Environmental Updates

Brookhaven National Laboratory
Community Advisory Council Review
March 12, 2015

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Environmental Update Topics

- Deer Management Update
- Peconic River Supplemental Sediment Sampling
- Former Hazardous Waste Management Facility (FHWMF) Perimeter Area Remediation – Phase 3
- Freon-11 Groundwater Remediation
- Reactor Surveillance and Maintenance
- Building 811 Planned Demolition
Deer Management Update

January 2015

- Monday Memo published
- Employee brown bag information session held
- Work planning to refine all details proceeded
- Baiting started mid-January
  - Once every 4 – 5 days
  - Nightly towards the end of January through end of cull
Deer Management Update

- **February 2015**
  - Mobile deer processing facility arrives February 6
  - February 7 - Cull starts with 3 PM run through with Laboratory Protection and a 6 PM tailgate meeting to go over safety.

- **Cull conducted (300 deer taken)**
  - February 7 – 106 deer taken by 6 AM next morning
  - February 8 – 97 deer taken by 6 AM next morning
  - February 9 – 74 deer taken by 5:30 AM next morning
  - February 10 – 23 deer taken by 8:30 PM

- **Processing** – all deer processed on site with work completed by February 12.
Deer Management Update

- Deer Meat
  - 7,340 lbs of meat produced, ~ 25 lbs/deer
  - Frozen meat picked up on Feb. 12 stored at Dutchess County Federation of Game and Fish Clubs, Hunters for the Hungry venison donation program
  - Distributed to churches and food pantries from Saratoga County south to New York City

- Testing
  - 60 Batch samples taken, tested for cesium-137
  - Values ranged from non-detect to 0.89 pCi/g wet weight
  - Average of all samples was 0.26 pCi/g wet weight
  - NYSDOH health criteria is consumption of 65 lbs/yr at 6.9 pCi/g wet weight

- Environmental samples
  - 50 individual samples taken – being sent for analysis
Deer Taken

Legend
Deer
- 0-4
- 5-8
- 9-12
- 13-16
- 17-20
- 21-24
- 25-28
- 29-32

Roads
- Surface Water
- Unpaved
- Paved
- Boundary

SCALE
Miles
0 0.25 0.5
Deer Population Reduction (next steps)

- **March – May**
  - Conduct surveys that incorporate impacts of population reduction and winter mortality
  - Deploy 4-Poster tick management devices

- **June – July**
  - Begin documenting impacts of deer reductions
  - Summer interns to conduct forest health monitoring within deer exclosures and paired forest health plots
  - Assess 4-Poster effectiveness

- **July - September**
  - Conduct surveys that account for reproductive effort
  - Estimate population and set reduction goals
  - Begin planning for November cull (preferred), March cull if delay needed
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Peconic River Supplemental Sediment Sampling

- Last briefed CAC in November on status of planned sampling
- One of three on-site sediment sample locations detected elevated mercury concentration in 2014 (7.4 mg/kg at PR-WC-06-D1-L50)
- Following review of the data, a decision was made to collect additional samples to confirm that this is a localized spot, and not a large, more widespread area of contamination
- In November, the regulators agreed with plan to collect four samples (five feet upstream, five feet downstream, five feet to the left, and five feet to the right of the original sample)
- Continue this process until an average mercury concentration below 2.0 mg/kg is achieved resulting in a delineated area
- The data will continue to be reviewed with the regulators
Peconic River Sediment Sampling Locations

Figure 1
Peconic River Sediment Sample Locations (PR-WC-06, PR-SS-15, Former Sediment Trap)
Peconic River Supplemental Sediment Sampling

October 2014, dry

December 2014

January 2015

February 2015 sampling postponed
Peconic River Supplemental Sediment Sampling

- December 2014 – Four samples collected
  - Two above 2 mg/kg and two below 2 mg/kg of mercury
  - Average of 2.6 mg/kg

- January 2015 - Six samples collected
  - Three above 2 mg/kg and three below 2 mg/kg of mercury
  - Average of all 10 samples remains at 2.6 mg/kg

- Spring 2015 – Five additional samples planned, with another nine to be collected and stored.
  - Following the averaging of the 15 samples, the need to analyze some or all of the additional nine samples will be determined

- Continue to brief regulators on results
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FHWMF Perimeter Area Soil Cleanup

- Last of three phases of cleanup (last briefed CAC in November on cleanup completed)
- 100 cubic yards of soil were excavated to achieve levels below the cleanup goal of 23 pCi/g (Cs-137), confirmatory sampling and final status survey completed
- Oak Ridge Institute for Science and Education (ORISE) performed independent verification of data
- Closeout Report submitted to regulators for review in February
- Continue implementation of institutional controls
FHWMF Perimeter Area with Institutional Controls
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Bldg. 452 Freon-11 Groundwater Treatment System Update

- New extraction well (EW-18) has been in operation since March 2012, ~95 lbs. freon removed to date
- Maximum Freon-11 concentration in source area currently <50 µg/L (down from 38,000 µg/L)
- Extraction well maximum Freon-11 concentration currently 14 µg/L
- Dec. 2014 follow-up characterization of source area, Freon-11 max of 29 µg/L
- Pulsed-pumping initiated February 2015 (1 month on and 1 month off), evaluating system shutdown in 2015
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Reactor Surveillance and Maintenance Update

- BGRR - Completed replacement of 76 former office windows (including asbestos abatement) in February
- Repairs planned to HFBR north air lock and former machine shop roof once weather permits
- Safety enhancements planned to HFBR stack platforms
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Brookhaven Science Associates
Former Waste Concentration Facility (Building 811) Planned Demolition

- Operated from 1947 to 2008 as waste processing facility
- Help reduce environmental liability risk to soil and groundwater
- Source area groundwater characterization
- Utility isolation completed in 2014
- Planning underway for demolition and soil removal in spring 2015
QUESTIONS?