioning activities, the Division suggests that UNC-CH meet with representatives from the Division’s Central Office and Raleigh’s Aquifer and Surface Water Protection Sections at your earliest convenience.

3. UNC-Chapel Hill will temporarily abandon the two (2) existing monitoring wells in accordance with the permit requirements; however, since these wells will be abandoned, UNC-Chapel Hill requests that the monitoring requirement in Attachment C be limited only to the proposed new monitoring wells MW-3 and MW-4.

   Condition IV.10. has been clarified to read as follows:

   “Monitoring wells MW-3 and MW-4 shall be sampled after construction and within 3 months prior to initiating non-discharge disposal operations. Monitoring wells MW-3 and MW-4 shall be sampled thereafter at the frequencies and for the parameters specified in Attachment C. Prior to their temporary abandonment, monitoring wells MW-1 and MW-2 shall be sampled at the frequencies and for the parameters specified in Attachment C.
All mapping, well construction forms, well abandonment forms and monitoring data shall refer to the permit number and the well nomenclature as provided in Attachment C and Figure 1."

Please note that Attachment C remains unchanged because required quarterly sampling events for monitoring wells MW-1 and MW-2 may occur prior to the installation of monitoring wells MW-3 and MW-4, and the subsequent abandonment of monitoring wells MW-1 and MW-2.

4. On page 2 of the cover letter, Condition 1.5., MW-3 is listed twice. UNC-Chapel Hill believes that one of these references should be changed to MW-4.

The typographical error has been corrected.

5. On page 1 of the permit, UNC-Chapel Hill believes that the wording in paragraph 3 should read “continued operation and subsequent decommissioning of: approximately 320 linear feet of 8-inch gravity sewer.”

Thank you for providing the unknown linear distance of the 8-inch gravity sewer to be decommissioned. The permit has been amended accordingly.

6. Also on page 1 of the permit, UNC-Chapel Hill believes that the wording in paragraph 6 should read “construction and operation of: approximately 540 linear feet of 8-inch gravity sewer.”

Thank you for providing the unknown linear distance of the 8-inch gravity sewer to be constructed. The permit has been amended accordingly.

7. On page 3, section 1.5., MW-3 is mentioned twice. UNC-Chapel Hill believes that one of these references should be changed to MW-4.

The typographical error has been corrected.

8. UNC-Chapel Hill did not receive a copy of Figure 1 marking the location of the new groundwater monitoring wells. Please forward a copy of Figure 1 so we can review the location of the proposed new monitoring wells on the site map.

Figure 1 is included as an attachment to this email.

9. On page 4 of the permit, section II.11., the requirement to secure easements from landowners who are not the permittee and who own land within the compliance boundary is stated. The delineated compliance boundary for this project, as presented in the permit application, is located entirely within the property boundary of the UNC Bingham Facility. UNC-Chapel Hill requests concurrence that this permit condition is not applicable to this project or clarification if DENR believes that the permit condition applies.

Condition II.11. is standard boiler plate language, and is applicable to all non-discharge permitted facilities. This condition is now included in all non-discharge permit issuances in order to voice the requirements in 15A NCAC 02L .0107(f).

10. The sampling schedule as specified in Attachment A will require compliance sampling six (6) months of the year. In an effort to minimize potential confusion with respect to the different sampling frequencies, we suggest that quarterly sampling be utilized for all Attachment A parameters (i.e., WWTP effluent) as well as for all Attachment C parameters (i.e., Groundwater Monitoring and Limitations). UNC-Chapel Hill believes that this approach will prove to be more reliable and more easily administered than the mixed sampling frequencies contained in the draft permit.

The request to increase the sampling frequencies for Chloride and Total Dissolved Solids in Attachment A to quarterly, as well as the sampling frequencies for all parameters in Attachment C (save for VOCs) to quarterly has been approved. Please note that VOCs shall now be sampled in December, so that it is in-line with the other sampling events.
11. **UNC-Chapel Hill proposes to have our ORCs certified to conduct the weekly pH and TRC testing, please confirm this is acceptable.**

The Division finds it acceptable to have UNC-CH’s operators-in-responsible charge (ORCs) certified to conduct the weekly pH and TRC testing.

The modified draft permit is attached for your review. All modifications have been noted using track changes. Please review the draft permit and provide comments at your earliest convenience. Once the Division has received your comments, any necessary changes will be made to the draft.

Once the draft permit has been finalized and approved by UNC-CH, the public hearing process will begin.

If you have any questions, please contact me at your convenience.

Sincerely,

Nathaniel Thornburg

******************************************************************************
Nathaniel D. Thornburg – Environmental Engineer
Aquifer Protection Section – Land Application Unit
1636 Mail Service Center
Raleigh, NC 27699-1636
910-807-6453
910-807-6496 FAX
http://portal.ncdenr.org/web/wq/aps/lau

On January 6, 2012, the Aquifer Protection Section (APS) moved to the 6th floor of the Archdale Building located at 512 N. Salisbury Street in Raleigh. My new phone number is (919) 807-6453 and I am located in Office 640K. Our mailing address remains 1636 Mail Service Center, Raleigh, NC 27699-1636.

DISCLAIMER: All e-mails sent to and from this account are subject to the North Carolina Public Records Law and may be disclosed to third parties.
APPENDIX E

HEARING OFFICER SELECTION MEMO
MEMORANDUM

To: Charles Wakild, PE – Director
Division of Water Quality

Thru: Ted L. Bush, Jr. – Chief
Aquifer Protection Section

Jon Risgaard – Supervisor
Land Application Unit

From: Nathaniel Thornburg – Engineer
Land Application Unit

Re: Public Hearing Request for Permit No. WQ0023896

On September 29, 2011, a public hearing request (attached) was sent to former Director Coleen Sullivan. The request communicated public concerns “regarding the proposed infrastructure’s impact on ground water, surface waters, the surrounding environment and public health…” Concerns specific to water quality included: the proposed increased spray irrigation area footprint; proposed average daily wastewater flows and annual irrigation limits; treated wastewater storage; disposal of domestic/animal waste; and potential impacts to Collins Creek, adjacent properties and groundwater supply wells. The request is a joint document from two non-profit citizen groups, Preserve Rural Orange and Haw River Assembly. The document was also endorsed by 56 neighbors and community members.

The public hearing request was in response to a permit modification request received August 18, 2011 from the University of North Carolina at Chapel Hill (UNC-CH) for their non-discharge wastewater irrigation system (Permit No. WQ0023896) in Orange County. The modification request proposes to:

- Decommission an existing 8-inch gravity sewer; the ultraviolet (UV) disinfection system; the secondary effluent storage basin pump station; the 75,843 gallon lined effluent storage lagoon; and the 2.12 acre irrigation area composed of one field with 16 nozzles.

- Refurbish an existing 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined secondary effluent storage basin.

- Reconstruct an existing animal wastewater treatment system storage basin and irrigation pump station, and incorporate them into the subject non-discharge permit.

- Construct and operate an 8-inch gravity sewer system, a liquid sodium hypochlorite disinfection system, a 525 gallon chlorine contact tank; a secondary effluent pump station and 5.72 acres of irrigation area.
The existing wastewater treatment and irrigation facility serves the Bingham Facility, which is a biomedical animal research center. The wastewater treatment system is currently for domestic waste only, and secondary treated effluent is spray irrigated. This permit was originally issued December 17, 2004 and the most recent permit issuance was for a modification issued on February 12, 2007. The current permit modification request has been reviewed by both the Aquifer Protection Section’s Central and Raleigh Regional Staff, with additional information requested October 14, 2011. The subsequent additional information response was received November 14, 2011 and a draft permit (attached) was approved by the Division and UNC-CH on March 19, 2012.

It should be noted that the Bingham Facility also includes an animal wastewater treatment and irrigation system that was deemed permitted under the Animal Waste Management System rules (15A NCAC 02T .1303(a)(1)). After several water quality violations, the deemed permit status for the animal wastewater treatment and irrigation system was revoked on February 1, 2010. These water quality violations also resulted in an enforcement case and penalty assessment that was settled on May 25, 2010. While this animal wastewater treatment and irrigation system is not part of Permit No. WQ0023896, two components of this system are being reconstructed and repurposed for inclusion in the subject permit, while the remaining animal wastewater treatment and irrigation system components are being decommissioned. Accordingly, a small amount of animal waste will now be included in the waste stream for Permit No. WQ0023896.

Please provide guidance regarding the appropriateness of conducting a public hearing for this project. If you deem that a public hearing is necessary, please inform me of potential public hearing officers so I may begin the public hearing process.

If you have questions or need additional information, please contact me at (919) 807-6453.

Enclosures (2)
APPENDIX F

PUBLIC NOTIFICATION
STATE OF NORTH CAROLINA
COUNTY OF WAKE

Advertiser Name: NC DENR
Address: AQUIFER PROTECTION SERVICES
1636 MAIL SERVICE CENTER
RALEIGH, NC 276991636

Before the undersigned, a Notary Public of Wake County, North Carolina, duly commissioned and authorized to administer oaths, affirmations, etc., personally appeared Barbara Brown, who being duly sworn or affirmed, according to law, doth depose and say that she is Accounts Receivable Specialist of The News & Observer a corporation organized and doing business under the Laws of the State of North Carolina, and publishing a newspaper known as The News & Observer, in the City of Raleigh, Wake County and State aforesaid, the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all of the requirements and qualifications of Section 1-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section 1-597 of the General Statutes of North Carolina, and that as such he or she makes this affidavit; and is familiar with the books, files and business of said corporation and by reference to the files of said publication the attached advertisement for NC DENR was inserted in the aforesaid newspaper on dates as follows:

08/05/2012

Barbara Brown, Accounts Receivable Specialist
Wake County, North Carolina
APPENDIX G

PUBLIC FACT SHEET
MEMORANDUM

To: All Interested Parties

From: Jon Risgaard – Supervisor
Land Application Unit

Re: Public Information Fact Sheet for the Proposed Modification to Permit No. WQ0023896

On August 18, 2011, the Aquifer Protection Section’s Land Application Unit received a permit
application for a major modification to The University of North Carolina at Chapel Hill’s (UNC-CH)
Bingham Facility wastewater irrigation system (Permit No. WQ0023896) located in southwest Orange
County. The major modification request proposes to:

➢ Decommission an existing 8-inch gravity sewer; the ultraviolet (UV) disinfection system; the
secondary effluent storage basin pump station; the 75,843 gallon lined effluent storage lagoon; and
the 2.12 acre irrigation area composed of one field with 16 nozzles.

➢ Refurbish an existing 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined
secondary effluent storage basin.

➢ Reconstruct an existing animal wastewater treatment system storage basin and irrigation pump
station, and incorporate them into the subject non-discharge permit.

➢ Construct and operate an 8-inch gravity sewer system, a liquid sodium hypochlorite disinfection
system, a 525 gallon chlorine contact tank; a secondary effluent pump station and 5.72 acres of
irrigation area.

The existing wastewater treatment and irrigation facility serves the Bingham Facility, which is a
biomedical animal research center. The existing wastewater treatment system is for domestic waste only,
and secondary treated effluent is spray irrigated. This permit was originally issued December 17, 2004
and the most recent permit issuance was for a modification issued on February 12, 2007. The current
permit modification request has been reviewed by both the Aquifer Protection Section’s Central and
Raleigh Regional Staff, with additional information requested October 14, 2011. The subsequent
additional information response was received November 14, 2011 and a draft permit was approved by the
Division of Water Quality (DWQ) and UNC-CH on March 19, 2012.
UNC-CH Bingham Facility  
August 3, 2012  
Page 2 of 5

It should be noted that the Bingham Facility also included an animal wastewater treatment and irrigation system that was deemed permitted under the Animal Waste Management System rules (15A NCAC 02T .1303(a)(1)). After several water quality violations, the deemed permit status for the animal wastewater treatment and irrigation system was revoked on February 1, 2010. These water quality violations also resulted in an enforcement case and penalty assessment that was settled on May 25, 2010. While this animal wastewater treatment and irrigation system is not part of Permit No. WQ0023896, two components of this system are being reconstructed and repurposed for inclusion in the subject permit, while the remaining animal wastewater treatment and irrigation system components are being decommissioned. Accordingly, since the Bingham Facility is converting to a dry-bedding system, only a small amount of animal waste resulting from wash-down water will now be included in the waste stream for Permit No. WQ0023896.

On September 29, 2011, DWQ received a public hearing request that express public concerns “regarding the proposed infrastructure’s impact on ground water, surface waters, the surrounding environment and public health...” Concerns specific to water quality included: the proposed increased spray irrigation area footprint; proposed average daily wastewater flows and annual irrigation limits; treated wastewater storage; disposal of domestic/animal waste; and potential impacts to Collins Creek, adjacent properties and groundwater supply wells. The request is a joint document from two non-profit citizen groups, Preserve Rural Orange and Haw River Assembly. The document was also endorsed by 56 neighbors and community members.

In response, the DWQ Director’s Office approved the request and appointed Jeff Manning, supervisor of the Basinwide Planning Unit, as the hearing officer. The public comment period will open on August 5th with public notification via the News & Observer and the DWQ website. The hearing has been scheduled for August 22, 2012, and the 30-day public comment period will close at the end of business on September 4, 2012.

For further information regarding the UNC-CH Bingham Facility and the public hearing process, please read the Fact Sheet presented on Pages 3 through 5.
UNC-CH Bingham Facility Public Hearing Fact Sheet

1. TYPES OF OPERATIONS COVERED

A. Activities Covered by this Permit:

On the basis of a Division of Water Quality review, the North Carolina Environmental Management Commission proposes to permit the requested modifications to the UNC-CH's Bingham Facility Wastewater Irrigation System (Permit No. WQ0023896).

