



Public Involvement Meeting for the Bird Machine Co. Property

Presented by Baker Hughes Inc. and
AMEC Earth & Environmental, Inc.

August 16, 2011



Baker Hughes, Environmental Affairs

- Chris Clodfelter, Project Manager (713.439.8329)
- Dina Kuykendall, Director of Environmental Affairs (713.439.8789)

AMEC

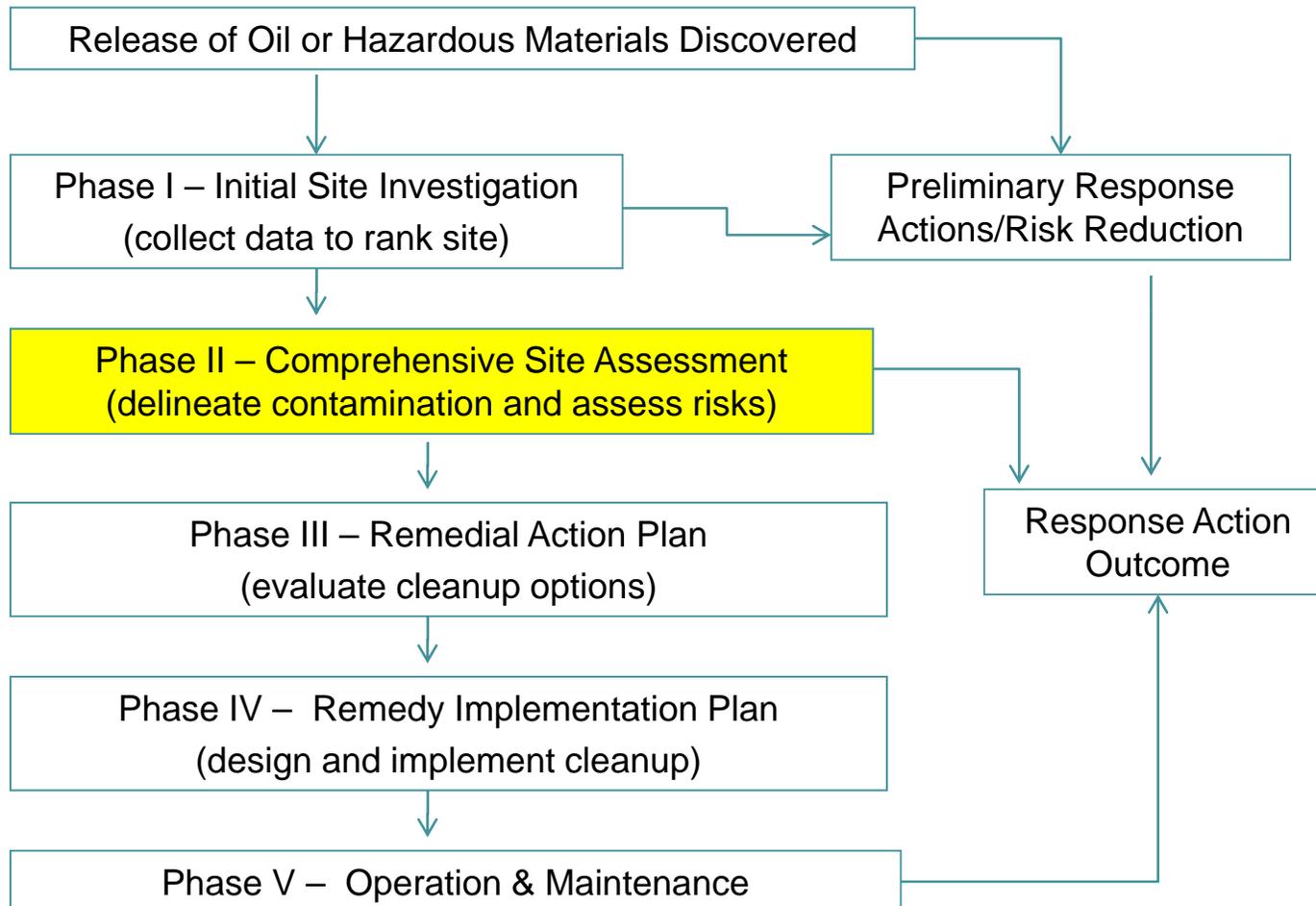
- Kim Henry, Licensed Site Professional #7122 (978.392.5334)
- Marc Grant, Project Manager (978.392.5330)

