

Brookhaven National Laboratory State Pollutant Discharge Elimination System (SPDES) Permit Modification

Presentation to the Community Advisory Council

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a passion for discovery



SPDES Permit Renewal Process

- NYSDEC issued draft permit February 9, 2009
 - Comment period ends May 26, 2009
- NYSDEC considers comments and then issues final permit
 - BNL has one year to complete special studies as required
- NYSDEC considers results of special studies, and may reopen permit depending on results
 - If permit is not reopened, the public may not have an opportunity to comment on potentially significant changes to operations
- BNL must implement treatment/alternate disposal methods by January 1, 2012

SPDES Permit – What Changed?

- Significant changes focused on sewage treatment plant discharge to Peconic River (Outfall 001)
- Big Picture: Reduce metals discharges to Peconic River
 - To achieve Water Quality Based Effluent Limits
 - To reduce potential impacts on aquatic organisms
- Approach: Quantification & Removal Study and Mercury Minimization Program
 - An integrated study of options to reduce the discharge of metals to the Peconic River
 - Identify and measure sources of metals
 - Evaluate treatment options
 - Evaluate alternative disposal options
 - Recommend options to achieve goals
- BNL is committed to studying full range of options to determine best environmental outcome

Sources of metals

- 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
- Water treatment units



Potential Treatment Technologies

- Filtration (sand, cartridge, bag, etc)
- Ion exchange
- Carbon filtration
- Selective ion exchange: Mercury
- Coagulation/precipitation
- Reverse osmosis
- Constructed wetland

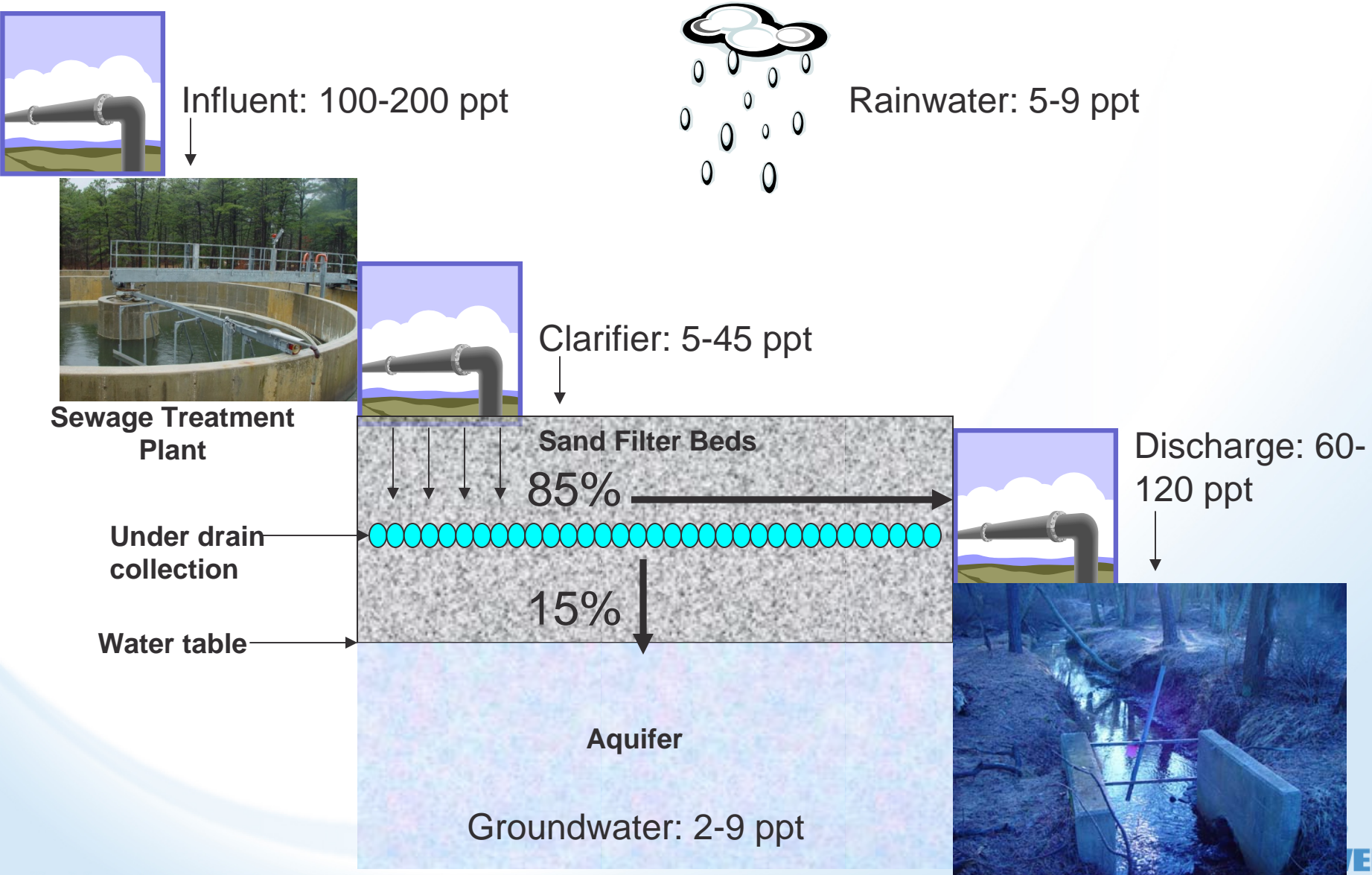


Alternate Disposal Options

- Hold & Haul
 - Collect waste in drums or tanks and ship offsite
- Small scale sanitary treatment
 - Divert specific waste streams to package sanitary plant
 - Discharge to recharge system
- Partial or full redirection of STP discharge to recharge system
 - Stop or reduce discharge to Peconic River and direct discharge to recharge basin instead



Current STP Discharge profile for Mercury



Factors to Consider if Full or Partial STP Discharge is Redirected to Recharge

- Peconic river flow
 - Determine periods of no flow
 - Determine extent of river affected
- Flora and fauna
 - Wetlands
 - Fish and other aquatic organisms
- Groundwater
 - Quality
 - Flow patterns



Overview of Significant BNL Comments (still draft)

- Include redirection of STP discharge (full or partial) as part of the Quantification and Removal Study
- Clarify permitting process and public involvement for future permit changes
- January 1, 2012 implementation date should be flexible and based on the results of the Quantification and Removal Study, and Mercury Minimization Program

SPDES Permit Summary

- Permit open for public comment until 5/26/09
- Goal: Reduce metals discharges to Peconic River
- BNL is committed to studying full range of options to determine best environmental outcome

QUESTIONS, COMMENTS, DISCUSSION