B. Geographic Area Covered by this Permit:

The facility is located in southwest Orange County off Orange Chapel Clover Garden Church Road (SR 1956) in Bingham Township. Facility coordinates are 35.902532° N, -79.238067° W.

C. Types of Wastewater Produced:

The wastewater consists of 100% domestic waste comprised predominantly of wastewater generated by facility personnel. The facility is also being repurposed as a dry-bedding facility, therefore the system will not treat animal waste, save for wash-down water.

D. Description of Existing/Proposed Treatment & Disposal Facilities:

Existing facilities include: an 8,000 gallon baffled septic tank with an effluent filter; a 2,100 gallon septic tank effluent lift station with two 20 gallon per minute (GPM) 0.5 horsepower (hp) pumps and audible/visual high water alarms; a 4,000 gallon recirculation tank with two 55 GPM 0.5 hp pumps; two AdvanTex AX100 textile media packed bed filters; and a 60º v-trapezoidal flume with ultrasonic level sensing.

Existing facilities also include a well filter treatment system consisting of: a 3,240 gallon hydropneumatic storage tank; a 2,250 gallon manganese oxidation tank; a potassium permanganate tank; an 86 gallon diaphragm tank; three manganese filters; and a 4,000 gallon filter backwash tank with two 20 GPM 0.5 hp pumps.

Existing facilities to be decommissioned include approximately 320 linear feet of 8-inch gravity sewer; an ultraviolet (UV) disinfection system with two lamps; an 80 GPM floating transfer pump station; a 75,843 gallon lined effluent storage lagoon; and a 2.12 acre irrigation area composed of one field with 16 nozzles.

Existing facilities to be refurbished include the conversion of a 171,500 gallon lined effluent storage lagoon into a 125,724 gallon clay lined secondary effluent storage basin to be used as supplemental wet weather storage.

Existing facilities to be reconstructed include the conversion of: the existing animal wastewater treatment system storage basin into a 1,122,440 gallon clay lined wet weather storage basin; and the existing animal wastewater treatment system irrigation pump station into a 1,495 gallon domestic wastewater pump station with two 158 GPM submersible pumps and audible/visual high-water alarms.

Proposed facilities to be constructed include: approximately 540 linear feet of 8-inch gravity sewer; a liquid sodium hypochlorite disinfection system with a 55 gallon chemical storage tank and two 7.1 gallon per hour (GPH) positive displacement peristaltic chemical feed pumps; a 525 gallon chlorine contact tank; a secondary effluent pump station with two 80 GPM submersible pumps; and a 5.72 acre irrigation area composed of four fields with a total of 160 nozzles.
2. BASIS FOR ISSUING A STATE NON-DISCHARGE PERMIT

The Division of Water Quality has been delegated authority by the Environmental Management Commission to issue non-discharge permits in the state of North Carolina. This draft permit was developed based on an application for a major modification to the Wastewater Irrigation System Permit (WQ0023896), received from the University of North Carolina at Chapel Hill on August 18, 2011, and additional information received November 14, 2011.

3. THE ADMINISTRATIVE RECORD

The administrative record, including the original application, received additional information, Division of Water Quality review comments, and the draft permit are available for review and copying at the Archdale Building located at 512 N. Salisbury St., Raleigh, NC 27604; and at the Division of Water Quality's Raleigh Regional Office at 3800 Barrett Dr., Raleigh, NC 27609 between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Copies of the administrative record can be provided at a charge of 2 1/2 cents per page with the first 100 copies free of charge.

4. PUBLIC COMMENT SCHEDULE.

Draft permit to public notice: August 5, 2012
Public Meeting date: August 22, 2012
Public comment period closes: September 4, 2012

5. EFFECTIVE DATE AND LENGTH OF THE PERMIT

The permit will be effective until September 30, 2015.

6. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

The Division of Water Quality Director, pursuant to General Statute 143-215. 4(b) (1) and (2) and Administrative Code 15A NCAC 02T .0108, has determined that it is in the public interest that a meeting be held to receive all pertinent public comment on whether to issue, deny, or modify the draft permit. All information received prior to the close of business on September 4, 2012, will be taken into consideration in finalizing the permit decision. The meeting will be held on August 22, 2012 at 7:00 p.m. at the White Cross Recreation Center located at 1800 White Cross Rd., Chapel Hill, NC 27516. Registration will begin at 6:30 p.m.

The meeting will be conducted in the following manner:

A. Explanation of the NC Environmental Management Commission's Permitting Procedure and contents of the draft permit by the Division of Water Quality staff.

B. Public Comment – The public meeting is a forum for the Division to obtain water quality information that was either overlooked or unavailable at the time the permit was drafted. INFORMATION PRESENTED SHOULD SPECIFICALLY ADDRESS ISSUES RELATED TO WATER QUALITY IMPACTS RESULTING FROM WASTE MANAGEMENT AT THIS FACILITY. Comments, statements, data and other information may be submitted in writing prior to or during the meeting, or may be presented orally at the meeting. Persons desiring to speak will indicate this intent at the time of registration at the meeting. So that all persons desiring to speak may do so, lengthy statements may be limited at the discretion of the meeting officer. Oral presentations that exceed three minutes must be accompanied by three written copies, which will be filed with the meeting clerk at the time of registration.
C. Cross-examination of persons presenting testimony will not be allowed. However, the meeting officer may ask questions for clarification.

D. The meeting record will be closed at the conclusion of the meeting.

7. COMMENT PERIOD

The comment period for the draft permit will conclude at the close of business on September 4, 2012. All comments received until this time will be considered in the formulation of final determinations with regard to this permit.

Interested persons are invited to submit written comments on the draft permit or on the Division of Water Quality's proposed determinations to the address below:

Division of Water Quality
Aquifer Protection Section
Land Application Unit
1636 Mail Service Center
Raleigh, North Carolina 27699-1636
Attn: Nathaniel Thornburg

/NDT
APPENDIX H

UNC-CH PUBLIC HEARING STATEMENT
Hello, my name is Bob Lowman. I’m the associate vice chancellor for research at UNC-Chapel Hill. I’m also the person at the University responsible for oversight of the Bingham Facility.

We are here tonight because the University has applied for a modification of its wastewater treatment permit for the Bingham Facility, a facility for housing research animals. In a very few minutes, I would like to highlight a few salient features of our application and explain the rationale behind the system we have proposed.

We are modifying our permit because of changes in our plans for the site. While we once had plans to expand the site and to install a tertiary wastewater treatment system, the downturn in the economy and site limitations put a stop to those plans about two years ago.

Instead, we will be refurbishing the smaller domestic wastewater treatment system on the site—a fully permitted system that was not implicated in the citations we received from DENR a couple of years ago. Under this plan, we will limit the amount of wastewater to be treated—a plan fully consistent with the completed square footage on site. In effect, we have decided to be better—not bigger—at our Bingham facility.

Refurbishing the wastewater treatment system at Bingham will improve performance. To make sure we don’t overload the capacity of the soil to absorb the spray irrigation, we have taken a conservative approach in the design of the spray fields and increased their area. Spraying the same volume of water over a larger area provides greater operational flexibility and reduces environmental impacts.

We are also changing our animal husbandry practices so that we can continue to house animals at Bingham in a way that meets the design specifications of the refurbished treatment system. We plan to do that by maintaining all of our animals on dry bedding that will be swept up and disposed of offsite. We also have installed a new, more efficient cage washer that uses far less water than the old one.

Because of these changes, our permit application does not increase the maximum amount of treated wastewater we can apply to the land by spray irrigation: just over 3,500 gallons per day.

We are eager to get started on this project because, for the past 2½ years since we shut down the faulty system, all the wastewater from the site has been pumped and hauled from Bingham to the OWASA wastewater treatment facility. This has been a noisy and smelly process for us and our immediate neighbors. It’s also very expensive. We estimate that refurbishment of the system will cost about $900,000, much less than the cost of continuing pump and haul operations indefinitely.

To sum up, we made some mistakes at Bingham, we’re sorry for them, and we’ve learned from them. That’s why we are here tonight with an application modification. Two years ago, we received two citations from DENR for spills of highly treated waste water. One resulted from a broken pipe in the irrigation system. The other resulted from holes in the plastic liner of one of our holding ponds.
Our new application is designed to ensure that these kinds of spills do not happen again. Specifically, the clay-lined pond meets requirements for the soil filtration step of treatment, so leaks should not be an issue. We will also use a higher quality material for the plumbing and spray heads in the irrigation fields to reduce the risk of broken pipes. We are taking the faulty system out of the ground entirely and getting rid of it. It will be like it never existed.

Under our previous permit, we were required to drill monitoring wells and test the water from those wells at regular intervals. Until we started the pump and haul process, we monitored the groundwater at the Bingham site and the test results showed no pattern of contamination. We have tested our own drinking water well and the drinking water well at the former Lombardo property that adjoins ours and also found no concerns.

Under our new permit, we will be required to drill two additional monitoring wells. We welcome this requirement, as it will provide even more assurance that our wastewater treatment is effective and presents no risk of harming the environment or having any negative effect on any of our neighbors.

I hope this brief overview is helpful to DENR in evaluating our application. Thank you for your time and your attention.
APPENDIX I

PUBLIC HEARING TRANSCRIPT
1. **Speaker: Floyd Earhart**  
   **Representing: Wildcat Creek Homeowner’s Association**

   “Good evening, and I appreciate you allowing me to speak on behalf of the homeowners and friends and neighbors in Wildcat Creek. I’ve lived in Wildcat Creek now for 37 years. When we first moved into Wildcat Creek, the Haw River was an open sewer line. It is now, with the exception of silt, clean. You can now fish in the river, and you can swim in the river and a lot of recreational canoeing. I have some very serious concerns about this permit modifications. From what I understand, they have not gone through the full Environmental Impact Statement. Any other entity or corporation or one of my farmer neighbors would have to go through to build any kind of new facilities on their property. I would like to see them having to go through a full permitting process, and so would my neighbors here in the Wildcat Creek area. One of the main reasons is from what I’ve seen from the maps, if there is any kind of a problem it would probably spill over into Wildcat Creek, which would spill back into our development, which would probably contaminate our drinking water which we have worked for years to finally after a number of years we have a clean water system. Where as in the past we had problems with contamination, and I am seriously against them just coming up and saying ‘We know what we’re doing. Don’t worry about it.’ Well I’ve noticed that a lot of times in the past we needed to worry about it. And I would like to see them have to do a full impact statement that way it would be fully transparent to the public on what’s going on and how they’re about to do what they’re going to do. Thank you very much.”

2. **Speaker: John Runkle, Esq.**  
   **Representing: Preserve Rural Orange**

   “Good evening. My name is John Runkle. I’m an attorney here in Orange County, and my client Protect Rural Orange requested that I submit preliminary comments regarding the necessity for an Environmental Impact Statement. We intend to submit additional comments by the September 4th deadline. I urge all of you to do that, too. If you don’t want to speak, write into them and give them your comments in the next couple weeks. Now, first of all, there is no question that the project falls under the State Environmental Policy Act regarding an EIS. The purpose of the EIS is to provide a responsible state agency with a useful decision making tool. And this modification at the UNC Bingham Facility meets all the requirements. It is on public land and the project involves expenditure of public monies. The ongoing and new impacts of the facility are significant. Now, there are these SEPA provisions that address water permits are spelled out in the departmental rules, and further in the 02T rules that this is being regulated under, one of the provisions for a completed application is a final environmental document, either a finding of no signification impact or a record of decision. The only Environmental Assessment was done back in 2007 and it does not show the present project, nor does it show the much of anything related to the impacts of the various projects and major changes subsequent to 2007. And as Dr. Lowman said in his opening remarks, there have been changes in the plan for the site. These changes are what triggers the environmental impact statement, and whether they have failed to do that over the last 30 years, or have failed to comply with the environmental impact statement, now is the time they have got to start doing it. We have to draw the line someplace and this is going to be the project where they have to do the environmental impact. Now the reason for doing that is the same reason is one of the conditions for the application. An EIS and an application needs to have a description of the project, including the origin, type and flow waste to be treated. There is so much in the application that’s not there. It’s just that ‘We kind of intend to do this after we get the system in. We might want to do this.’ This is the way that they have been operating over the last decade. It’s not clear cut what they’re trying to do. It’s not clear cut of how they’re going to do it. And it’s not clear cut of the environmental impacts from those kinds of things. Everything that has been done has not been done in a coherent, orderly fashion. You can apologize for past mistakes, but you need to get together all the information, all the documentation, looking at those impacts, how to modify those impacts, how to really look at everything and do that under the environmental impact statement. Each new modification saw a problem that either was pointed out
2. **Speaker: John Runkle, Esq.**  
   **Representing: Preserve Rural Orange**  
   (continued)

by the regulators or by the neighbors of the facility have been done in a piecemeal manner. And in several instances, these solutions have failed to solve a problem, even when considerable amounts of public funds have been spent and have been wasted. The purpose of the EIS is to provide the decision maker information about the reasonably expected impacts. We need a full analysis of those impacts. In this instance, the Division of Water Quality cannot make decision whether to modify the wastewater irrigation permit until it sees an EIS about the impacts. It is the responsibility of UNC to make certain that the application is complete, and that a full and comprehensive EIS is part of that application. Now is the time that UNC needs to begin complying with SEPA and other environmental laws at the Bingham facility. And lastly, please notify me at the address on my comments of any decision you make on this permit. I would appreciate the hearing officer’s report and any further actions that you take on it. Thank you very much.”

A copy of his speech is in Appendix J.