- We're here to:
 - Provide an accurate picture of environmental status
 - Listen to community concerns and questions
 - There are no plans for future site development
- Extensive Voluntary Remediation to date demonstrates our commitment to protect:
 - Community health and safety
 - The environment
- Project Funding is approaching \$9 Million

- Baker Hughes purchases Bird in June 1989
 - Initial investigations conducted with acquisition
 - Remediation of known issues conducted in 1990
- Extensive Site Investigation conducted in 2004
- Release Abatement Measures ongoing for various areas since 2005
- Source Removal and Majority of Remediation now complete

- Review Site Activities since the last Public Meeting (September 2007)
- Summarize the Comprehensive Site Assessment (Draft Phase II) Report and receive comments from the Public
- Discuss Future Activities and Opportunities for Public Involvement

Massachusetts Contingency Plan Process



History of 100 Neponset Street



- 134 acres; 107 are wetlands, buffer zone, or water
- Early 1800's started manufacturing using water power
- 1920 Bird Machine started operations
- 1989 Baker Hughes purchased BMC
- 2004 Manufacturing was discontinued



Release Tracking No. (RTN) Status



- MassDEP has assigned 16 RTNs
- 5 RTNs were closed before 2007, in years:
 - 1992 remediation of historic Fuel Oil spill
 - 1993 removal of historic Cart Path drums
 - 2002 remediation of historic Cutting Oil spill
 - 2004 remediation of historic Petroleum spill
 - 2005 removal of historic buried Asbestos materials
- Demolition Debris Area (DDA) Phase II/III Reports were completed in 2007
- The remaining RTNs (incl. DDA) were linked in 2008 under a Tier 1B permit (#4-3024222)

Recent Activities



- Old Buildings demolished in 2007-2008 for Release Abatement Measures (RAMs)
- RAMs included excavation and offsite disposal of soil and historic drum remnants
 - Metal recycled and concrete crushed for re-use
- 18,000 tons of contaminated soil moved off-site from Nov 2007 through Jun 2011
- Other work has focused on groundwater monitoring and evaluating the site data

This report covers remaining RTNs except DDA

Results for 3 areas:

- Manufacturing Building Area
 - 13 RAM excavations
- Lead Release Area 3
 - 4 RAM excavations
- South Rail Spur

