Community Advisory Council
April 15, 2009
Action Items/Notes

Final

These notes are in the following order:

1. Attendance
2. Correspondence and Handouts
3. Administrative Items, Budget Update,
4. EM Stimulus Funding, John Sattler, DOE Brookhaven Site Office
5. LIPA Solar Project, Robert Gordon, DOE, and Mark Toscano, BNL
6. Agenda Setting
7. Community Comment
8. SPDES Permit, Robert Lee, Environmental Protection Division

1. Attendance

Members/Alternates Present:
See Attached Sheets.

Others Present:
C. Armitage, C. Birben, F. Carlson, H. Carrano, J. Carter, J. D'Ascoli, M. Deering, K. Geiger, G. Goode, R. Gordon, T. Green, M. Holland, S. Johnson, T. Kneitel, S. Kumar, R. Lee, R. McKay, C. Parnell, J. Remien, J. Sattler, M. Toscano

2. Correspondence and Handouts

Items one through three were mailed with a cover letter dated April 7, 2009. Items four and through seven were available as handouts at the meeting.

1. April 15, 2009 draft agenda
2. Final notes for February 12 2009
3. Draft notes for March 12, 2009
4. Revised draft Agenda
5. Copy of American Recovery and Reinvestment Act (ARRA) presentation
6. Copy of LIPA Solar RFP and Proposed BP Project presentation
7. Copy of the SPDES Permit Modification presentation

3. Administrative Items

The meeting began at 6:34 p.m. Reed Hodgin reviewed the ground rules and the draft agenda. Those in attendance introduced themselves.

Approval of Minutes
Reed asked for corrections, additions or deletions to the March 12, 2009 draft notes. The notes were approved with no corrections and three abstentions.

George Goode, Environmental & Waste Management Services, informed the CAC that there will be a shipment of five beam plugs leaving the site this evening at 10 p.m. They are loaded into a cask and the truck will be escorted off site and will head out to the Nevada Test site.

Michael Holland, Department of Energy (DOE), gave the CAC an overview of the stimulus money that has already been received by Brookhaven and the additional money that may possibly be coming to the Lab. He said that Secretary of Energy, Dr. Steven Chu, visited the Lab and announced that $184 million was being sent to Brookhaven. Of that, $150M will be used to accelerate the NSLS II project, $17M will be going to accelerate the construction of the Interdisciplinary Science Building onsite, and $18M will be distributed to infrastructure projects such as renovating roofing, upgrading fire protection systems, electrical systems, mechanical systems and others. In addition, the Nuclear Physics Program Office informed the Lab this morning that they intend to send $12M to BNL for detector upgrades at RHIC and the Isotope Production Program.

Member Chaudhry asked if other Labs are also receiving this money.

Holland said that BNL received more money than any of the other science Labs, probably because of the cutting edge research that is currently being done here as well as our performance on a whole.

4. American Recovery and Reinvestment Act (ARRA), EM Completion Project, John Sattler, Office of Environmental Management, DOE BHSO

John Sattler, DOE Federal Project Director, spoke about the Environmental Management (EM) stimulus money and gave a quick overview of the American Recovery and Reinvestment Act (ARRA). He explained that the DOE Office of Environmental Management will receive $6 billion for cleanup, which will be distributed across 17 sites in 12 different states for various projects. The ARRA was signed into law on Feb. 17, 2009 and is expected to jump-start the economy. The EM projects onsite that will be funded by ARRA will receive just over $42 million. The focus of the projects that have been identified to fund are related to jobs and projects that can be successfully completed by the end of 2011. For Environmental Management, the focus will be on footprint reduction.

Member Giacomaro asked if the $6B across the country is in addition to the money BNL would receive anyway.

Sattler said yes, this money is above and beyond base funding. The idea for EM to get this money is to accelerate work so that cleanup at sites like Brookhaven, which is considered a “small site” because of the scope of work, compared to Savannah River or Hanford, can be completed in the very near future. What we’re going to do is accelerate some of the cleanup work planned for the out years.

One key element in the Recovery Act is to provide transparency and accountability. There are important requirements that include keeping the dollars separate, tracking them separately, and accounting for all the jobs created or retained. There are a host of reporting requirements associated with it. We are in the process now of setting up a program to track the money. Sattler went over the facilities/areas, scope of work and scheduled completion dates for the ARRA EM projects at BNL.

Member Esposito asked for clarification, if the list on the slide is the new completion schedule with the additional funds and if the graphite pile is to be removed by January 2010, what was the original date without the increased funding?

Sattler said most of these projects were already planned and budgeted for the future; this money is allowing the Lab to accelerate the work. The BGRR is a little different, we had some serious funding constraints. If the Lab hadn't received this infusion of money, things would have slowed down and possibly temporarily halted. This money will allow this project to remain on schedule.

Member Giacomaro said it appears that this money is speeding things up that were already planned, so it is not really additional money. You were going to be receiving it in the future anyway.

Sattler said it is additional money because there was no guarantee that the Lab would be receiving it in the future. It all relates to the budget cycle. The goals of the Recovery Act are to complete work that is well defined, already has a contractor in place, and involves available technology.

Reed said the work was planned and the budget identified but the funding was not yet committed to that work until now.

Sattler said an important point is that there was no assurance that the funding would be received through the normal budget cycle although we would request it.

