Community Update
Broad Brook Mill Site
East Windsor, Connecticut
July 2010

This fact sheet provides an overview of the progress to date at the Broad Brook Mill site and outlines the next steps in the clean-up process.

Summary

The Proposed Remedial Action Plan (RAP) for the Broad Brook Mill site has been completed and is now ready to be presented to the public. The RAP provides a detailed description of the environmental impacts at the site, as well as the recommended approach to clean up the site.

The Connecticut Department of Environmental Protection (CT DEP) will be holding a public meeting and hearing so that the community can provide feedback on the RAP (*see text box to the right for details*). This newsletter contains a brief overview of the RAP, including the site history, the nature of the site environmental impacts, and the proposed remediation options. In addition, a general schedule of upcoming activities is provided.

Following the public comment period, the CT DEP will produce a response to comments received. If comments result in substantive changes to the RAP, these changes will be highlighted and communicated to the public.

Your Opinion Counts!

The CT DEP is accepting public comment on the Proposed Remedial Action Plan (RAP) from **July 22 through September 20, 2010.** If you have comments regarding the proposed clean-up plan, we want to hear from you before making a final decision. A public meeting and hearing will be held on August 30, 2010 to provide an opportunity for citizens and local officials to offer oral or written comments.

Monday, August 30, 2010
Public Information Session at 7:00 p.m.
Public Hearing begins at 8:30 p.m.
East Windsor Town Hall
11 Rye Street, Broad Brook, CT 06016

If you are unable to attend the public hearing, you may also submit written comments - see **Page 6** to find out how. For more information about the proposed plan, public hearing, or should you have specific needs or questions about the public meeting facility and its accessibility, please contact the CT DEP or EPA (see page 7 for contact information).

This information pamphlet summarizes the RAP and the proposed clean-up options. For detailed information, the RAP is available for review at the information repositories at the Library Association of Warehouse Point, 107 Main Street, East Windsor, CT. The RAP is also available at the CT DEP's Offices in Hartford, CT and at EPA's Office in Boston, MA.

Site Description & History

The Broad Brook Mill site, formerly known as the Millbrook Condominiums, is located in the Broad Brook section of East Windsor, Connecticut. The site is bordered by Broad Brook to the west and north, Main Street to the east, and Mill Street to the south.

The property includes a former industrial mill building which was converted into and formerly used as residential condominiums. The condominiums have been vacant since late 2004. The southern half of the site contains Scott Road (formerly Brookside Drive), and is generally flat and undeveloped. The northern half of the site includes paved parking areas, parking garages, an abandoned boiler building, the former condominium mill building, and landscaped grounds.

Historically, the site was used for industrial purposes dating back to at least 1835. Former industrial operations included a woolen mill, gristmill, sawmill, and a tannery. In 1849, the Broad Brook Company bought the mill and continued manufacturing woolen products until 1951. In order to provide power for the woolen mill, the Broad Brook Company operated a coal gasification plant on a portion of the site. Coal ash from the coal burning activities was spread across much of the site as fill material, and the coal ash represents a portion of the environmental impacts at the site.

In 1954, United Aircraft Corporation purchased the property on behalf of its Hamilton Standard Propeller Division (currently, Hamilton Sundstrand Corporation or HSC). From 1954 to 1974, HSC engaged in the manufacturing of printed circuit boards and boron filaments. Composite Materials Corporation, a subsidiary of ALCOA, continued similar manufacturing operations between 1974 and 1982. In January 1986, the property was sold to Connecticut Building Corporation. After a fire destroyed many of the former mill buildings in May 1986, 21 residential condominiums were constructed in the former mill building that survived the fire.

The CT DEP entered into a Consent Order with HSC on November 19, 2003 to develop and implement a clean-up plan. This Consent Order became effective on October 29, 2004 when HSC acquired ownership of the property. A December 8, 2003 Deferral Agreement between CT DEP and the United States Environmental Protection Agency (US EPA) designated CT DEP as the lead agency for the site clean-up.

Description of Environmental Impacts

The presence of environmental impacts from the prior industrial activities was first discovered in August 1993. Subsequent investigations identified the areas of the site impacted with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), and several metals as a result of historical operations. These contaminants were found to be present at concentrations that exceed the applicable standards as listed in Section 122a-133k-1 through 3 of the Connecticut Remediation Standard Regulations (CT RSRs).

-View of Broad Brook from West Site Boundary Looking South

Overview of the Environmental Impacts And the Proposed Remedial Action Plan

The Broad Brook Mill site was used for industrial purposes for over 150 years. As a result of the various activities, the soil and the groundwater at the site have been impacted.

