Amy Harvey

From: Jeanette Coffin
Sent: Thursday, June 03, 2021 10:06 AM
To: Bruce Sinclair
Cc: CHRIS BLUE; Allen Buansi; Amy Ryan; Hongbin Gu; Jeanne Brown; Jess Anderson; Karen Stegman; Michael Parker; Pam Hemminger; Tai Huynh; Amy Harvey; Ann Anderson; Carolyn Worsley; Laura Selmer; Mary Jane Nirdlinger; Maurice Jones; Michael Simms; Rae Buckley; Ran Northam; Ross Tompkins; Sabrina Oliver
Subject: RE: Input on Coal Ash Removal from the Police Station Site

Thank you for your correspondence with the Town of Chapel Hill. The Mayor and Town Council are interested in what you have to say. By way of this email, I am forwarding your message to the Mayor and each of the Council Members, as well as to the appropriate staff person who may be able to assist in providing additional information or otherwise addressing your concerns.

Again, thank you for your message.

Sincerely,

Jeanette Coffin

Jeanette Coffin
Office Assistant
Town of Chapel Hill Manager's Office
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514
(o) 919-968-2743 | (f) 919-969-2063

From: Bruce Sinclair [mailto:bsinclair@nc.rr.com]
Sent: Wednesday, June 2, 2021 8:11 PM
To: Town Council <mayorandcouncil@townofchapelhill.org>
Subject: Input on Coal Ash Removal from the Police Station Site

My name is Bruce Sinclair. I am a resident of Carrboro, but have served as Chair of the Carrboro Environmental Advisory Board and Treasurer of the Friends of Bolin Creek; and now serve as a Regional Collaboration Member of the Chapel Hill Environmental Stewardship Advisory Board and a member of the Town of Carrboro Planning Board.

I attended the Joint Reviews and Public Input sessions on this topic.

I would like to express my views and concerns on the handling of the coal ash.

First, I would like to thank the Town of Chapel Hill for their work so far in remediation and the vast amount of public input they have solicited.

My major concern with trying to relocate the coal ash is whether the actual disturbance, removal, transport and relocation of the coal ash would pose more environmental risk than trying to the greatest extent possible to safely encapsulate the ash on site. In addition, I am concerned about the Environmental justice issue of moving the ash to a location in an under-served, under-represented community. Our waste should not become another community's problem - not to mention the residual ash that would be scattered along the route of transport.

In summary, in order to mitigate social and environmental damage, I would appeal to the council to prioritize encapsulation and redevelopment plans that minimize disturbance over relocation of the coal ash.

Thank you for your consideration in this matter.

Bruce Sinclair
Carrboro

Amy Harvey

From: Jeanette Coffin
Sent: Thursday, June 03, 2021 10:08 AM
To: mkimball@selcnc.org
Cc: Colleen Willger; CHRIS BLUE; Allen Buansi; Amy Ryan; Hongbin Gu; Jeanne Brown; Jess Anderson; Karen Stegman; Michael Parker; Pam Hemminger; Tai Huynh; Amy Harvey; Ann Anderson; Carolyn Worsley; Laura Selmer; Mary Jane Nirdlinger; Maurice Jones; Michael Simms; Rae Buckley; Ran Northam; Ross Tompkins; Sabrina Oliver
Subject: FW: Coal ash at 828 MLK Jr. Blvd
Attachments: 2021-06-02 SELC letter to Town Council re 828 MLK Jr. Blvd.pdf; 2018 floodplain map.pdf; Questions about coal ash at the police station.pdf; 2018-11-02 Memo re State Regulatory Options for Police Station Coal Ash Site.pdf

Thank you for your correspondence with the Town of Chapel Hill. The Mayor and Town Council are interested in what you have to say. By way of this email, I am forwarding your message to the Mayor and each of the Council Members, as well as to the appropriate staff person who may be able to assist in providing additional information or otherwise addressing your concerns.

Again, thank you for your message.

Sincerely,

Jeanette Coffin

Jeanette Coffin
Office Assistant
Town of Chapel Hill Manager's Office
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514
(o) 919-968-2743 | (f) 919-969-2063

From: Megan Kimball [mailto:mkimball@selcnc.org]
Sent: Wednesday, June 2, 2021 5:33 PM
To: Town Council <mayorandcouncil@townofchapelhill.org>
Cc: Future of 828 <futureof828@townofchapelhill.org>; John Richardson <jrichardson@townofchapelhill.org>; Laura Selmer <lselmer@townofchapelhill.org>; Mary Jane Nirdlinger <mnirdlinger@townofchapelhill.org>; Nick Torrey <ntorrey@selcnc.org>; Julie McClintock (mcclintock.julie@gmail.com) <mcclintock.julie@gmail.com>; Pamela Schultz <pamela.b.schultz@gmail.com>
Subject: Coal ash at 828 MLK Jr. Blvd

Good evening Mayor Hemminger and Council members,

Please see attached a comment letter with some information and considerations that may be helpful to you as you consider redeveloping the police station site. Please let me know if you have any questions or would like additional information—the Southern Environmental Law Center has a decade of experience on issues related to coal ash, and we are happy to be a resource to you. You can contact me any time.

I look forward to your discussion tonight and Friday,
Megan

Megan Kimball
Staff Attorney | Southern Environmental Law Center
601 West Rosemary Street, Suite 220 | Chapel Hill, NC 27516-2356
T: 919-967-1450
F: 919-929-9421
E: mkimball@selcnc.org
http://www.southernenvironment.org

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 601 WEST ROSEMARY STREET, SUITE 220 Facsimile 919-929-9421
CHAPEL HILL, NC 27516-2356

June 2, 2021

By E-mail

Mayor Pam Hemminger
Chapel Hill Town Council
Town Hall, Second Floor
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514-5705
mayorandcouncil@townofchapelhill.org

Re: Coal Ash and Redevelopment of 828 Martin Luther King Jr., Blvd.

Dear Mayor Hemminger and Members of the Chapel Hill Town Council,

We write in advance of today's Council meeting to share our thoughts on coal ash remediation at the police station site, located at 828 Martin Luther King Jr. Boulevard. It is our understanding that at tonight's meeting, the Council will consider options for economic development of the property.

We are concerned the Town lacks guiding principles and key information to decide how to move forward with redeveloping the site. Town staff have said the Town will chose a redevelopment plan first and then figure out how to make the site safe later, once the Town and developer enter into a Brownfields agreement. But this approach is backwards.

Although a private property owner may rely on DEQ and the Brownfields Program to shepherd it through the remediation process, the Town is not just any owner, and this site is not just any site. The police station property has unique challenges, described below, and the Town's decision will affect residents for many years into the future.

Before it makes any decisions, the Town must conduct a thorough risk assessment of the property. The Town should determine at the outset what kind of risk, including cancer risk, it finds acceptable at the site, and then explore what options are available based on this accepted risk level. It should consider a variety of options and compare their risks. These options should range from a full development scenario (similar to the one presented by Belmont Sayre in April), to a no-build scenario (renovating the existing building), and a number of options in between. We describe some considerations for this analysis below.

Importantly, the Town must ensure whatever plan it selects is protective of human health and the environment. For this reason, any coal ash that is exposed or close to the surface must be removed, and the Town and any future owner must continue monitoring to confirm coal ash is not contaminating the groundwater. We also urge the Town to consult experts before selecting a plan of action to address the risks and true costs of constructing a retaining wall along a flood plain, and/or building a large development on top of a 40-foot deep dump filled with a heterogeneous mix of debris and coal ash, which is known to be an unstable foundation.

Any coal ash that is exposed or close to the surface must be cleaned up.

There are several areas at the site where coal ash is either exposed or under less than two feet of soil cover.[1] This coal ash must be cleaned up. As we know from experience at this site, soil cover and coal ash can erode over time.[2] Exposed coal ash is unsafe for people and the environment. As long as there is coal ash that is close to the surface, it could erode, creating a risk to public health and the environment.

The Town has undertaken a few interim remedial measures to safeguard the exposed coal ash at the embankment, which erodes down onto the Bolin Creek trail and into the creek.[3] As Town staff has acknowledged, however, these measures are only temporary fixes. Any development plan must include a permanent solution to address exposed and eroding coal ash.

The Town has considered covering the coal ash or building a retaining wall along the embankment of eroding coal ash next to the trail and creek. At the public information meeting last week, Town staff said a large majority of the $2.5 to 4 million total projected remediation costs would go towards constructing this large retaining wall.

Leaving coal ash in place, however, raises significant concerns given that this embankment extends into the 100-year and 500-year floodplains of Bolin Creek.[4] It is not safe to keep coal ash in a floodplain. As climate change has accelerated in recent years, we have seen rainfall events grow more and more severe.[5] These events will only grow in frequency and strength as climate change continues in the coming years, which will lead to flooding along many of the Town's waterways—including Bolin Creek.[6] Indeed, Bolin Creek has flooded on multiple occasions in the past few years.[7] In light of these extreme weather events, a retaining wall may be insufficient to keep the site safe.[8] For any decision on remediation or

---

[1] *See* Hart & Hickman, *Results of Post-Data Gap Assessment*, Figure 2 (Sample Location Map) (Dec. 1, 2020) ("Data Gap Report") (see pink areas of exposed ash and yellow areas of ash under less than two feet of cover).
[2] *See* Hart & Hickman, *Interim Remedial Measures Report* i-ii (April 19, 2021) ("The exposed [coal ash] along Bolin Creek Trail [was] from deposition of [coal ash] eroded from the embankment, and the exposed [coal ash] along the embankment appeared to be the result of gradual erosion of the overlying soil layer tht likely covered the [coal ash] at one time along the embankment.").
[3] *See, generally, Interim Remedial Measures Report*.
[4] *See* SELC, Map (Oct. 29, 2018) (showing 100-year floodplain in blue, 500-year floodplain in orange, overlapping with areas of exposed coal ash; note: the coal ash near the trail, closest to the creek, has been removed since this map was created, but ash on the embankment remains).
[5] *See* letter from SELC to Town Council at 6-9 (Nov. 2, 2018); *see also* Alyssa LaFaro, *An Active Storm Season* (June 30, 2020), *available at* https://www.unc.edu/posts/2020/06/30/an-active-storm-season/.
[6] *See* Crystal Price, *Neighbors Near Bolin Creek Frustrated with Ongoing Flooding Issue in Chapel Hill*, CBS17 (Feb. 7, 2020, 6:09 PM), *available at* https://www.cbs17.com/news/local-news/orange-county-news/neighbors-near-bolin-creek-frustrated-with-ongoing-flooding-issue-in-chapel-hill/.
[7] *Id.*; Friends of Bolin Creek, *Updates*, http://ash.bolincreek.org/more-info (last visited June 2, 2021) (video showing flooding from Hurricane Florence near the coal ash embankment).
[8] Mary Anne Hitt, Coal Ash Was a Disaster in North Carolina Well Before Hurricane Florence—And Now It's Even Worse (Oct. 1, 2018), *available at* https://www.sierraclub.org/compass/2018/10/coal-ash-was-disaster-north-carolina-well-hurricane-florence-and-now-it-s-even-worse (noting that, after Hurricane Florence, floodwaters "overtopped a retaining wall between [Sutton] lake and one of the unlined coal ash dumps" at that site).

redevelopment of the property, the Town must keep in mind climate change and the location of the site in the Bolin Creek floodplain.

Covering coal ash with soil can also be risky. As we know at this site and have seen at others, groundcover naturally erodes, and erosion can be accelerated by storm events.[9] The coal ash on the embankment at the police station site was likely covered under soil at one point, but over time it became exposed and eroded down to the trail.[10] The Town removed more than 1,000 cubic yards of eroded coal ash from around the trail, and the Town's consultants reported an additional ten to fifteen cubic yards of coal ash washed down the embankment during a recent severe storm, causing the Town to dig a drainage ditch to divert stormwater around the parking lot and away from the embankment.[11] Although reducing stormwater runoff is helpful, this area and other areas of the site with low levels of ground cover remain at risk of erosion and spreading coal ash.

Experiences in other parts of the state also show the hazards of covering coal ash with soil. In Mooresville, NC, the soil covering a coal ash structural fill near the Lake Norman high school eroded, leaving coal ash exposed only 50 yards from the school. The coal ash had been placed there in 2001 pursuant to a plan approved by DEQ, but construction activities and rain from Hurricane Florence caused the cover to erode, exposing coal ash and putting people and the environment at risk.[12]

Removing the coal ash and storing it in a secure, lined landfill is the safest solution. As these examples show, covering ash with soil can be unreliable and create bigger problems down the road.

The Town and any future owner must continue groundwater monitoring.

