FREQUENTLY ASKED QUESTIONS (FAQs)
Onondaga Lake Dredging Project
Sediment Consolidation Area (SCA) at Wastebed 13

April 2010

The attached document provides answers in response to numerous questions raised by the public recently regarding the plan to dredge Onondaga Lake sediments and pipe them to Wastebed 13, where they will be dewatered and permanently stored in an engineered Sediment Consolidation Area (SCA). The answers were prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and the United States Environmental Protection Agency (EPA). Important highlights of the project are listed below, and more specific details are provided in the answers to FAQs provided in the attached document.

- The plan to dredge Onondaga Lake and place the sediments in an SCA was selected by EPA and NYSDEC in July 2005 and is fully protective of human health and the environment.
- The plan was selected after years of study and investigation, a detailed analysis of alternatives, and a public process to review and comment on the plan.
- Prior to selecting Wastebed 13 as the disposal site, the NYSDEC and EPA considered numerous alternatives including taking the sediments offsite to a permitted disposal facility, leaving the sediments and containing them in the lake itself, and considering other disposal sites near the lake other than Wastebed 13.
- Even if the sediments were to be taken offsite, a large dewatering facility would need to be constructed on Wastebed 13 or other areas near the lake. Sediments would need to be stored in such an area until they were dried enough to transport offsite.
- The most highly contaminated sediments in the lake will not be placed in the SCA. They will be contained behind the lakeshore barrier wall and collected via recovery wells for offsite disposal.
- The contaminant levels of the sediments going to the SCA will be relatively low.
- The current plan to dredge Onondaga Lake is very unique in that it essentially entails a "closed system" for moving the sediments from the lake bottom to the ultimate disposal site. Unlike most dredging projects, from start to finish the sediments will be enclosed to prevent public exposure.
- The sediments will not just be placed in the existing Wastebed 13. The SCA design includes a clay bottom with a liner together with a leachate collection system to capture liquids. The SCA will also be covered with an engineered cap and properly closed to prevent the elements from impacting the containment system.
- Most importantly, disposing the sediments in the SCA will not impact human health or the environment.
- The entire project will be monitored, including air and groundwater monitoring, to assure its effectiveness.

Onondaga Lake Sediment Consolidation Area at Wastebed 13
Frequently Asked Questions

1. Why is Onondaga Lake being dredged?

Ecological and human health risk assessments conducted for the Lake Bottom subsite indicated that contaminants associated with the lake sediments resulted in risks which exceeded threshold levels to the ecological community and potentially to people who consume fish caught from the lake. Onondaga Lake is being dredged in order to remove a portion of the contaminated sediment from the bottom of the lake and to enable the isolation (through capping) of the remaining contaminated sediments. By doing so, humans and the environment will be protected from the contaminants that are currently present in sediments.

2. Why can't we leave the contaminated sediment and just cap the lake bottom?

After conducting an extensive evaluation which included consideration of oral and written comments received from the public, the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA) determined that a combination of dredging and capping offered the best protection to human health and the environment. In addition, capping without any dredging was not selected because it would cause a significant loss of lake surface area in near shore areas and would otherwise impair lake restoration and restrict future lake use.

3. Why not take the dredged material offsite for disposal?

Offsite disposal was evaluated by NYSDEC and EPA as part of the remedy selection process. As discussed in the 2004 Feasibility Study (FS) and the Record of Decision (ROD) (including response to comments), onsite disposal was preferred over offsite disposal for several reasons. Offsite disposal would require additional facilities and equipment for dewatering, staging, loading, and transport of dredged sediments. For example, even if all the dredged sediment were to be taken offsite, a significant dewatering facility would still have to be constructed near the lake. Transportation of sediment to the dewatering facility, storing it while dewatering is ongoing, and transportation of the material offsite creates additional potential public exposure and risks. There would also be a greater potential to impact the public due to nuisance odors and potential volatile emissions.

The NYSDEC's and EPA's decision to select the onsite disposal remedy (Sediment Consolidation Area - SCA) was made after carefully analyzing state and federal criteria such as protecting human health and the environment, short and long-term effectiveness, compliance with federal and state environmental laws, implementability and cost effectiveness.

After consideration of offsite disposal and other disposal options, permanent containment of dredged sediment at the wastebeds was determined to be the most protective of human health and the environment and was selected by the EPA and NYSDEC in the 2005 Record of Decision. The New York State Department of Health (NYSDOH) concurred with this remedy.

4. Did NYSDEC and EPA investigate moving the sediments by rail to an offsite facility?

As discussed in the response to question #3 above, offsite disposal was considered but not selected, in part, due to the complications associated with hauling sediments significant distances from the dredging activity and other exposure concerns. Both truck and rail transportation were evaluated as part of the process. Although rail transportation offers the benefit of minimizing highway impacts, it creates additional complications such as limited rail availability and costs. For example, even with nearby rail lines, additional rail spurs, loading facilities and other facilities would need to be constructed to accommodate sediment transport.

5. Why did NYSDEC and EPA determine that an onsite Sediment Consolidation Area (SCA) would be the best disposal alternative?

An onsite location allows the sediment dredging, transporting and disposal system to be properly controlled and engineered to protect human health and the environment. Onsite containment minimizes potential exposure to contaminants. In short the onsite alternative assures that:

- dredged material transportation would be minimized;
- dredged material can be contained from the point it is removed from the lake bottom to the point where it will be fully contained in the SCA; and
- potential exposure to the public will be minimized and controlled at every step from dredging to disposal.