A large portion of the soil impacts across the site are related to the deposition of fill materials that contained common coal ash from coal-fired industrial processes. The coal ash contains various semi-volatile organic compounds (SVOCs), especially polycyclic aromatic hydrocarbons (PAHs), as well as various metals.

The areas of coal ash fill (including portions of the river banks of the Broad Brook), will be capped using a clean fill soil cover and pavement system, which will prevent people from coming in contact with the coal ash.

In addition, limited areas of the site soils and groundwater are impacted with volatile organic compounds (VOCs), SVOCs, total petroleum hydrocarbons (TPH), and chromium. These compounds are generally related to the use of various solvents, paints, fuels, electroplating materials, etc.

Soil Vapor Extraction (SVE) and Air Sparging (AS) technologies are proposed to remove the VOCs from the soils and groundwater. These technologies involve injecting and extracting air to evaporate the contaminants and remove them from the subsurface.

Biosparging technology, which involves the injection of air into the groundwater to stimulate biological degradation, will be used to treat areas of TPH impacts in groundwater.

Finally, calcium polysulfide will be used to treat the groundwater that is impacted with chromium. Calcium polysulfide will chemically remove the dissolved chromium creating a stable, environmentally safe mineral in the soil.

Sediment containing SVOCs and TPH in a small area of Broad Brook on the western property boundary will be removed.

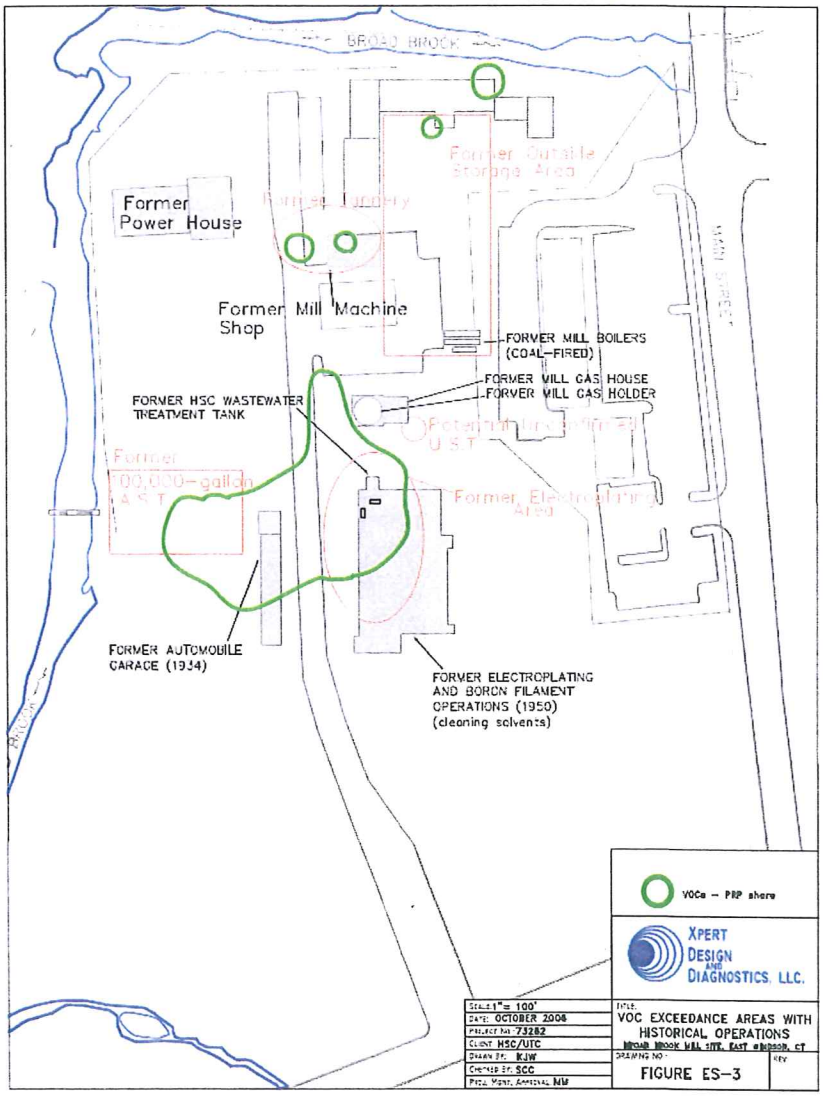
Coal Ash Impacts: Coal-fired industrial processes were historically used at the site. As was common practice in those days, the coal ash was spread around the site and used as fill material. Typical chemical make-up of coal ash includes SVOCs (especially polycyclic aromatic hydrocarbons [PAHs]) and various metals.