Until recently, sampling at the site indicated high levels of coal ash pollutants in the property's groundwater. After digging additional sampling wells, the Town's consultant Hart & Hickman stated that the contaminated areas were "perched" water—in this case, groundwater

[9] *See* Interim Remedial Measures Report at ii, 3, 9.
[10] *Id.* at ii, 3.
[11] *Id.* at 7, 9.
[12] *See ,e.g.,* Marvin Beach, WCCB, *Coal Ash Uncovered Near Lake Norman High School in Mooresville,* Oct. 24, 2018, *available at* https://www.wccbcharlotte.com/2018/10/24/coal-ash-uncovered-near-lake-norman-high-school-in-mooresville/; Kristin Leigh, WSOC, *9 Investigates: Coal Ash Site Exposed Near Lake Norman High* School, Oct. 24, 2018, *available at* https://www.wsoctv.com/news/local/9-investigates-coal-ash-site-exposed-near-lake-norman-high-school/858440521; Megan Suggs, Statesville Record & Landmark, *Coal Ash Disturbed Near Lake Norman High School*, Oct. 24, 2018, *available at* https://www.statesville.com/news/local/coal-ash-disturbed-near-lake-norman-high-school/article_35dc35d0-d7d0-11e8-a330-53ddc2f70d12.html; *see also* Erik Ortiz, *Teen's cancer uncovers a mystery in one North Carolina town: Why here?*, NBC News (Jan. 4, 2020), https://www.nbcnews.com/health/cancer/teen-s-cancer-uncovers-mystery-one-north-carolina-town-why-n1062011; Megan Suggs, Mooresville Tribune, *Mooresville's 'Coal Ash Corridor' Is Largest Concentration In State*, Oct. 27, 2018, *available at* https://www.mooresvilletribune.com/news/local/mooresville-s-coal-ash-corridor-is-largest-concentration-in-state/article_decd08c2-da1e-11e8-96f2-f7d911d2c512.html.

trapped in large pockets within the debris in the underground dump.[13] Hart & Hickman reported recent groundwater samples indicate coal ash is not in contact with the groundwater.[14]

This finding is encouraging, but the Town must remain vigilant and continue to sample the groundwater periodically. Subsurface conditions may change over time, particularly given the mixture of large debris and coal ash underground, and construction activities may cause these materials to shift. If the Town elects to redevelop this property under a Brownfields agreement, the agreement should include a requirement for the property owner to monitor the groundwater for coal ash contaminants.

It is important the Town takes measures to protect the groundwater because it flows into Bolin Creek, which empties into Jordan Lake—a water source that offers numerous recreational opportunities to nearly 1 million annual visitors and provides drinking water to nearly 700,000 Triangle residents.[15] Any plan for the site must ensure that coal ash does not pollute groundwater.

The Town must conduct a full risk assessment of the site and potential uses.

The Town has conducted multiple risk assessments of the lower part of the site by the creek and the trail, but it has not yet conducted any assessment of the rest of the site the Town is proposing to redevelop. Instead, Town staff say they are waiting to conduct this analysis *after* a development plan is selected. However, getting this information first is essential for the Council to make an informed decision on future uses and development plans.

At the public information meeting last week, Town staff presented "pros" and "cons" for a handful of development scenarios. The information in this presentation cannot substitute for a scientific assessment of the health and environmental risks associated with how coal ash would be handled under the various development options.

During the Town's presentation last week, we could not help but notice a preference for using the property as an opportunity for economic development. While Town staff clarified no decision had been made on how to use the property, the presentation focused more on redevelopment than remediation. The "pros" and "cons" listed for each alternative also seemed skewed towards economic development in both number and subject matter.

---

[13] *See Data Gap Report* at 13-15 ("[T]he results of this assessment indicate there is evidence of perched groundwater in the fill material which is separated from the main underlying unconfined aquifer. . . . Uncontrolled fill areas such as the Site, in which layers with significantly different permeabilities are placed next to one another (i.e., debris with sand or a gravel zone immediately overlying a silt or clay layer) have a high potential for perched groundwater zones. . . . [I]nfiltrating rainwater which infiltrates the ground and recharges groundwater may get trapped by low permeability zones in the fill above the unconfined aquifer and form perched groundwater zones.").

[14] *Id.*

[15] Mary Claire McCarthy, *Protecting the Forests Protects Our Drinking Water Supplies in the Jordan Lake Watershed* (Aug. 11, 2020), *available at* https://collaboratory.unc.edu/news/2020/08/11/protecting-the-forests-protects-our-drinking-water-supplies-in-the-jordan-lake-watershed/#:~:text=Jordan%20Lake%20serves%20a%20mixture,flood%20control%20for%20downstream%20regions.

We recognize economic opportunity is an important consideration for the Council. However, it is only one piece of the puzzle. The risks of developing on top of a coal ash dump necessitate a broader look at the options available—beyond those that provide a financial benefit to the Town. To this end, the Town should conduct a full risk assessment to understand the nature and extent of environmental and health risks associated with redevelopment before it picks a plan.

1. *The Town must consider multiple exposure pathways.*

It is important for the Town consider the various ways people may be exposed to and harmed by coal ash. At the public information meeting last week, Town staff said dermal exposure—contact through the skin—was the primary method of exposure to coal ash. Dermal exposure, however, is only one of several ways people can be exposed to the harmful toxins in coal ash. Coal ash contains heavy metals like arsenic, lead, mercury, cadmium, chromium, and selenium, among others. These contaminants can leach out of the ash into soil and water. They can also become airborne. If consumed or inhaled, these metals can cause cancer, heart damage, lung and kidney disease, respiratory distress, reproductive problems and birth defects, and gastrointestinal illness.[16]

A risk assessment should be done to help the Town understand and compare the potential exposure risks of various development options. For example, the assessment should consider the risk of each type of use—what are the risks to a resident versus an office worker? In addition to the average user, the assessment should consider the risk to the most vulnerable user of each development scenario, including children and pregnant women.

Another example would be to consider risks during construction. There may be fugitive dust emissions during construction that pollute the air. Coal ash is comprised of small particles, which are especially dangerous because they are inhaled into the deepest part of the lungs and trigger immunological responses and inflammation.[17] Once disturbed, these particles can move off-site as fugitive dust, exposing workers and residents to harmful particulate matter.[18] Construction also destabilizes coal ash: removing trees and vegetation can loosen soil and expose coal ash material to erosion.[19] A risk assessment could consider the risk of harm during construction under each development scenario—how it will affect residents under a full development scenario, which would involve a significant amount of construction and ground disturbance over a lengthy period of time, as compared to lesser development scenarios, which entail less construction and ground disturbance over shorter periods of time. The Town needs to

---

[16] *Coal Ash: Hazardous to Human Health*, PHYSICIANS FOR SOCIAL RESPONSIBILITY (May 2018), *available at* https://www.psr.org/wp-content/uploads/2018/05/coal-ash-hazardous-to-human-health.pdf; *see also* Clara G. Sears & Kristina M. Zierold, *Health of Children Living Near Coal Ash*, 4 GLOBAL PEDIATRIC HEALTH (2017), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5533260/.

[17] Alan H. Lockwood & Lisa Evans, *How Breathing Coal Ash Is Hazardous to Your Health*, Earthjustice & Physicians for Social Responsibility at 3 (2014), *available at* https://earthjustice.org/sites/default/files/files/Ash_In_Lungs_1.pdf.

[18] *Id.* at 2.

[19] Kristin Leigh, *Coal Ash Site Exposed Near Lake Norman High School*, WSOC (Oct. 24, 2018) *available at* https://www.wsoctv.com/news/local/9-investigates-coal-ash-site-exposed-near-lake-norman-high-school/858440521

understand the measures can be taken in each scenario to reduce risk and the true costs of safely pursuing each option.

2. *In addition to human health, the Town should consider ecological health.*

Deer, birds, rabbits, and other animals rely on the wooded areas surrounding the police station for habitat.[20] Fish, frogs, salamanders, and more live in and around the waters of Bolin Creek.[21] The greenway below the property is also lined with trees, wildflowers, and other plants. At present, these plants and animals are already at risk of exposure to harmful coal ash; namely, through runoff from the south embankment of the property and a drainage ditch in the police station parking lot. Coal ash has been discovered near the surface of this embankment and the drainage ditch. Further disturbances to the site's coal ash during redevelopment would only increase the risks of harmful materials running off into these important animal and plant habitats. It is important for the Town to consider these risks in its decision so that it can take measures to avoid or mitigate any impacts.

The Town should rule out using the property for affordable housing due to environmental justice concerns.

Chapel Hill has seen a housing boom in recent years, with numerous luxury apartments and condos springing up across the town. These high-end developments crowd out more affordable housing options and make it difficult for many lower-income residents and students to find a place to live. While lower-income Chapel Hill residents are sorely in need of affordable housing, that housing should not come at the cost of living on a site contaminated with coal ash. Siting affordable housing on top of a coal ash dump raises significant environmental justice concerns. We urge the Town to rule out siting affordable housing on this property. As some Council members suggested at a meeting in April, the Town could require a developer to build affordable housing at another comparable but uncontaminated location.

The Town should consult with an engineer to confirm it is safe to build on top of a coal ash dump.

Building on top of a coal ash dump raises concerns about site stability. Coal ash is an inherently unstable material—a dam constructed on top of coal ash deposits was the cause of the Kingston, Tennessee TVA coal ash spill—and we know from past experience in North Carolina that sites that have used coal ash as structural fill have failed. In Mooresville, NC, for example, a parking lot at an automotive shop that used coal ash as fill opened up into a sinkhole following

[20] *See Bolin Creek Natural Area Conservation Planning Guide (Draft)*, FRIENDS OF BOLIN CREEK (Nov. 2018) at 15, available at http://bolincreek.org/blog/wp-content/uploads/2018/08/Bolin-Creek-Natural-Area-2018-Conservation-Planning-Guide-Draft-Abridged-Version.pdf.
[21] *See id.*

heavy rains, spilling coal ash into a nearby stream.[22] That same sinkhole had been repaired multiple times under DEQ's supervision, yet it continues to be a serious problem.[23]

The Town's consultants have highlighted how the underground material at the site is not homogenous—it is a mixture of large construction debris, coal ash, and other materials. It is so varied there were large, empty pockets that filled with rainwater (the perched water zones).[24] Given this variability, the Town should carefully study the subsurface conditions to determine whether it is safe for redevelopment.

The public has not had sufficient opportunity to participate in the planning process.

We are concerned the Town has not sufficiently engaged affected members of the public. While the Town held two virtual public information sessions in May, they were not well advertised and the first meeting was a closed forum in which Town staff did not allow members of the public to speak to ask questions or make comments. Instead, the public was instructed to submit written comments. Town staff only read some of the public's questions aloud and said answers would be provided online later. We asked more than a dozen questions about the risk assessment and interim remedial measures report, most of which have not yet been answered. Please find our questions attached.

After the May 17 meeting, we contacted Town staff and raised a number of issues with the format of the meeting, namely that it prevented meaningful public participation in the project. In response to those comments, the Town changed the format of the May 24 meeting to allow for a more open virtual forum. The format of the May 24 meeting was much better, allowing the public to hear others' questions and concerns, but likely due to the failed meeting the week before, it was not well attended.

We are aware of the difficulties of holding public meetings during a global pandemic, and greatly appreciate the Town's willingness to modify the format of the meeting to better allow public input. We encourage the Town to provide more opportunities for public feedback, and we especially recommend conducting additional outreach to affected communities. The Town only directly notified residents within 1,000 feet of the site regarding the May 24 information meeting—anyone else who wanted to attend had to specifically seek out the information via the Town's online calendar. Because coal ash can leach into groundwater, erode onto Bolin Creek trail, run off into the creek, and become airborne and inhaled, it has community-wide effects, and the Town should engage a broader group. While we are glad the Town directly notified the site's immediate neighbors, the radius chosen is not sufficient to capture the concerns of and allow for meaningful engagement by all those the project effects. Due to the insufficient advertisement, the public concerns presented before Council during its

---

[22] Lisa Sorg, *Breaking: Coal ash released after sinkhole collapse in Mooresville*, N.C. Policy Watch (Sept. 21, 2020), *available at* http://pulse.ncpolicywatch.org/2020/09/21/breaking-coal-ash-released-after-sinkhole-collapse-in-mooresville/#sthash.BoX8bSSt.dpbs; David Boraks, *DEQ Says Mooresville Sinkhole Is on Site Filled With Coal Ash*, WFAE (Sept 21, 2020, 5:35 PM), *available at* https://www.wfae.org/energy-environment/2020-09-21/deq-says-mooresville-sinkhole-is-on-site-filled-with-coal-ash.