6. Why was Wastebed 13 selected for the SCA?

Sixteen separate potential onsite locations for the SCA were investigated. Onsite disposal at Wastebed 13, an area historically used for waste disposal, was determined to be the best location for construction of an engineered lined disposal facility among the onsite wastebeds based on engineering evaluations. The selection criteria used to evaluate onsite options included wastebed capacity, geotechnical stability, potential impacts in the local community, construction requirements, and other factors. After a thorough review, including public input, Wastebed 13 was selected by the NYSDEC and EPA as the site for the SCA. The selection of Wastebed 13 was included in the federal Consent Decree approved by the federal court in January 2007 and was announced in a public fact sheet.

7. Aren't you just moving contamination from one place in the environment to another?

No. Contaminated sediments are being removed, via dredging, from the lake bottom where they pose unacceptable risks to human health and the environment. The contaminated sediments will be sequestered in an engineered, containment cell that will be maintained and monitored to ensure that it is protective of human health and the environment. In essence, the sediments are being removed from an area where they are causing impacts to humans who consume fish and to the environment, to an area that is designed to prevent environmental and human health impacts.

8. Is the overall design spearheaded by Honeywell? Are any other responsible parties involved?

Honeywell is responsible for the design and implementation of the remedy under a Federal Consent Decree. All design and implementation work is subject to NYSDEC and EPA review and approval. Often, Honeywell's proposals are supplemented based on review comments from the environmental agencies. The numerous design documents are the products of recognized scientists, engineers and others working on the project. NYSDEC and EPA also rely on the expertise of the NYSDOH and, when appropriate, private consultants hired by NYSDEC to assist with these complex document reviews.

Other responsible parties are not involved in the actual design and implementation of the remedy, but could be held liable for some of the cost associated with the work.

9. Isn't Honeywell paying the State to review its documents? Is Honeywell only responsible for the $451 million estimated cost of the cleanup?

By law Honeywell is required to pay for the cost of cleanup. Honeywell is also responsible by law for NYSDEC's and EPA's administrative costs associated with the lake cleanup. If Honeywell refused to pay the costs or were unable to do so, the cost would have to be borne by NYS taxpayers and/or the federal Superfund program. Honeywell is responsible for the cost of implementing the remedy even if it exceeds the $451 million estimate. Honeywell is also responsible for cleaning up the other sites near the lake which it owns or which it operated that have impacted or are currently impacting the lake.

10. Why didn't I know about the SCA?

NYSDEC and EPA provided extensive opportunities for public review of the proposed remediation plans for Onondaga Lake including plans for disposal of dredged sediments at the wastebeds.

Beginning in November 2004, numerous fact sheets, public comment periods, informal availability sessions, formal public meetings, mailings and other methods of communication were used to inform the Onondaga Lake community of the project. In addition, Honeywell conducted concurrent

outreach efforts to keep the public informed. Extensive independent media coverage including newspaper articles and television news reports also occurred. Many of these outreach efforts specifically focused on the SCA portion of the remedy including the selection of Wastebed 13 as the preferred disposal site.

In sum, the outreach efforts for the Onondaga Lake Bottom remediation project have far exceeded the requirements of State and federal law for similar projects. Public outreach efforts will continue throughout the project design and implementation, as guided by the Citizen Participation Plan for the Onondaga Lake Bottom Subsite.

Page 20 of this FAQ document presents a more detailed summary of some of the specific outreach efforts from 2004 to date. See also page 8 of the Record of Decision summarizing community participation.

11. What research has been done on Wastebed 13 regarding the SCA?

As part of the State's Inactive Hazardous Waste Disposal Site Remedial Program, environmental investigations have been completed on the Wastebeds 9-15 Site. Previous analytical sampling on and in the vicinity of Wastebeds 9-15 indicated that the wastebed material did not constitute a significant threat to public health or the environment. The site is currently listed as a Class 3 Registry Site. NYSDOH concurred with the listing decision. Additional details on the classification of the site are provided in the response to question #21.

Three detailed investigations were conducted by Honeywell with NYSDEC/EPA/NYSDOH oversight in Wastebed 13 during 2005, 2006, and 2007. Numerous geotechnical data were gathered using standard geotechnical practices and standard tests were conducted in order to determine anticipated consolidation (settlement) rates and geotechnical stability. Evaluations of the resultant geotechnical data supported the use of Wastebed 13 as a suitable location for the SCA and these data will further help inform remedial design and monitoring of the SCA.

12. The sediments in test plots were placed only 10 feet high, but the current design is for 30 feet high; how do you know the SCA will hold 30 feet of sediments?

The pilot test plot was only one part of the comprehensive geotechnical investigation in support of the SCA design. Calculations for consolidation (settlement) and geotechnical stability using established engineering methods and procedures were also performed using actual site data gathered during field investigations of Wastebed 13. These calculations and pilot test plot results demonstrated that Wastebed 13 can safely hold the entire volume of dredged sediments (up to 2.65 million cubic yards). Details regarding the pilot study are summarized in Appendix A of the Sediment Consolidation Area Civil and Geotechnical Initial Design Submittal which is available at www.dec.ny.gov/chemical/61197.html#IDS_Documents.

13. Years ago a wastebed dike broke and flooded houses, cars, etc. Why won't that happen again?

The Wastebed 7 dike that failed in 1943 and flooded houses with the fluidized waste in Lakeland was designed and constructed differently than Wastebed 13. Wastebed 13 was built in 1973 with berms that are 30 feet thick at the top and 100 feet thick at the bottom. Therefore the design of the dike system for Wastebed 13 is more substantial than the earlier dikes and its stability has been confirmed as part of the extensive geotechnical investigations and evaluations completed at the site. Furthermore, the existing dike system is not an integral part of the SCA containment system because the SCA containment cell will be set back from the perimeter of Wastebed 13 within newly constructed berms. In addition, the new SCA will not be a fluidized containment area since geotextile tubes will be used for dewatering the lake sediments within the SCA.