The coal ash has been observed as black to dark brown layers across the entire site, co-mingled with the native site soils. The majority of coal ash impacted soils were present within the upper eight feet of the ground surface. The coal-ash is not impacting the site groundwater. Sections of the river banks of Broad Brook have been re-graded historically (in fact, the course of the Broad Brook has been modified several times in the past), and coal ash and slag has also been observed on some areas of the banks.

Modern Sources of Contamination: Soil and groundwater impacts by VOCs (primarily trichloroethene commonly known as TCE), SVOCs, TPH, and metals (chromium) are related to the use of solvents, paints, fuels, oils, and other chemicals related to the site operations conducted after 1954. For example, the site map on this page (*see below*) shows the areas in the soils that are in exceedance of the applicable soil criteria for VOC compounds.

Broad Brook Sediments: Sediment sampling conducted in the Broad Brook indicates that the sediments are impacted with SVOCs and TPH which are characteristic of the types of contaminants found in water bodies near roadways or urban areas. However, there is one area, located on the western site boundary and downstream of a small dam structure that has sediment concentrations of SVOCs and TPH that are higher than the rest of the brook. This limited area will be addressed through direct sediment removal.

-Broad Brook Mill Site – Map Showing VOCs In Site Soils Exceeding CT RSR Standards



Clean Up Goals

The soils and groundwater at the site will be cleaned up using several remedial technologies. The clean-up goals for the site will meet the CT RSR standards, as well as federal and state requirements.

Soil Clean-up Goals: Remedial actions or other controls are required to address soil impacts which exceed clean-up criteria.

The two primary soil criteria are the Direct Exposure Criteria (DEC) and Pollutant Mobility Criteria (PMC). DEC represents the maximum concentrations of individual compounds that will not pose a recognized health risk due to direct exposure to soil. PMC represents the allowable soil concentrations that will not result in adverse impacts to the site's groundwater.

Groundwater Clean-Up Goals: The clean-up activities for groundwater contamination will be determined by three types of groundwater criteria: Groundwater Protection Criteria (GWPC), Surface Water Protection Criteria (SWPC), and Volatilization Criteria (VC). The EPA Maximum Contaminant Levels (MCLs, or drinking water standards) and Maximum Contaminant Level Goals (MCLGs) are also applicable.

Proposed Remedial Alternatives

Several remedial alternatives were reviewed to determine if they could be used at the site. The feasibility evaluation included an assessment of: 1) the technology's ability to meet the clean-up goals, 2) applicability to the site conditions, 3) compliance with applicable or relevant and appropriate federal and state requirements, standards, and criteria, 4) cost, and 5) acceptance by the community. The following remedial alternatives are proposed because they best achieve these requirements:

Site Cover To Address Coal Ash - The areas of coal ash fill (including certain portions of the Broad Brook river banks) will be covered using a clean fill soil layer and pavement system. This is a common and accepted remedial practice for these types of compounds, and will prevent people from coming in direct contact with the coal ash materials.

Remediation Technologies to Treat Soils and Groundwater – VOCs readily evaporate when exposed to air. Soil Vapor Extraction (SVE) and Air Sparging (AS) technologies are proposed to actively remove the VOCs from the soils and groundwater. These technologies involve injecting and extracting air through wells to evaporate the VOCs and remove them from the subsurface. This technology is expected to achieve clean-up results within 2 to 5 years of treatment.

Biosparging and bioventing technologies will be used to treat areas of TPH impacts. Biosparging involves injecting fresh air into the groundwater. Bioventing involves moving air through the soils above the water table. The air provides oxygen for biological organisms, so that they can then biologically break down the TPH compounds. This technology is expected to achieve clean-up results within 3 to 5 years.

Finally, calcium polysulfide will be used to treat the groundwater that is impacted with chromium. Calcium polysulfide will chemically remove the dissolved chromium creating a stable, environmentally safe mineral in the soil.

Sediment removal will be conducted in one area of the Broad Brook on the west property boundary. Even though there are no specific sediment clean-up goals, this limited area has sediment containing SVOCs and TPH in concentrations that are higher than the rest of the brook, so sediment removal will be conducted as a conservative measure.

After implementation of clean-up activities, it is expected that the property will be able to be reused with some restrictions (e.g., prohibiting disturbance of the cap and use of groundwater).

Anticipated Remediation Schedule

After approval of the RAP, remediation of the property will begin. If the RAP is approved as currently written, the general schedule will be as follows:

- Complete Remediation Work Plans – Summer and Fall 2010
- Remediation System Construction – Spring, Summer, and Fall 2011
- Anticipated Construction Completion – 2012

What are the Environmental Risks?

The site has been extensively sampled and monitored over the years. All of the environmental impacts are contained within the site property boundaries, and there are no known impacts to the surrounding community. The RAP provides the plan to clean-up the site to minimize any potential risks.