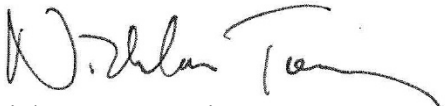
[23] *Id.*

[24] *Data Gap Report* at 14 ("[I]nfiltrating rainwater which infiltrates the ground and recharges groundwater may get trapped by low permeability zones in the fill above the unconfined aquifer and form perched groundwater zones.").

upcoming meeting may not reflect the full range of considerations. At a minimum, the Town should post public meeting notices on the Bolin Creek trail in both directions for at least two weeks before holding public meetings on this issue.

We appreciate the Council's commitment to being good stewards of the property and thank you for your consideration of these comments. If you have any questions or would like additional information, please contact us at 919-967-1450 or mkimball@selcnc.org.

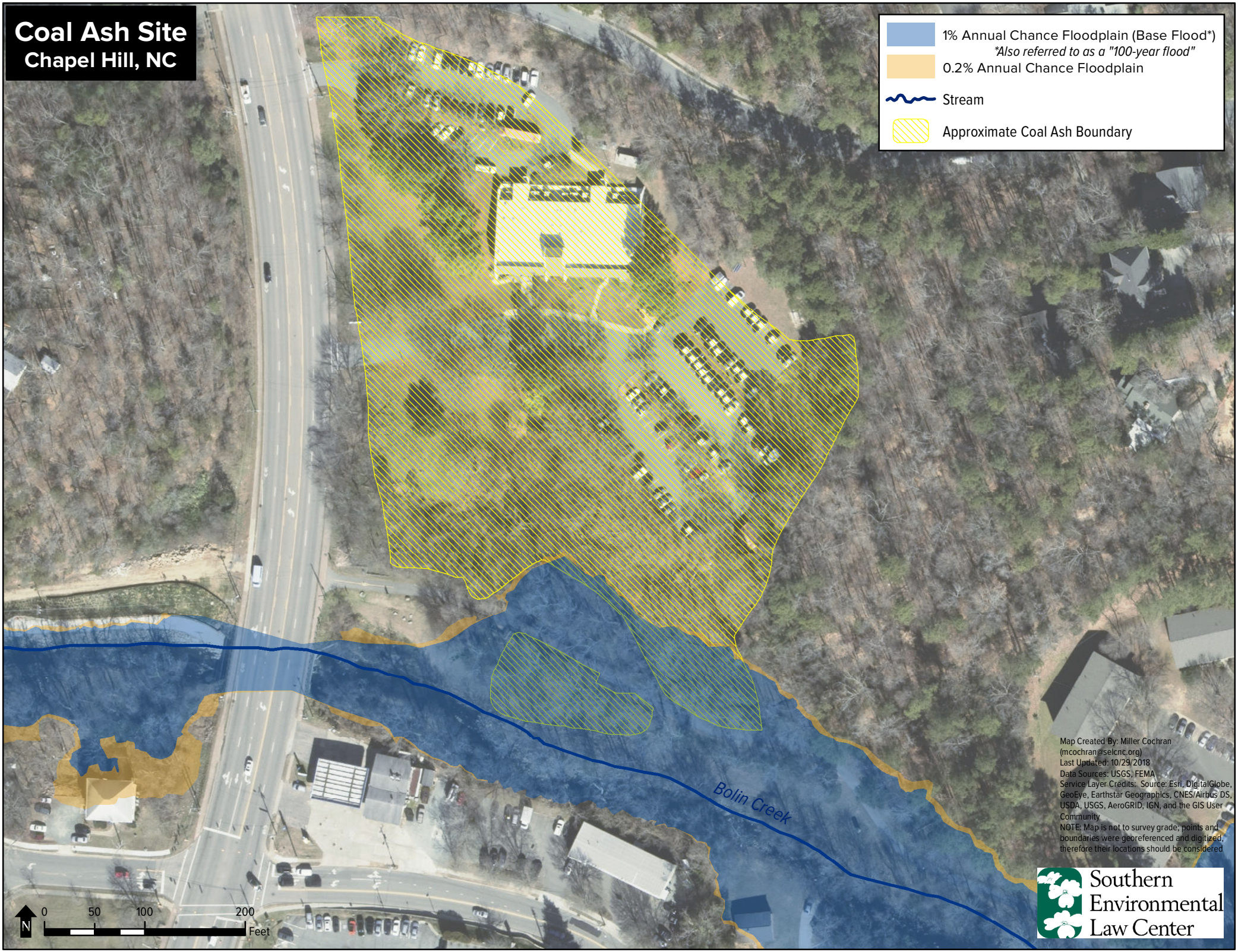
Sincerely,



Nick Torrey, Senior Attorney
Southern Environmental Law Center

Megan Kimball, Staff Attorney
Southern Environmental Law Center

Coal Ash Site
Chapel Hill, NC



Map Created By: Miller Cochran
(mcochran@selcnc.org)
Last Updated: 10/29/2018
Data Sources: USGS, FEMA
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
NOTE: Map is not to survey grade; points and boundaries were georeferenced and digitized, therefore their locations should be considered

Southern Environmental Law Center

From: Megan Kimball
To: futureof828@townofchapelhill.org; "John Richardson"; Laura Selmer; Vencelin Harris
Cc: Pamela Schultz; Julie McClintock (mcclintock.julie@gmail.com); Nick Torrey
Subject: Questions about coal ash at the police station
Date: Monday, May 17, 2021 2:17:40 PM

Hello everyone,

Please see below some question by the Southern Environmental Law Center and Friends of Bolin Creek. We look forward to the presentation tonight.

Thank you,
Megan

- This risk assessment only looks at the area along the trail, but the Town is contemplating redeveloping the entire site where most of the coal ash is located. When will the Town do a risk evaluation for the entire site, and what standards will it use to ensure any proposed uses for the property are safe (for example, business, residential, etc. during and after construction)? See N.C. Gen. Stat. § 130A-310.68 (remediation standards).
- The 2021 Risk Assessment (p. 4) states "For known or suspected carcinogens, the sum of individual excess lifetime cancer risk values for all constituents and for all exposure pathways may not exceed 1 in 10,000." But the summary of the 2019 risk assessment (2021 Risk Assessment p. 8) states that in 2019, "an additive lifetime increased cancer risk of less than or equal to 1 in 100,000 for cancer endpoints" was used. Please clarify what standard was used for cancer risk in 2019 and 2021 and if it is correct that the 2021 standard is less protective, why?
- The risk assessment does not indicate the Town assessed risk at the constituent level (for example, arsenic). Normally the acceptable risk for a constituent is less than or equal to 1 in 1,000,000. See N.C. Gen. Stat. § 130A-310.68(b)(9) (remediation standards). Did the Town evaluate risk at the constituent level, in addition to cumulative risk? If it did, which constituents were considered, what standards were used, and what was the result of this evaluation?
- The risk assessment bases some of its evaluation on the results of a user survey. Please share the data from the user survey. The assessment only uses the mean exposure—why did the risk assessment not consider the high end exposure scenario? In addition to the mean, the assessment should take into account the worst case scenario (high end exposure) and a probabilistic scenario (accounting for uncertainty) in order to protect all users of the trail.
- What is the Town's plan for permanent remedial measures along the creek? Has the Town evaluated removing the ash from the eroding, steep hillside next to the creek and trail (Area F)? What is the timeline for these permanent measures?
- The risk assessment says the interim remedial measures are effective (p. 15), but the interim remedial measures report says that after a storm event, 15 cubic yards of ash

eroded from the eroding, steep slope (Area F) to a spot right next to the trail (Area H), despite the presence of hydroseed and silt fences (p. 9). Please provide more detail what happened, including the dates of the storm and the Town's response. Why did the interim remedial measures fail, and what is the Town doing to prevent more coal ash from washing down the hill (Area F)?

- In a June 2019 meeting, the Town Council requested periodic sampling every 6 months and after major storm events. Has the Town been performing this sampling, and if so, can you please share the results?
- In the December 2020 data gap report, the Town's consultant reported there is likely much less ash at the site than previously estimated. However, the site conditions remain the same—we know there is a significant amount of exposed coal ash and ash close to the surface, for example on the eroding hillside (Area F), but the updated cross-section of the site shows hardly any coal ash deposits in this area (cross-section A-A'). How was this cross-section developed, and if it is not an accurate depiction of where ash is located relative to the ground surface, can the Town please provide one?
- The interim measures report says the Town dug up an additional 12 cubic yards of coal ash when it dug stormwater ditches to divert stormwater away from the top of the hill of eroding coal ash (Area F) (pp. 12-13). The ditch runs along the parking lot and out into the woods next to a residential cul-de-sac. Given the ditch was dug in deposits of coal ash, is there still coal ash near the surface of the ditch? What measures has the Town taken to ensure coal ash is not washing out the stormwater ditch?
- The interim remedial measures report says the vegetation planted in the coal ash will need to be fertilized periodically (p. 12). How often will it be fertilized? What type of fertilizer will be used? Will it be safe for trail users and the creek?
- What is the Town's plan for permanent remedial measures for the rest of the site? Has the Town determined a cleanup standard (see N.C. Gen. Stat. § 130A-310.68)? Aside from Area F, there are other areas of exposed ash and ash that is close to the surface. Has the Town evaluated removing this ash and contaminated soil?
- At a meeting in March, the Town's consultants presented only one option to redevelop the site, and Council members requested staff to present additional options. When will those options be presented? Is the Town considering a range of options, including some that would minimize ground disturbance like renovating the existing building or constructing a new building on a smaller footprint? Will these options be presented to the public in an open forum for discussion and feedback (not a "webinar" style meeting with only written questions from the public)?
- Will safety be a factor in Town's decision on how to develop the site? In other words, will the Town first consider, among other factors, the health and environmental risks of each proposed use and development plan and the required safety measures for each option, and *then* decide on a development plan? Or will it decide on a development plan first, prioritizing economic development, and then work backwards?
- The Town only gave the public one week notice of this meeting and is not allowing an

open forum for questions and discussion. Why did the Town not provide more notice of the meeting, and why did the Town chose this closed format? If the consultants and Town staff are sharing the same information provided during the March 5 subcommittee meeting, which is available for the public to view online, what is the purpose of this meeting?

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450 | 601 WEST ROSEMARY STREET, SUITE 220 CHAPEL HILL, NC 27516-2356 | Facsimile 919-929-9421

November 2, 2018

BY U.S. MAIL AND E-MAIL

Chapel Hill Town Council
405 Martin Luther King Jr. Blvd.
Chapel Hill, NC 27514
mayorandcouncil@townofchapelhill.org

Re: Remediation of coal ash contamination at the Chapel Hill Police Department property located at 828 Martin Luther King, Jr. Blvd.

Dear Mayor Hemminger and members of the Chapel Hill Town Council:

At the October 10, 2018 Chapel Hill Town Council meeting, it appeared the Council had a number of unanswered questions related to North Carolina's regulatory requirements and options for addressing the coal ash contamination at the Police Station property. We have compiled the attached information based on our research and conversations with NCDEQ staff in the Brownfields Program and the Inactive Hazardous Sites Branch; we hope you will find it helpful.

Please note, this material is provided for general informational purposes only. To the extent the Council requires legal or tax advice, it should seek counsel from an attorney or tax professional. Additionally, although SELC has made every effort to ensure the information herein is accurate and complete, the Council should consult an attorney before acting on the basis of the information provided in this letter.

Thank you for considering these materials. If you would like to discuss further or have additional questions, please feel free to contact us at (919) 967-1450 or via email.

Sincerely,

Megan Kimball
mkimball@selcnc.org
Nicholas Torrey
ntorrey@selcnc.org

Attachments: Brownfields/IHSB Q&A memo
Brownfields/IHSB Comparison Chart
Bolin Creek floodplain map
Plat for Contemporary Art Museum Raleigh

North Carolina Inactive Hazardous Sites: Remedial Options
Questions & Answers

1. What are the differences between the Inactive Hazardous Sites Branch ("IHSB") option (a.k.a. the Voluntary Cleanup option), and the Brownfields Program option?