3. **Speaker: Nancy Holt**  
   **Representing: Carolina Concerned Citizens**

“I have several concerns. The primary one being the hodgepodge way that this waste system is being put together for a secondary treatment system with irrigation that may become airborne and float into the surrounding communities. And there is nothing, nobody has ever said anything about how any chemicals, or how bacteria or anything else, may, or viruses, may be controlled in the waste. And the volume of water. Now according to the USGS, an average person uses 63, or 62.3 gallons of water a day. If you have 10 employees working at a facility, and this estimate of water is for home use. I assume they are not all taking baths and washing dishes and things, however, they could clean the lab and do all the things. And that means that one million gallons of water is coming from cleaning the animal holding area, and what is being done about that? Do you actually know what, if anything, is in the wastewater from the animal holding area? Is it new types of viruses? Is it new diseases? Is it pharmaceuticals? Nobody knows, but that stuff is going to become airborne, and it will be irrigated nears roadsides, where kids catch the school bus. And when kids walk through grass, they often drop things, they reach down and pick up things. The usual hand to mouth behaviors of children would make this less than desirable. And I would recommend that UNC review, along with the Aquifer Protection people, review the location of these sites to ensure that it does not come close to a public road way. Thank you.”
4. Speaker: Alex Castro, Jr.  
Representing: Preserve Rural Orange

“Good evening. I would like to bring to your attention a couple of items that are in your Operation and Maintenance requirements. Specifically on your page five, Item 12, the freeboard and the wet weather storage and secondary effluent storage basins shall not be less than two feet at any time. And then the next one, the installation of gauges. Now my concern, in view of the history here in North Carolina of our hog farms and their lagoons, storms coming through, hurricanes, what have you, where we have excessive amounts of rain, I would like to know how they are going to monitor that this freeboard does not get to be less than two feet. My concern stems from the fact that as far as I know, they do not have any surveillance system, any monitoring system, and obviously if we have a tropical storm or hurricane coming through, the individuals involved with this facility will be concerned about their own families and their own safety, and who is minding the farm? How are these extraordinary circumstances going to be dealt with so that there is not an overflow when these stormy conditions come through? And there are, as has previously been stated, obvious needs for an Environmental Impact Statement, so that we could understand how they approach the issues of the modifications in a global manner, as opposed to individually as these provisions are put into place. There needs to, in my mind, be a strategic view of what’s going on and how they’re going to deal with the problems that might arise from the modifications they’re making to the facility. Thank you.”

5. Speaker: Elizabeth Hilborn  
Representing: Preserve Rural Orange

“Thank you for the opportunity to speak tonight. So, I am here to talk about groundwater and I’m spurred to speak because UNC historically has not acted as a reliable informant or a good neighbor. They neglected to inform surrounding residents of the major spill of wastewater that occurred during October through December of ’09. This certainly had major implications for surface water, but also potentially groundwater. Surrounding residents depend upon groundwater for our drinking water. There is no other alternative. We also have wells of varying ages. Some of these may be shallow, hand dug wells. There is quite a mix of housing stock ages out here. Groundwater resources in this area are very poorly mapped. The new and existing test wells that UNC discusses may not be representative of the water quality that surrounding resident’s experience. Additionally, PRO understands that an original well that was supplying the facility that was capped in 2010 was coffee-colored at the time of that capping. We have no information about the contaminants that were present in the well to cause that discoloration. We’ve already discussed the safe guards in place for the distribution of irrigation of wastewater during periods of heavy rainfall, but North Carolina experiences severe, periodic droughts. Some of these shallow wells may be impacted when the wastewater sprayed in this area is the only source of groundwater recharge for the area. I also want to call your attention to a 1998 study that USGS performed with Orange County. They conducted a geographic study of the relative susceptibility of Orange County soils to groundwater contamination from surface and shallow sources. And I’ve reviewed the report and the associated maps that accompany that report, it appears that the UNC facility is sited on land that is categorized as high-risk for groundwater contamination. And I’d like to know why the proposed permit modification is proceeding for this apparently high-risk site, this facility with a history of violations. We depend upon these wells as the only source of our drinking water for our families and our livestock. I’m extremely concerned that the public health will be impacted, and I request that an Environmental Impact Assessment include the evaluation of existing groundwater quality in the surrounding neighbor’s wells and of the potential for future contamination. Thank you.”
6. **Speaker: Jim Gossett**  
Representing: Self  

*Waived his time.*

7. **Speaker: Elaine Chiosso**  
Representing: Haw River Assembly

“Good evening, and thank you for holding this public hearing and thanks people for coming out since they came all this way to hear what we have to say. So, I am Elaine Chiosso, the Haw River Keeper with the Haw River Assembly that has been working for 30 years to protect our river and Jordan Lake. So, we care about the whole watershed, and streams that feed into the Haw River and Jordan Lake, and that includes Collins Creek, which is really at the heart of this permit decision. The UNC Bingham Animal Research Facility is on land that drains to Collins Creek. Downstream of this facility, Collins Creek has been on the impaired waters list, that is the EPA’s 303(d) list, for many, many years. And the aquatic biology of this creek is not meeting state standards. What role has the Bingham facility and its past violations of water quality played in this impairment? The Haw River Assembly believes that it is time for the state to investigate the source of impairment in Collins Creek. We need to start the process of bringing it back to health and reducing the pollution that’s flowing downstream to the Haw River and Jordan Lake. The University has not acted in good faith in the past with its plans, its operations and management of this facility. A poorly build and operated wastewater system and the storage lagoons resulted in the 120,960 gallon spill in 2009, with leakage into Collins Creek. That wastewater leak was not properly sampled and it’s been arduous for the public to get needed information on the problems that affect their community. In 2010, the disclosure that the waste spray fields and the road were built in wetlands in violation of the federal Clean Water Act brought promises from the University that the process going forward would be in compliance of state regulations, and be transparent and better communications to neighbors. This has not proved to be the case. The current permit before the state to upgrade the wastewater treatment is calling for a system with very large capacity for a small number of employees. Why? The plan for the animal waste is to use dry bedding, but where will the soiled bedding be stored before taken offsite? And what quantity of water and chemicals and contaminants will be in the wash down water that will then be the treated effluent out on the spray fields? So, even our best, modern wastewater treatment plants can’t handle a lot of chemicals. They go right through the plant, or they damage the biology of the plant. This is a very small system that has even less capacity to treat chemicals. Why are the spray fields being expanded to twice the size, over five acres, for such a small operation? Are there undisclosed plans for the expansion of this facility and those plans are not included in this permit? So the number of unresolved water quality impacts coupled with the poor performance and violations of water quality by the University in the past should require an Environmental Impact Assessment. That assessment and statement should be done before any further actions or permits are approved. The University is not required by law to meet the more stringent and environmentally protective standards of the county that it’s in. Orange County has some of the best environmental protections in the state, but under state law, a public facility like the University does not have to follow these laws. And they do not, but that are not even meeting minimum state standards. I think the University should be a model for citizens that we should be proud of, and I do speak as an alumna of UNC Chapel Hill, so it makes me very unhappy to be standing here saying this. The permit modification should not be approved by the state unless it is clear that doing so will cause no further degradation of water in Collins Creek, the Haw River and Jordan Lake. Thank you very much.”

*A copy of her speech is in Appendix J.*
8. **Speaker: Laura Streitfeld  
Representing: Preserve Rural Orange**

“Thank you for the opportunity to speak tonight. The UNC Animal Research Facility has a long and ongoing track record of polluting the Haw River watershed, a record of non-compliance with government regulations, and non-disclosure of its activities. Citizens who are here tonight and throughout the community are troubled by what we do know as well as what we don’t. I’m going to touch on some of the key issues. To discuss all of our concerns would take all evening. Before deciding whether to issue, revise or deny UNC’s wastewater permit, we urge the Division of Water Quality to require a full account of environmental consequences of forty years of animal research operations and waste at the UNC facility. We ask you to require UNC to prepare an Environmental Impact Statement for a thorough disclosure of not only impacts but also to explore all environmentally responsible alternatives to the proposed expansion of UNC’s wastewater system. In 2010, Bob Lowman told neighbors UNC considered closing down the facility permanently. An EIS should explore that option along with every other alternative to spraying more industrial waste at the source of the region’s drinking water supply. In 2006, UNC’s consultants S&ME prepared an Environmental Assessment, less thorough, but also significant at looking toward impacts and alternatives than an EIS. And they prepared that before building new wastewater systems, which later failed. The Environmental Assessment prepared in 2006 is inaccurate and incomplete. Here’s what was not accurate in that 2006 document. Before embarking on building buildings and a new wastewater system, UNC’s consultants asserted that there were no wetlands at the site. The EA reads ‘no potential wetlands were identified within the study area for the proposed project, and consequently, no impacts to wetlands are anticipated.’ In 2010, UNC admitted that there were wetlands, and that deemed permitted animal wastewater spray fields and a new access road had been constructed on those wetlands. There are also wetlands directly below the other wastewater lagoon on the southeast corner of the property. The 2006 Environmental Assessment calls the facility a ‘remote campus of UNC’ and states that the primary noise source would be from Old Fayetteville Rd., north of the facility. For those of you who don’t live out here, Old Fayetteville Rd. is actually 10 miles east of the facility in Carrboro. This and perhaps other data in the assessment appears to describe UNC’s blood lab in Carrboro, not the facility at hand. It also states that no existing structures will be renovated, however, renovations have been underway and perhaps completed in one of the older buildings at the site. The Environmental Assessment states that the proposed action will result in no impacts to surface water. The impacts on surface water of 40 years of operations of this facility are unknown. In 2009, UNC waited 52 days before alerting the Division of Water Quality about a wastewater leak and testing the lagoon with tracer dye. The UNC staff did not alert the Division of Water Quality to the wastewater spilling into the creek, but you staff from the Division of Water Quality did observe wastewater with green tracer dye, and documented it flowing overland into the creek, close to where we now know there are wetlands. We’re grateful that you took photographs and that you were there to identify this, otherwise the neighbors never would have known. In the Environmental Assessment, several things are missing. One thing that’s key is an investigation of the impacts of wastewater operations and incidents, including intentional direct discharges into the creek for an unknown period until the wastewater system was built. Neighbors were told and were given a handout in December of 2009 that verified from UNC’s perspective that this was the practice until a wastewater system was built. Discharging directly into the creek. There were also multiple wastewater spills and toxic solvent contamination of the septic system in 2009 and 2010, and there is very likely a host of information that we don’t know that has not been reported because we haven’t seen the records from before then. We don’t know the contents of the spilled wastewater because UNC did not choose to sample the water, even though it was spilling into the creek, and they had dyed it, and they had the opportunity to collect it and find out what was in it knowing that it was contaminating a source of drinking water. Until UNC discloses the exact locations on a map where spills occurred, and takes samples to identify the impacts on water, silt, sediment and soil at these locations, we don’t have a clear picture of the future consequences and secondary and cumulative impacts of UNC’s proposed wastewater operations. UNC, as Betsy Hilborn said, tested a brand new, but not the old one that was in operation for almost four decades when it was capped. Bob Lowman
8. Speaker: Laura Streitfeld  
Representing: Preserve Rural Orange  
(continued)

described the water to me as the ‘color of your coffee.’ And when I asked whether they had collected any samples to test before capping it, the answer was, ‘No’. That was very concerning to neighbors. We need updated details for this project. The rationale behind this expansion keeps shifting. The buildings in the Environmental Assessment were cited as having a purpose: rodent retention; hog enclosure; and some numbers were included. This new wastewater system that is being proposed will serve three buildings whose purpose and inhabitants are not fully specified and are different from what was proposed in the Environmental Assessment. In the draft permit, the numbers and species of animals are not specific. The draft permit also allows UNC to use its failed system that has been shut down for more than two years, while the new system is constructed. As the Division of Water Quality staff noted, 2.14 acres that were previously in use at the rate of 24 inches a year were sufficient for similar projects and this project, and yet, UNC is proposing just over 10 inches a year and doubling the acreage that it will use to spray industrial research waste. Why will there be so much waste if the University is using dry bedding for its animals? We need a full account of the source of this waste which has been called 100% domestic. There is also a history of non-compliance. UNC applied for a stormwater permit last year and asked for it to apply retroactively to construction from two years earlier. The construction that they hoped to permit after the fact included waste systems that were sited and operating in violation of federal, state and local regulations. This facility is poorly sited. Its wastewater and water issues will always be problematic because it was located, without any public input, in a rural, agricultural residential zone without municipal or water service. We know that this water that is cited as being 100% domestic cannot be fully domestic given that there will only be up to 10 employees at the site. If dry bedding is truly being collected for the animals, 10 employees cannot possibly generate 1.2 million gallons of wastewater, even if they lived on site 24/7 and flushed and washed non-stop. They would use about a third of that amount. Fire safety is another concern. Two of the buildings that UNC had built have wooden roofs with plans to store dry bedding in bulk. UNC did not invest in sprinkler systems in any of its buildings, and the facility relies on well water, and we don’t know what kinds of massive water draw would be required to stop a fire, or what impact that would have on the aquifer. UNC’s old propane tank configuration was unauthorized and was in violation of state regulations requiring inspection. The new bulk LP plant with two 18,000 gallon tanks containing 66 tons of propane received four warning letters starting a year ago until February of this year about unresolved fire safety and emergency protocol procedure manuals. Another concern is chlorine in the new system. The old system of UV wastewater disinfection never worked properly and we don’t know the composition of the 120,000 gallon plus wastewater that spilled into the creek unreported three years ago. We don’t know because UNC has never disclosed the composition of the industrial animal waste leaking in the lagoon. The new system of chlorine treatment poses potential risks to water and to human health and animal health. If this permit is granted, UNC would spray chlorine-treated wastewater in open pastures right next to people’s homes, next to kids waiting for the school bus, and cattle grazing right across the fence. Though the County planning director suggested to UNC leaders several times in meetings that they needed an emergency plan in case of a chlorine leak, the issue remains unaddressed. We also would like to see hydrogeologic testing occur at the site. There is a diabase dyke that prevented a landfill from being sited on the adjacent property 20 years ago. Hydrogeologic testing would identify geologic characteristics that could allow contaminants to seep rapidly into the aquifer. Almost all of the issues discussed tonight were brought to UNC’s attention by neighbors, and almost none have been addressed to neighbor’s satisfaction. On a tour of the facility, Alex Castro, who spoke earlier, saw the propane tanks and suggested that the fire department get involved… On a tour of the facility, Alex Castro, saw propane tanks and alerted the University, and the University put in the consolidated tanks. However, they chose to put the tanks at the top of a gully, so that in Bob’s words, ‘any leak would go directly down to the creek rather than into the buildings.’ While we appreciate protecting human life and animals, we would also like to see much better regard for the creek and surface waters. Citizens have done our homework, and we’re asking you to make sure UNC does theirs.
8. Speaker: Laura Streitfeld  
Representing: Preserve Rural Orange  
(continued)

Carolina has the means to investigate the impacts of their facility on the watershed. This year, the UNC Water Institute was launched, dedicated to solving the most critical global issues in water and health. UNC must be directed to use its vast resources to monitor and evaluate water quality locally as well as internationally. Without the state taking action, UNC will not disclose or remedy the issues at hand. As a neighbor and a citizen of North Carolina and a UNC alum, I’m disappointed by the University’s actions, which do not uphold the public trust or protect public safety and the environment. I urge you to require UNC to prepare an Environmental Impact Statement to have an accurate picture of its past record, impacts and future plans before deciding to issue, revise or deny a wastewater permit that will affect the watershed for years to come. Thank you for holding this hearing. We deeply appreciate having this opportunity, the first ever for the community to comment publicly to the state about UNC’s wastewater plan and its impact on our regional drinking water supply, downstream in Jordan Lake, and on this rural community. Thank you.”