Member Amper asked if someone from the Lab could tell the CAC why it is that they were not aware of the BGRR funding issue and how they can be assured that in the future they will be notified of projects that run into funding constraints.

Sattler said the work on the graphite reactor has not slowed down, but was approaching a point where there could be a slow down due to funding constraints. Several things impacted funding. This fiscal year there was a Continuing Resolution and some of the anticipated money was sent to other sites that had immediate need. BNL had to rely on the money left over from the prior year.

Member Amper reiterated that if the Lab is aware of this and knows the CAC has an interest, he asked that the Lab inform the CAC of any funding constraints.

> **ACTION ITEM:** Find out why the CAC was not notified of the possibility of a slow down on cleanup of BGRR and how the CAC can be sure they are informed in the future of funding constraints.

Member Andrejkovics asked if the completion dates are final and if these projects are in contract now.

Sattler said these are final draft numbers, the projects are well defined. Recently BSA submitted a revised baseline budget to firm up the dates and DOE is currently reviewing that document. He anticipates that it will be finalized in the near future.

Sattler illustrated some of the projects. He said the scope of work for the Former Hazardous Waste Management Facility perimeter area project is to remove and remediate contaminated soils. There are identified hot-spots and they will dig up and dispose of the soil in those areas. Cesium-137 is the primary contaminant of concern and is limited to the top six inches to one foot. There is no impact to groundwater. He said the Transfer Waste Lines from Bldg. 811/801 will be removed and the soil remediated. The scope of work at the BGRR is to remove all graphite pile blocks. Once the pile is removed, cleanup will continue using base funding money. The HFBR System Isolations project is to stabilize the HFBR for long-term surveillance and maintenance. The systems will be de-energized, drained, locked out and tagged out. All

abandoned equipment and fixtures will be cleaned out, disposed of and isolated. All residual D_2O (heavy water) will be removed from piping systems and disposed of and the fission chambers, filters and resin beds will be removed and disposed of. The two fan houses near the stack will be removed and the soil will be remediated. The stack itself will then be demolished.

Member Schwartz asked if there were any radiation hazards associated with the activities and if there will be airborne dust when the fan houses are knocked down?

Sattler said there may be residual contamination. The graphite reactor is a Hazard Category 3 because of the residual radioactivity in the graphite pile inside the bioshield. All of these things will be taken into consideration.

Member Esposito said she thought the CAC was given a complete rundown on cleanup and D&D for both the HFBR and the BGRR and there was no mention of a potential slowdown. The good news is that the graphite cube will be taken care of with this additional money so now funds that were intended for the graphite cube can be used for the bioshield. She asked how this affects the timeline for the entire BGRR.

Sattler said although the Lab was aware that there would be an issue if they did not receive the money for the BGRR, they were never informed that would actually happen. The Lab has been operating on the assumption that they would be getting the money this year. We will be keeping a close eye on the money to make sure there are no shortfalls. The more work that gets accomplished, the more likely it is that the project will get funded.

Member Esposito asked if it would be fair to say that the graphite cube remediation has been expedited and the rest of the BGRR is on track.

Sattler said yes.

Member Amper asked Jeanne D'Ascoli if the Lab could give the CAC a presentation looking back ten years at the timeline. See where they thought they would be ten years later and compare that to where they actually are now.

> **ACTION ITEM:** Provide a ten-year analysis of cleanup – what was proposed to be cleaned up and when, and what the current status is.

Member Shea asked for an elaboration on the soil cleanup in the hot spots of the Former Hazardous Waste Management area and what the range of Cs-137in the contaminated soil is.

Jason Remien, Environmental Protection Division, said the area has been evaluated over the last several years. There was one area with a concentration of 800 picocuries per gram, but on average most of it was 23 - 67 picocuries per gram. There are no high concentrations and all of the hot spots are shallow, only the top six inches.

Member Garber asked how the HFBR stack would be demolished.

Chuck Armitage said most likely the stack will be collapsed from the top down into a large pile of rubble and then carted away.

5. LIPA Solar RFP and Proposed BP Project, Robert Gordon, DOE, and Mark Toscano, BNL

Robert Gordon said in April 2008 LIPA (Long Island Power Authority) put out a Request for Proposals (RFP) for interested parties who could supply up to 50 MW of power generated

through photovoltaics (PV). They reserved the right to choose one or more vendors. BNL and DOE proposed using a portion of Laboratory property to host a solar array because the Lab is committed to developing renewable energy sources. This offer was placed on the website for all of the offerors to see along with several conditions. First, the Lab wanted to satisfy the LIPA requirement, which is to provide power to send to the grid to benefit the community. Secondly, DOE and BNL would receive a benefit, with some of the output of the solar array to be dedicated to the Lab. Lastly, a portion of the project be connected to research at the Laboratory. The project will complement work that is ongoing at the Lab and there are already industries that have expressed interest in conducting research at the small array. LIPA has awarded four projects and one of them was BP Solar which was selected to work exclusively with BNL.

Member Guthy asked if there is a way for the array to be upgraded.

Gordon replied that the research array is intended to be very fluid so that different technologies can be tried. It will be a great educational tool.

Member Schwartz asked if BP Solar is working exclusively with BNL on the entire project or just the research array.

Gordon said they will work with the Lab on the entire project and would have to meet all of the conditions. BP Solar was chosen to work exclusively with BNL on this one award, but there are three other awards elsewhere.