Both programs are ways for owners of inactive hazardous sites to clean up their properties voluntarily. Please see the attached chart comparing the key components of each program. Although there are some important differences, in the end, the programs are substantially similar. Some of the big points are as follows:

- *Intended participants.* The IHSB program is available for anyone who volunteers to clean up a site, whether or not they caused the contamination. The Brownfields Program has a more specific target—developers who (1) didn't cause the contamination, (2) are interested in remediating and reusing a site, but (3) are unable to obtain financing because of the contamination. The Brownfields Program makes it easier for these developers to get a loan. Under this law, the developer may enter into an agreement with the State to partially clean up and use the land subject to land use restrictions, in exchange for a covenant by the State not to sue for additional cleanup, which helps convince a lender to finance the project.[1]

- *Limitation of Liability (Covenant-Not-To-Sue).* Under a Brownfields Agreement, the State agrees not to sue the developer or future owners to further clean up the Brownfields property.[2] This protection is limited by law. It does not protect the developer or future owner from liability to third parties, or from liability for future contamination at the site (if, for example, a contractor digs up contamination or an embankment erodes exposing contamination, causing a new release). Additionally, there are several statutory "reopeners," which would cause the developer or future owner to lose its liability protection.[3]

- *Limitation of Liability (Dollar Cap).* Under the statute for IHSB, cleanup liability for a party who voluntarily remediates a contaminated site is limited to $5 million.[4] There is no equivalent statutory provision for the Brownfields Program,[5] meaning if a site loses its liability protection (the covenant-not-to-sue, described below), the owner could be responsible for an unlimited amount of cleanup.

- *Cleanup standards, land use restrictions, and cleanup plans.* Under both programs, the State may allow the remediating party to leave contamination in place if the State concludes it is not hazardous to health or the environment, and so long as the owner agrees to appropriate land use restrictions.[6] The only difference is that under IHSB, the remediating party may fully clean up the property to unrestricted use standards; in that case no land use restrictions are necessary, and the property will have clean title.[7] In both programs, the owner

plays a role in developing the cleanup plan, which is submitted to the State for approval after a public review process.

There is no covenant-not-to-sue under IHSB. However, as explained above, under IHSB, the remediating party benefits from a $5 million cleanup liability cap.[8] Additionally, although there is no explicit promise not to sue, it is unlikely the State will sue for further cleanup if the remediating party completes remediation as agreed because the contamination will be either fully cleaned up if remediated to the unrestricted use standard, or safely contained if remediated to the restricted use standard—in other words, there would be nothing for the State to enforce.[9]

- *Tax Exclusion.* Under the Brownfields Program, the owner of the property will enjoy a partial property tax exclusion for the first five taxable years after the improvements are completed.[10] If the project has multiple phases, the developer receives separate five-year property tax exclusions for each completed phase.[11] This benefit is designed to help cover the cost of assessment and cleanup required under the Brownfield Agreement. The first year, the owner enjoys a 90 percent exclusion, and this percentage is reduced incrementally down to 10 percent for year five. This benefit for private developers is often the main draw of the program.[12] From the local government's perspective, it represents a temporary loss of tax revenue (in other words, the town and county subsidize the assessment and cleanup), but on the other hand, it provides an incentive for developers to make productive use of the land, which benefits the locality in the long run. As far as we know, this tax exclusion only applies to owners participating in the Brownfields Program; there is no parallel tax exclusion under the IHSB Program.

2. What does "liability protection" in the Brownfields Program mean and when does it apply?

Under the Brownfields Program, liability protection means the State might not require a developer or future owner of a site covered by a Brownfields Agreement to clean up remaining known contamination identified in the Brownfields Agreement, so long as it complies with the law and meets certain conditions.

- The protection comes in the form of a "covenant-not-to-sue" by DEQ in the Brownfields Agreement. This means DEQ promises not to sue the developer or future owners for the cleanup of remaining known contamination it identifies in the agreement, so long as the developer and future owner(s) meet their obligations under the agreement and law.[13]
- This protection extends to any lender that provides financing for the cleanup or development of the site.[14]
- The protection is limited by law and the terms of the Brownfields Agreement. Notably:
  - It only protects the developer and future owner(s) from responsibility for cleaning up areas specifically identified in the Brownfields Agreement as areas where contamination can be left in place.[15]

  - It does not provide liability protection concerning future site contamination for which the developer, owner, or other party may be responsible.[16]
  - It does not protect the owner from liability to third parties associated with the pollution.
  - The developer is only protected so long as the activities conducted on the property do not "increase the risk of harm to the public health or the environment."[17]
  - The developer and future owner(s) are only protected so long as they comply with the requirements of the Brownfields law and the terms of the Brownfields Agreement, including any land use restrictions.[18]

- A developer or owner can lose liability protection and be required to clean up the site to unrestricted use standards if:[19]
  - The developer or owner violates a land use restriction;
  - The developer or owner knowingly or recklessly provides false information to obtain a Brownfields Agreement or demonstrate compliance;
  - New information indicates previously unreported contaminants or a new area of contamination;
  - The level of risk to public health or the environment becomes unacceptable due to changes in exposure conditions (including the failure of remediation efforts to mitigate risks in accordance with the Brownfields Agreement, or changes in land use that increase probability of exposure);
  - New information demonstrates a contaminant associated with the site is more harmful to public health or the environment than anticipated when the Brownfields Agreement was signed; or
  - The developer fails to file a timely and proper Notice of Brownfields Development, as required by the brownfields law.

3. Am I protected from liability if I participate in the IHSB Program, rather than the Brownfields Program?

Yes, but in a different way. There is no covenant-not-to-sue under the IHSB Program. However, under IHSB (but not Brownfields), the remediating party benefits from a $5 million cleanup liability cap. This means a person who volunteers to clean up the site cannot be required to undertake more than $5 million in cleanup costs.[20]

Additionally, although there is no explicit promise not to sue, it is unlikely the State will sue for further cleanup if the remediating party completes remediation as agreed because the contamination will be either fully cleaned up if remediated to the unrestricted use standard, or safely contained if remediated to the restricted use standard—in other words, there would be nothing for the State to enforce.[21]

4. If I partially clean up the site (under either program), is there a way to lock in protection and guarantee I don't have to do more?

No, there are no guarantees. Under both programs, the State may require more cleanup if it turns out that the partial cleanup does not adequately protect health or the environment, or if

circumstances change.[22] For example, the infrastructure or technology installed to mitigate the risk of exposure could fail—a retaining wall could be breached, or a cover could erode, exposing the contamination (this happened recently in Mooresville—for more detail, see the response to Question 8 below). Or, additional contamination, unknown at the time of remediation, may later be discovered. New science could demonstrate land use restrictions are insufficient or contaminants are more harmful than previously believed.

A number of circumstances could change requiring additional cleanup. However, under IHSB (but not Brownfields), the remediating party might only be required to remediate up to the $5 million limitation of liability cap.[23] The remediating party should seek legal advice from an attorney to determine the extent of additional liability due to changed circumstances.

5. Can I agree to partially clean up the site under the Brownfields option and get liability protection by agreeing to land use restrictions, and then later decide voluntarily to do more cleanup than is required by my Brownfields Agreement?

Theoretically, yes, but we are not aware of this having been done. The liability protection offered by the Brownfields program is simply protection from additional state cleanup requirements, so there would be little incentive for a developer to remediate more than required. And the value of the property will continue to be depressed while the use restrictions imposed by the Brownfields program remain in place.[24] If the developer or future owner were to eliminate the hazard so that the property met the unrestricted use standards, the owner could ask DEQ to cancel the "Notice of Brownfields Property" and remove the land use restrictions from the property deed.[25]

6. Can I propose a range of uses in my application for the Brownfields Program, or do I need a specific proposal?

Yes, an applicant may propose a range of uses. However, the most successful projects begin with a developer and specific proposal.[26] The Brownfields Program is an iterative process. Once DEQ determines the applicant to be eligible, the assessment begins. During this time, DEQ will ask the developer for information, including sampling data, based upon the prospective developer's proposed uses. This cycle of DEQ requesting information, and the developer obtaining it, will continue until DEQ has enough information to negotiate the terms of the Brownfields Agreement—including how the property may be used, what cleanup or mitigation controls will be required, and what land use restrictions are needed.[27] If the developer begins the process without a proposal for how it wants to use the property, the assessment phase will be prolonged and expensive because the parties will need to investigate all possible uses.

For example, if a developer begins the process knowing it will not build any sub-grade structures, like an underground parking garage or a basement, then it might not be required to provide soil samples at those depths. Conversely, if the developer wants to keep open the

possibility of using sub-grade structures, it will have to provide that data in the assessment. The more narrow the proposal, the more efficient the process will be.

7. What are the limitations on approved uses under the Brownfields Program? Could I build a playground on a partially cleaned-up site?

It depends. DEQ determines land use restrictions on a case-by-case basis.[28] There is a general statutory requirement that the property is "suitable for the uses specified in the agreement while fully protecting public health and the environment."[29] DEQ interprets this provision broadly.[30] During the assessment, DEQ will consider many factors, including the nature and extent of contamination, the site conditions, and whether sensitive populations will use the site (for example elderly people, children, pregnant women, etc.) before determining the appropriate land use restrictions.

For example, at a contemporary art museum in Raleigh, the deed restrictions include, among others, no playgrounds, childcare centers, or schools. See plat for CAM Raleigh (attached as Exhibit 3), which lists land use restrictions in the right column. The plat also includes the groundwater, soil, and sub-slab vapor contaminants at the site (see top), and sampling locations (see map).

8. Is climate change a factor we should consider in choosing a remediation plan?

Yes. Climate change is causing more frequent and intense storms. For coal ash and other contaminants, this is a concern when they are kept in floodplains. Throughout North Carolina, coal ash sites big and small threaten disaster each time a flood or hurricane strikes, as Hurricane Florence demonstrated in September 2018 by overtopping coal ash dams and breaching a landfill at Duke Energy's Sutton facility, and by flooding old coal ash ponds at Duke Energy's H.F. Lee facility. Flooded ash collects in sediments in the streambed and is washed downstream.

Part of the coal ash dump on the Police Station property lies in the floodplain of Bolin Creek. See attached map for the outline of the 100-year and 500-year flood boundaries of Bolin Creek, which flows to Jordan Lake. Attached as Exhibit 2. Recently, Hurricane Florence caused Bolin Creek to flood a portion of the coal ash site, sending floodwaters rushing along the base of the 40-foot high coal ash cliff on the town's property. Please see the video of flooding at the base of the coal ash cliff after Hurricane Florence, posted at http://ash.bolincreek.org/more-info.

We do not know how much coal ash was released into Bolin Creek or other downstream waters. Such coal ash releases are obviously a significant concern, and so is the risk such storm events pose to the structural stability of the coal ash cliff on the edge of the floodplain. Any plan for the site must ensure that the coal ash does not remain in the path of increasingly frequent and severe flooding.

At Duke Energy's H.F. Lee facility, which is located within the 100-year floodplain of the Neuse River,[31] an area containing one million tons of buried coal ash was completely submerged by Florence's floodwaters. Water samples around the site tested above the state standard for arsenic, with elevated levels of many other heavy metals present in the samples.[32] After the flood, these toxins settle into and linger in the river sediment.

Duke Energy's sites are large-scale industrial coal ash pits, but floods threaten small sites equally, if not more because they may lack effective flood control technology that can withstand a major storm event. For example, according to recent news reports,[33] 40,000 tons of coal ash was recently disturbed at a construction site in Mooresville, only 50 yards from a high school. In 2001, the ash had been used as structural fill and covered with soil pursuant to a plan approved by NCDEQ. Recent construction activities and rain from Hurricane Florence eroded the layer of soil covering the ash, causing the ash underneath to become exposed. As DEQ stated in the news reports, the owner of the site now must take additional remedial measures to clean up the released ash and safely contain any ash it is allowed to keep on site. If the coal ash is not safely removed or contained, it will continue to contaminate a nearby stream and threaten the health of the children in the school next door.

By contrast, during the same storm, disaster was averted in Conway, South Carolina because the public utility already had safely removed almost all the coal ash from the site.[34] Hurricane Florence caused unprecedented flooding of the Waccamaw River. Floodwaters overtopped the walls one of the two ash basins on site, but thankfully all the ash already had been removed from that basin. The second ash basin was within inches of flooding, but the utility's extraordinary efforts to contain it with pumps, an inflatable dam, helicopters, and enormous sand bags were successful. Had floodwaters breached the second ash basin, 200,000 tons of coal ash could have been released into the Waccamaw River, compromising the entire community's water supply.

The coal ash flooding this fall demonstrates that it is crucial remove coal ash from flood-prone areas, and it is important to consider not only the 100-year storm, but 500- and 1,000 year storms as well. The concept of the "100-year" storm is deceptive, as storms of this magnitude happen far more often than once every 100 years. Rather, these storms have a 1 in 100 chance of occurring in a given year, and a 100-year storm one year does not prevent another from hitting in even a few months.