14. How good are the Geotextile tubes? Where have they been used before? Where have there been ruptures or failures?

Geotextile tubes are a high strength woven plastic that have been used successfully for over 40 years in a variety of applications, including the farm industry and the food industry where geotextile tubes have proven to be effective at dewatering wastes and controlling odors. They are often used to dewater sediment because they are simple and effective. Examples of projects where they have been used or are being used include the Ashtabula River project in Ohio; the Badger Army Depot (Gruber's Grove) site in Baraboo, Wisconsin; and the Ottawa River project in Toledo, Ohio.

Geotextile tubes seldom tear open or fail. Furthermore, the geotextile tubes used in the SCA will be located within the bermed, composite liner system. If a geotextile tube were to tear open during operations and if any dredged solids were to spill out, these materials would still be contained within the bermed, lined containment area and would be corrected as appropriate.

15. Where else has a containment system, like the one you are proposing for the SCA, been successfully used?

Some examples of similar projects are provided below. (The first two are completed while the last example (Ottawa River) is planned to start in 2010.)

> **Ashtabula River–** Approximately 640,000 cubic yards (CY) of polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and heavy metals contaminated sediment were hydraulically dredged, and piped to a 12.5 acre lined disposal cell. Sediment dewatering was completed with the use of geotextile tubes that were left in place. The disposal site is located approximately 2,000 feet from the nearest residential area.
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> **Badger Army Depot (aka Gruber's Grove)-** Approximately 90,000 CY of mercury, lead and copper contaminated sediments were dredged and buried in place within a lined

containment system. Sediment dewatering was completed with the use of geotextile tubes that were left in place. The disposal site is located approximately 1 mile from the nearest residential area.

Ottawa River- Approximately 260,000 CY of PCB, PAH, and heavy metals contaminated sediment are to be disposed in a lined dewatering area within an existing landfill (except for PCB contaminated material greater than 50 ppm). Geotextile tubes used for dewatering will be buried in place within the containment area. The disposal site is located approximately 1500 feet from the nearest residential area.

16. Will you take the most toxic sediments offsite? Where will this be done?

The Record of Decision (ROD) states "…it is likely that a portion of the dredged materials (e.g., NAPLs) will be treated and/or disposed of at an off-site permitted facility rather than at the SCA."

A significant volume of Non-Aqueous Phase Liquids (NAPLs, which are essentially pure liquid waste) was known to be present in the vicinity of the causeway between I-690 and the lakeshore. The remedy originally called for these NAPLs to be dredged and disposed offsite. However, to ensure the stability of the adjacent causeway and the adjacent area which includes a portion of I-690, and because more extensive sampling of the area indicated that the pure chemical contamination is significantly less extensive than estimated in the ROD, it was decided that the NAPLs would instead be contained behind a barrier wall and collected via recovery wells for offsite disposal. This decision was documented in a 2006 Explanation of Significant Differences document that was issued by NYSDEC and EPA and provided to the public. As a result, these most highly concentrated waste materials (NAPLs) will be collected and disposed offsite, and will not be disposed of at the SCA.

17. What contaminants are in the lake bottom?

The major contaminants include benzene, toluene, mercury and other metals, chlorinated benzenes, PAHs, and PCBs. More information about the contaminants found in the lake bottom is available in the July 2005 Record of Decision (ROD), Volume 1. Specifically, page 5 of the ROD includes a description of "What Contaminants are in Onondaga Lake?"

18. How much and what concentrations of contaminants will be placed in the geotextile tubes in the SCA?

The latest estimate of volume of sediments to be dredged from the lake is on the order of 2.2 million cubic yards of in-place sediments.

There has been extensive analysis of the concentrations of waste in the lake sediments. Average concentrations of contaminants within lake sediment samples are presented in Tables 3 and 5 of the

Record of Decision. These average contaminant levels are comparable to NYS soil cleanup standards for industrial sites. Furthermore, the NYSDEC, EPA and NYSDOH all agree that the concentration levels will not increase as a result of consolidation in the geotextile tubes.

It should also be noted that the SCA is being designed to prevent human exposures to any contaminated sediment, regardless of whether the dredged sediment contains high or low concentrations of contaminants.

19. What laws govern PCB disposal?

The Toxic Substance Control Act governs, among other things, disposal of PCB contaminated materials at concentrations of 50 ppm or greater. In Onondaga Lake, where PCB concentrations in sediments are less than 50 ppm, these contaminated sediments are not considered to be PCB regulated hazardous waste pursuant to the provisions of 6 NYCRR Part 371 and as such the New York State Environmental Conservation Law governs disposal of the contaminated sediments (including the PCBs less than 50 ppm) to be dredged from the lake. There are numerous other State and federal laws that dictate how PCBs and other hazardous substances can be disposed of. Part of the Record of Decision (ROD) process included an extensive assessment and verification that the remedy is compliant with all Applicable or Relevant and Appropriate Requirements (ARARs). See page 62 of the ROD.