Member Graves asked if BP Solar is affiliated with BP Petroleum

Gordon said they are the same.

Mark Toscano, Energy Manager, said the Lab and DOE identified locations where a solar photovoltaic (PV) system would have minimal environmental impact, be close to the LIPA transmission system, and minimize aesthetic concerns for the general public. These locations are in the southeast corner of the site, close to the LIPA substation and in an area that can be developed.

Member Esposito asked if that area is wooded.

Toscano said some parts are wooded.

Member Amper asked if the project is proposed for the Pine Barrens Core area.

Toscano said it is not proposed for the Core. The Lab has identified areas that are not to be developed and BP has abided by that.

Toscano said BP Solar is currently proposing a large scale solar photovoltaic project of up to 37 MW and the data collected under this research collaboration will be available to LIPA and the public. BNL will be able to explore new research collaborations and launch an educational and community outreach program about solar energy, among other benefits.

Member Giacomaro asked how many acres of land will be used for this array.

Toscano said about 190 acres are needed for the 37 MW project that has been proposed.

Member Andrejkovics asked why it is only 37 MW when the original LIPA RFP was for 50 MW. Toscano explained that this is only one of four projects. The rest is being distributed through the other three projects across Long Island. This is still in the very early stages of development.

There are no construction details available yet. BP will be completing their preliminary design over the next few months. The Lab has begun an Environmental Assessment under the National Environmental Policy Act (NEPA) process and expects completion by late summer or early fall.

Member Shea asked how they will prevent animals from climbing on the solar panels and how high off the ground will they be.

Toscano said he expects the area to be fenced and there will be surveillance to prevent vandalism. The exact details have not been worked out yet. Tim Green is looking at some native grasses to see how high they will grow and that will determine how high off the ground the panels will be.

Member Giacomaro asked if this will be multi-level.

Toscano said no, it will be one level. He said the expected clearing will be consistent with Pine Barrens standards and guidelines. He said the final location of the research array has not been determined yet.

Member Heil asked for an explanation on the timing of the project.

Toscano said, first, LIPA needs to be assured by BP that this is a viable project. Once LIPA is satisfied, then BP can present their information and LIPA will decide whether or not they want to go forward with this project. All issues and concerns need to be addressed. There is a lot to do and this project is probably a couple of years away.

Michael Deering, LIPA, said the project needs to be fully developed and operational by the end of 2011.

Member Sprintzen asked if this is being funded with stimulus dollars or if is it independent.

Deering said this is an independent project right now. However, the Governor has announced that the State will be contributing $15 million through NYSERDA, which might be coming from stimulus money, we don't know.

Member Graves asked why not use an area that is already cleared instead of a wooded area and asked what the size of the circle around the tiger salamander habitat is. He said that could become an island surrounded by the solar array.

Tim Green, BNL Natural and Cultural Resource Manager, said a large part of the area already cleared is set aside for the NSLS II project. Some of the other areas are landfills and you can't penetrate the cap of a landfill because that is the seal.

Toscano said the cleared areas were the first places looked at as potential sites. It would be much easier to put this in areas that were already cleared, but it would be very expensive to have it spread it out all over the site and try to connect it to the grid.

Green said the area identified as tiger salamander habitat is not actually tiger salamander habitat because tiger salamanders don't like cleared fields. The circle around that area is a 1,000 foot circle, so we are requesting that all development remain outside of that circle. That area was originally the meadow marsh project and when the Lab did the cleanup, they actually recreated that habitat for the salamanders.

Member Amper said the Lab, as a federal facility, is not subject to the Pine Barrens Protection Act of 1993 because that is state legislation; however, the Lab has made it their policy to conform to the standards, guidelines, and regulations that are contained in that act. It has not yet been established whether this project conforms to the standards and guidelines of the Land Use Plan, but it is the position of the Laboratory that it will. In the process of developing solar energy, he said he would caution the Lab and LIPA. It appears contradictory to be clearing trees in order to save energy. The carbon footprint has a subtractive component and that would be all of the trees that have to be cut down. The Pine Barrens Society's position is that they don't oppose projects that conform to the standards and guidelines. Having said that, the Society also doesn't like seeing the Pine Barrens cut down much either.

Member Chaudhry said LIPA originally solicited bids for 50 MW of power. BNL is only going to be producing 37 MW. Why is it not the full amount? Is LIPA now pursuing another bidder for the other 13 MW?

Toscano said LIPA has three other projects that actually exceed the original 50 MW goal.

Deering said LIPA received proposals ranging from 1 MW to 38 MW projects. Two primary bidders were chosen and two subsequent bidders. BP Solar has the one project of 37.9 MW total capacity. The second primary bidder chosen was Enexco. Their project will be distributed throughout Long Island, using numerous sites. They have a very diverse approach. These need to be looked at as two completely different projects for the purpose of review. BNL will do their NEPA review following their regulatory processes and Enexco will follow the SEQRA (State Environmental Quality Review Act) process. At this point in time BNL is negotiating the purchase power agreement. The entire decision will go back to the board and that will be made public.

Member Shea asked if this solar array will affect the weather.

Deering said it will not affect weather patterns.

Member Andrejkovics asked if there are any existing projects of this size elsewhere.

Toscano said there are many on drawing boards.