A common definition of floodplain is based on the 100-year flood, but this definition is inadequate to address flood risk in North Carolina. The statistical definition of a 100-year flood has not been updated in North Carolina since 2006.[35] Since that time, the state has seen many large floods. With hurricanes Matthew in 2016 and Florence in 2018, the state has been dealt two so-called 1,000-year storms in only two years.[36] There is a consensus among researchers that climate change will continue to make storms and the floods that follow more intense, as

warmer air can hold more moisture and add more fuel to storm systems.[37] We already have seen an increase in the number of Category 4 and 5 hurricanes since the 1980s.[38]

North Carolina ranks second among U.S. states (behind only Florida) for its number of tropical storms and hurricanes.[39] Even non-tropical storms are already releasing more water—the Southeast is the only region in the U.S. that has experienced a significant increase in extreme rainfall from two-day storms, which are happening 50 percent more often than they did last century.[40] Over the next 12 years throughout the Southeast, extreme summer thunderstorms that are typically 100-year floods events are expected to drop between 40 percent and 80 percent more rain than they do today.[41]

Based on the recent experiences during Hurricane Florence, any infrastructure placed in North Carolina floodplains is increasingly at risk to flood and failure. Therefore, coal ash should not be kept in the 500-year floodplain, let alone the 100-year floodplain. By planning for climate change and proactively moving contaminants like coal ash out of flood zones, owners of contaminated sites and the State can avoid future disasters and protect health and the environment.

9. What other information should we seek or factors should we consider in making this decision?

Here are some suggestions for information you may want to obtain and factors you may consider before deciding how to approach remediation:

- Public health and sensitive populations. Who lives, works, or plays on or near the site? Are they young, pregnant, nursing, or elderly? How might these people be exposed to the contaminants on or near the site (*e.g.*, the public greenway)? What are the potential exposure pathways, how high is the risk of exposure, how would exposure affect health, and what measures can be taken to eliminate the risk of exposure? The remedial option you choose should be geared at protecting the most at-risk population.

- Environmental justice. If you would like to use the property to aid an underserved part of the community (for example, by developing affordable housing on the site), environmental justice principles should inform your decisionmaking on how to use and remediate the site. Low-income communities and communities of color are disproportionately burdened by pollution and have disparate access to healthy places to live. Although it is important to site affordable housing and social services in town, near jobs, public transportation, good school districts, and other amenities, it is equally important not to site services for vulnerable families in places that risk damaging exposure to environmental health hazards. Any decision on how to remediate and use the property must balance these considerations in a way that is equitable and protective of public health. For more information about environmental justice, please see the resources in the endnotes.[42]

- Wildlife. The pollutants in coal ash can kill or harm wildlife, can bioaccumulate in the food chain, and can interfere with reproduction. One recent study found concentrations of coal ash pollutants 18 to 125 percent higher in raccoons from a contaminated site and noted that "[t]oxic concentrations of arsenic and lead can impact the central nervous, blood, cardiovascular, gastrointestinal, urinary and reproductive systems in wildlife."[43]

- Costs and benefits. A full economic analysis should evaluate the costs and benefits of each option over an extended time horizon:
    - Consider the estimated future value of the property if partially remediated with deed restrictions, versus the value of a fully cleaned up site with clean title and future tax revenues from the property, which would offset some or all of the cleanup costs over time.
    - Calculate the present value cost of cleanup under all options:
        - Fully removing the coal ash—in addition to the Rougemont and Uwharrie landfills considered in the current cost estimate, evaluate the Charah coal ash disposal site in Moncure, Chatham County;
        - Phasing the project over two or more years to spread the costs;
        - Removing the coal ash cliff area—the most unstable portion of the ash—and the ash along the greenway, while leaving some upland ash in place;
        - Reusing some or all of the removed ash for fully-lined structural fill to offset construction costs elsewhere (as with the Asheville airport expansion, where reusing coal ash for lined structural fill is reported to have saved $12 million[44]);
        - Other recycling options including cement or concrete manufacturing;
        - Leaving all the ash in place—include costs of constructing a retaining wall that would withstand flooding from Bolin Creek, and all maintenance costs for the lifetime of the site;
        - In order to fairly compare these options, cost estimates should reduce the cost of future cleanup actions to present value.

- Potential responsible parties. The state will attempt to identify responsible parties and order them to clean up the site.[45, 46] According to DEQ, the law has been applied to responsible parties retroactively.[47] However, identifying responsible parties can be difficult, and the State's ability to order the cleanup will depend on whether they have enough evidence to demonstrate whether a party was responsible for the contamination.[48] If you have information about the identity of a responsible party, you could provide this information to the state to facilitate its investigation.

- Floodplains. No coal ash should be stored in a 100-year, 500-year, or 1,000-year floodplain. As explained above, any plan for the site must ensure the coal ash is removed from flood-prone areas.

Prepared by the Southern Environmental Law Center, October 2018.

Disclaimer: this material is provided for general informational purposes only. To the extent you require legal or tax advice, you should seek counsel from an attorney or tax professional. Additionally, although the Southern Environmental Law Center has made every effort to ensure the information herein is accurate and complete, you should consult an attorney before acting on the basis of the information provided in this letter

---

[1] North Carolina Department of Environmental Quality, *Program FAQs*, *available at* https://deq.nc.gov/about/divisions/waste-management/bf/faqs ("Brownfields FAQs").

[2] N.C. Gen. Stat. § 130A-310.33 (Liability Protection); DEQ, *Brownfields Program Guidelines and Issue Resolutions*, Issue 11 (Dec. 2017), *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/Website/PDFs/BF%20Guidelines%20%20Issue%20Resolutions%20Dec%202017.pdf ("Brownfields Guidelines").

[3] N.C. Gen. Stat. § 130A-310.33 (Liability Protection).

[4] N.C. Gen. Stat. § 130A-310.9(a) (Voluntary Remedial Actions; Limitation of Liability; Agreements; Implementation and Oversight by Private Engineering and Consulting Firms):

> No one owner, operator, or other responsible party who voluntarily participates in the implementation of a remedial action program under G.S. 130A-310.3 or G.S. 130A-310.5 may be required to pay in excess of five million dollars ($5,000,000) for the cost of implementing a remedial action program at a single inactive hazardous substance or waste disposal site. The owner, operator, or other responsible party who voluntarily participates in the implementation of a remedial action program under G.S. 130A-310.3 or G.S. 130A-310.5 shall be required to pay in addition to the cost of implementing the remedial action program a fee of one thousand dollars ($1,000) to be used for the Department's cost of monitoring and enforcing the remedial action program. The limitation of liability contained in this subsection applies to the cost of implementing the program and to the fee under this subsection. The limitation of liability contained in this subsection does not apply to the cost of developing the remedial action plan.

[5] Information from DEQ Division of Waste Management—Brownfields Program staff.

[6] N.C. Gen. Stat. § 130A-301.3 (Remedial Action Programs For Inactive Hazardous Substance Or Waste Disposal Sites); N.C. Gen. Stat. § 130A-310.35 (Notice of Brownfields Property; Land-Use Restrictions in Deed); see also N.C. Gen. Stat. § 130A-.

[7] N.C. Gen. Stat § 130A-310.32 ("As a result of the implementation of the brownfields agreement, the brownfields property will be suitable for the uses specified in the agreement while fully protecting public health and the environment instead of being remediated to unrestricted use standards.")

[8] N.C. Gen. Stat. § 130A-310.9(a) (Voluntary Remedial Actions; Limitation of Liability; Agreements; Implementation and Oversight by Private Engineering and Consulting Firms).

[9] Information from DEQ Division of Waste Management staff.

[10] N.C. Gen. Stat. § 105-277.13 (Taxation of Improvements on Brownfields).

[11] DEQ, *Tax Incentives*, *available at* https://deq.nc.gov/about/divisions/waste-management/bf/taxes ("Tax Incentives FAQ").

[12] Tax Incentives FAQ; Information from DEQ Division of Waste Management—Brownfields Program staff.

[13] N.C. Gen. Stat. § 130A-310.33 (Liability Protection); Brownfields Guidelines, Issue 11.

[14] N.C. Gen. Stat. §130A-310.33(a).

[15] N.C. Gen. Stat. §130A-310.33(a) ("A prospective developer who enters into a brownfields agreement with the Department and who is complying with the brownfields agreement shall not be held liable for remediation of areas of contaminants identified in the brownfields agreement except as specified in the brownfields agreement [...].")

[16] Brownfields Guidelines, Issue 11.

[17] N.C. Gen. Stat. §130A-310.33(a).

[18] N.C. Gen. Stat. §130A-310.33(a), (c).

[19] N.C. Gen. Stat. §130A-310.33(c):

> If a land-use restriction set out in the Notice of Brownfields Property required under G.S. 130A-310.35 is violated, the owner of the brownfields property at the time the land-use restriction is violated, the owner's successors and assigns, and the owner's agents who direct or contract for alteration of the brownfields property in violation of a land-use restriction shall be liable for remediation to unrestricted use standards. A prospective developer who completes the remediation or redevelopment required under a brownfields agreement or other person who receives liability protection under this Part shall not be required to undertake additional remediation at the brownfields property unless any of the following apply:
>
> (1) The prospective developer knowingly or recklessly provides false information that forms a basis for the brownfields agreement or that is offered to demonstrate compliance with the brownfields agreement or fails to disclose relevant information about contamination at the brownfields property.
>
> (2) New information indicates the existence of previously unreported contaminants or an area of previously unreported contamination on or associated with the brownfields property that has not been remediated to unrestricted use standards, unless the brownfields agreement is amended to include any previously unreported contaminants and any additional areas of contamination. If the brownfields agreement sets maximum concentrations for contaminants, and new information indicates the existence of previously unreported areas of these contaminants, further remediation shall be required only if the areas of previously unreported contaminants raise the risk of the contamination to public health or the environment to a level less protective of public health and the environment than that required by the brownfields agreement.
>
> (3) The level of risk to public health or the environment from contaminants is unacceptable at or in the vicinity of the brownfields property due to changes in exposure conditions, including (i) a change in land use that increases the probability of exposure to contaminants or in the vicinity of the brownfields property or (ii) the failure of remediation to mitigate risks to the extent required to make the brownfields property fully protective of public health and the environment as planned in the brownfields agreement.
>
> (4) The Department obtains new information about a contaminant associated with the brownfields property or exposures at or around the brownfields property that raises the risk to public health or the environment associated with the brownfields property beyond an acceptable range and in a manner or to a degree not anticipated in the brownfields agreement. Any person whose use, including any change in use, of the brownfields property causes an unacceptable risk to public health or the environment may be required by the Department to undertake additional remediation measures under the provisions of this Part.
>
> (5) A prospective developer fails to file a timely and proper Notice of Brownfields Development under this Part. (1997-357, s. 2; 2001-384, s. 11.)

[20] "No one owner, operator, or other responsible party who voluntarily participates in the implementation of a remedial action program under G.S. 130A-310.3 or G.S. 130A-310.5 may be required to pay in excess of five million dollars ($5,000,000) for the cost of implementing a remedial action program at a single inactive hazardous substance or waste disposal site." N.C. Gen. Stat. §130A-310.9(a).

[21] Information from DEQ Division of Waste Management staff.

[22] DEQ, *Inactive Hazardous Sites No Further Actions*, *available at* https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/ihs-no-further-actions; N.C. Gen. Stat. §130A-310.33(c).

[23] N.C. Gen. Stat. § 130A-310.9(a) (Voluntary Remedial Actions; Limitation of Liability; Agreements; Implementation and Oversight by Private Engineering and Consulting Firms).

[24] Information from DEQ Division of Waste Management—Brownfields Program staff.

[25] N.C. Gen. Stat. §130A-310.35(e).

[26] Information from DEQ Division of Waste Management—Brownfields Program staff.

[27] DEQ, *North Carolina Brownfields Program, Brownfields Agreement Process*, available at https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/BF-BFA%20Process%20Flowchart-2012%20final.pdf.

[28] Information from DEQ Division of Waste Management—Brownfields Program staff.

[29] N.C. Gen. Stat. §130A-310.32(a)(2).

[30] Information from DEQ Division of Waste Management—Brownfields Program staff.

[31] *See* Floodplain Map, Flood Risk Information System ("FRIS"), https://fris.nc.gov/fris/Index.aspx?user=General%20Public&address=1199%20Black%20Jack%20Church%20Rd,%20Goldsboro,%20NC%2027530&ST=NC&ST=NC, last accessed Oct. 10, 2018 (showing flood information for Lee plant).

[32] *See* Waterkeeper Alliance, *Analysis Finds Toxic Levels of Arsenic in Neuse River Water Following H.F. Lee Coal Ash Spill*, Sept. 28, 2018, *available at* https://waterkeeper.org/analysis-finds-toxic-levels-of-arsenic-in-neuse-river-water-following-h-f-lee-coal-ash-spill/.