20. What is currently in the wastebeds?

As stated in the Record of Decision, "these Settling Basins were the primary means of disposal for the waste produced by the Solvay operations." Solvay process wastes are the predominant materials found in the wastebeds and these are primarily composed of calcium carbonate, calcium silicate, and magnesium hydroxide. In addition, other waste streams from former plant operations including wastewaters and fly ash, as well as wastewater sludges from Anheuser Busch and the Metropolitan Syracuse Wastewater Treatment Plant were discharged into the wastebeds. These other waste streams contained other contaminants including volatile organic compounds, phenols, and metals including mercury. Analytical sampling on and in the vicinity of Wastebeds 9-15 has indicated that the wastebed material did not constitute a significant threat to public health or the environment.

21. Do the groundwater, leachate seeps, and surface water from the existing wastebeds pose an immediate health threat to the surrounding communities?

A hydrogeological assessment was performed between 1987 and 1989 to evaluate groundwater and nearby surface water quality near the wastebeds. A Supplemental Site Investigation was conducted in 1998. Contaminants that were identified include relatively low concentrations of volatile organic compounds, phenols, and metals including mercury. Based on the results of these investigations, the NYSDEC listed Wastebeds 9 through 15 as a Class 3 site on New York State's registry of inactive

hazardous waste sites. The NYSDOH concurred with the listing decision. A Class 3 site does not pose a significant threat to human health or the environment and remedial action can be deferred. Once the SCA is completed, that portion of the wastebed could be reclassified as a Class 4 site, meaning it is properly closed with continued management, maintenance and monitoring in place.

It should also be noted that existing fencing around the wastebeds prevents trespassers from coming into contact with any observed seeps or surface water that occur on the wastebeds. Also, groundwater in the immediate vicinity of the wastebeds is not utilized for human consumption or process purposes. Consumption of contaminants in groundwater is not expected because the site and surrounding areas are serviced by a municipal water supply that is tested on a routine basis to ensure the quality of drinking water that is provided to area consumers. Groundwater monitoring around the wastebeds continues and will be enhanced as part of the SCA construction to further assure protection of the surrounding community.

22. What testing has been done recently to monitor the quality of the air, soil, and water in the vicinity of the existing wastebeds, Ninemile Creek, and most importantly in the surrounding residential areas?

Groundwater, surface water, sediment, and soil sampling have been performed at Wastebeds 9-15, Wastebeds 1-8, the Wastebed B/Harbor Brook site, and Geddes Brook/Ninemile Creek. Some of the more recent sampling work has been associated with ongoing remedial investigations in order to characterize the nature and extent of contamination and develop remedial alternatives; data gathering to support interim remedial measures; and sampling to support design of the remedies for Geddes Brook/Ninemile Creek.

Additional investigation, testing and monitoring is being developed to determine the extent to which Wastebeds 9-15 need to be closed. This includes some soil, but mostly groundwater testing.

The NYSDEC is not aware of any recent analytical testing done in the immediate vicinity of surrounding residential areas. However, the extensive sampling previously mentioned in and around the wastebeds did not indicate that there was a need for sampling in the surrounding residential areas.

There has been no indication that the wastebeds have impacted air quality in the area. However, an extensive community air monitoring program will be designed and implemented before and during the operation of the SCA to help ensure that air quality in the surrounding residential areas is not impacted.

23. Were these tests performed by an independent party?

The majority of sampling in this area was performed by Honeywell's contractors with oversight provided by NYSDEC, EPA, and NYSDOH. Oversight often includes NYSDEC presence during

sampling and provisions for split sampling and independent analysis done by NYSDEC or its contractors. Extensive Quality Assurance/Quality Control measures apply to these sampling activities. Analytical testing must be conducted by qualified labs. Resultant analytical data are subject to independent third party validation.

24. What does the SCA conceptual design consist of?

The design is for a 70-acre SCA to be built on the plateau of Wastebed 13 in a location that minimizes concerns for SCA consolidation (settlements). The containment aspects of the SCA include a composite liner system, overlain by a gravel drainage layer which will support the geotextile tubes that will contain the lake sediments, and finally the layered SCA final cover system that is designed to further isolate the sediments from the environment and minimize exposure. Refer to Figure 1 on page 21 of this FAQ document.

The composite liner system includes a geomembrane liner underlain by a natural clay barrier layer. Above this, a gravel drainage layer will be constructed which will effectively convey the drainage from the geotextile tubes to a sump area where the liquid would be pumped to a waste water treatment system. The geotextile tubes will be placed and filled above the gravel drainage layer.

The final cover system includes a soil leveling layer above the geotextile tubes, then a geomembrane which will be overlain by a barrier protection soil layer, which in turn is overlain by a vegetated topsoil layer.

Dredged sediments will be pumped to the SCA directly from the dredge via a double walled pipe. The sediment slurry, which is mostly water, will be discharged into the geotextile tubes. The water will drain via gravity through fabric of the geotextile tubes while the solids portion (the sediments) will remain trapped within the geotextile tube. The water that drains from the tubes will be conveyed via the gravel drainage layer to a sump area for effective removal to an on-site water treatment plant. The majority of contaminants will remain with the sediments within the geotextile tubes. However, the water that drains from the geotextile tubes will carry some of the contaminants and these contaminants will be removed by the on-site water treatment plant with the exception of ammonia which will be removed via treatment at the Syracuse Metropolitan Waste Water Treatment Plant.

Once dredging is complete and the dredged materials within the geotextile tubes have adequately dewatered, the final cover system will be constructed. The site will continue to be monitored and maintained by Honeywell for as long as is necessary to ensure protectiveness of public health and the environment. As part of site maintenance, water within the SCA will continue to be collected and treated. New York State would assume responsibility for continued site maintenance and monitoring in the event that Honeywell were to go bankrupt.