A copy of her speech is in Appendix J.

9. Speaker: Cliff Leath  
Representing: Self

“My name is Cliff Leath, and I am an adjoining property owner with the UNC facility, and I thank you for allowing me to speak this evening. First of all, I’d like to concur with all of the future, the past speakers. I’m not going to rehash the things that they talked about, but only from the perspective of a neighbor on a few of the key critical items. The first thing is I do think there needs to be an Environmental Impact Statement, and I strongly suggest that that happen. As a neighbor, I’m concerned with the use of over 3,000 gallons of water a day for whatever the purposes are that they’re using over there. It was 24,000 gallons when we started. The neighbors along the road are now adjacent to a commercial facility, and I’m concerned about water quality and I’m concerned about in drought conditions when all the neighbors are conscientiously conserving water that the facility is using 3,000 plus gallons a day and our wells could run dry. I do not know about theirs, but I have a fairly deep well and only have 3 gallons a minute. So water availability is a concern and water quality. I’m also concerned about the spraying of the treated waste, particularly in drought conditions. I’m concerned about where the spray heads are located, but I’m concerned about the spraying of the waste in drought conditions and what that means to water quality as a result of the spraying. I am concerned about the fact that there may not be water availability should there be a fire at the facility. That’s a concern of the neighbors because the fire could spread, the animals could die, and there is no sprinkler system there to, and there’s also no water holding tank facility, which was discussed previously as a safeguarding mechanism. They mentioned the monitoring plan under this new system and I applaud that. I think it is a good idea, but I’ve had a concern all along, it’s one thing to have monitoring in place, but the monitoring doesn’t do any good if there is not an action plan to take action when and if there is an issue and a problem. And we so clearly saw that when we had the spill of thousands of gallons of water. It was 50 some-odd days before Chapel Hill was notified that there was a problem at the facility, and so I’d like to see what that action plan is, and who is empowered to do what should there be issues with this new system if it is in fact put in. I’m not going to take my full amount of time, so Laura Streitfeld has the rest of my time. Thanks.”
10. **Speaker: Tom Schopler**  
**Representing: Preserve Rural Orange**

“PRO being PRO, Preserve Rural Orange. I want to thank you for holding this hearing tonight. Tonight you’ve heard presented lots of examples of the University’s wasteful, negligent, sometimes questionably, one could argue bordering on criminal actions with regards to the animal research facility. We’ve heard about fraudulent representations of wetlands; plans to drain excessive water from the aquifer; spills of wastewater into Collins Creek; and irresponsible reactions to these failings. It’s been pointed out that there is a legal obligation to have an EIS performed in this situation. There have been questions about why the spray field needs to be, why they have doubled the size of the spray field with regards to the amount of water they say they are going to use. There’s no operational specs, as Cliff just referred to. And basically incomplete comprehensive plan about what they plan on doing with this facility. We are asking that the University be required to perform a complete Environmental Impact Statement, and I think that they have demonstrated that without this oversight they will continue to operate irresponsibly and wastefully. With consideration to the state of our economy, we must make sure there is sufficient oversight to ensure the University will not damage or waste our environmental resources or our tax dollars. I’d like to give the rest of my time to Laura Streitfeld as well. Thank you.”

11. **Speaker: Earl Gurganus**  
**Representing: Self**

“Hey. My name is Earl Gurganus and I am also a neighbor to this facility. And I would just like to make a couple of questions and comments. First of all, I’d like to ask a question to UNC, and that is why is this facility used and why is it so necessary? My perspective on this whole thing is that this is a public institution. The University of Chapel Hill is a public university, and as a public university it represents the public, which is us. And as a member of the public I think that a facility that might spill wastewater into the environment in a high-risk location may be in fact prone for disaster for the neighboring communities. And as a member of that community, I think that a public university should take the comments of the public here very seriously. I’d also like to read point 11 on approximately page 8 of the draft of the permit, and it is number 11. Except as provided for in 15A NCAC 02L, it’s a huge acronym, .0107 gallons, the Permittee shall ensure that any landowner who is not the Permittee and owns land within the compliance boundary shall execute and file with the Orange County Register of Deeds an easement with running the land containing the following items: (a) a notice of the permit and a number or other description as allowed in huge acronym I just read; (b) prohibits construction and operation of water supply wells within compliance boundary; and (c) most importantly reserves the right of the Permittee or the State to enter the property within the compliance boundary for purposes relating to the permit. The Director may terminate the easement when its purpose has been fulfilled or is no longer needed. My comment with this section here is that it seems rather unconstitutional, as I see it, for the State or Permittee to be able to enter property within the compliance boundary if the compliance boundary may in fact go outside into neighboring... No? Ok. Well, it seems very suspect to me anyways. So, it seems that as an unconstitutional, it would be very unconstitutional for this university to not regard the comments of the public.”
APPENDIX J

PUBLIC HEARING SPEECHES
August 20, 2012

TO: NC Division of Water Quality
RE: Proposed Modification to Permit #WQ0023896, UNC-CH Bingham Facility

The Haw River Assembly is a grassroots non-profit organization founded in 1982 to protect the Haw River and Jordan Lake. We have been working for 30 years for cleaner waters throughout the watershed, including streams such as Collins Creek that is at the heart of this permit decision.

UNC- Chapel Hill’s Bingham Animal Research Facility is on land that drains to Collins Creek. Collins Creek, downstream of this facility has been on the NC 303 (d) list of Impaired Waters in the state for many years. The aquatic biology of this creek is not meeting the fresh water standards set by the state. What role has the Bingham facility and its past violations of water quality played in this impairment? The Haw River Assembly believes that it is time for the state to investigate the source of impairment in Collins Creek. We need to start the process of bringing it back to health and reducing the pollution flowing downstream into the Haw River and Jordan Lake.

The University has not acted in good faith in the past with its plans, operations and management of this facility. A poorly built and operated wastewater system and the storage lagoons resulted in a 120,960 gallon spill in 2009, with leakage of waste into Collins Creek. Leaking wastewater was not properly sampled, and it has been arduous for the public to get needed information on the problems affecting the community they live in. In 2010 the disclosure that waste spray fields and the road were built in wetlands in violation of federal Clean Water Act brought promises from the University that the process going forward would be in compliance of all state regulations, and be transparent and with better communications to neighbors. This has not proved to be the case. In 2011 UNC applied for permits to expand the wastewater system without notification of neighbors.

The current permit before the state to upgrade the wastewater treatment is calling for a system with very large capacity for a small number of employees. Why is this? The plan for the animal waste is to use dry bedding, but where will the soiled bedding be stored, and what quantity of chemicals and other contaminants will be in the wash down water that will be part of the treated effluent on sprayfields?
Why are the spray fields being expanded to almost twice the size – over 5 acres for such a small number of employees? Are there undisclosed plans for expansion of this facility and their uses that are not included in this permit?

The number of still unresolved water quality impacts coupled with the poor performance and violations of water quality by the University in the past should require an Environmental Impact Statement be done before any further actions are taken, or permits granted for this facility. The University is not required by law to meet the more stringent and environmentally protective rules of the county it is in – but it has not even met the state minimum laws. The permit modification should not be approved by the state unless it is clear that doing so will cause no further degradation of water quality to Collins Creek, the Haw River and Jordan Lake.

Sincerely,

Elaine Chiosso
Haw Riverkeeper and Executive Director
August 22, 2012

COMMENTS ON PROPOSED MODIFICATIONS TO PERMIT WQ0023896
UNC - CHAPEL HILL BINGHAM FACILITY WASTEWATER IRRIGATION SYSTEM

My client, Protect Rural Orange, requested that I submit preliminary comments regarding the necessity for an environmental impact statement ("EIS") for this project. We intend to submit additional comments by the September 4, 2012, deadline.

First, there is no question that the project falls under the State Environmental Policy Act ("SEPA") provisions requiring an EIS. The purpose of an EIS is "to provide the responsible State agency with a useful decision-making tool." In re Environmental Mgt. Comm’n, 53 N.C. App. 135, 280 S.E.2d 520 (1981). G.S. 113A-4 (2) states

Every State agency shall include in every recommendation or report on any action involving expenditure of public moneys or use of public land for projects and programs significantly affecting the quality of the environment of this State, a detailed statement by the responsible official setting forth the following:

a. The environmental impact of the proposed action;
b. Any significant adverse environmental effects which cannot be avoided should the proposal be implemented;
c. Mitigation measures proposed to minimize the impact;
d. Alternatives to the proposed action;
e. The relationship between the short-term uses of the environment involved in the proposed action and the maintenance and enhancement of long-term productivity; and
f. Any irreversible and irretrievable environmental changes which would be involved in the proposed action should it be implemented.

The Bingham Facility is both on public land and the project involves the expenditure of public moneys. The ongoing and new impacts of the Facility are significant.

These SEPA provisions addressing water permits are spelled out in more detail in the departmental rules, CONFORMITY WITH NORTH CAROLINA ENVIRONMENTAL POLICY ACT, 15A NCAC 01C.1010 - .0505, describing the detailed information needed
to prepare an adequate EIS, setting forth the need for the action, all of the impacts associated with the action and its alternatives, and ways to mitigate the adverse effects.

Specifically to the present project, the application for the modifications at the Bingham Facility is inadequate as it does not provide "a final environmental document (Finding of No Significant Impact or Record of Decision)." 15A NCAC 02T .0105(c)(4). The environmental assessment in 2007 does not show the present project, nor does it show much of anything related to the impacts of the various projects and major changes subsequent to 2007.

Not only does the application not comply with the SEPA requirements, it does not comply with the application requirements for this type of project. 15A NCAC 02T .0105(c)(7) requires the application to contain "a description of the project including the origin, type and flow of waste to be treated." The impacts of the project cannot be determined if there is not a precise description of the project, the origin, type and flow of the wastes. The application simply does not show why the modifications are needed.

As stated by others in this hearing process, there has been no showing of "good faith" compliance with the SEPA, nor has there been "good faith" compliance with many of the other environmental rules. See 15A NCAC 02T .0120. The proposed modifications to the wastewater treatment system at the Bingham Facility are part of a series of modifications and changes to the facility over the last decade that have not been reviewed in a coherent, orderly fashion. Each new modification to solve a problem pointed out by regulators and neighbors of the facility has been done in a piecemeal manner, and in several instances, these "solutions" have failed to solve a problem even when considerable amounts of public funds are spent, and wasted.

The purpose of an EIS is to present to the decisionmaker information about the reasonably expected impacts. This statement with its full analysis of the impacts must be before the decisionmaker prior to making the decision.

In this instance, the Division of Water Quality cannot make a decision whether to modify the Bingham Facility wastewater irrigation permit until it receives an EIS about the impacts of proposed construction activities. It is the responsibility of UNC to make certain that its application is complete, and that a full and comprehensive EIS is part of that application. Now is the time for UNC to begin complying with SEPA and the other environmental laws at the Bingham Facility.

Please notify me at the address above of any decision you make on this permit.
The UNC Animal Research Facility has a long and ongoing track record of polluting the Haw River Watershed, non-compliance with government regulations and non-disclosure of its activities. Citizens are troubled by what we do know as well as what we don’t.

Before deciding whether to issue, revise or deny UNC’s wastewater permit, we urge the Division of Water Quality to require a full account of environmental consequences of forty years of animal research operations and waste at the UNC facility. We ask you to require UNC to prepare an Environmental Impact Statement for a thorough disclosure of not only impacts but also to explore all environmentally responsible alternatives to the proposed expansion of UNC’s wastewater system. In 2010 UNC Associate Vice Chancellor Bob Lowman told neighbors UNC considered closing down the facility permanently. An EIS should explore that option along with every other alternative to spraying more industrial waste at the source of the region’s drinking water supply.

In 2006 UNC consultants S&ME prepared an Environmental Assessment before building new wastewater systems, systems which later failed. UNC’s 2006 EA is inaccurate and incomplete.