[33] Marvin Beach, WCCB, *Coal Ash Uncovered Near Lake Norman High School in Mooresville,* Oct. 24, 2018, *available at* https://www.wccbcharlotte.com/2018/10/24/coal-ash-uncovered-near-lake-norman-high-school-in-mooresville/; Kristin Leigh, WSOC, *9 Investigates: Coal Ash Site Exposed Near Lake Norman High* School, Oct. 24, 2018, *available at* https://www.wsoctv.com/news/local/9-investigates-coal-ash-site-exposed-near-lake-norman-high-school/858440521; Megan Suggs, STATESVILLE RECORD & LANDMARK, *Coal Ash Disturbed Near Lake Norman High School*, Oct. 24, 2018, *available at* https://www.statesville.com/news/local/coal-ash-disturbed-near-lake-norman-high-school/article_35dc35d0-d7d0-11e8-a330-53ddc2f70d12.html; *see also* Megan Suggs, Mooresville Tribune, *Mooresville's 'Coal Ash Corridor' Is Largest Concentration In State*, Oct. 27, 2018, *available at* https://www.mooresvilletribune.com/news/local/mooresville-s-coal-ash-corridor-is-largest-concentration-in-state/article_decd08c2-da1e-11e8-96f2-f7d911d2c512.html.

[34] Jessica Minch, WBTW, *Santee Cooper: Waccamaw River Crests Without Overtopping Grainger Ash Pond 2*, Sept. 26, 2018, *available at* https://www.wbtw.com/news/grand-strand/santee-cooper-waccamaw-river-crests-without-overtopping-grainger-ash-pond-2/1478206077; *see also* Thad Moore, THE POST AND COURIER, *Flooded SC River Within Inches of Spilling Into Coal Ash Pit with 200,000 Tons of Waste*, Sept. 25, 2018, *available at* https://www.postandcourier.com/news/flooded-sc-river-within-inches-of-spilling-into-coal-ash/article_b32ab830-c0c0-11e8-9f36-c3a9518cf2dd.html.

[35] *See* U.S. Department of Commerce, National Oceanic and Atmospheric Administration ("NOAA"), National Weather Service, *NOAA Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 2, available at* http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas14_Volume2.pdf.

[36] *See* NOAA's National Weather Service Hydrometeorological Design Studies Center, *Exceedance Probability Analysis for Selected Storm Events*, http://www.nws.noaa.gov/oh/hdsc/aep_storm_analysis/, last accessed Oct. 10, 2018 (showing information for Hurricane Florence and Hurricane Matthew).

[37] *See* NOAA, Geophysical Fluid Dynamics Laboratory, *Global Warming and Hurricanes: An Overview of Current Research Results, available at* https://www.gfdl.noaa.gov/global-warming-and-hurricanes/ (last visited Oct. 10, 2018; *see also* Abbie Bennett, *Florence floods damaged thousands more homes because of sea level rise, study shows*, NEWS & OBSERVER, Sept. 24, 2018, *available at* https://www.newsobserver.com/news/local/article218944875.html.

[38] *See* Webster, P.J., *et al., Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment*, 309 SCIENCE 1844-1846 (2005) (on file with the author).

[39] *See* Brian Donegan, The Weather Channel, *North Carolina Second Only to Florida for U.S. Tropical Storms and Hurricanes*, Sept. 11, 2018, *available at* https://weather.com/storms/hurricane/news/2018-06-05-map-shows-how-many-tropical-storms-hurricanes-struck-each-state.

[40] *See* David R. Easterling, *et al.*, *Climate Science Special Report: Fourth National Climate Assessment, Volume I, Chapter 7: Precipitation Change in the United States*, U.S. Global Change Research Program, 207-230, doi: 10.7930/J0H993CC (2017), *available at* https://science2017.globalchange.gov/chapter/7/.

[41] *See* Andreas F. Prein, *et al.*, *Increased Rainfall Volume From Future Convective Storms in the US*, 7 NATURE CLIMATE CHANGE 880-884 (2017) (on file with the author); *see also* Zhe Feng, *Near Doubling of Storm Rainfall*, 7 NATURE CLIMATE CHANGE 854-856 (2017) (on file with the author); Somini Sengupta, *Why the Wilder Storms? It's a 'Loaded Dice' Problem*, NY TIMES, Oct. 5, 2018, *available at* https://www.nytimes.com/2018/10/05/climate/rain-floods-extreme-weather.html.

[42] United States Environmental Protection Agency, *Environmental Justice* website, *available at* https://www.epa.gov/environmentaljustice (*see resources tab on Equitable Development and Environmental Justice* page at https://www.epa.gov/environmentaljustice/equitable-development-and-environmental-justice); Megan Haberle, *Fair Housing and Environmental Justice: New Strategies and Challenges*, 26 J. of Affordable Housing 2, 271 (2017), *available at* https://www.prrac.org/pdf/AH_26-2_06Haberle.pdf.

[43] UGA News Service, *Coal Burning Linked To Toxic Contaminants Found In Raccoons*, Athens Banner-Herald (Feb. 4, 2017), http://www.onlineathens.com/uga/2017-02-04/coal-burning-linked-toxic-contaminants-found-raccoons (last visited Nov. 2, 2018).

[44] Robert Nordstrom, Asheville Regional Saves $12 Million Using Free Coal Ash Fill, Airport Improvement (May-June 2015), https://airportimprovement.com/article/asheville-regional-saves-12-million-using-free-coal-ash-fill.

[45] Information from DEQ Division of Waste Management staff.

[46] N.C. Gen. Stat. § 130A-310.1(c) (Identification, inventory, and monitoring of inactive hazardous substance or waste disposal sites; duty of owners, operators and responsible parties to provide information and access; remedies.):

> Whenever the Secretary determines that there is a release, or substantial threat of a release, into the environment of a hazardous substance from an inactive hazardous substance or waste disposal site, the Secretary may, in addition to any other powers he may have, order any responsible party to conduct any monitoring, testing, analysis, and reporting that the Secretary deems reasonable and necessary to ascertain the nature and extent of any hazard posed by the site.

[47] Information from DEQ Division of Waste Management staff.

[48] Information from DEQ Division of Waste Management staff.

Exhibit 1

Comparison of the North Carolina Inactive Hazardous Sites Program and Brownfields Program

	Inactive Hazardous Sites Branch ("IHSB") (aka Voluntary Cleanup Program)[1]	Brownfields Program[2]
Eligibility	Anyone is eligible to volunteer to clean up a property under IHSB. The state will look for a responsible party. If it is able to find a responsible party, it will ask it to clean up the property. If the responsible party refuses, the state may take legal action to order the responsible party to clean-up.	The Brownfields Program is available only to parties that did not contribute to the contamination on the site. The applicant must also have the technical, financial, and managerial means to implement the project. In addition to parties that originally generated or dumped the waste, parties that later disturbed contamination already on site and caused a new release of contaminants are also excluded from participation in the Brownfields Program.
Fees	One-time fees: • If overseen by DEQ: $1,000 • If overseen by Registered Environmental Consultant: $2,500 Varying annual fees, payable until site reaches No Further Action Status (see https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/ihs-no-further-actions).	Fee schedule: • Standard Project: $8,000 • Ready-For-Reuse Project: $15,000 • Redevelopment Now: $30,000 Fees are subject to negotiation in the Brownfields Agreement. The Redevelopment Now option is for expedited review of high-value, high-public benefit projects. The Ready-For-Reuse option is for owners that are not eligible to participate in the Brownfields Program but want to market the project to developers that would be eligible.

Other Costs	The remediating party will be responsible for costs associated with engaging contractors or consultants (including, as needed a Registered Environmental Consultant) to perform a remedial investigation, develop a remedial action plan, and implement and oversee remedial design and construction and other remedial action activities.	The owner/developer will be responsible for costs associated with: • Engaging consultants to collect information and sampling data for the assessment and to develop a remedial and redevelopment plan, to submit to the State; • Negotiating the Brownfields Agreement; • Implementing the required remedial measures; and • Ongoing monitoring and compliance requirements after the remediation is complete. Note: the tax exclusions (see below) are designed to help offset some of these costs.
Cleanup Standard	Two possibilities: an unrestricted use standard, or a restricted use standard with land use restrictions (see explanation under Brownfields Program). The unrestricted use standard means the property is fully remediated and can be used without restriction.	Restricted use standard with land use restrictions. A restricted use standard is tied to the planned use of the property. The remediating party will be obligated to clean up or mitigate the contamination on site only to the extent required to make it safe for its intended use.
Remedial Plan	After completing a remedial investigation, a voluntary remediating party works either directly with the State or with a Registered Environmental Consultant to develop a cleanup plan (known as the Remedial Action Plan).	After an assessment, the State and the developer will negotiate what remediation that will be required in the Brownfields Agreement based on the developer's proposed use of the property and conditions of the site. The developer must agree to remediate the property so that the property is "suitable for the uses specified in the agreement while fully protecting public health and the environment." If the parties are not able to come to an agreement on remediation, the project will not move forward.

Land Use Restrictions	None, if cleaned up to the unrestricted use standard. This means the property can be sold with clean title for its full value. Some restrictions, if cleaned up under a restricted use standard (same as Brownfields Program – see explanation on right).	Some land use restrictions will be required. Because the property is not fully cleaned up, it may only be used for certain purposes. The State will require the property deed to include land use restrictions, which will apply to future owners. Restrictions are determined on a case-by-case basis, based on what is "suitable for the uses specified in the agreement while fully protecting public health and the environment." These restrictions limit how the property may be used, which lessens the value of the property compared to the non-restricted standard. For an example, see attached plat for the Museum for Contemporary Art and Design in Raleigh (CAM) (Exhibit 3). The deed restrictions include, among others, no playgrounds, childcare centers, or schools. The plat also lists the concentrations of contaminants found at the site and identifies sampling locations. These restrictions remain on the plat and are carried to future owners.
Limitation of Liability—Dollar Cap	$5,000,000. "No one owner, operator, or other responsible party who voluntarily participates in the implementation of a remedial action program under G.S. 130A-310.3 or G.S. 130A-310.5 may be required to pay in excess of five million dollars ($5,000,000) for the cost of implementing a remedial action program at a single inactive hazardous substance or waste disposal site."	None. This means unless a liability cap is negotiated into the Brownfields Agreement, a developer or future owner may face unlimited liability for remediation if it loses liability protection under N.C. Gen. Stat. §130A-310.33(c) (see bulleted list in next row).

Limitation of Liability—Covenant-Not-To-Sue	There is no explicit liability protection analogous to the "covenant-not-to-sue" under the Brownfields Program; however, so long as the property is remediated to the agreed-upon standard, and the remedial efforts and land use restrictions do not fail, the risk of additional cleanup is low. The state would have no reason to enforce against an owner if the property is completely cleaned up or if the contamination that remains is successfully contained and poses no risk to health or the environment.	Yes, with limitations. Under the Brownfields Agreement, the State agrees not to sue (the "covenant-not-to-sue") a developer or future owner to do more cleanup than is required under the agreement so long as the developer and future owner comply with the requirements of the Brownfields law and agreement, and so long as the activities on the property do not "increase the risk of harm to the public health or the environment." This provision does not protect the developer or future owner from liability for future site contamination (if, for example, the remaining contamination is intentionally or unintentionally dug up and released, or if a retaining wall fails or soil cap erodes and releases contaminants). Under the law, a developer or owner can lose liability protection and be required to clean up the site to unrestricted use standards (the same unrestricted use standard used by IHSB) if: • The developer or owner violates a land use restriction; • The developer or owner knowingly or recklessly provides false information to obtain a Brownfields Agreement or demonstrate compliance; • New information indicates previously unreported contaminants or a new area of contamination; • The level of risk to public health or the environment becomes unacceptable due to changes in exposure conditions (including the failure of remediation efforts to mitigate risks in accordance with the Brownfields Agreement, or changes in land use that increase probability of exposure); • New information demonstrates a contaminant associated with the site is more harmful to public health or the environment than anticipated when the Brownfields Agreement was signed; or • The developer fails to file a timely and proper Notice of Brownfields Development, as required by the brownfields law.

Tax Exclusion	None.	Yes. The developer receives a five-year partial tax exclusion for each phase completed as follows: • Year 1: 90% exclusion • Year 2: 75% exclusion • Year 3: 50% exclusion • Year 4: 30% exclusion • Year 5: 10% exclusion This means, for example, during the first year, the owner pays only 10 percent of the property taxes on the appraised value of the land (90 percent of the tax is excluded). The tax exclusion is designed to partially offset the cost of assessment and remediation. In effect, the local government subsidizes the cost of assessment and remediation to incentivize redevelopment. A short-term tax loss could translate to a long-term gain, if remediating the property to unrestricted use standards under IHSB is not feasible and the property would remain idle.