It should be noted that the SCA is conservatively designed to properly contain wastes which in many cases could have contamination levels that are much higher than those anticipated from lake

sediments. It is also a requirement of CERCLA/Superfund that the Lake Bottom site be monitored and a report prepared at a minimum of once every five years to evaluate the protectiveness of the remedy. An assessment of the protectiveness of the SCA will be included in that evaluation.

25. Is Wastebed 13 currently licensed to receive waste?

The substantive requirements of federal and State permits that would apply to the SCA will be met. Since the SCA is a component of a selected remedy under the federal and State superfund programs, no license or permit is required. However, the same extensive design and regulatory review applies to the SCA as if it were a permitted facility.

26. Is the liner completely impervious? Won't it eventually fail through erosion, vegetation, burrowing mammals, sunlight, settling action? Won't the clay crack?

The composite liner system proposed for the SCA is an engineered barrier system that has been used for over 35 years at landfills across the nation. This type of system has been found to be effective at containing a wide range of waste materials. The liner system to be used for the SCA has been tested to confirm it is chemically compatible with the materials to be dredged. When the geomembrane liner is used in conjunction with the low-permeability clay barrier (to form a composite liner) and is used in conjunction with a drainage layer designed to limit liquid head on the liner system to 1 foot or less, EPA studies have demonstrated that the liner efficiency is 99.9% or better.

Both the liner and final cover system have been designed using well-established engineering procedures to provide a containment system meeting acceptable factors of safety and to provide adequate isolation of the sediments from the environment and human exposure. The composite liner system is recognized as a best available single liner technology to contain waste materials and has a service life on the order of 1000 years. During construction, the installation of the SCA liner and cover systems will be subjected to construction quality control and construction quality assurance monitoring. Following the installation of the liner system and the drainage layer, the SCA liner system will be subjected to a liner integrity test to identify, locate and repair any construction related defects (leaks) prior to placing the SCA into service. Once the SCA is filled and the final cover system is installed, infiltration into the SCA will be essentially cut off, thereby further eliminating a primary potential pathway for any future source of leakage. The integrity of the cover will be maintained by a post-closure maintenance program which requires regular monitoring and inspections; maintenance and repairs would be made as needed.

27. Did you consider nearby residences when siting the SCA?

Yes, the 2006 SCA Siting Evaluation Report considered nearby residences and estimated the nearest residences to be approximately 950 feet away from the top of the existing Wastebed 13 berm. The

construction, operations, and closure of the SCA will be protective of the nearest residences and the community.

28. Is the decision to use Wastebed 13 final?

The selection of Wastebed 13 was made after years of investigation, alternative analysis, studies, evaluations, and consideration of input from the public. The design and construction of the SCA at Wastebed 13 will continue in accordance with the Federal Consent Decree schedule that calls for dredging to begin in 2012. However, the NYSDEC will continue to work with the community to assure the design, construction, operation, closure and monitoring of the SCA at Wastebed 13 is protective of human health and the environment.

29. How will the plan be changed?

As indicated above, design and construction of the SCA at Wastebed 13 will continue in accordance with the Federal Consent Decree schedule that calls for dredging to begin in 2012. However, since its inception, the plan for the SCA at Wastebed 13 continues to be enhanced. Significant changes to the plan have already occurred in response to concerns raised by the public. For example, the initial concept was to achieve dewatering via gravity settling of solids in a large open lagoon. Based upon subsequent deliberations, including consideration of public comments, dewatering via geotextile tubes was selected. Use of the geotextile tubes dewatering method, compared to a large gravity settling lagoon method, significantly reduces the potential for exposure and potential impacts to air quality. In addition, the geotextile tubes occupy a smaller footprint than a settling basin, enabling additional buffer distance between the SCA footprint and the property boundaries of Wastebed 13.

NYSDEC and EPA will continue to listen to the community's comments and concerns related to minimizing community impacts of the SCA on Wastebed 13. For example, monitoring and mitigation plans such as the Site Security & Community Health and Safety Plan, Air Quality Monitoring Plan, and the Traffic Management Plan will be developed with input from the community. In addition, end use for the SCA has yet to be determined and community input on future use of the site is welcome.

30. What is the schedule for the design and construction of the SCA?

The design of the SCA is comprised of several distinct components which are SCA Civil and Geotechnical; Sediment Management (Operations); and Water Treatment; and each component is generally organized into sequential phases (initial design, intermediate design, and final design).

The SCA Civil and Geotechnical component is the furthest along as it is in the final design phase. This component addresses the site preparation aspects of the SCA such as site grading, site

compaction, and containment cell construction. We expect that this design component will be completed in the summer of 2010.

The Sediment Management (Operations) design is in its intermediate phase. This component addresses dredging productivity, sediment slurry conveyance to the SCA, and dewatering of the sediments at the SCA. We expect that this design component will be completed during the fall of 2011.

The Water Treatment plant design is in its final phase. This component addresses the facilities needed to treat water from the sediment dewatering process. The design component is scheduled to be completed during the fall of 2010.

Construction of the SCA is planned to commence during mid-2010. This initial work will entail site clearing, grading, and compacting. Construction of the Water Treatment plant is scheduled to commence in the fall/winter of 2010. Construction of all SCA facilities is planned to be completed by the spring of 2012 in advance of the 2012 dredging season which is scheduled to begin May 2012.

31. How will the dredged sediments be dewatered at the SCA?

Dredged sediments will be pumped to the SCA directly from the dredge via a double-walled pipe. The sediment slurry, which will be mostly water (less than 10% solids), will be discharged into geotextile tubes. The water will drain via gravity through geotextile fabric while the solids portion (the sediments) will remain trapped within the geotextile tube. The water that drains from the geotextile tubes will be collected from within the gravel drainage layer that forms the base upon which the geotextile tubes are placed and filled. Drained water will be directed to an onsite water treatment plant. The gravel layer is underlain by a composite liner system to prevent the water from draining into the underlying wastebed/ groundwater system. The SCA is designed to minimize or eliminate all standing water within the SCA during the dewatering process.