Here’s what is not accurate in the 2006 EA:

No wetlands
The 2006 EA reads, “No potential wetlands were identified within the study area for the proposed project, and consequently, no impacts to wetlands are anticipated.”
In 2010, UNC admitted that there were wetlands, and that “deemed permitted” animal wastewater spray fields and a new access road had been constructed on wetlands. There are also wetlands directly below the other, permitted wastewater lagoon.

(continued)
The 2006 EA calls the facility a “remote campus of UNC” and states that the “primary noise source” would be from Old Fayetteville Road, north of the facility. Old Fayetteville is actually 10 miles east of the facility, in Carrboro. This and perhaps other data in the EA appears to describe UNC’s Frances OwenBlood Research Lab in Carrboro.

The EA states that no existing structures will be renovated, however renovations have been underway on Building One.

The EA states that “The Proposed action will result in no impacts to surface water.”

Impacts on surface water are unknown. In 2009, UNC waited 52 days before alerting DWQ about a wastewater leak and testing the lagoon with tracer dye. UNC staff did not alert DWQ to dyed wastewater spilling into the creek, but DWQ observed wastewater with green tracer dye documented water flowing overland into the creek, close to where we now know there are wetlands.

Here’s what’s missing from the 2006 EA:

An investigation of the impacts of wastewater operations and incidents, including intentional direct discharges into the creek for an unknown period until the wastewater system was built, multiple wastewater spills and toxic solvent contamination of the septic system and everything else we don’t know. What was the composition of wastewater in multiple illegal discharges? We don’t know, as the university did not sample leaking wastewater. And until UNC discloses the exact locations on a map where spills occurred, and takes samples to identify impacts on water, silt, sediment and soil at these locations, we don’t have a clear picture of future consequences and secondary and cumulative impacts of UNC’s proposed wastewater operations.
Capped well
UNC tested a brand new well but not the old one that was in operation for almost four decades when it was capped. Two years ago, at a meeting with neighbors, UNC Associate Vice Chancellor Bob Lowman described water in the old well to me as “the color of your coffee.”

Updated details for the project. The rationale behind this expansion keeps shifting. The buildings in the EA were cited as having a purpose: rodent retention, hog enclosure, and numbers were included. This wastewater system will serve three buildings whose purpose and inhabitants not specified and are different from what was proposed in the EA. In the draft permit the numbers and species of animals are not specific.

Carolina has been a hostile gatekeeper of public records, and of its operations and plans affecting the Haw River Watershed.

Non-compliance
UNC applied for a stormwater permit last year and asked for it to apply retroactively to construction from 2 years earlier. The construction they hoped to permit after the fact included waste systems that were sited and operating in violation of federal, state and local regulations.

This facility is poorly sited
Its wastewater and water issues will always be problematic because it was located, without any public input, in a rural, agricultural residential zone without municipal water or sewer service.

Fire safety. Two of the UNC buildings have wooden roofs, with plans to store dry bedding in bulk. UNC did not invest in sprinkler systems in any of its buildings, the facility relies on well water, and we don’t know what kinds of massive water draw would be required to stop a fire, or what impact that would have on the aquifer. UNC’s
previous propane tank configuration was an unauthorized bulk LP plant in violation of state regulations requiring inspection. The new bulk LP plant with two 18,000 gallon tanks containing 66 tons of propane received four warning letters between September 2011 and February 2012 about unresolved fire safety and emergency procedure manuals.

Chlorine

The old system of UV wastewater disinfection never worked properly and we don’t know the composition of the 120,000+ gallons that spilled into the creek three years ago. We don’t know because UNC has never disclosed the composition of the industrial animal waste in the leaking lagoon. The new system of chlorine treatment poses potential risks to water and to human and animal health. If this permit is granted, UNC would spray chlorine-treated wastewater in open pastures right next to people’s homes, kids waiting for the schoolbus and cattle grazing across the fence. Though Orange County’s Planning Director suggested to UNC leaders several times that they needed an emergency plan in case of a chlorine leak, the issue remains unaddressed.

Hydro-Geologic testing

There is a diabase dyke that prevented a landfill from being sited here twenty years ago. Hydro-geologic testing would identify geologic characteristics that could allow contaminants to seep rapidly into the aquifer.

Citizens have done our homework, and we’re asking you to make sure UNC does theirs. Carolina has the means to investigate the impacts of their facility on the watershed. This year the UNC Water Institute was launched, dedicated to solving the most critical global issues in water and health. UNC must be directed to use its vast resources to monitor and evaluate water quality and availability locally as well as internationally.
APPENDIX K

E-MAILED PUBLIC COMMENTS
Thornburg, Nathaniel

From: Kitchin Durham
Sent: Sunday, August 19, 2012 3:14 PM
To: Thornburg, Nathaniel
Subject: Protect water & farms from UNC wast. Public Hearing 8/22

Nathaniel,

I plan on attending the hearing at the White Cross Recreation Center on August 22.

Kitchin Durham
Thornburg, Nathaniel

From: Howard Hoyt
Sent: Thursday, August 23, 2012 12:27 AM
To: Thornburg, Nathaniel
Subject: UNC-CH Bingham WQ0023896 Permit

Nathaniel,

I attended the hearing at the White Cross Recreational Center this evening and while I am gratified that a hearing was convened, I consider that to be merely the start of the dialog, not an ending. I am an engineer and assume a certain level of waste generation as part of an industrial process, so I am no Luddite. I was, however, disappointed by a couple of aspects particular to the handling of the UNC-CH Bingham permitting situation:

The management at UNC-CH Bingham:

The oversight at the facility has had conspicuous and very disastrous lapses over the last couple of decades resulting in waste discharges. While all companies and systems have unavoidable failures, it is critical to immediately follow up with full disclosure and a plan for reworking of the system and policies which allowed the failure in the first place. A different method to keep the discharges from happening again (which was offered this evening) is not the solution to the problem. Reworking the policies or replacing people to ensure proper management is. UNC-CH Bingham's lack of communication regarding their facilities in the last few years, despite repeated attempts at contact, suspiciously smacks of back-alley maneuvering. If it is not intentional deceit, then it is monumental arrogance to not inform neighbors on whom they have a profound effect. This pattern of behavior is totally unacceptable for a publicly funded entity and has to stop. I need to know that there has been a reworking of both policy and management at the facility before I will agree that a permit should be issued.

The discharge water quality issue:

I am also distraught at the failure of UNC to adhere to water standards that it's own scientists espouse, and permitting procedures which apply to everyone else. Why should UNC, an entity incorporated on behalf of, and for the benefit of the citizens of North Carolina, be above adhering to water quality standards that apply to the rest of the general population and industry? I am the Director of Engineering at AMI, LLC, an optical disc plant in Burlington, and we are required to perform testing to verify and prove under penalty of forfeiture that all components in the effluent we discharge are below city, state and federal standards. In the case of the UNC-CH Bingham facility, they have repeatedly refused to sample their effluent, even as it illegally spilled onto public and private lands and streams. UNC, being financed by and representing the public good, should voluntarily hold itself to the highest standard, whether it be local, state or federal, not maneuver to evade proper practice or public intercourse.

The permit application WQ0023896 presented this evening states that only domestic use water will be sprayed on to the fields, but it then contradicts that statement by including animal cage wash-down water. The most common route of elimination of biological and chemical agents used in animal testing is excretion. The explanation that the animals will all be given dry bedding does not half address the issue: if you have animals with "dry bedding" as we do, you know full well that blood and urine (as well as liquid stool components) will merely drain through onto the surface below, stick to it and dry. Animals do not walk around while they urinate; they stand in one place and thoroughly saturate one small area, ensuring it drains through and wets the underlying surface. The dried excreta will then be re-hydrated by the wash-down, and be drained away to be
sprayed on to the fields. This concern is not an idle one: radio-isotopes, carcinogens and teratogens are commonly given to laboratory animals as part of cancer research. These substances, particularly radio-isotopes, do NOT break down due to biological processes and are merely excreted in the same form as when they were administered. IF UNC will not fully disclose the list of substances given to the animals that they propose to distribute all over our drinking water aquifer, then it is imperative that they continue trucking it to a treatment center where it can be properly dealt with. If you are being honest with yourself, you wouldn't let UNC spray unidentified carcinogens and radioactive compounds into the water you feed yourself and family, and neither will I. Let's find out what they are planning to spray.

I would appreciate you exercising both your legal duty and ethical imperative to insist that an environmental impact study and full disclosure of the substances in the effluent be forthcoming from UNC. If the study reveals that there is no cause for concern, then our system and your department have done it's job, and you can be happy that you are protecting the public welfare, and I can drink my water with impunity (or scotch). However, I would both support and help finance legal action against UNC and NC-DWQ if these imperatives are not met. We have the basic right to live where we are and not have our wells contaminated; indeed we have ZERO alternatives in this matter and we will not move away from the problem.

I would be very happy to discuss this with anyone who has corrections, questions or statements on this matter,

Yours truly,

Howard Hoyt
I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely,
Darren Dlugo
Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's application for a wastewater permit modification, Permit No. WQ0023896.

As an Orange County resident in the affected area, I have been shocked at how poorly the university has conducted itself in this manner. I fail to see how the state could responsibly approve expanding a wastewater plant that has so many previous violations, with no effort at monitoring local water quality.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you for helping to keep our drinking water safe,

Georg Buehler
Mr. Thornburg,

I'm writing to voice my concerns over the UNC Animal Research Facility's application for a wastewater permit modification, Permit No. WQ0023896.

My home and family land is located approximately one mile from this facility. Considering their history of problems and failures at this facility and their unwillingness to disclose such problems, I strongly urge you to deny this application.

James I. Allen
Thornburg, Nathaniel

From: Linda Hammock
Sent: Friday, August 24, 2012 8:09 AM
To: Thornburg, Nathaniel
Subject: UNC Animal Research Facility’s wastewater permit

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636
phone: (919) 807-6453
email: nathaniel.thornburg@ncdenr.gov

Dear Mr. Thornburg:

I’m writing to urge you to deny the UNC Animal Research Facility’s wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely,
Linda Hammock
Good Morning Nathaniel

When we chose to come to Earth, we promised to be good custodians for the life of this planet and all those who share life with us.

How are we doing so far?
Won't you help us help our beautiful planet!!
Please take a closer look at the UNC Animal Research Facility's request for a wastewater permit modification, Permit No. WQ0023896.

Thank you for your time.
Lyn Petrochuk
One with the Oneness of ALL
Thornburg, Nathaniel

From: [Redacted]
Sent: Friday, August 24, 2012 8:31 AM
To: Thornburg, Nathaniel
Subject: UNC Animal research facility

I’m writing to urge you to deny the UNC Animal Research Facility’s wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely,
Sherry Wilshire-Eshelman
[Redacted]
Dear Mr. Thornburg,

I was at the hearing Wednesday evening but did not speak. What I reflected on afterwards was that everyone locally in attendance came because they are afraid. For us, UNC has not acted like a good and trustworthy neighbor. They have broken the law, lied to us, stonewalled us, acted without transparency and in a manner no one would want a neighbor to act.

This facility is in actuality a multi, multi-million dollar industrial research center. If it were a normal business it would be subject to county ordinances, but by cloaking this industrial site in UNC clothing they can by-pass all the regulations the rest of us have to comply with. There is a complete lack of disclosure of what they are specifically doing, or plan to do.

One type of research sites like this do is to test pharmaceuticals to determine if they are safe enough for future human trials. Sadly for us the pharmaceuticals that are tested in this facility that may be found unsafe for human trials will already be dumped into our ground water. So we are afraid for our health and our children's health.

We have no way to compel them to act like good and proper neighbors, but you do. How they have evaded an E.I.S. having already acknowledged some toxic dumping (and we don't know what has gone unreported) just reinforces the perception they are a large commercial entity, bringing in millions of dollars to the university, but acting cavalierly towards the people most likely to be impacted by any toxic leftovers of their research.

Since we cannot make them do the right thing, we are asking you to help us achieve this goal.

Thank you,

Larry Green

(one mile from the site and using well water)
To: Nathaniel Thornburg

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely, Virginia Leslie
Dear Sir,

As a resident of southwestern Orange county, I appreciated the hearing held this week concerning ongoing UNC failures at the animal research facility. The main points were well covered at the meeting. What I wish to impress upon DWQ officials is that UNC has failed with the 2006 Environmental Impact Assessment in several well-documented areas-most notably undisclosed wetlands on the site, and then again with the 2009 wastewater spills for which DENR issued fines to UNC.

I do not see how a competent regulator could give UNC a pass at this time solely on the assurance of UNC officials. Bob Lowman of UNC said at the hearing "we made mistakes, and we (UNC) has learned from them." Dr. Lowman, who oversees this project for the University has a PhD in psychology. He is not a facilities expert, which in my opinion the University sorely needs, but an expert on human reactions and interactions. Please do not hoodwinked by a trained psychologist with a mea culpa. UNC operates in the dark for the most part. Only repeated public exposure and a full Environmental Impact Statement can demonstrate that UNC has indeed learned some lessons.

I commend the DWQ and the larger DENR for good work. I am aware this is not a politically easy time for the Department and impress upon you to do the right thing, as you are the only regulators with impact upon this matter.

Thanking you in advance,

Jack Pless
vice chairman
Preserve Rural Orange
I am writing to request that you deny the UNC Animal Research Facility’s wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

A PAST, PRESENT, and FUTURE ENVIRONMENTAL IMPACT STUDY SHOULD BE DONE BY AN INDEPENDENT AGENCY WHO WOULD HAVE NO CONFLICT OF INTEREST WITH UNC-CH!! THIS ONLY MAKES LOGICAL SENSE IN THE LIGHT OF UNC’S PAST ILLEGAL ACTIONS AND NON-TRANSPARENT ACTIVITIES....