Prepared by the Southern Environmental Law Center, October 2018

Disclaimer: this material is provided for general informational purposes only. To the extent you require legal or tax advice, you should seek counsel from an attorney or tax professional. Additionally, although the Southern Environmental Law Center has made every effort to ensure the information herein is accurate and complete, you should consult an attorney before acting on the basis of the information provided in this letter.

[1] Information about Inactive Hazardous Sites Branch was complied from the following sources:

- Inactive Hazardous Sites Response Act of 1987, codified at N.C. Gen. Stat. §130A-310. through §130A-310.13, *available at* https://deq.nc.gov/about/divisions/waste-management/waste-management-rules/inactive-hazardous-sites.
- North Carolina Administrative Code Title 15A, Subchapter 13C (Inactive Hazardous Substance or Waste Disposal Sites rules), *available at* http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2013%20-%20solid%20waste%20management/subchapter%20c/subchapter%20c%20rules.pdf.

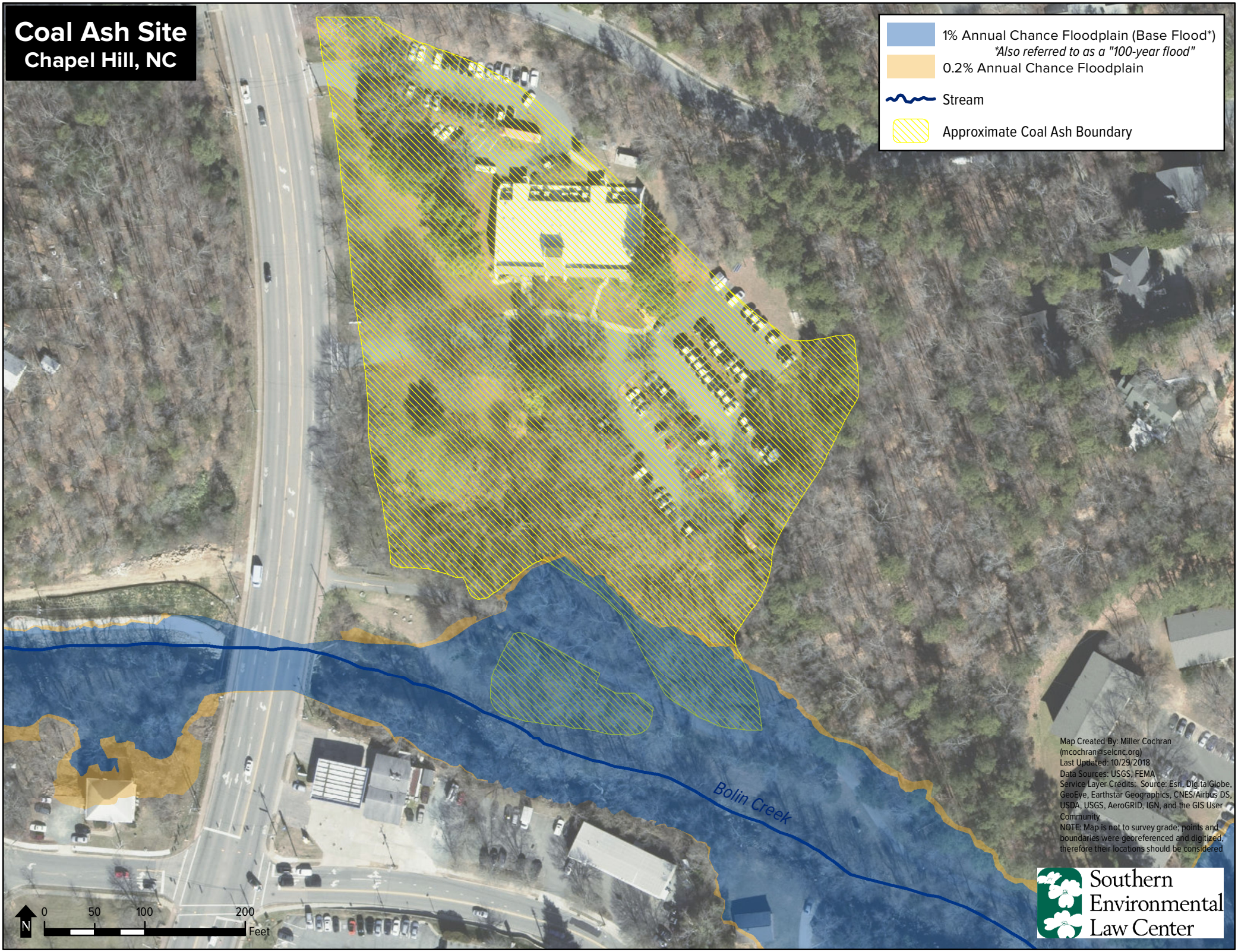
- Materials available on the North Carolina Department of Environmental Quality ("DEQ"), Inactive Hazardous Sites web site, *available at* https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program, including:
    - *Inactive Sites No Further Actions*, *available at* https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/ihs-no-further-actions.
    - *No Further Action Fees*, Feb. 8, 2017, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/SF/IHS/guidance/NoFutherActionFees020817PDF.pdf.
    - *REC Program Site Cleanup Process Overview*, Jan. 2, 2018, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/SF/IHS/REC%20Program/REC%20Site%20Cleanup%20Process%20Overview%201-18.pdf.
- Information from DEQ Division of Waste Management staff.

[2] Information about the Brownfields Program was complied from the following sources:

- Brownfields Property Reuse Act of 1997, codified at N.C. Gen. Stat. §130A-310.30 through §130A.310.40, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/Website/PDFs/BPRA%20as%20ratified%20by%20NCGA%2020150930.pdf.
- N.C. Gen. Stat. §105-277.13 (Taxation of improvements on brownfields.), *available at* https://www.ncleg.net/EnactedLegislation/Statutes/PDF/BySection/Chapter_105/GS_105-277.13.pdf.
- Materials available on DEQ's Brownfields Program web site, *available at* https://deq.nc.gov/about/divisions/waste-management/bf, particularly:
    - *Brownfields Guidelines and Issue Resolutions*, December 2017, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/Website/PDFs/BF%20Guidelines%20%20Issue%20Resolutions%20Dec%202017.pdf.
    - *Program FAQs*, *available at* https://deq.nc.gov/about/divisions/waste-management/bf/faqs.
    - *Brownfields Agreement Process* flowchart, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/BF-BFA%20Process%20Flowchart-2012%20final.pdf.
    - *Brownfields Public Notice Process* flowchart, *available at* https://files.nc.gov/ncdeq/Waste%20Management/DWM/BF/BF-Public%20Notice%20Flowchart-2012%20final.pdf.
    - *Tax Incentives FAQ*, *available at* https://deq.nc.gov/about/divisions/waste-management/bf/taxes.
    - *Fee Information*, *available at* https://deq.nc.gov/about/divisions/waste-management/bf/fees.
    - Redevelopment Now Option, available at https://deq.nc.gov/about/divisions/waste-management/bf/rn-option.
- Information from DEQ Division of Waste Management—Brownfields Program staff.

Exhibit 2

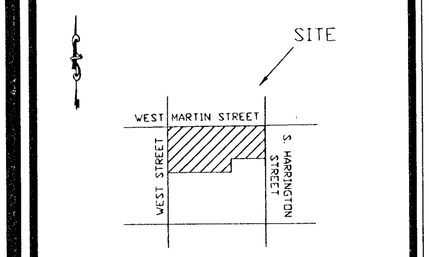
Coal Ash Site
Chapel Hill, NC



Map Created By: Miller Cochran
(mcochran@selcnc.org)
Last Updated: 10/29/2018
Data Sources: USGS, FEMA
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
NOTE: Map is not to survey grade; points and boundaries were georeferenced and digitized, therefore their locations should be considered

Southern Environmental Law Center

Exhibit 3



VICINITY MAP (N.T.S.)

Groundwater Contaminant	Sample Location	Date of Maximum Concentration Sampling	Maximum Concentration above Unrestrictive Use Std. (µg/L)	Unrestrictive Use Std. (for reference only) (µg/L)
Aliphatics C5-C8	MW-1	06/17/2010	57,700	400
Aliphatics C9-C18	MW-1	06/17/2010	16,200	700
Aromatics C9-C22	MW-1	06/17/2010	3,790	200
Benzene	TMW-3	12/17/2008	14,000	1
Benzene	MW-1	06/17/2010	19,700	1
Ethylbenzene	TMW-3	12/17/2008	880	600
Ethylbenzene	MW-1	06/17/2010	1,220	600
Naphthalene	TMW-3	12/17/2008	540	6
Toluene	MW-1	06/17/2010	12,200	600
1,2,4-Trimethylbenzene	MW-1	06/17/2010	970	400
Xylenes(total)	MW-1	06/17/2010	6,950	500
Barium	TMW-3	12/17/2008	840	700
Chromium	TMW-4	12/17/2008	22	10
Iron	TMW-3	06/13/2007	8,630	300
Lead	TMW-3	12/17/2008	25	15
Lead	TMW-4	12/17/2008	130	15
Manganese	TMW-3	06/13/2007	3,660	50

Soil Contaminant	Sample Location	Depth	Date of Maximum Concentration Sampling	Maximum Concentration above Unrestricted Use screening Level (mg/kg)	Unrestrictive Use Screening Level (For Reference only) (mg/kg)
Benzo(a)anthracene	TMW-4	0-1	12/17/2008	0.62	0.15
Benzo(b)fluoranthene	TMW-4	0-1	12/17/2008	0.70	0.15
Benzo(a)pyrene	SB-14	2-4	06/14/2007	0.13	0.015
Ethylbenzene	SB-14	2-4	06/14/2007	5.90	5.40
Ethylbenzene	SS-20	7	06/04/2010	7,660	5.40
Naphthalene	SB-12	2	03/19/2009	31	3.60
Naphthalene	SS-4	7	06/04/2010	3,720	3.60
1,2,4 Trimethylbenzene	SB-12	2	03/19/2007	220	6.70
1,2,4 Trimethylbenzene	SB-19	2-4	06/14/2007	9.8	6.70
1,2,4 Trimethylbenzene	SB-20	2-4	06/14/2007	9.5	6.70
1,2,4 Trimethylbenzene	SS-2	7	06/04/2010	10.2	6.70
Total Xylenes	SB-12	2	03/19/2007	540	130
Total Xylenes	SS-4	7	06/04/2010	445	130

Sub-slab Vapor Contaminant	Sample Location	Date of Maximum Concentration Sampling	Maximum Concentration above Screening Level (ug/m3)	Screening Level (For Reference only) (ug/m3)
n-Hexane	Location VI-1	11-8-2008	4.00E+03	1.46E+03
Benzene	Location VI-2	11-8-2008	4.60E+02	0.31E+02
Benzene	Location VI-3	11-8-2008	7.40E+01	3.1E+01

LAND USE RESTRICTIONS

N.C.G.S. 130A-310.35(a) requires recordation of a Notice of Brownfields Property ("Notice") that identifies any restrictions on the current and future use of a Brownfields Property that are necessary or useful to maintain the level of protection appropriate for the designated current or future use of the property and that are designated in a Brownfields Agreement pertaining to the property. This survey plat constitutes one of two components of the Notice pertaining to the Brownfields Property depicted on this plat and recorded at the Wake County Register of Deeds' office. The other component of the Notice is a document, to which the Brownfields Agreement for the subject property is attached as Exhibit A; a reduced version of this survey plat constitutes Exhibit B to that document. The following Land Use Restrictions, excerpted verbatim from the Notice, are hereby imposed on the Brownfields Property and shall remain in force in perpetuity unless canceled by the Secretary of the North Carolina Department of Environment and Natural Resources (or its successor in function), or his/her designee, after the hazards have been eliminated, pursuant to N.C.G.S. § 130A-310.35(e):

1. No use may be made of the Brownfields Property other than for art museum and residential purposes, and for industrial and, if DENR issues prior written case by case approval, other commercial purposes. Within the meaning of this restriction, the following definitions apply:

a. "Art museum" refers to a facility designed for and displaying art work for the public's enjoyment and edification.

b. "Residential" refers to use for a permanent human dwelling of any single- or multi-unit building.

c. "Industrial" refers to the manufacture or processing of goods or materials.

d. "Commercial" refers to a business enterprise.