Once construction is complete, the remediation systems to treat soils and groundwater will begin to operate. It is anticipated that the remediation will be completed within 5 years after the systems are turned on.

It is our goal to minimize any disturbance to the surrounding community during construction. Construction travel routes will be carefully planned with the Town of East Windsor to minimize traffic issues. All work will be conducted between 7 am to 7 pm, and all local noise ordinances will be complied with. Dust control measures will be used to minimize any nuisances to the community.

Public Comment Period and Hearing Session

A *Proposed Remedial Action Plan* was submitted to CT DEP and EPA on May 21, 2010 by HSC as required under the Consent Order. Prior to final CT DEP approval, CT DEP is notifying the surrounding community, Broad Brook officials, and other interested parties of the start of a 60-day public comment period. The public comment period is scheduled for July 22 through September 20, 2010.

-Mill Pond Dam Outfall, West Side of Main Street, Broad Brook, CT

On August 30, 2010, CT DEP will conduct a public meeting that will include an informational session followed by a public hearing to formally accept comments:

Monday, August 30, 2010
Public Information Session at 7:00 p.m.
Public Hearing begins at 8:30 p.m.
East Windsor Town Hall
11 Rye Street, Broad Brook, CT 06016

The RAP and other supporting documents are available at CT DEP's offices, EPA's offices, and at the public information repository at the Library Association of Warehouse Point, East Windsor. An advance appointment is required to review documents at the CT DEP's or EPA's offices.

Following the public comment period, the CT DEP will produce a response to comments received. If comments result in substantive changes to the RAP, these changes will be highlighted and communicated to the public.

Citizens who wish to receive future mailings or CT DEP's responses to public comments should submit the form at the end of this newsletter. Citizens who received this update by mail are already on the mailing list.

Comments may be submitted in writing using the attached comment page (last page of this newsletter), or through E-mail to:

Maurice Hamel
Connecticut Dept. of Environmental Protection
Remediation Division
79 Elm Street, Hartford, CT 06106-5127
e-mail: maurice.hamel@ct.gov

Other Documents Available for Review

The *Deferral Agreement* between the EPA and CT DEP and the *Consent Order* between CT DEP and Hamilton Sundstrand are available to the public for review. Copies of these agreements are available on EPA's website. The agreements also have been placed in the public information repository at the Library Association of Warehouse Point, East Windsor, or you may request a copy from the EPA or CT DEP site contacts.

A *Community Involvement Plan* prepared by Hamilton Sundstrand for this site has been approved by CT DEP. This Plan identifies issues of community concern and includes a schedule for conducting public involvement activities related to the review and approval of a Remedial Action Plan. The *Community Involvement Plan* is available on EPA's website. It also has been placed in the public information repository at the Library Association of Warehouse Point, East Windsor.

Who should you contact for more information?

CT DEP Project Manager – Lead Agency
Maurice Hamel
Connecticut Dept. of Environmental Protection
Remediation Division
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Hartford, CT 06106-5127
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Anni Loughlin, U.S. EPA Project Manager
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
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Jim Murphy, EPA Community Involvement
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
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e-mail: murphy.jim@epa.gov

EPA New England website:
www.epa.gov/ne/superfund/sites/broadbrook

This EPA website contains links to the Deferral Agreement, Consent Order, and certain other site documents. However, EPA is not likely to post documents generated pursuant to the Consent Order (such as the Remedial Action Plan).

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e-mail: Bryan.Kielbania@UTC.com

Public Information Repository
Library Association of Warehouse Point
107 Main Street
East Windsor, CT 06088
Library Director: Vincent Bologna, Tel: 860-623-5482
Monday - Thursday 10:00 am -8:00 pm
Friday 10:00 am -5:00 pm
Saturday 10:00 am -3:00 pm
(closed on Saturdays during July and August).

Use This Space to Write Your Comments or to be Added to the Mailing List

CT DEP and EPA encourage you to provide your written comments and ideas about the clean-up options under consideration for addressing the contamination at the Broad Brook Mill site. You can use the form below to send written comments, or submit them via the internet. If you have questions about how to comment, please contact CT DEP or EPA. Submit written comments, which must be postmarked (in the case of U .S. Mail) or received (in the case of E-mail) no later than September 20, 2010, to:

Maurice Hamel
Connecticut Dept. of Environmental Protection
Remediation Division
79 Elm Street, Hartford, CT 06106-5127
e-mail: **maurice.hamel@ct.gov**

(attach additional sheets as necessary)

Mailing list additions, deletions, or changes:

☐ be added to the site mailing list
☐ note a change of address
☐ be deleted from the mailing list

Name : _____

Address: _____

_____

Please check the appropriate box and fill in the correct address information above. Send to CT DEP by mail or e-mail.