32. Will water leak from the geotextile tubes?

Yes, the geotextile tubes are designed to allow the water from the dredged sediment slurry to drain from within the geotextile tubes in order to reduce the volume of the material contained within and hasten dewatering. The water that drains from the geotextile tubes will be collected within a gravel drainage layer that will underlie the geotextile tubes. The gravel layer is underlain by a composite liner system to prevent the water from draining into the underlying wastebed/ groundwater system. The water within the gravel drainage layer will be collected in sumps and conveyed to an onsite water treatment plant.

33. Will the groundwater be impacted?

The SCA is being designed and will be constructed and operated so that groundwater will not be impacted. The composite liner system is designed to isolate the contaminants from the environment. This will ensure that any leachate that may be generated from the dredged materials will be collected from within the cell by a leachate collection system. Additionally, any water that may permeate the cap will be also collected by the leachate collection system. Finally, the SCA will be maintained and monitored to ensure that it is operating properly.

34. What happens if the pipeline breaks?

The pipeline will be double walled (a pipe within a pipe) for protection against leaks. If the inner pipe develops a leak, the resultant pressure loss would be detected and the dredging operation shut down in order to correct the problem.

A pipeline break involving both the inner and outer pipe would also be detected based on a loss of line pressure and would also elicit dredging shut down and liner repair. In addition, any spill would be quickly cleaned up as appropriate.

35. What prevents exposure to contaminants?

During operations of the SCA, exposures to contaminants are prevented or minimized by eliminating or reducing potential exposure pathways. For example, direct contact with the waste is prevented and potential exposure via inhalation is minimized by the virtually closed system of dredging and conveyance of dredged material to the SCA. In addition, any sediment processing and water treatment will be enclosed, to the extent practicable to prevent/minimize potential uncontrolled emissions. Air monitoring will also be conducted during SCA operations to ensure protectiveness and in the event any action levels are exceeded, contingency plans will be implemented in order to correct the problem. The SCA site will also be fenced and secured to help prevent trespassing. A Community Health and Safety Plan will also be developed, with opportunity for input by the public that will detail measures to prevent exposures, including site monitoring.

Once the SCA is closed, the capped, composite-lined containment cell will prevent potential exposures. Site maintenance and monitoring will ensure continued protectiveness.

36. Will there be volatile (or harmful) emissions?

The dredged materials conveyance, dewatering, solids containment and water treatment systems are being designed to minimize opportunities for volatile emissions of contaminants of concern. The primary means of preventing volatile emissions (and odors) will be by enclosing all of the various processes to the extent practicable. A Community Air Monitoring Plan and contingency plan will

also be developed, with public input, to help ensure that the air quality of surrounding communities is protected.

37. What studies have been conducted to ensure the emissions are not harmful?

Extensive technical tests have been conducted in order to predict potential emissions (bench scale testing, wind-tunnel testing, flux chamber testing, odor characterization studies, collection of site specific meteorological data, and modeling). The analysis of data collected indicates that SCA operations will be protective of human health. Nonetheless, dredging and SCA operations will be monitored and contingency plans will be implemented, if needed, to ensure protectiveness. It should be noted that NYSDOH has and will continue to provide direct support to NYSDEC with respect to design and implementation of air monitoring plans, contingency plans, and any other project aspects pertaining to protectiveness of human health and the environment.

38. What will the air quality monitoring system consist of?

Air sampling will be completed prior to the SCA operations in order to establish baseline ambient air quality of the surrounding area. Community Air Monitoring Plans (CAMPs) for the SCA construction and operations phases, respectively, are being developed as part of the ongoing SCA design. A CAMP for the dredging operations is also being developed. The SCA monitoring program will include continuous, real-time air monitoring (for dust and site related contaminants) at the SCA construction site and at upwind and downwind locations to be approved by NYSDOH, NYSDEC, and EPA. Additionally, air samples will be collected on a regular basis and sent to a laboratory for chemical specific analysis. All of the air monitoring results will be reviewed regularly by site personnel and the agencies to ensure that site specific action levels are not exceeded. In the event that exceedances occur, measures identified in contingency plans will be implemented to modify work activities. Opportunity for the public to offer input to these CAMPs will be provided, along with the preferred method of distributing this information to those interested in viewing the monitoring data.

39. What do the sediments smell like? Will there be odors?

During lake sediment investigations, some sediment samples exhibited odors while others did not. Some sediments had a petroleum-like odor probably related to the presence of benzene, toluene, or xylene compounds and others had a "chemical" smell that may have been related to the presence of chlorobenzene.

The native lake marls (i.e., earthy deposit consisting of clay and calcium carbonate) that are encountered at depth within the lake's sediment layers often exhibited a sulfur odor that is associated with natural organic decay that occurs on lake bottoms. Certain odors, such as these, are

due to natural processes such as decaying of organic matter, and are not associated with the waste material.

Based upon extensive evaluations and experience at other similar sites around the country, odors are not expected to be a nuisance. The dredged materials conveyance, dewatering, solids containment and water treatment systems are being designed to minimize opportunities for nuisance odor emissions. The primary means of preventing odor emissions will be by enclosing all of the various operations to the extent practicable. In addition, air monitoring stations will be placed at the perimeter of the SCA and the property line to monitor air quality. With community input, health and safety plans, including a detailed monitoring program and contingency plan, will be finalized prior to dredging to establish a protocol and contact information if residents have questions or concerns about SCA operations. Honeywell will be required to implement contingency measures such as covering the geotextile tubes or reducing operations if odors become a problem. If any problems persist, dredging and SCA operations would be delayed until corrective measures were implemented.