2. No building may be constructed on the Brownfields Property until DENR has been consulted regarding the potential for subsurface contamination at the Brownfields Property to contribute to the migration of vapor contaminants, and the potential for vapor intrusion to pose a health risk to future building users. If DENR determines that subsurface contamination at the Brownfields Property could pose a potential health risk in a planned building due to vapor intrusion, the building may not be constructed without:

a. a vapor barrier and, if DENR determines it necessary, a mechanical or passive sub-vapor barrier venting system, neither of which shall be installed without advance written DENR approval, and the installation of each of which shall be followed within 30 days by provision to DENR of certification of proper installation under seal of a professional engineer licensed in North Carolina, as well as photographs illustrating the installation and a brief narrative describing it; or

b. a showing that meets with DENR's written satisfaction that no vapor-related measures are needed.

3. Between 30 and 90 days after the heating and air conditioning system of the existing site building becomes operational, the Brownfields Property's then current owner shall conduct indoor air sampling in accordance with a plan approved in writing in advance by DENR, and shall, within 30 days after said sampling, submit a report subject to DENR approval setting forth the procedures used and the analytical results obtained. If the analytical results indicate to DENR the presence of indoor air contaminants associated with subsurface contaminants in excess of the screening levels DENR determines are appropriate, the Brownfields Property's then current owner shall, within a time period acceptable to DENR, assess and mitigate risks associated with said contaminants to DENR's written satisfaction.

4. Surface water at the Brownfields Property may not be used for any purpose without the prior written approval of DENR

5. No activities that encounter, expose, remove or use groundwater (for example, installation of water supply wells, fountains, ponds, lakes or swimming pools, or construction or excavation activities that encounter or expose groundwater) may occur on the Brownfields Property without prior sampling and analysis of groundwater to the written satisfaction of DENR in any areas proposed for such activities, and submittal of the analytical results to DENR. If such results disclose to DENR contamination that might put at risk the Brownfields Property's suitability for the uses specified in land use restriction 1. above or public health or the environment, the proposed activities may not occur without the prior written approval of DENR on such conditions as DENR imposes, including at a minimum compliance with plans and procedures, approved pursuant to applicable law, to protect public health and the environment during the proposed activities.

6. Soil at the Brownfields Property at a depth greater than three (3) feet may not be disturbed without a minimum of seven (7) business days advance written notice to DENR, unless DENR states otherwise in writing in advance. While such soil is disturbed, DENR may inspect and sample, or require sampling of, the subject soil for contaminants. If soil contamination is discovered that DENR determines might put at risk the Brownfields Property's suitability for the uses specified in land use restriction 1. above or public health or the environment, the Brownfields Property's then current owner shall take any actions that DENR requires to ensure the Brownfields Property's suitability for such uses and to fully protect public health and the environment, such as removing and disposing of as much soil as DENR requires in accordance with applicable law.

7. No mining may be conducted on or under the Brownfields Property, including, without limitation, extraction of coal, oil, gas or any other minerals or non-mineral substances.

8. No basements may be constructed on the Brownfields Property unless they are, as determined in writing by DENR, vented in conformance with applicable building codes.

9. None of the contaminants known to be present in the environmental media at the Brownfields Property, including those listed in paragraph 7 of Exhibit A hereto, may be used or stored at the Brownfields Property without the prior written approval of DENR, except in de minimis amounts for cleaning and other routine housekeeping activities.

10. The Brownfields Property may not be used as a playground, or for child care centers or schools.

11. The owner of any portion of the Brownfields Property where any existing, or later-installed, DENR-approved monitoring well is damaged shall be responsible for repair of any such wells to DENR's written satisfaction and within a time period acceptable to DENR.

12. Neither DENR nor any party conducting environmental assessment or remediation at the Brownfields Property at the direction of, or pursuant to a permit, order or agreement issued or entered into by, DENR may be denied access to the Brownfields Property for purposes of conducting such assessment or remediation, which is to be conducted using reasonable efforts to minimize interference with authorized uses of the Brownfields Property.

13. During January of each year after the year in which this Notice is recorded, the owner of any part of the Brownfields Property as of January 1st of that year shall submit a notarized Land Use Restrictions Update ("LURU") to DENR, and to the chief public health and environmental officials of Wake County, certifying that, as of said January 1st, this Notice containing these land use restrictions remains recorded at the Wake County Register of Deeds office and that the land use restrictions are being complied with, and stating:

a. the name, mailing address, telephone and facsimile numbers, and contact person's e-mail address of the owner submitting the LURU if said owner acquired any part of the Brownfields Property during the previous calendar year; and

b. the transferee's name, mailing address, telephone and facsimile numbers, and contact person's e-mail address, if said owner transferred any part of the Brownfields Property during the previous calendar year; and

c. whether any vapor barriers and/or sub-barrier venting systems installed pursuant to land use restriction 1. above are performing as designed, and whether the uses of the ground floors of any buildings containing such vapor barrier and/or mitigation systems have changed, and, if so, how.

STATE OF NORTH CAROLINA
WAKE COUNTY
I, AL PRINCE, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE BY ME (OR UNDER MY DIRECT SUPERVISION) - (DEED DESCRIPTION RECORDED IN BOOK____PAGE____); THAT THE RATIO OF PRECISION AS CALCULATED BY LATITUDES AND DEPARTURES IS 1/ 20,000+ ; THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN AS BROKEN LINES DRAWN FROM INFORMATION FOUND IN BOOK_____PAGE_____; THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY HAND AND SEAL THIS 4th DAY OF FEBRUARY, 2011.

_____P.L.S. 1356 (N.C.)
CORPORATION # 0277

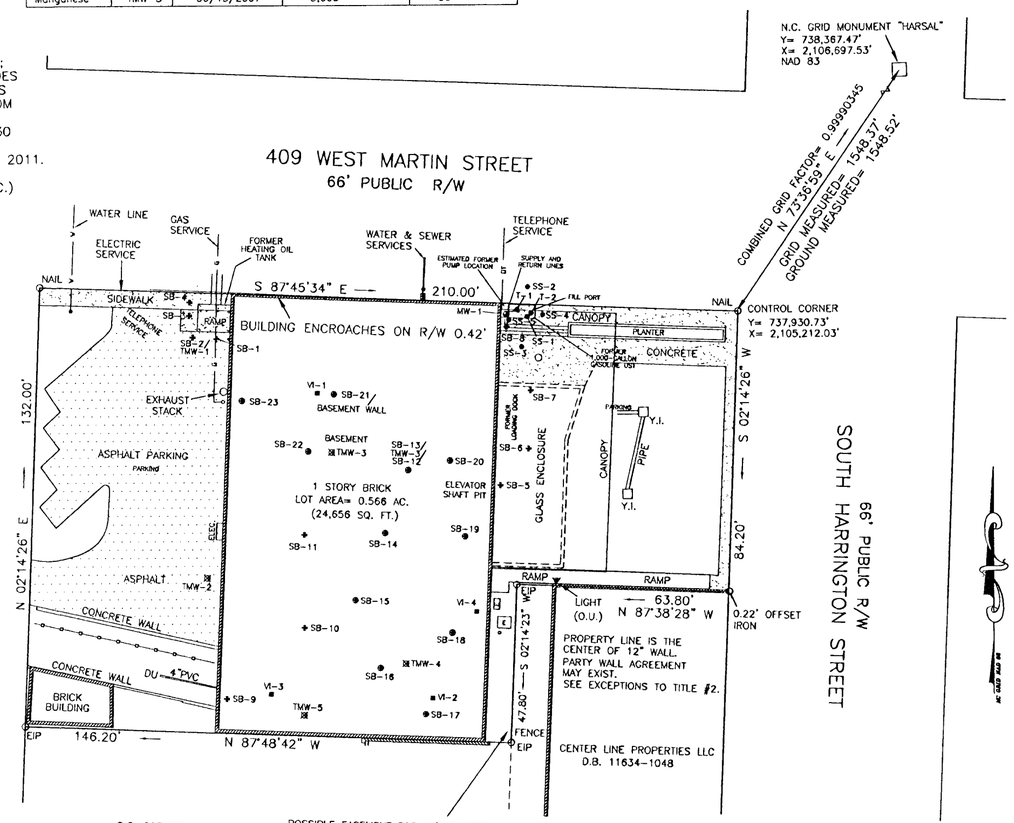
NOTES:

1. NO FEMA FLOOD PLAIN ON THIS PROPERTY.
2. DISTANCES SHOWN ARE HORIZONTAL GROUND MEASURED.
3. AREAS COMPUTED BY COORDINATE GEOMETRY.
4. ONLY VISIBLE ABOVE GROUND UTILITIES WERE LOCATED.
5. THIS MAP REPRESENTS SOIL AND GROUNDWATER CONTAMINANTS. LIST OF MONITORING WELLS AND CONTAMINATES PROVIDED BY MID-ATLANTIC ASSOCIATES, INC. WITH LOCATIONS.
6. PROPERTY IS SUBJECT TO ALL EASEMENTS OF RECORD.
7. PROPERTY IS ZONED IND-2 & CUD O&I-2

THIS PROPERTY__IS/__IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE__AS DEFINED BY F.I.R.M. COMMUNITY PANEL NUMBER 3720170300J WITH AN EFFECTIVE DATE OF MAY 2, 2006.

REFERENCES:
1. PIN# 1703570886
2. M.B. 1920-195
3. D.B. 14074-1179
4. D.B. 6479-913
5. D.B. 1748-333
6. D.B. 402-293
7. D.B. 428-182
8. D.B. 428-189
9. D.B. 350-433
10. D.B. 279-73
11. D.B. 149-211
12. D.B. 7611-593

LEGEND:
O= EXISTING IRON PIPE
D.B. = DEED BOOK
M.B. = MAP BOOK
M.H. = MANHOLE



LEGEND

MW-1	MONITORING WELL LOCATION (MID-ATLANTIC ASSOCIATES)
T-1	SOIL SAMPLE LOCATION (MID-ATLANTIC ASSOCIATES)
SS-1	RISK-BASED SAMPLE LOCATION (MID-ATLANTIC ASSOCIATES)
TMW-1	APPROXIMATE TEMPORARY MONITORING WELL LOCATION (ECS)
SB-23	PREVIOUS APPROXIMATE SOIL BORING LOCATION (ECS)
SB-16	APPROXIMATE SOIL BORING LOCATION (ECS)
VI-1	APPROXIMATE VI CANISTER LOCATION (ECS)
	UNDERGROUND UTILITY LINES

I, AL PRINCE, PROFESSIONAL LAND SURVEYOR NO. L-1356, CERTIFY TO ONE OR MORE OF THE FOLLOWING AS INDICATED THUS, ☐ OR ☐ :

☒ A. THAT THIS PLAT IS OF A SURVEY OF AN EXISTING PARCEL OR PARCELS OF LAND;

_____P.L.S. (L-1356)

THE AREAS AND TYPES OF CONTAMINATION DEPICTED HEREON ARE APPROXIMATIONS DERIVED FROM THE BEST AVAILABLE INFORMATION AT THE TIME OF FILING.

Approved _____ for the purposes of N.C.G.S. § 130A-310.35

_____ 4/20/2011
Linda M. Culpepper, Deputy Director — date
Division of Waste Management
State of North Carolina

OWNER:
409 WEST MARTIN LANDLORD, LLC
409 WEST MARTIN STREET
RALEIGH, N.C. 27603-1819

GRAPHIC SCALE
0 30 60 100
(IN FEET)
1 inch = 30 ft.

WAKE COUNTY, NC 206
LAURA M RIDDICK
REGISTER OF DEEDS
PRESENTED & RECORDED ON
04/26/2011 AT 13:56:27

BOOK:BM2011 PAGE:00394

RECORDED IN MAP BOOK _____, PAGE _____, WAKE COUNTY.

NORTH CAROLINA PROFESSIONAL SEAL L-1356 LAND SURVEYOR ALBERT E. PRINCE
SEAL:
CORPORATION # 0277

BY	DATE	REVISIONS

DATE: 2-4-2011
SCALE: 1"=30'
DRAWN BY: AEP
CHECKED BY: AL PRINCE
FILE NAME: AKT BROWNS

TITLE: SURVEY PLAT
EXHIBIT B TO THE NOTICE OF BROWNFIELDS PROPERTY AT
409 WEST MARTIN LANDLORD, LLC - OWNER
CONTEMPORARY ART MUSEUM - PROSPECTIVE DEVELOPER
ADDRESS= 409 WEST MARTIN STREET
PIN# 1703570886
RALEIGH T.S. - WAKE COUNTY, NORTH CAROLINA

SHEET: 1 OF: 1

AL PRINCE & ASSOCIATES, P.A.
ENGINEERS-SURVEYORS-PLANNERS
975 WALNUT STREET, SUITE 233
CARY, NORTH CAROLINA - 27511
PHONE (919) 467-3545 FAX (919) 467-3607