Gordon said there is a 30 MW project that is under construction for the federal government at a NASA facility.

Member Schwartz said much of the CO_2 that is in the atmosphere today is a consequence of land clearing that has taken place in the past and continues to take place. We know how much carbon goes into the atmosphere due to land clearing activities. He suggested this be included in the environmental review process and that the question of what the payback time would be for that land clearing activity from the solar power generated be answered.

Green said that is one of the points in the environmental review that will be asked. BP Solar will provide the Laboratory with the numbers so they can be compared to the carbon footprint from cutting the trees versus what will be saved over the lifetime of this project, which is expected to be 20 years.

Member Giacomaro asked if BP Solar is a new organization and if it has produced solar power in the past. Do they have research facilities now?

Gordon said they have been around for quite a while and they sell their solar panels in Home Depot.

Member Graves said if the smaller 13 MW project can be done in other places, why can't the 37 MW be done that way. He asked how far away from the 1,000 foot circle the tiger salamander has been tracked.

Green said they have been tracked up to 1,250 feet away. The 1,000 foot circle is a result of research that has been done here at BNL.

Member Corrarino asked what effect a hurricane would have on the panels.

Toscano said the panels will exceed design criteria for this area. They are very low profile so they are not likely to catch the wind. It is still early in the process and the design will be reviewed.

Member Esposito commented that BP prefers to clear the land because it is too expensive to do this on rooftops. What type of environmental review will this be subject to?

Green said this will be done under NEPA and will require an Environmental Assessment.

6. Agenda Setting

Jeanne D'Ascoli told the CAC that next month Vicki Colvin, Rice University, will be giving a presentation on the environmental, safety and health issues in regard to nanotechnology. She will be presenting to employees at 4:00 p.m. and then to the CAC at 6:30 p.m. If it is necessary to finish the SPDES discussion, that will also take place next month. For a future agenda item, the HFBR Record of Decision has been signed and the Laboratory would like the CAC to see how their input was used and what the final ROD looks like. She said there is also a science presentation, a presentation on the science that is expected to come out of the NSLS II, and the CAC may participate in an emergency table top drill in the future. The possibility of taking part of the summer off will be discussed next month.

Member Schwartz asked to see what is still on the list of possible agenda items.

D'Ascoli said that information is at the end of the notes.

Member Jordan-Sweet asked for a brief report on the new Interdisciplinary Science Building.

D'Ascoli said the Lab would like to give a presentation on the master plan, which includes the new buildings. Hopefully, next month we can prioritize these things.

Member Garber asked if the two presentations next month by Vicki Colvin will be the same.

D'Ascoli said she assumes they will be similar.

7. Community Comment

Jeanne D'Ascoli commented that there was a training session held for some interested CAC members, and that is available to any additional CAC members who may be interested in this overview.

8. SPDES Permit Presentation, George Goode, Environmental Protection Division; and Robert Lee, Environmental & Waste Management Services Division

Reed told the CAC that the public comment period for the proposed SPDES Permit is open until

May 26th. Last month the CAC had a presentation on the technical background and copies of the permit were given out. This month there will be additional information presented and then George Goode and Bob Lee will be available to answer any questions. The CAC will then be given time for an internal discussion. If we are unable to finish this tonight the discussion will continue next month, which will still be within the time period.

George Goode said New York State Department of Environmental Conservation (DEC) issued a draft permit February 9, 2009; they will now consider comments and then issue the final permit. BNL has one year to complete any special studies that are required. The DEC will consider the results of any special studies and may re-open the permit depending on the results. If the permit is not re-opened, the public may not have the opportunity to comment on potentially significant changes to operations. BNL must implement treatment/alternative disposal methods by January 1, 2012.

Significant changes to the permit focus on the Sewage Treatment Plant (STP) which discharges to the Peconic River (Outfall 001). The main point is to reduce metals discharge to the river so water quality based effluent limits can be achieved and potential impacts on aquatic organisms can be reduced. The approach is the Quantification and Removal Study and Mercury Minimization Program. This is an integrated study of options to reduce the discharge of metals to the Peconic River. The steps are to identify and measure sources of metals, evaluate treatment options, evaluate alternative disposal options, and recommend options to achieve goals.

BNL is committed to studying a full range of options to determine the best environmental outcome. There are six metals of concern that have been identified: copper, iron, lead, zinc, nickel, and mercury. Some of the major sources that we are aware of are: cooling towers, boiler plant operations, sand filter beds at STP, metal cleaning operations, printed circuit lab, printing presses, photo developing, sanitary waste, potable water system, legacy deposits, and water treatment units. We know that the sand filter beds at the STP are a source of metals contamination. They provide final filtration to remove suspended solids prior to the discharge to the Peconic River and metals accumulate on the surface. The levels of mercury and sometimes zinc can be elevated in our sanitary waste possible due to people taking vitamins and eating certain foods. Some fish have parts per million and we are measuring in parts per trillion so it is a possible contributor.

Some potential treatment technologies are: filtration (sand, cartridge, bag, etc), ion exchange, carbon filtration, selective ion exchange (experimental, tends to focus on Mercury), coagulation/precipitation, reverse osmosis, and constructed wetlands. Alternative disposal options include: hold and haul, which consists of collecting waste in drums or tanks and shipping offsite; small scale sanitary treatment, which means to divert specific waste streams to package sanitary plant and discharge to recharge system; and partial or full redirection of STP discharge to a recharge system which will stop or reduce discharge to the Peconic River and direct discharge to a recharge basin instead.