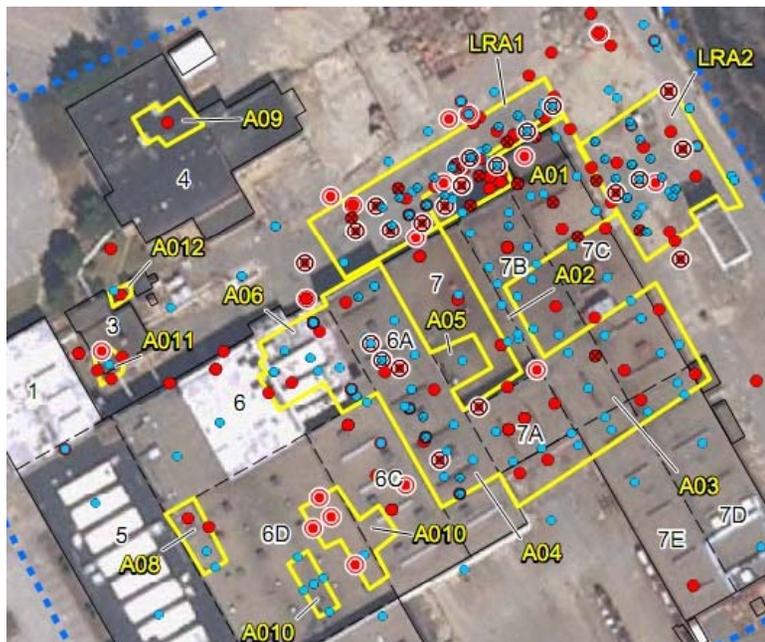


Overall Soil Results



- Contaminant concentrations (especially lead & hydrocarbons) reduced by RAM excavations
- Remaining levels above background extend 5-8 feet deep and are decreasing with depth
- RAM soil removals met cleanup objectives and compounds remaining in soil pose No Significant Risk to human health and the environment

14,000 tons of soil have been removed to meet RAM cleanup objectives

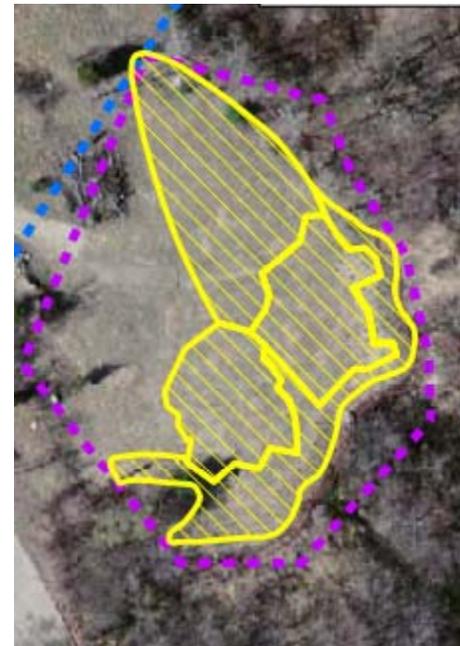


Metal Results & RAM Areas

- Remaining contaminants are mainly metals and hydrocarbons at low levels
- Risk Assessment demonstrates soil poses No Significant Risk

7,000 tons of soil have been removed to meet RAM cleanup objectives

- Remaining contaminants are mainly metals and hydrocarbons (lowest levels of the three areas)
- Risk Assessment demonstrates soil poses No Significant Risk



LRA3 RAM Areas

Black abrasive grit fill in a small area bordering tracks, surrounded by pond, river, and street



South Rail Spur Area

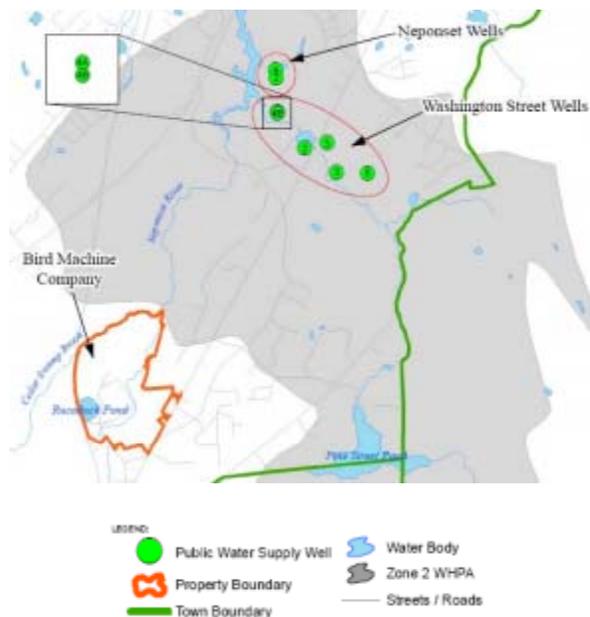
- Remaining low levels of Metals and hydrocarbons exceed background levels
- Risk Assessment demonstrates soil poses No Significant Risk