IF THESE STUDIES ARE NOT DONE.. IT WILL BE APPARENT TO THE PUBLIC, THAT YOU DO NOT HAVE ANY INTEREST IN PROTECTING THE ENVIRONMENT. AT THIS POINT, THE PUBLIC WILL PUSH FOR MORE AND CONTINUED RESTRUCTURING OF YOUR AGENCY.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

VERY TRULY YOURS,
MYRA M. DOTSON, CHAIR
SEWAGE SLUDGE ACTION NETWORK
Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you for your consideration.

Tom Schopler
Thornburg, Nathaniel

From: Nathan Bearman
Sent: Friday, August 24, 2012 12:00 PM
To: Thornburg, Nathaniel
Subject: UNC Animal research facility

Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's application for a wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Nathan

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Nathan Bearman
Thornburg, Nathaniel

From: Megan O'Connell
Sent: Friday, August 24, 2012 12:11 PM
To: Thornburg, Nathaniel
Subject: Wastewater

Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you.
Megan O'Connell
Thornburg, Nathaniel

From: allen bose
Sent: Friday, August 24, 2012 1:10 PM
To: Thornburg, Nathaniel
Subject: research center water

Who could foresee that the Mississippi River would EVER be too shallow for a paddleboat? Mark Twain would be appalled. We should all be appalled and also afraid because humans have interfered with the earth's water cycle until it has broken.

Pumping over 3000 gallons of water out of the ground everyday for one research project is not something we should be doing. As you know, groundwater supplies 99% of our drinking water and the earth's population is already 3.5 times what the earth's groundwater can sustain.

The local environment cannot sustain the over 3000 gallons of wastewater to be sprayed daily on the property. The quality of the area's groundwater would eventually be degraded through percolation. Runoff from the frequent intense rainstorms we now experience will carry wastewater-sodden soil into the creek running through the property and then into the waterways that empty into the Haw River.

We request that the NC Division of Water Quality do its job of protecting the quantity and quality of our aquifer-supplied wellwater and local surface waters with an Environmental Impact Statement. The university has not done a good enough job of evaluating the environmental effects of its plans and actions. Thank you.

Allen Bose
Thornburg, Nathaniel

From: LYNN D LEATH
Sent: Friday, August 24, 2012 1:20 PM
To: Thornburg, Nathaniel
Cc: PRO
Subject: UNC Animal Research Facility

Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undiscovered wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

LYNN LEATH
Mr. Thornburg:

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely,

Susan B. Kilzer
Thornburg, Nathaniel

From: Clifford Leath
Sent: Friday, August 24, 2012 3:13 PM
To: Thornburg, Nathaniel
Cc: Laura Streitfeld, Alex Castro, Tom Schopler, Jack Pless, Lynn Leath
Subject: UNC wastewater hearing at White Cross Rec Center on 8.22.12

Dear Sir,

I am an adjoining neighbor with the UNC Bingham Animal Research Facility. I spoke at the hearing in White Cross this Wednesday. I have concerns about the proposed water usage out of the aquifer that our neighbors are also depending on for their water needs. While we neighbors are conserving water UNC is wastefully (no pun intended) using over 3,000 gallons per day. Also of concern is the spraying of waste water near the road and in dry conditions. I have concern about this water contaminating our environment. Also of concern is the proposed use of dry bedding for the research animals. This could pose a fire hazard, and since the facilities do not have sprinkler systems or a water holding tank, water would have to be used from the aquifer or pumped and hauled from surrounding ponds.

I believe that UNC has been irresponsible in their construction and management of the site evidenced by the spill of thousands of gallons of water into Collins Creek.

I strongly recommend that a new Environmental impact Assessment be done before anything is agreed upon as far as UNC's proposed new waste treatment facility. Thanks for your good work in documenting the spills and allowing for our hearing, and I trust that you will give serious consideration before you allow UNC to further jeopardize our environment and environs!

Thanks for your time and consideration,

Clifford T. Leath
Resident
August 26, 2012

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

Dear Mr. Thornburg:

I appreciated the opportunity to speak to the Division of Aquifer Protection regarding the waste management permit for the UNC Animal Research Facility at the White Cross Recreation Center on August 22, 2012.

The draft permit is incomplete and a full assessment could not be made of the proposed waste management process to be permitted as several key documents were not included in the available online draft. The previous permit was based on an animal holding area with waste management suitable for farm waste disposal operations. Now is the time to evaluate the UNC Animal Research Facility for what it actually is—an important part of medical research and a facility that should have a full Environmental Impact Statement and adequate waste treatment based upon the effluent's chemicals, botanicals, and other elements. To date, that has never been done. UNC should want the EIS and to know what is in the effluent so that it can be safely discharged via irrigation or other methods—depending upon the analysis of the waste water.

A key question the Aquifer Protection Section should be asking is what is in the waste effluent to be irrigated? Since the process of sewage treatment is only secondary and not the usual tertiary expected for irrigated effluent; has anyone ever done a full TCLP (Toxicity Characteristic Leaching Procedure) and WET test (Whole Effluent Toxicity) on the irrigated waste water? Has anyone ever done a test on the triclosans in the waste water? Has UNC stated the types of surfactants they will use to clean the animal confinement areas (estimated to be 1 million gallons of water per permit data extrapolation)?

Since chlorine is the major chemical planned to kill or reduce bacteria and viral elements of the effluent; has anyone given any thought to the synergy of chlorine and triclosan when exposed to UV light—(becoming Dioxin)? The National Toxicology Program has reported that trihalomethanes which are the by-product of water chlorination along with epidemiological studies also suggest that introduction of these elements into surface, ground, or municipal waters could increase the incidents of colorectal cancer in humans. (NIEHS, 1993 Melnick, Dunnick, Sandler, Elwell and Barrett)

I would like to share some information and a modified table of aerosol transfers from irrigation and residuals applications. Since the irrigation at the UNC Facility will be effluent, you can see that the transfer of mist and aerosols from irrigation may travel great distances into the community. This information was compiled by Dr. Edward McGowan, a retired WHO board certified physician (surgery, internal medicine and dermatology), and medical geo-hydrologist after 40 years working around the world with nations to create safe drinking water. He has reviewed all data on the UNC Research Facility and had concerns regarding the transmission of bacteria and viral elements into the community at large, especially the risks of antibiotic resistant bacteria. (See WEF, Rose, and Pruden studies)

From Tellier's tables, Dr. McGowan generated a small series of curves, the base data for which are noted below (R Tellier - Emerg Infect Dis, 2006 Nov;12(11):1657-62. ncbi.nlm.nih.gov)

**TABLE**

Assumptions: 5 mph** average wind speed, laminar flow. In an open flat area such as farmland laminar flow would need to be considered.
Particle Diameter...............Settling Time........Distance at wind speed 5 mph**

100 uM..........................10 sec..................44 ft
20 uM..............................4 minutes...............1780 feet
10 uM..............................17 minutes.............7480 feet (1.4 miles)
5 uM.................................62 minutes..........approx 5 miles
< 3uM.................................These essentially will not settle.

* Adapted from Tellier’s work.
** 5 mph is about as fast as a rapid walk.

Note: The median diameters at which particles exhibit aerosol behavior also corresponds to the size range that will reach the deepest recesses of the respiratory tract (lungs).

Assume that a 10uM particle settles in 17 minutes from a drop height of 3 M; in a 5 mph wind with laminar flow it moves 7,480 ft from the release point (about 1.4 miles).

As a medical research facility, I think the waste treatment system must be tertiary because the facility is processing human as well as animal waste, and that the irrigation pathways changed to prevent any contamination of public roadsides.

Please review this permit to ensure public health is protected as well as the environment. This issue needs to be put to rest. Most of us are either graduates of UNC or employees and this is degrading for our community to have to fight to protect our health from our neighbor, employer, educator and assumed friend.

Nancy Holt
Carolina Concerned Citizens
Thornburg, Nathaniel

From: Bryna Rapp
Sent: Tuesday, August 28, 2012 11:39 AM
To: Thornburg, Nathaniel
Subject: Permit No. WQ0023896

Mr. Thornburg,

I am writing to ask you to deny the UNC Animal Research Facility’s wastewater permit modification and to recommend that they complete Environmental Impact Assessment.

Those of us who live out here are completely reliant on our well water and cannot afford to have UNC contaminating or depleting those wells. We have no alternative water source. These operations appear to be inappropriate for this area given the amount of water used and the contaminates in the waste water. I believe an impact assessment would shine light on that and lead to an alternative solution.

We appreciate the public hearing that was held last week and the opportunity to express our concerns.

Sincerely,

Bryna Rapp
From: Helen Davidson Tapper [REDACTED]
Sent: Wednesday, August 29, 2012 11:09 AM
To: Thornburg, Nathaniel
Subject: UNC Animal Research Facility

Dear Mr. Thornburg,

I’m writing to urge you to deny the UNC Animal Research Facility’s wastewater permit modification, Permit No. WQ0023896.

As a local resident, I am very concerned about their 3500 gallon/day water usage, especially given the possibility of drought and citizen well dry up. Additionally, I believe that we citizens have a right to know exactly what kind of research waste they are generating, and I hope that you share our strong desire to know this information before permitting them to spray it back into the earth.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you,
Helen Tapper
[REDACTED]
Thornburg, Nathaniel

From: C B [REDACTED]
Sent: Thursday, August 30, 2012 12:26 PM
To: Thornburg, Nathaniel
Subject: No unc wastewater in the haw!

We are destroying the haw. It cannot be undone once fouled.....

Please stop further destruction

STOP!
Thornburg, Nathaniel

From: C B [REDACTED]
Sent: Thursday, August 30, 2012 12:29 PM
To: Thornburg, Nathaniel
Subject: Stop haw destruction

Please consider a stuch in time to save nine...

The haw is on the cusp of being "Lake Erie on fire" is that what we want?
Mr. Thornburg, et. al,
I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

As a resident living within 2 miles of this facility I believe that without extreme oversight UNC will continue its tradition of non-compliance to existing environmental laws and regulations. As a result, our neighborhood and water supply will suffer greatly. It seems to me that as a governmental entity the University feels they should be exempt from the rules that apply to the rest of us. I encourage you to deny the permit modification.

Sincerely,
Rhett L. Macomson
Thornburg, Nathaniel

From: Gary Simpson
Sent: Thursday, August 30, 2012 5:02 PM
To: Thornburg, Nathaniel
Subject: Permit No. WQ0023896

Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Sincerely,
Gary Simpson
Dear Mr. Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

We live perhaps 3 miles from the facility and so are neighbors. Unhappy ones, with a well that undoubtedly shares some of its resource ground water with this same facility.

On this go-around of their work on their facility in our backyard, UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system. As you can imagine, we are not looking forward to the results.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to which we can hold UNC accountable: for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

I have no interest in hampering the legitimate scientific work of this facility -- but I have a great stake, in myself, friends, neighbors, children and land to keep our home and water clean and healthy. As a homeowner, I can make only minimal changes to my land or home without county approval. The process can often be lengthy -- how can UNC operate with so little regard for its neighbors welfare?

Much appreciation for your attention to this issue.

Best,

Richard C. Tapper
Thornburg, Nathaniel

From: Wallace Williams
Sent: Thursday, August 30, 2012 7:49 PM
To: Thornburg, Nathaniel
Cc: info@preserveruralorange.org
Subject: Deny UNC's wastewater permit

Dear Mr. Thornburg,

There is ample evidence that UNC’s Animal Facility does not follow the rules and in fact, tries to hide problems.

There has been little research, none that we have heard of in our area even though we are only a few miles from the facility, of the drugs and contaminants that may be in its wastewater leaching into our water table.

The surrounding residents have valid reasons to worry about the water they drink! This facility does not belong in an area that relies on well water. It not only uses to much water but its wastewater has the potential of causing permanent damage to area wells.

To my knowledge, UNC pays no taxes for its facilities. Tax paying residents expect and demand that they be protected for the tax dollars they provide to Orange County. How would Orange County provide water to area residents should our worst fears materialize?

This permit should have been denied long ago and the facility moved to a more appropriate area.

Sincerely,

Wallace and Robin Williams
From: J J Freeland [REDACTED]
Sent: Friday, August 31, 2012 7:32 AM
To: Thornburg, Nathaniel
Subject: Protect Haw River watershed

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.
Thornburg, Nathaniel

From: Heather Main
Sent: Friday, August 31, 2012 12:43 PM
To: Thornburg, Nathaniel
Subject: UNC Animal Research Facility

I’m writing to urge you to deny the UNC Animal Research Facility’s wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed. UNC needs to obey environmental protection laws as the rest of us do. The Haw River needs to be cleaned up. Keep our rivers and ground water clean.

Thanks,

Heather Main

--
FROM: Nathaniel Thornburg
Division of Water Quality
Aquifer Protection Section
1636 Mail Service Center
Raleigh, NC 27699-1636

TO: Nathaniel Thornburg
Division of Water Quality
Aquifer Protection Section
1636 Mail Service Center
Raleigh, NC 27699-1636

FROM: Margaret Heath, 40+ year Orange County resident

RE: Please DENY UNC Permit No. WQ0023896, wastewater permit for "The Farm"

DATE: September 1, 2012

Dear Dr. Thornburg:

I do not believe your agency should issue "Permit WQ0023896" for the UNC Animal Research Facility in Orange County. UNC's historical use of the property for animal-based research has always been a MISUSE of land in the rural buffer - and they should not have been allowed to establish this operation in the first place. And certainly, subsequent wastewater leaks and reported dumping at the site confirm that UNC cannot be relied upon to run such a facility in rural Orange County.