The mercury level of the influent to the STP is around 100 – 200 parts per trillion. The contamination that is removed in the sludge at the STP is shipped offsite. The mercury level at the discharge from the STP is 5 – 45 ppt, which is a significant reduction. The discharge then goes to the sand filter beds as the final filtration prior to being discharged to the river. There the effluent percolates through the sand filter bed to an under drain collection system about three feet below the surface which collects the effluent, sends it to be disinfected in a UV chamber, and then discharges it to the Peconic River. The discharge concentration at the river goes up to about 60 – 120 ppt, so we know the sand filter beds are actually adding mercury back in from years of accumulation in its upper layer. About 85 percent of the effluent that goes into the sand filter beds is collected and discharged into the Peconic River, about 15 percent percolates

through the drain collection system and actually recharges into the aquifer. There are three groundwater monitoring wells that monitor the sand filter beds and we know that the concentrations in groundwater around the sand filter beds are around 2 – 9 ppt. That is significant because rainwater is 5 – 9 ppt so this concentration is similar to background levels.

We know we have upstream sources and we know that the STP is quite effective at removing the mercury; we also know that the sand filter bed is a source. Our current permit limit is 200 ppt and our current discharge is below that, but the limit for mercury is scheduled to drop to 50 ppt in 2012. Although this limit can be achieved at the discharge from the STP, it is not being achieved at the discharge from the sand filter beds to the Peconic River. This is one of the reasons why the Lab wants to consider partial or full diversion of some of the effluent to a recharging system. The sand filter beds are each about an acre in size. There is a project to clean them this year. The Lab plans on removing the top six inches to one foot of sand, where the majority of the contaminants are, this summer and we should see a significant improvement in the levels as a result of that project.

Member Esposito asked if the money for this project was secured.

Goode said right now half the project is planned for this summer and half next summer because of funding. There is a chance we could do the whole thing this summer.

Robert Lee said the plan is to do two sand filter beds this summer and two next summer.

Member Giacomaro asked if the sand filter beds are removing solids and when was the last time they were changed or cleaned?

Goode said they are removing suspended solids so when the effluent leaves, there is still organic and other suspended material there which then has to go through a filtration process to remove all of that prior to discharge. They haven't been changed or cleaned in a long time. There have been some selective cleanups as part of the CERCLA program, but the entire area has not been done since the 1960's.

Member Giacomaro asked why the Lab can't re-treat it after it goes through the sand filter beds.

Goode said the treatment process that removes the mercury is the organic material and that has to be filtered out prior to discharge.

Lee said the majority of the 100 – 200 ppt is captured in the solids that come into the STP. There is a clarifier which removes 90 percent of the solids before it goes through the sand filter. The problem is that there is 50 years worth of accumulation in them. That is why there is an increase in mercury concentration. It would be very energy intensive to have it retreated after going through the sand filter beds.

Goode said we are focusing mainly on mercury, but we have to remember that there are five other metals that we have to look at and we don't know what those concentrations are at each of these intermediary steps.

Member Chaudhry asked if the sand filter beds are man-made.

Goode said they are made up of sand that was placed there specifically to provide filtration for suspended solids. We are meeting our permit limits with the way they are operating right now. We know that they accumulate contamination over time, but they have not become so contaminated that the Lab is in violation on our discharge limits. They are still working as they were designed to. The new limits and goals and the overall goal of reducing contamination of

the Peconic River with metals is causing us to look at whether there might be better technology to achieve these goals. Maybe replacing the sand filter beds, diverting part to a recharge basin, using packaged sand filters, or other options need to be considered.

Member Chaudhry said he felt the sand filter beds definitely need to be replaced. He asked if the Lab is just going to study this or actually do it.

Goode said it has to be studied for the full range of metals. The top six inches to one foot of the sand filter beds is going to be replaced regardless of anything else. There are factors that need to be considered when deciding whether or not to redirect the discharge to a recharge basin. We need to look at the flow of the Peconic River, would this create periods of no flow and we need to find out to what extent the river would be affected. We will have to study the wetlands, the fish, and other aquatic organisms to determine what the result of those changes would be. We also have to look at what will happen to the groundwater if additional effluent were added to it, could it create groundwater contamination, would it change the flow patterns. All of this has to be studied before any decisions or recommendations can be made. This is only one of the options we are recommending. BNL's comments are still in the draft mode. Some of our significant comments include redirection of STP discharge (full or partial) as part of the Quantification and Removal Study, clarification of the permitting process and public involvement for future permit changes, and that the January 1, 2012 implementation date should be flexible and based on the results of the Quantification and Removal Study and Mercury Minimization Program. BNL is committed to studying the full range of options to determine the best environmental outcome.

Member Schwartz asked if BNL is held to a higher standard than other sources because of the delicacy of the Peconic River.

Goode said no, the higher standard if any, is due to the small size of our discharge zone. We basically are the Peconic River at certain times of year.

Member Esposito asked if you cleaned out the sand filter beds, what would be the expectation for filtration ability for heavy metals.

Goode said the answer is unknown.

Lee said there are four separate filters. We will clean two this year and two next year.

Goode said only one sand filter bed is used at a time.