- Risk Characterization was performed assuming a legal restriction to prohibit residential use for the exposure areas evaluated (previously developed areas)
- Soil in all 3 exposure areas poses No Significant Risk to human health, the environment, public welfare, and safety
 - Results correlate with earlier findings of No Significant Risk for surface water and sediments (Neponset River Phase II Report)
- Groundwater results and risk will be presented following a break for questions and discussion

Site Groundwater Classification



The Site is in what the MCP defines as a Potential Drinking Water Source Area based on Town by-law designation

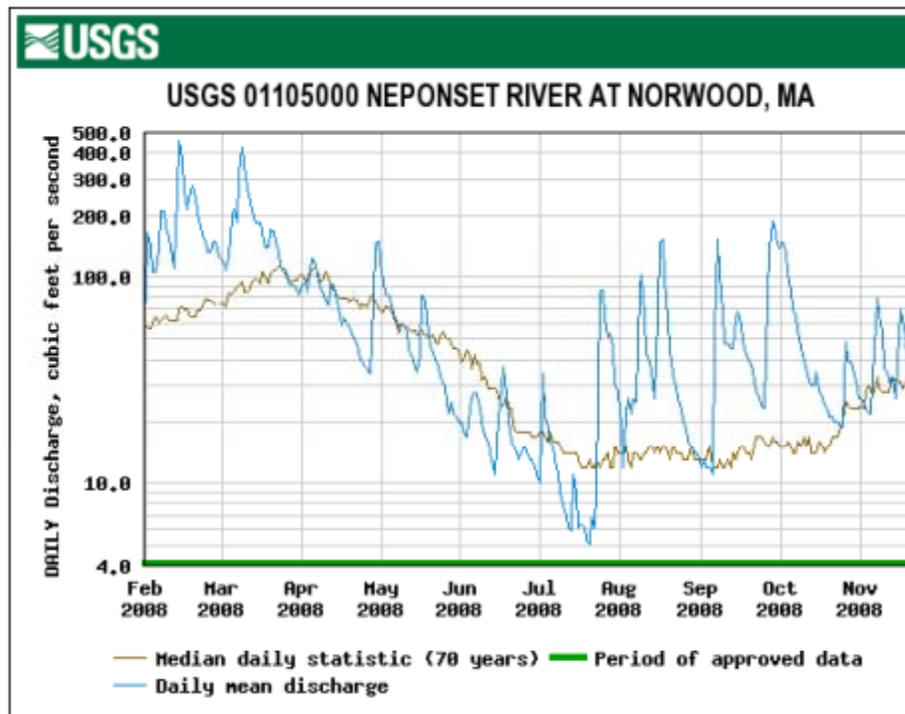


- Site is in a town-designated Primary Recharge Area.
- However, the nearest Public Zone II is more than 800 ft from Site contaminants
- Site groundwater is not used or likely to be used for drinking, but cleanup must achieve drinking water quality

Groundwater Contribution to Neponset River Flow



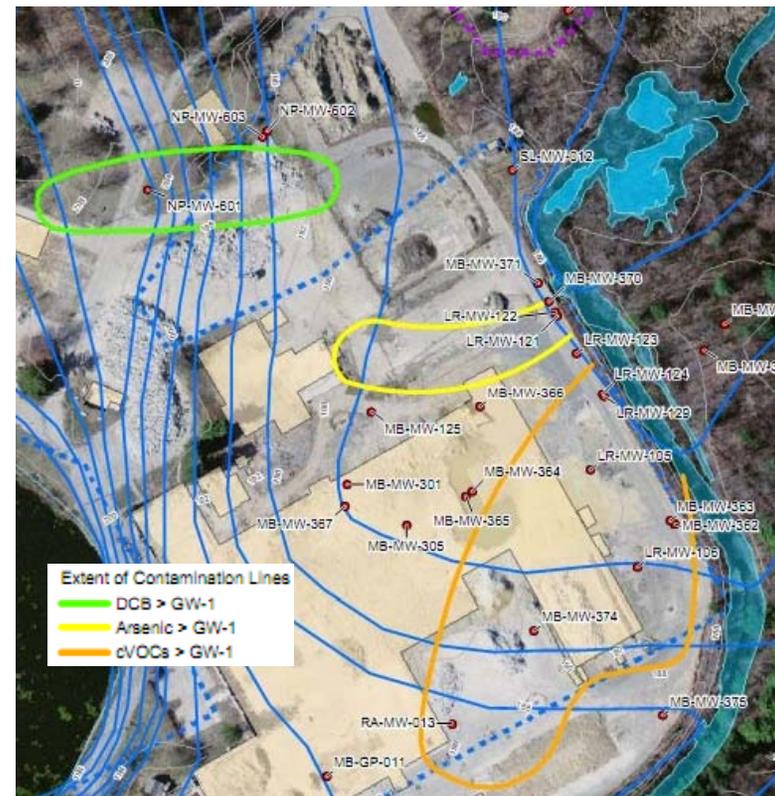
Site Groundwater comes from surface infiltration and from Ruckaduck Pond, created by Neponset dams