40. What happens if the residents smell the operations? Will Honeywell continue the pumping?

The community health and safety plan that will be developed as part of the remedial design will establish a protocol and contact information if residents have questions or concerns about SCA operations so that appropriate investigations can be conducted and contingency plans implemented, as needed. Contingency plans may include covering the geotextile tubes or reducing/ceasing dredging operations if it is found that the SCA is generating nuisance odors. If odors are excessive, operations will be stopped until the problem is addressed with additional measures.

41. Why are you monitoring for 30 years?

A minimum post-closure monitoring period for waste disposal areas is typically established through federal and State regulations and policy to be a minimum of 30 years. However, that said, Honeywell has a continuing obligation to operate, monitor and maintain the site as long as necessary to ensure protectiveness of public health and the environment. If necessary, Honeywell will be required to monitor beyond 30 years. Long term site monitoring and maintenance are routine components of any waste containment cell post-closure operations plan, like the SCA. In addition, as long as the material is in the wastebed, EPA requires an extensive review of the project every 5 years to assure effectiveness.

42. Will the SCA be safe forever?

The SCA will last indefinitely. It is designed with several redundancies to ensure that the containment is permanent. The leachate pumping system will be maintained to minimize the

amount of liquids on the liner. Beneath the pumping system there will be a polyethylene membrane and minimum 12-inch layer of natural clay.

To keep precipitation from entering the SCA in the future, a vegetative cover (native grasses or shrubs), a topsoil layer, 24-inches of protective soil, a geomembrane cover, and grading layer will be placed over the SCA to prevent water from entering the SCA, and therefore further reduce the risk of water leaching out of the SCA.

Honeywell will operate, monitor and maintain the site as long as necessary to ensure public health and safety. This will include operating the pumping system, inspecting and repairing the cover, sampling monitoring wells, etc. Honeywell will be obligated to fix any problems. In the event that Honeywell were to go bankrupt, New York State would assume responsibility for continued site maintenance and monitoring.

43. What about the dust that will be caused by the construction of the SCA?

A Community Air Monitoring Plan will be developed by Honeywell and approved by NYSDEC/EPA and NYSDOH that will include dust monitoring provisions and procedures for dust suppression during construction of the SCA to help ensure that dust is prevented and controlled. The public will have an opportunity to review and provide input on the draft plan.

44. When will the SCA be constructed and how long will the SCA operate?

Construction of the SCA is scheduled to begin in mid 2010 and be completed by the spring of 2012 in order to be ready to process dredged sediments when the dredging season begins in 2012. The SCA will be operated from the start of dredging in 2012 until dredging ends in 2015. Following completion of dredging, the SCA will be capped, including the final vegetative cover, in 2016. During this 5 year period, dredged materials will only be pumped to the SCA during the four dredging seasons, generally from May through November. During the non-dredging periods, the site will continue to be maintained, monitored, and kept secure and stormwater will continue to be managed.

45. Will the SCA be visible?

The SCA should not be visible from offsite, with the exception of from the bridge on Airport Road. Honeywell determined this based on a field test whereby flags on 30 foot poles were placed in each corner of the SCA site and the location was observed from various off-site vantage points including during the winter when vegetation does not provide any screening. It should also be noted that the height of the SCA will not be above the existing wastebeds' berms to the south and east. However, site lighting and air monitoring equipment may be visible at times from some off-site locations during SCA operations.

To the extent practical, existing trees and other vegetation around the perimeter of the site will be left in place during SCA construction and operation to provide a near-field visual barrier for the site.

46. What is the status of closing the Wastebeds?

As a Class 3 site (refer to the response to question #21), the final closure of Wastebeds 9-15 was deferred while other, more significant, sites were remediated. NYSDEC is currently negotiating a Consent Order with Honeywell to require final closure of these Wastebeds.

Even though final closure has not been completed, several steps have been taken towards closure and reduction of environmental impacts. Honeywell continues to improve leachate collection around the Wastebeds. Groundwater monitoring continues and is being expanded to assure effective closure. The Town of Camillus operates a construction and demolition waste (C&D) landfill in portions of Wastebed 15. Honeywell has closed these portions in accordance with the current regulatory requirements. Honeywell has also planted several pilot plots of willows to determine whether this type of vegetative cover will provide an effective cap. Lastly, a significant portion of Wastebed 13 will be closed with a state of the art cover system used for the SCA.

47. NYSDEC Deputy Commissioner Washington's October 2009 testimony at the NYS Assembly Committee on Environmental Conservation Hearing included the statement: "Presently, the preferred management option for mercury containing items is to collect these products at the end of their useful life and send them to a facility to reclaim or sequester the mercury and remove it from the environment." Is your SCA plan consistent with this preferred approach?

The referenced management option applies to mercury containing consumer products (e.g., thermometers, light bulbs, thermostats, etc.), not mercury contaminated sediments. Nonetheless, the SCA at Wastebed 13 will sequester whatever mercury is present in the dredged sediments within the containment cell so that it is adequately isolated from the environment. The proposed engineering controls and monitoring, dredging and sediment consolidation will be conducted in a manner that is protective of public health and the environment.