Lee said we should see the mercury concentrations come down. He said he is concerned about the other elements like copper, where the Lab will be held to 3.4 ppb standard. The current discharge is around 6 ppb and I don't think we can do much better even if we clean out the sand filter beds. That is inherent in the processes and in the type of water that is being discharged to the STP. Zinc is another element that we are going to have a hard time meeting the limits for because it has a very heavy sanitary component to it.

Goode said the good news is the project that is planned is going to give us an opportunity to measure those things.

Lee said the Quantification and Removal Study requires us to look at the plant and determine the level of efficiency for each of those metals. We don't have all the information yet.

Member Esposito said she feels diverting the discharge is going to create another whole series of problems for the Peconic River.

Lee said that is why we are discussing this option in such depth.

Goode said if we determine there will be terrible impacts, we won't do it.

Member Heil asked what the term of the new permit will be and what the difference is in standards for groundwater versus the river.

Goode said the term will be for five years. The discharge limits are significantly different. The ambient water quality standards which govern the discharge to the Peconic are extremely low because of the sensitivity of aquatic organisms. The groundwater discharge limits are significantly higher.

Lee said for example, the copper discharge limit to the river is 3.4 ppb, the discharge limit to groundwater is 400 ppb. The Lab's current discharge limit is 150 ppb.

Member Campbell said if the source of most of the metals is plumbing, why not install new plumbing to avoid that problem.

Goode said there isn't a good substitute for copper plumbing and the State recognizes that. In the Quantification and Removal Study, the Lab is asked to compare the concentrations seen from processes to strictly sanitary. It also allows us to compare to our potable water. Those will be the benchmarks used to compare against.

Member Graves asked what drives the State standards.

Lee said the standards are based on impacts to aquatic organisms. Effluents used to be based on technological standards, now they are water quality based limits.

Goode said the results of the study will ultimately determine the limit. A limit above the target could be established. There must be a reasonable attempt to use best available technology to get as good as you can within reason.

Reed said a good question is whether or not the standards are correct, but that is not part of this discussion which is fact finding.

Member Garber said there are different types of sand for the sand filter beds; he asked if it is possible to use sand that specifically targets these metals. He also asked for an explanation of a Class C river.

Lee said a Class C river is one that provides for the propagation and survival of fish year round. A Class D river, which is what the Peconic River used to be, is a seasonal river that dries up and restores itself during heavy periods of rain. A Class D river has higher effluent limits than a Class C. He said in the original permit issued in 1978 this was a Class D river.

Goode asked how many people have never been down to see where the discharge into the river is. He explained that it was originally a trench dug by the army to drain wetlands and prevent mosquitoes.

Member Esposito said we can't change the classification.

Member Corrarino asked for clarification of the comment that said, replacing the sand will decrease the mercury discharge, but it is unknown by how much.

Goode said that is correct. We know that right now the concentration increases after going through the sand filter beds. We also know that the top six inches to one foot is where the majority of the metals contamination is. We expect to see a reduction if we remove that sand and replace it with clean material, especially if we can find sand that specifically targets metals removal, but we don't know that for sure.

Member Giacomaro asked if other places throughout the country use this type of system and is there a specification stating how often the sand should be changed. He said there should be a set policy.

Goode said the discharges are monitored on a monthly basis and the permit limits are being met. However, he said he agrees this should be scheduled as preventative maintenance.

Member Giacomaro said that copper has been used as a purifier for many years and if the copper plumbing is replaced to reduce copper limits that may increase the likelihood of other contamination.

Lee said the Lab relies on UV disinfectant as a final purifier to kill bacteria.

Goode said UV is used as a replacement for chlorine.

Member Esposito asked if there is some type of upgrade or retrofit to the existing STP infrastructure that could be used to filter out the additional metals. She asked if there is any type of new technology available that could be implemented so the flow doesn't have to be changed.

Goode said ion exchange is commonly used for metals removal, but it is not effective for mercury. We are currently investigating a mercury system that is experimental and extremely expensive. It may be that a combination of several options would work, we just don't know yet.

Lee said the Lab could install an ion exchange on the discharge from the STP, but if you are devoid of ions in the water that could be more corrosive. Ion free water will go out in search of ions and will start stripping ions from whatever it touches. That could work to our detriment. This is all part of the Quantification and Removal Study. We are trying to find out how we can optimize the treatment and sewage plant to maximize the removal of metals without going to the extreme.

Reed said so far there are two ideas and a third, which is actually a combination. The first is to have a periodic schedule whereby the sand filter beds would be cleaned; the second is to add another treatment activity downstream of the sand filter beds, and lastly a combination of both those options.

Member Jordan-Sweet asked if there are six sand filter beds, why only four are being discussed. She said perhaps there has been improvement to the quality of sand available since the 1960's.

Lee said only four are being used, so the other two are not an issue. All six are contaminated; they were used in the past. The other two were taken out of service in 1995. Only four are needed. The Laboratory plans on looking at the different types of sand and sand filters. As part of the study we will look at rapid sand filters, packaged sand filters, sand filters with different filtration media as a means of optimizing treatment.

Goode said one of the options being looked at are the sand filtration units that are being utilized in one of the ground water treatment systems for the treatment of Sr-90, and have shown to be very effective.

Member Guthy asked where the sand is coming from for the sand filter beds.