Any applications that are accepted for this facility by UNC, however, should require an Environmental Impact Statement.

Thank you!

Margaret Heath
Thornburg, Nathaniel

From: Deanna Rowan
Sent: Saturday, September 01, 2012 3:55 PM
To: Thornburg, Nathaniel
Subject: UNC-The Farm Permit Application

Mr. Thornburg:

As an Orange County resident and taxpayer as well as animal advocate, I urge you to deny the application by UNC for a permit to continue operating The Farm facility for animal research. Considering the potential waste hazard and pollution to waterways in western Orange County, UNC should discontinue animal research at this or any other facility as have many other universities and colleges in our nation who have chosen to use alternative methods to animal use. UNC has more than once encroached on the rights of Orange County residents on this and other issues using its prestige and financial clout to get its way. Let's keep Orange County green and clean!

Thank you for your consideration on this issue.

Deanna Rowan

"The wind of heaven is that which blows between a horse's ears"...Arabian proverb
Like many of my neighbors...I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Linda G. Ikenberry
Dear Mr. Thornburg,

I am a recent member on the board of Preserve Rural Orange (PRO). That said this appeal to the Division of Water Quality regarding the University of North Carolina’s Animal Research Facility comes without PRO’s oversight and/or approval.

As property owners located within two miles of the University’s operation, my husband and I are very concerned about water quality and quantity issues. The purpose of this letter is to ask that you require a thorough analysis of the environmental impact that UNC’s proposed operation will have on this well-water based community before a waste water permit is considered.

Two years ago and 20 acres away from us a new, 5,000 square-foot home burned to the ground despite the heroic work of the White Cross Volunteer Fire Department. The department trucked in tank after tank of water from miles away around the clock. Obviously this was a horrifying experience for the homeowners and everyone else in this heavily-wooded community. We subsequently gave the volunteers unlimited access to our pond in the event of another fire in rural Orange County.

But our pond, as well as those of our neighbors, is down. And they have all been so for the last five years because, as must be clear to everyone by now, we are in a long-term drought. And, as any casual observer can see, this is not just a rural problem. Even in the dead of winter University Lake is low – a fact that Orange Water and Sewer (OWASA) broadcasts on a weekly billboard. For those of us who think that our most precious dwindling resource is not so much oil as it is water, the report is alarming.

It is one egregious matter that UNC has already dumped gallons of toxic animal waste in our drinking water. It is another matter altogether that the university might be allowed to tap this community’s precious water, however polluted, without so much as an unbiased analysis of where more water will come from in the event of another fire.
We implore you, as guardians of our water quality and, therefore, quantity, please subject UNC to an environmental impact study before permitting it to go forward with what seems to be a very ill-defined expansion plan in rural Orange County.

Thank you.

John and Robin Gallagher
Nathaniel Thornburg
Division of Water Quality
Aquifer Protection Section
1636 Mail Service Center
Raleigh, NC 27699-1636

Please do not issue a wastewater permit modification, No. WQ0023896, to the UNC Animal Research Facility in Orange County. UNC is not trustworthy after submitting a false 2006 Environmental Assessment; they didn’t disclose multiple illegal wastewater discharges that had a negative impact on wetlands, creeks, and groundwater. In addition, UNC cannot be allowed to spray treated waste water from the research on the land that is in Haw River watershed to Jordan Lake. UNC’s Facility for animal-based research has been a deplorable misuse of land in the rural buffer. At the very least they should be required to prepare an Environmental Impact Statement in order to hold them accountable for future misdeeds. My personal view is that animal based research has no place in modern science, nor in a progressive community, and must be replaced with non-animal models.

Sincerely,

Savannah Scarborough
Dear Mr. Thornburg,

I provided oral comments at the meeting, but wished to follow up with more information about the study to which I referred during my comment period: "Susceptibility of Ground Water to Surface and Shallow Sources of Contamination, Orange County, North Carolina" by Silvia Terziotti and Jo Leslie Eimers, 1999. USGS Open file report 99-179.

In the study, the authors create relative susceptibility categories for ground water contamination across the area of Orange Co. In Figure 4, they display a map of Orange county overlaid with color-coded categories of risk. Upon examination of Figure 4, it appears that the UNC facility on Orange Chapel Clover Garden Rd. falls into an area designated as high risk for ground water contamination.

For this reason alone, their permit should be denied. As the Environmental Management Commission states in DENR’s "Classifications and water quality standards applicable to the groundwaters of North Carolina" (2010), "the best usage of the groundwaters of the state is as a source of drinking water". The operation of this facility as proposed, places the sole drinking water source for local residents at high risk for contamination and is therefore a hazard to the public health in our community.

Elizabeth Hilborn
Thornburg, Nathaniel

From: Maria Castro
Sent: Monday, September 03, 2012 6:23 PM
To: Thornburg, Nathaniel
Subject: UNC animal facility in Bingham township

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636
phone: (919) 807-6453
e-mail: nathaniel.thornburg@ncdenr.gov

I'm writing to urge you to require additional info from UNC for the Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you,

Maria Castro
A dog's status as "man's best friend" offers him no protection from being locked in lonely cages and forced to endure excruciating experiments. Hearing the steady sound of discontented, bellowing canines coming from the antiquated cruel animal UNC research lab is heart breaking. These poor animals; an estimated 120 of them, are subjected to cruelty on a daily basis.

We have no idea what these animals are enduring; they have no “real” life at all. How, how, how in the world can this continue? Please, as a human, be humane and shut down UNC’s Dog Research Facility. Find homes for these poor animals and let them enjoy the loving touch of their master’s hand, a touch of love rather than insensitivity, cruelty and death.

Respectfully submitted,

Margaret Cash
Dear Mr. Thornburg:

Please do deny the permit that the UNC Animal Research Facility is requesting that relates to wastewater permit modification, Permit No. WQ0023896.

From my reading of the articles linked to on the Preserve Rural Orange.org website, I believe that an Environmental Impact Statement should be performed that would provide detailed information about the likely consequences and costs of UNC-CH’s request to expand the acreage over which their wastewater spray will be distributed. This facility may be discharging biohazardous waste from sick animals that have been used as models for diseases. It may be more than simple fecal bacteria contamination. Local residents should hold UNC CH accountable. UNC-CH should absolutely not be trusted to keep promises that they will do better. I would like to see this facility closed permanently. But please do not allow any expansion of this facility’s operations before the university is required to provide careful study of the situation, so that the information would be available to the public. Please use existing regulations to hold the university accountable for providing "transparency" about their entire operations and future operations at this site. Thank you very much.

sincerely,

Lisa Greenbaum
Dear Mr. Thornburg,

I hope that this e-mail finds you well. I recently found out that UNC has re-applied for a permit modification to expand its failed wastewater system at 1907 Orange Chapel Clover Garden Road in southwest Orange County. I also just learned (from a friend who was passing by and could hear the dogs yelping in distress) that UNC has an Animal Research Center at this site. Please, I beg you not to approve their application.

Dumping waste in this area in addition to testing on dogs -- man's best friend -- is no good for the county! Please, make the morally correct decision.

Best wishes,
Kate Thomas
Dear Nathaniel,

I have the following concerns regarding this facility:

- The proximity of the facility to family homes and school bus stops
- The huge quantities of water required, ostensibly for the “domestic” use of 35 employees without sufficient explanation, suggesting on its face that information is being withheld
- The facility drawing its water from the single available source of drinking water for neighboring families at a time when we face frequent droughts and water shortages
- Spraying waste water into the air the neighboring families breathe without publicly revealing what is in the waste
- Spraying onto land that drains or perks into groundwater and a neighboring creek, possibly polluting families’ wells, Collins Creek, the Haw River watershed, and ultimately Jordan Lake
- The property being declared a wetland, and in 1998 labeled by the US Geological Survey to be at high risk for groundwater contamination
- UNC’s pattern of secrecy, repeated violations of regulations, and broken promises to neighbors, all of these suggesting it has not acted in good faith, and all without suffering any consequences

I would like to submit the following requests:

- That a comprehensive environmental impact study, including testing of all wells surrounding the facility, be completed and submitted to public scrutiny and discussion
- That all possible alternatives, including closing the facility, be explored before investing millions of tax dollars in a facility that is problematic for numerous reasons and, according to a UNC representative who spoke at the public hearing, is slated to be closed anyway in the not-too-distant future
- That UNC be held fully accountable for providing accurate information to the public and for any damage they may have caused to surrounding families and the environment

I also request that, should the project go forward, additional safeguards—including frequent monitoring, timely action, transparency and accountability—be put into place to insure that the health and safety of area residents and the environment are protected in the future, not only on paper but in reality.

Thank you for your attention and time,

Tali Horn
To Whom it may concern:

I am an immediate neighbor of the UNC Animal Research facility. On two earlier occasions the university has taken shortcuts that have had an impact on my quality of life:

- installation of a telecommunications manhole in the center of my front yard
- placement of a loud HVAC system in close proximity to dwellings on my property

In these cases the University admitted there were mistakes and made significant corrections, but the remedies are at most just tolerable. At least in these cases the damage is limited to aesthetics and tranquility. However a similar mistake with the proposed upgrades to the current water systems could render my property uninhabitable.

All state and county permitting processes should be observed and completed. Your office has the power to assure that no shortcuts are taken by denying this application, Permit No. WQ0023896, until a full environmental Assessment and Impact Statement have been completed and provided for review.

The greatest tragedy would be if a mistake could have been avoided and it wasn't.

With regards,

Hiawatha Demby
Thornburg, Nathaniel

From: Carolyn Cole
Sent: Tuesday, September 04, 2012 11:58 AM
To: Thornburg, Nathaniel
Cc: info@preserveruralorange.org
Subject: Deny UNC Wastewater Permit #WQ0023896 and require an environmental Impact statement

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

Dear Mr Thornburg,

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896. Approving it at this point in time does not make good sense given the history of UNC’s actions to date.

UNC constructed a faulty wastewater system after submitting an inaccurate and incomplete Environmental Assessment in 2006. The university has not yet disclosed the impacts on wetlands, creeks, and groundwater of multiple illegal wastewater discharges in 2009 and 2010 that led to a shut-down of the system.

Before issuing any permits for this facility, please recommend requiring UNC to prepare an Environmental Impact Statement to hold UNC accountable for detailed information on the consequences of multiple illegal discharges, equipment failures and violations at the facility including a road and wastewater spray fields built on undisclosed wetlands. An EIS would also ensure that UNC explores alternatives to the proposed project in order to minimize environmental impacts on the Haw River Watershed.

Thank you for considering this request for denial and requiring an environmental impact statement.

Sincerely yours,

Carolyn Cole
I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

All permit decisions made by DENR on water permits must evaluate the cumulative effect of that decision on other permit decisions. In this case, there were apparently illegal filling of wetlands and other unpermitted activity which has not been addressed. UNC should be held to account for those violations at least through an SOC or some other action. Giving them a permit without correcting past harms or considering the permit’s impact on those past actions is wrong.

Given the size of this plant and the fact that public funds are being used to build it, SEPA should be triggered and followed. Residents have called for a full EIS and I join their call. While I do not represent them, I support their request.

Thanks,

Ryke

RYKE LONGEST
Ricardo Hernandez

August 28, 2012

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

As citizens of Orange County, we are responding to the proposed modification to permit WQ0023896 requesting to upgrade the UNC Animal Research Facility (Bingham Facility).

We submit the following requests:

- **That a comprehensive environmental impact study**, including testing of all wells surrounding the facility, be completed and submitted to public scrutiny and discussion
- That all possible alternatives, including closing the facility, be explored before investing millions of tax dollars in a facility that is problematic for numerous reasons and, according to a UNC representative who spoke at the public hearing, is slated to be closed anyway in the not-too-distant future
- That UNC be held fully accountable for providing accurate information to the public and for any damage they may have caused to surrounding families and the environment.
We have a long list of concerns:

- The huge quantities of water required, ostensibly for the “domestic” use of 35 employees without sufficient explanation, suggesting on its face that information is being withheld
- The facility drawing its water from the single available source of drinking water for neighboring families at a time when we face frequent droughts and water shortages
- Spraying waste water into the air the neighboring families breathe without publicly revealing what is in the waste
- The property being declared a wetland, and in 1998 labeled by the US Geological Survey to be at high risk for groundwater contamination
- UNCh's pattern of secrecy, repeated violations of regulations, and broken promises to neighbors, all of these suggesting it has not acted in good faith, and all without suffering any consequences

We thank you for your attention to our concerns.

Sincerely, Ricardo Hernandez
Santiago Hernandez

August 28, 2012

Nathaniel Thornburg

Division of Water Quality, Aquifer Protection Section

1636 Mail Service Center, Raleigh, NC 27699-1636

_I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896._

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• That UNC be held fully accountable for providing accurate information to the public and for any damage they may have caused to surrounding families and the environment.

We thank you for your attention to our concerns.

Respectfully,

Santiago Hernandez
Hi Nathaniel,

Attached are my comments from the August 22nd DWQ public hearing on Draft Permit # WQ0023896 for the UNC Animal Research Facility's proposed wastewater permit modification.

In a separate message, I will send a detailed list of items of concern from Preserve Rural Orange.

Thank you,

-Laura Streitfeld

--
Laura Streitfeld
Executive Director, Preserve Rural Orange

Email laura@preserveruralorange.org
Phone (919) 593-5411

Preserve Rural Orange
P.O. Box 1314
Carrboro, NC 27510

-------- Original Message ---------
Subject: Deny Proposed Permit No. WQ0023896.
From: Ryke Longest
Date: Tue, September 04, 2012 12:58 pm
To: "nathaniel.thornburg@ncdenr.gov" <nathaniel.thornburg@ncdenr.gov>

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All permit decisions made by DENR on water permits must evaluate the cumulative effect of that decision on other permit decisions. In this case, there were apparently illegal filling of wetlands and other unpermitted activity which has not been addressed. UNC should be held to account for those violations at least through an SOC or some other action. Giving them a permit without correcting past harms or considering the permit’s impact on those past actions is wrong.