48. What is the SCA-CPWG and what will this group be tasked with?

The Sediment Consolidation Area Community Participation Working Group (SCA-CPWG) will be an autonomous group comprised of approximately 7-9 volunteers from the Onondaga Lake community working together and in concert with the Lead CPWG and NYSDEC to foster meaningful public engagement in the construction, operation and monitoring of the SCA.

The SCA-CPWG will be charged with providing further public information and public engagement on the environmental, human health and quality of life issues (e.g., lights/dust control/sound/odor management/truck traffic) associated with the construction, operation and monitoring of the SCA.

49. Who will select the members of the SCA-CPWG?

Members of the SCA-CPWG will be appointed by NYSDEC. During the review of applicants, NYSDEC will consult with EPA, NYSDOH, the Lead Community Participation Working Group, and others.

50. Will the SCA CPWG subcommittee be established in sufficient time to be effective?

Yes. Although some portions of the SCA design are nearing the final stages and some construction activities are scheduled to begin this summer, there is still much that can be discussed and influenced at the community level. For example, monitoring and contingency plans such as the Site Security & Community Health and Safety Plan, Air Quality Monitoring Plan, and Traffic Management Plan will be developed with input from the community. In addition, public input is desired for potential end uses for the Wastebeds.

51. Where can I review design plans and other project information?

Information on the Onondaga Lake cleanup is available at www.dec.ny.gov/chemical/37558.html (under the heading "Onondaga") and the locations listed below.

Atlantic States Legal Foundation
658 West Onondaga St.
Syracuse, NY 13204
Phone: (315) 475-1170
Please call for an appointment

Camillus Town Hall
4600 W. Genesee Street
Room 100
Syracuse, NY 13219
Phone: (315) 488-1234

Liverpool Public Library
310 Tulip Street
Liverpool, NY 13088
Phone: (315) 457-0310

Moon Library
SUNY ESF
1 Forestry Drive
Syracuse, NY 13210
Phone: (315) 470-6712

NYSDEC, Region 7
615 Erie Blvd. West
Syracuse, NY 13204-2400
Phone: (315) 426-7400
Please call for an appointment

NYSDEC
625 Broadway
Albany, NY 12233-7016
Phone: (518) 402-9676
Please call for an appointment

Onondaga County Public Library - Central Library at the Galleries
447 South Salina Street
Syracuse, NY 13202
Phone: (315) 435-1800

Solvay Public Library
615 Woods Road
Solvay, NY 13209
Phone: (315) 468-2441

52. Can I be added to the project mailing list to receive project information, updates and meeting announcements?

To join the Onondaga Lake News email list, simply visit www.dec.ny.gov/chemical/52545.html and follow the instructions provided. If you would rather receive hard copy notification via the US mail, please call NYSDEC at (315) 426-7403.

TIMELINE OF NYSDEC OUTREACH ON THE ONONDAGA LAKE BOTTOM SITE AND THE SEDIMENT CONSOLIDATION AREA (SCA)*

2004	11/29/04	Fact sheet announcing Proposed Plan and completion of Remedial Investigation/Feasibility Study
2005	11/29/04-3/1/05	Public comment period on Proposed Plan
	1/6/05	Informal availability session held at Fairgrounds
	1/12/05	Informal availability session (afternoon) and public meeting (evening) held at Fairgrounds
	4/1/05	Fact sheet announcing EPA's concurrence with NYSDEC's Proposed Plan, NYSDEC/EPA responses to National Remedy Review Board's recommendations, and extension of Record of Decision
	4/1/05-4/30/05	Public comment period on EPA's concurrence with Proposed Plan
	7/05	Fact sheet announcing Record of Decision
2006	10/06	Fact sheet regarding Consent Decree, Sediment Consolidation Area (SCA) Siting Evaluation Report and Explanation of Significant Differences (ESD)
	10/06	Fact sheet specifically identifying Wastebed 13 as the preferred location for the SCA
	10/12/06-11/13/06	Public comment period on SCA Siting Evaluation and ESD
	10/19/06	Availability session (afternoon) and public meeting (evening) on the SCA and ESD held at Fairgrounds
2007	1/07	Fact sheet announcing Consent Decree approved by Federal Court on 1/4/07, SCA Siting Evaluation approved by NYSDEC on 1/9/07, and ESD approved by NYSDEC and EPA on 12/14/06
2008	11/08	Fact sheet announcing Remedial Design Work Plan (RDWP) and Citizen Participation Plan (CPP)
	11/1/08-12/31/08	Public comment period on RDWP and CPP documents
	11/20/08	Public meeting on RDWP and CPP held at Fairgrounds
2009	3/09	Fact sheet announcing RDWP and CPP documents finalized
	5/09	Fact sheet announcing draft Dredging, Sediment Management and Water Treatment Initial Design Submittal available for review
	12/09	Fact sheet announcing draft SCA Civil and Geotechnical Initial Design Submittal (IDS) available for review and encouraging that public comments be relayed to NYSDEC by 1/31/10
2010	1/10	Fact sheet announcing draft Remedial Design Elements for Habitat Restoration (Habitat Plan) available for review and encouraging that public comments be relayed to NYSDEC by 2/6/10
	1/14/10	Public information meeting on SCA IDS and Habitat Plan held at Fairgrounds

* This list includes NYSDEC sponsored meetings only. Numerous additional meetings have been held by other groups to discuss the Onondaga Lake Bottom remediation and the SCA. Examples include Town of Camillus meetings where NYSDEC was on the agenda, monthly meetings of the Lead Community Participation Working Group, Onondaga Lake Partnership Annual Meetings, and additional Honeywell outreach efforts.

Figure 1: What does the SCA conceptual design consist of?