Lee said the idea of replacing the sand filters was discussed in 1996 and the filtration sand, which is very fine, has been sitting here for the last 12 years.

Member Graves said in terms of pH and changes in precipitation over time with it becoming more acidic and that precipitation feeding the aquifers, have you looked at whether that is mobilizing the metals in the plumbing system and adding to your source.

Goode said the Lab controls the pH of potable water and maintains it around 8 to keep it slightly basic because metals add to the acidity.

Member Giacomaro asked if anyone has checked this 12 year old pile of sand for metals. It might be already contaminated to some degree.

Goode said that is a good point, especially because the limits are going to be lowered. There may have to be an acceptance testing criteria established for any filtration media that is put in.

Reed asked if this pile of sand is under cover.

Lee said it is out in the open.

Reed commented that it has been filtering 5-9 ppt rainwater for twelve years.

Member Esposito said if all this research still needs to be done, what exactly can the CAC comment on. We don't know if there is new technology or what will happen to the river if the flow is diverted; there is a lot that we just don't know. How can we comment when we don't have a lot of information?

Goode said that is a good point. From the Lab's perspective, this is a good opportunity for us to try to find ways to reduce our environmental impact and the requirements to do the studies are a good idea. The CAC wants to be able to give input in the implementation phase, and that is heavily dependent on the outcome of the studies. We have a year to do the studies and can continue to discuss with you the results of some of the work that is being done, but we want your comments with regard to implementation once the studies are completed. The Lab wants to know how the community feels about the options they are recommending to the DEC. That might be an area that you could comment on.

Lee said if you look back, the Lab's second comment is to clarify the permitting process and public involvement for future changes to the permit that will result from the survey results.

Member Esposito said right now, she is not able to make a coherent recommendation other than wanting to see the results of the study and then being able to comment.

Goode said that itself is an important comment.

Member Garber said the deadline is coming up soon for the interim limits for the SPDES permit.

Member Esposito said the interim limits are higher than the target limits allowing the Lab to do the necessary studies and then phase into the lower target limits. The CAC wants to be able to comment during the phase-in period.

Reed said the Lab feels it can successfully work within the existing interim levels until the studies are done.

Member Schwartz said it appears the Lab does not know how to achieve the new levels but does not seem worried.

Goode said that is because we have the interim limits which are achievable. The target limits do make us nervous, but there is recognition that some of these new numbers are unachievable. We need to show what we can achieve with available technology and the actual limits will be based on that.

Reed said the Laboratory has no problem with the interim limits or doing the studies. They feel it is very important for the CAC and the rest of the public to be involved and comment when the studies are done. Right now, they are looking for your comments on anything you want to say at this time, but the issue of public comment down the road during the implementation phase after the studies are done seems to be the main place that the Lab would like your input. We will add further discussion on the SPDES Permit to the agenda for next month and see if we can gather some comments. I have put together a few of the ideas that you have come up with for part of your discussion next month.

Flip Chart Notes - SPDES comments

1. Further treat effluent after filter beds
2. Impact of potential recharge option on Peconic flow a concern
3. Potential for replacing water plumbing?
4. Food (fish) a potential source to be studied specifically
5. Are there better sands for use in the filter beds?
6. Set period for cleaning sand filters
7. Sand change out combined with further treatment after sand beds?
8. Check stored sand for contamination before use

Member Esposito said she will not be here next month, but will be submitting comments from her organization and she would like that to be distributed to the CAC. She said she will focus on the ability to comment after the conclusion of the studies with an emphasis on avoiding flow diversion into the Peconic River and hopefully being able to use technology to reduce those levels.

Member Guthy thanked everyone for the time spent speaking to the CAC.

The meeting adjourned at 9:23 p.m.

Agenda Topics	Votes
~~Global Warming, Stony Brook, Pine Barrens~~ (1-10-08)	15
~~CAC as a conduit/resource to the community~~ (11-08-07)	13
~~Emergency Operations Center tour and drill~~ (6-12-08)	12
Nano technology	11
~~CERN – problems and implications~~ (4-10-08)	11
~~Site Environment Report – good and bad~~ (11-8-07)(10-2-08)	11
~~Nano safety~~ (3-13-08)	10
Regulator presentations on areas they oversee	10
Energy	9
Overview of programs	9
~~Deer Management~~ (4-10-08)	8
Anti-terrorism update	7
~~NSLS-II briefing~~ (12/11/08)	7
Nuclear power plant safety	6
~~Education Programs~~ (10-2-08)	6
~~Energy efficiencies~~ (9-13-07)	6
Sustainable transportation	4
~~Natural Resources management~~ (11-13-08)	4
~~Nano ES & H~~ (10-11-07)	3
Safety and Security	3
Experimental Review Process	3
Latest RHIC findings	2
How the Lab supports nuclear facilities in the N/E region	2
Status of P-2 road show	2
~~Heating plant and efficiency research~~ (12-11-08)	2
~~Lyme Disease~~ (6-11-09)	2
CAC process	2
Alternative fuels	2
Update on phyto/bacterial contamination remediation research	1
Deforestation	0
Work planning process	0

New Topics Added After September 2007 Vote

~~Global warming – BNL research~~ (5-8-08)
~~Nano toxicology~~ (5-14-09)
~~Nano ES&H issues at BNL and beyond~~ (5-8-08)
Nanotechnology/science at BNL
~~Nano management policy issues~~ (5-14-09)
Nano panel discussion with the DOE, EPA, and FDA
Renewable energy research at the Lab
BNL/CSHarbor/Stony Brook collaboration