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Thanks,
APPENDIX L

MAILED PUBLIC COMMENTS
Christina Sinatra

August 31, 2012

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

I'm writing to urge you to deny the UNC Animal Research Facility's wastewater permit modification, Permit No. WQ0023896.

As citizens of Orange County, we are responding to the proposed modification to permit WQ0023896 requesting to upgrade the UNC Animal Research Facility (Bingham Facility) in southwest Orange County.

We submit the following requests:

- **That a comprehensive environmental impact study**, including testing of all wells surrounding the facility, be completed and submitted to public scrutiny and discussion
- That all possible alternatives, including closing the facility, be explored before investing millions of tax dollars in a facility that is problematic for numerous reasons and, according to a UNC representative who spoke at the public hearing, is slated to be closed anyway in the not-too-distant future
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We have a long list of concerns:

- The proximity of the facility to family homes and school bus stops
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- That UNC be held fully accountable for providing accurate information to the public and for any damage they may have caused to surrounding families and the environment

We also request that, should the project go forward, additional safeguards—including frequent monitoring, timely action, transparency and accountability—be put into place to insure that the health and safety of area residents and the environment are protected in the future, not only on paper but in reality.

We thank you for your attention to our concerns.

Respectfully,

Christina Sinatra
Preserve Rural Orange comments
NC DWQ draft wastewater permit modification #WQ0023896
UNC Animal Research Facility, Bingham Township, Orange County, NC

Aquifer Protection Section

Despite any permits are considered for the UNC facility, Preserve Rural Orange (PRO) urges the Division of Water Quality to review the items detailed below. Given numerous and significant concerns, PRO asks the DWQ to take the following steps:

- Deny UNC’s application to modify the wastewater permit for the UNC Animal Research Facility.
- Require UNC to prepare an Environmental Impact Statement, following SEPA process for a publicly funded project on public land.

Citizens are concerned that the draft permit would result in the following:

1. Allow UNC facility to use existing 2.12-acre spray field that was shut down by DWQ in 2010. “Prior to construction of Fields 1 through 4, the Permittee shall operate and maintain Field A at the specified rates.” (Attachment B, draft permit)
2. Expand UNC spray irrigation acreage to 5.72 acres, more than doubling what was previously permitted, while reducing the hourly rate limit from 0.75 to 0.22 and reducing the yearly maximum application limit from 24.09” per year to 10.92” per year.
3. Allow spray irrigation unnecessarily in added acreage on open fields with high likelihood of wastewater particles drifting onto properties along the main road where children wait for the school bus, cattle graze, and neighboring homes face the UNC property.
4. Allow failed, deemed permitted and previously permitted UNC wastewater lagoons and pump station to be decommissioned and rebuilt without first assessing impacts of illegal discharges from improperly constructed and sited, leaking wastewater systems on creeks, wetlands, soil and groundwater.
5. Classify UNC industrial research laboratory and pharmaceutical waste as “100% domestic.”
6. Allow a facility with ten employees to generate and spray 3,556 gallons per day of “100% domestic” waste without precise information on composition and sources of wastewater.
7. Allow UNC to spray wastewater on Haw River Watershed land without first identifying pharmaceutical and chemical content.
8. Allow UNC to expand wastewater system without sufficient safeguards and notification procedures to protect water quality and availability on adjacent and downstream properties.
9. Allow UNC to expand poorly sited wastewater infrastructure before identifying cumulative and secondary impacts and exploring all alternatives to the proposed project.
10. Allow UNC to continue operations without identifying and mitigating impacts of previous intentional wastewater discharges into Collins Creek, which is listed as impaired downstream from the UNC facility.
11. Allow UNC to store dry bedding and soiled bedding in buildings with wooden roofs, without specifying volume or storage locations. Dry and soiled bedding is a fire hazard, potentially requiring large draws of well water.

The mission of Preserve Rural Orange is to preserve, strengthen and defend the viability of the rural community of watershed land, farms and woodlands in Orange County, North Carolina.
12. Allow UNC to operate a new 66-ton bulk LP (propane) plant deliberately positioned to send propane to settle at the creek in case of a leak, according to Bob Lowman. UNC installed the new bulk LP plant, concrete pad and road in 2011 without county site plan approval, replacing the facility's previous LP plant that operated without required authorization from the NC Department of Agriculture & Consumer Services.


14. Allow wastewater irrigation before doing hydrogeologic testing to identify location of geologic formations including dike that could result in rapid seepage and water contamination.

15. Allow limited monitoring that does not include samples from neighboring wells, the recently capped facility well or samples from locations where wastewater spilled onto the ground.

2006 Environmental assessment inaccurate and incomplete

Permitted wastewater systems that later failed were constructed based on an inaccurate and incomplete 2006 environmental assessment prepared by UNC consultant S&ME. UNC's current proposed wastewater permit modification warrants a full Environmental Impact Statement. Until UNC fully discloses details of impacts and alternatives in an EIS. DWQ does not have sufficient information to determine historic or future impacts of the UNC facility wastewater system, or whether there are less environmentally damaging alternatives to increasing the acreage of wastewater spray fields.

Inaccurate & incomplete information (source: 2006 EA)

1. UNC: "No wetlands" in study area or project area on UNC facility property. In 2010, UNC disclosed that wetlands were filled in to build an access road and deemed permitted wastewater spray irrigation fields with faulty equipment.

2. UNC: "No impacts on surface waters" from proposed project. In 2009, an illegal wastewater discharge went on for 52 days, reaching a tributary of Collins Creek.

3. UNC: Neighbors of the facility are "widely scattered." Neighbors' homes surround the UNC property. Several are within the 500-foot area of interest on 2012 draft permit site map.

4. UNC: "No existing structures will be demolished as part of the Proposed Action, and no existing structures will be renovated." Following this EA, UNC renovated Building 1.

5. UNC: "Primary noise source: Old Fayetteville Road...north of the project site." Old Fayetteville Road is ten miles east of the UNC facility, in Carrboro.

6. Missing: details about an unspecified period after UNC purchased the 56-acre property in 1971, when the university intentionally discharged wastewater with unknown contents into Collins Creek (source: 2008 UNC handout to neighbors).

7. UNC: "BMPs for stormwater management, such as stormwater storage and infiltration techniques, will be developed and implemented." 

8. UNC: "After preparation/review of this EA, UNC Chapel Hill has concluded there is a Finding of No Significant Impact (FONSI) and will not be preparing an Environmental Impact Statement (EIS)."
(continued)

Series of incidents at UNC Animal Research Facility

2007: Rural research campus construction: no public notice
- New building; "Deemed permitted" wastewater system built without engineer certification
- Neighbors learn of UNC plans by finding UNC surveyor’s tape on neighboring properties

2009: Wastewater lagoons & systems fail
- PRO requests facility public records of operations; UNC asks for $5,000 advance fee to inspect (not copy) partial records.
- Multiple illegal wastewater discharges; neighbors are never notified, leaking wastewater is not sampled

2010: Violations of federal, state & local regulations
- DWQ revokes wastewater system permit
- Toxic solvents contaminate septic system
- UNC shuts down failed waste systems
- UNC discloses: waste spray fields & road are built on wetlands in violation of Clean Water Act
- NIH inquires about infrastructure failures; UNC returns $14.5 million stimulus grant to NIH
- UNC hires McKim & Creed consultants
- UNC pledges transparency, compliance, communication of plans with neighbors & public, testing of neighbors' wells (none has occurred)
- Facility plans shift repeatedly: hundreds of dogs; small animals only; hogs and dogs on dry bedding; dogs and small animals

2011: UNC pursues wastewater system expansion without public notice
- UNC applies for erosion control permit, wastewater permit modification and stormwater permit
- UNC fails to notify neighbors of DWQ permit applications

Non-compliance

1. Without proper permits, UNC: constructed two new buildings; built two failed wastewater systems and lagoons (one permitted, one deemed permitted); filled in wetlands to construct an access road and wastewater spray irrigation fields in violation of the federal Clean Water Act.
2. In 2009 UNC completed construction of water and wastewater systems at the facility without a required site-specific stormwater permit, and in 2010 UNC completed Building 3, also without a stormwater permit.
3. In 2011, UNC applied for a stormwater permit retroactively, requesting to extend the date back to cover existing, improperly built wastewater systems—systems that failed and were shut down a year and a half earlier after multiple DWQ violations resulted in a revoked wastewater permit.
   a. "Because both the 2009 Water and Wastewater System Improvements and Building 3 had not previously received a state stormwater permit from the North Carolina Department of Environment and Natural Resources Division of Water Quality (DWQ), this permit application is also submitted as an after the fact permit for both of these earlier projects." (source: UNC stormwater management permit application 2011)
4. From September 2011 through February 2012, UNC facility’s bulk LP plant received four warning letters about ongoing violations from inspectors at the NC Dept. of Agriculture and Consumer Services.
5. UNC built a 66-ton propane plant, concrete pad and access road in 2011 without seeking county site plan approval, replacing a previous bulk LP plant that was never authorized by the NC Dept. of Agriculture and Consumer Services.
Fire hazards and water use

1. Water limitations at the site raise questions about large, unspecified volumes of well water that would be needed to stop a fire at a site without municipal water.
2. UNC constructed two buildings with wooden roofing materials and no sprinkler systems.
3. The draft permit proposes keeping all animals on dry bedding, but fails to specify where dry and soiled bedding would be stored or how often it would be disposed of.
4. The new bulk LP plant at the UNC facility has two 18,000 gallon propane tanks that hold 66 tons of propane. NC Dept. of Agricultural & Consumer Services inspectors issued four warning letters about violations at the new plant.

Ongoing questions

UNC has not provided detailed information addressing the following issues pertaining to contents of the UNC facility’s wastewater:

1. Wash down chemicals
2. Pharmaceuticals in wastewater
3. Radioactive isotopes in wastewater
4. Biosafety level – since PRO inquired 3 years ago, the UNC facility still hasn’t shared protocols for handling waste, bedding or carcasses of squirrel monkeys and other animals quarantined at the site at risk of infectious diseases including tuberculosis.

UNC: lack of transparency and accountability

UNC did not notify neighbors of wastewater expansion plans, malfunctions, equipment failures or multiple illegal discharges at the facility. When PRO exposed illegal discharges in 2010, UNC facility director Bob Lowman pledged to notify neighbors and PRO of all permit applications and correspondence with NC DENR and to post all documents on a UNC facility web page. In 2011 UNC applied for erosion control, stormwater and wastewater permits without notifying neighbors or PRO or posting documents on the web page.

At several meetings with neighbors on 2010, Lowman and other UNC officials also committed to testing neighbors’ wells for contamination and for the impact on of large well water draws on neighbors’ water capacity. Lowman now states he does not recall agreeing to test neighbors’ water.

In addition to well testing, since 2009 neighbors have repeatedly asked UNC for standard operating procedures, notification and safety protocols and emergency plans in case of future incidents at the site. On several occasions at public meetings over the past two years, Orange County’s manager, planning director and a county commissioner have proposed measures to UNC to notify citizens in case of spills and other emergencies at the site, including: coordinate with the county’s telephone alert system; create emergency evacuation plans in case of a chemical leak or other toxic contamination; test and monitor neighbors’ water. UNC has not implemented any of these measures.

For two and a half years, UNC Associate Vice Chancellor Bob Lowman has told PRO and neighbors that the university’s Environmental Health director is working on protocols for testing water. Last week Lowman stated that he doesn’t recall agreeing to test neighbors’ wells.
(continued)

The long list of significant concerns and UNC's ongoing non-compliance make a strong case for the DWQ to subject UNC's proposed permit modification to the highest degree of scrutiny. To protect water and citizens, Preserve Rural Orange asks you to hold the UNC Animal Research Facility accountable with increased oversight and to require a full Environmental Impact Statement before considering any permits for the facility.

The university has repeatedly failed to uphold the public interest in protecting drinking water and surface waters from impacts of industrial waste from the UNC facility. An EIS would provide a comprehensive view of consequences of forty years of UNC facility wastewater in the watershed, as well as a thorough examination of alternatives to contaminating water at the site, on surrounding properties and downstream in Jordan Lake's regional drinking water supply.
As citizens of Orange County, we are responding to the proposed modification to permit WQ0023896 requesting to upgrade the UNC Animal Research Facility (Bingham Facility) in southwest Orange County.

We have a long list of concerns:

- The proximity of the facility to family homes and school bus stops
- The huge quantities of water required, ostensibly for the “domestic” use of 35 employees without sufficient explanation, suggesting on its face that information is being withheld
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We also request that, should the project go forward, additional safeguards—including frequent monitoring, timely action, transparency and accountability—be put into place to insure that the health and safety of area residents and the environment are protected in the future, not only on paper but in reality.

We thank you for your attention to our concerns.
Ricardo Hernandez

August 28, 2012

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

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We thank you for your attention to our concerns.
Sincerely,

Ricardo Hernandez

RECEIVED/DEHN/R/DWQ
SEP 04 2012
Aquifer Protection Section
Santiago B. Hernandez

August 31, 2012

Nathaniel Thornburg
Division of Water Quality, Aquifer Protection Section
1636 Mail Service Center, Raleigh, NC 27699-1636

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I especially object to UNC's pattern of secrecy, repeated violations of regulations, and broken promises to neighbors, all of these suggesting it has not acted in good faith.

Thanks for listening. We appreciate that you held the hearing, which I and my family also attended.

Respectfully,

Santiago Hernandez

[Signature]