- River flows vary greatly depending on storms, as shown in hydrograph
- Site groundwater with low levels of contaminants contributes less than 0.5% of river flow
- Risk Characterization demonstrates that these low levels result in No Significant Risk to river receptors (human or ecological)

The Site Aquifer is 25 feet of sands over bedrock

- Groundwater contaminants include metals, solvents, hydrocarbons, chlorobenzenes
- Groundwater discharges to the Neponset River flowing to the northeast



Water Table & Groundwater Contaminant Areas

- Groundwater in South Rail Spur and Lead Release Area #3 meets drinking water standards and poses No Significant Risk
- Groundwater in Manufacturing Building Area does not meet drinking water standards
 - Since a condition of No Significant Risk cannot be demonstrated, cleanup options for this area must be evaluated in Phase III of the Massachusetts Contingency Plan process.

Phase II Report Risk Summary



Area	Medium	Condition of No Significant Risk Exists for			
		Human Health	Environment	Public Welfare	Safety
South Rail Spur	Soil	Yes	Yes	Yes	Yes
	Groundwater	Yes	Not Applicable		
Lead Release Area 3	Soil	Yes	Yes	Yes	Yes
	Groundwater	Yes	Not Applicable		
Manufacturing Building Area	Soil	Yes	Yes	Yes	Yes
	Groundwater	No	Not Applicable		
Neponset River	Sediment	Yes	Yes	Yes	Yes
	Surface Water	Yes	Yes		

This demonstrates that remediation efforts to date have been successful, e.g. source removal including soil excavation and removal offsite

- Continuing Groundwater Monitoring
- Phase III Report underway for groundwater areas exceeding drinking water standards
- Re-evaluating the previous Risk Assessment and Remediation Plans (Phase II/III) for the Demolition Debris Area
 - Ecological risks are being assessed
 - Risk for human exposure to asbestos is being evaluated in more detail
 - Alternatives to the DDA cap proposed in 2007 may be considered

- Future Land Use will be limited to prevent development or disturbance of the site
 - Discussing plans with Neponset River Watershed Association
- Evaluation of Remedies will consider current guidance for Green / Sustainable Remediation
 - Reduce energy & natural resource use, air emissions
 - Consider Social & Economic Benefits of limiting development and preserving ecological services

Phase III Remediation Options



- Draft Phase III Report to be completed by September 2011
 - Public Meeting expected for mid-October

- Remedies under evaluation for groundwater
 - Monitored Natural Attenuation
 - In-situ treatment that occurs within the aquifer
 - Pump & Treat: extract, treat, discharge to river

Closing Remarks



- Summary of the Presentation
 - Site History
 - Current Conditions
 - Potential Risks and Remedies
- Next Steps
 - Public Input on this Draft Phase II Report
 - Submit Draft Phase III Report

**Please Provide Comments by
Friday August 19, 2011 to:**

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