P = Present 2009 Affiliation		First Name	Last Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
ABCO (Garber added on 4/10/02)	Member	Don	Garber	P	P	P	P								
ABCO	Alternate														
Brookhaven Retired Employees Association	Member	Graham	Campbell	P	P	P	P								
Brookhaven Retired Employees Association (L. Jacobson new alternate as of 4/99)(A. Peskin 5/04)	Alternate	Arnie	Peskin	P											
CHEC (Community Health & Environment Coalition (added 10/04)	Member	Sarah	Anker												
(added 12/08)		Robert	Andrejkovics	P		P	P								
Citizens Campaign for the Environment	Member	Adrienne	Esposito	P	P	P	P								
Citizens Campaign for the Environment (Ottney added 4/02-takenoff 1/05 Mahoney put on)(7/06 add Kasey Jacobs)(K. Jacobs off 1/08)	Alternate														
E. Yaphank Civic Association	Member	Michael	Giacomaro			P	P								
E. Yaphank Civic Association (J. Minasi new alternate as of 3/99) (M. Triber 11/05) (Munson 6/06) (Feinman 2/09)	Alternate	Bob	Feinman		P	P									
Educator (changed 7/2006)	Member	Adam	Martin												
Educator (B. Martin - 9/01)	Alternate	Bruce	Martin												
Educator (A. Martin new alternate 2/00) (Adam to college 8/01)(add. alternate 9/02) (changed 7/2006)	Alternate	Audrey	Capozzi												
Environmental Economic Roundtable (Berger resigned, Proios became member 1/01)(Proios resigned 6/08)	Member	George	Proios												
Environmental Economic Roundtable (3/99, L. Snead changed to be alternate for EDF)	Alternate	None	None												
Fire Rescue and Emergency Services	Member	Joe	Williams												
Fire Rescue and Emergency Services	Alternate	Don	Lynch	P	P	P									
Fire Rescue and Emergency Services	Alternate	James	McLoughlin												
Friends of Brookhaven (E.Kaplan changed to become member 7/1/01)	Member	Ed	Kaplan		P	P									
Friends of Brookhaven (E.Kaplan changed to become member 7/1/01)(Schwartz added 11/18/02)	Alternate	Steve	Schwartz	P			P								
Health Care	Member	Jane	Corrarino			P	P								
Health Care	Alternate														
Huntington Breast Cancer Coalition	Member	Mary Joan	Shea	P	P	P	P								
Huntington Breast Cancer Coalition	Alternate	Scott	Carlin			P									

P = Present 2009 Affiliation		First Name	Last Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Intl. Brotherhood of Electrical Workers/Local 2230 (S.Krsnak replaced M. Walker 1/11/07)	Member	Scott	Krsnak	P		P									
IBEW/Local 2230	Alternate	Philip	Pizzo												
L.I. Pine Barrens Society	Member	Richard	Amper	P			P								
L.I. Pine Barrens Society (added P. Loris 6/05)(Alayeva off 6/08) (Itriyeva 02/09)	Alternate	Irina	Itriyeva		P	P									
L.I. Pine Barrens Society	Alternate	Susie	Husted												
L.I. Progressive Coalition	Member	David	Sprintzen	P	P		P								
L.I. Progressive Coalition	Alternate	None	None												
Lake Panamoka Civic Association (Biss as of 4/02)	Member	Rita	Biss	P		P									
Lake Panamoka Civic Association (Rita Biss new alternate as of 3/99)	Alternate	Joe	Gibbons												
Long Island Association (Groneman replace 10/05)	Member														
Long Island Association	Alternate	William	Evanzia				P								
Longwood Alliance	Member	Tom	Talbot	P	P										
Longwood Alliance	Alternate	Kevin	Crowley												
Longwood Central School Dist. (switched 11/02)	Member	Barbara	Henigin			P									
Longwood Central School Dist.	Alternate	Allan	Gerstenlauer												
NEAR	Member	Jean	Mannhaupt	P											
NEAR (prospect taken off ¾) (Blumer added 10/04)	Alternate	Karen	Blumer			P									
NSLS User	Member	Jean	Jordan-Sweet	P	P	P	P								
NSLS User	Alternate	Peter	Stephens												
Peconic River Sportsman's Club (added 4/8/04)	Member	John	Hall	P											
Peconic River Sportsman's Club	Alternate	Jeff	Schneider												
Ridge Civic Association	Member	Pat	Henagan			P									
Science & Technology (added 1/13/05)	Member	Iqbal	Chaudhry		P	P	P								
Town of Brookhaven (Graves made member 6/06)	Member	Anthony	Graves	P	P	P	P								
Town of Brookhaven	Alternate	None	None												
Town of Brookhaven, Senior Citizens	Member	James	Heil	P	P	P	P								
Town of Brookhaven, Senior Citizens (open slot as of 4/99)	Alternate	None	None												
Town of Riverhead	Member	Robert	Conklin												
Town of Riverhead (K. Skinner alternate as of 4/99)	Alternate	Kim	Skinner												
Wading River Civic Association	Member	Helga	Guthy		P	P	P								
Wading River Civic Association	Alternate	Sid	Bail												