Glynn County Superfund Sites
Environmental Cleanup Newsletter
Superfund Sites Update
July 2014

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This update and more information about the Glynn County Superfund Sites can be accessed at:

www.glynnenvironmental.org

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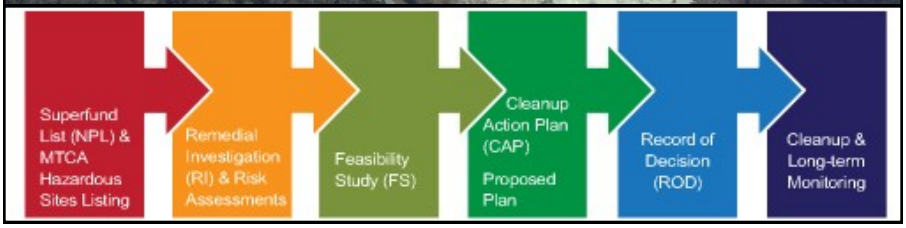


Superfund Process—What Happens Next?

There are many steps in the Superfund process and each of the three Brunswick sites are at different steps in the process. The reports important to the Superfund process are explained below.

The **Remedial Investigation** involves more testing of the site to determine the health risk to humans, plants, and animals from the harmful chemicals at the site. If the health risks to humans and the environment are above what is allowed, a list of cleanup options is created as part of a **Feasibility Study**.

A **Feasibility Study** looks at each of the cleanup options being considered to figure out the best cleanup for the site that will protect human health and the environment from current or future exposure to the site chemicals. Because the cleanup can be accomplished in different ways, the cleanup options must be compared to each other using some of the following categories: long-term effectiveness, short-term impacts, cost, whether the community concerns are addressed, and how permanent the cleanup is at the site.

After all the alternatives in the **Feasibility Study** have been reviewed, one is selected and published as the **Proposed Plan** to clean up the site. After the **Proposed Plan**, a **Record of Decision** is written. The **Record of Decision** is a document that states how a site will be cleaned up and the long-term monitoring that will be put in place.

Brunswick Wood Preserving

Background

The Brunswick Wood Preserving Site housed wood treatment and preserving operations from 1958 until 1991. The site now requires long-term cleanup due to the regular use of chemicals such as Creosote, Pentachlorophenol (PCP), and Copper chromium arsenate which contaminated the groundwater and soil. Other chemicals of concern on the site include **d**ense **n**on-**a**queous **p**hase **l**iquids (**DNAPL**) and sediment chemicals such as naphthalene, benzene, and **s**emi-**v**olatile **o**rganic **c**ompounds (**SVOC**s). The cleanup is managed in two parts, 1) the Upland, or site-wide soils, sediments, and groundwater and 2) the ecological risks in Burnett Creek and other surface waters.

Historical Highlights

- **June 1998:** *Remedial Investigation* Report
- **June 2001:** *Final Feasibility Study (Upland)*
- **June 2002:** *Record of Decision*
- **September 2012:** *Five-Year Site Review*

Current Activities

The Environmental Protection Agency believes construction is complete at this site, with human health risks currently under control. However, groundwater is not under control and requires continued work and monitoring for the site to be cleaned up.

May 2013: The groundwater system being used to clean chemicals out of the groundwater was using ozone, hydrogen peroxide, and oxygen but was changed to use oxygen only.

October 2013: Continued monitoring of groundwater near the cleanup location indicated that the barrier wall installed in 2011 is not containing the contamination. This failure is despite cleanup efforts from injection wells inside the barrier. As of February 2014, there are still chemicals being detected outside the barrier.

December 2013: All groundwater treatment by injection wells was discontinued. Some areas of groundwater showed reductions in groundwater contamination while others did not. Officials are currently trying to determine what the next step should be in cleaning up the chemicals in the groundwater.

February & March 2014: Seven new wells were installed with devices to measure groundwater levels. These devices will track water levels continuously over several months. The information gathered will be used to determine if the contaminated groundwater is being properly contained.

BWP groundwater treatment site: 2012 (top photo) and 2014 (bottom photo).
Sources: USACE 5-year Review 2012 (top), and Daniel Parshley (Bottom)

LCP Chemical Site-Turtle River

Background

From the 1920s through 1994, various industries (i.e. oil refinery, electrical power, paint/varnish, and a chlor-alkali chemical plant) have used this site. Contaminants are still present as runoff and are impacting the soil, groundwater, tidal marsh sediment, and marsh plants and animals. The contaminants include **p**oly**c**hlorinated **b**iphenyls (**PCB**s), mercury, lead, dioxins, and cancer-causing hydrocarbons. The site cleanup is being managed in three parts, which include the estuary, the groundwater, and the upland soils and sediments.

Historical Highlights

- **August 2010:** The *Baseline Ecological Risk Assessment for the Upland*
- **April 2011**: *Baseline Ecological Risk Assessment for the Estuary*
- **July 2011**: *Human Health Baseline Risk Assessment for the Estuary* and *Human Health Baseline Risk Assessment for the Uplands Soils*
- **March 2013:** *Estuary Feasibility Study Tech Memo*
- **April 2013:** *Final Uplands Feasibility Study Technical Memo*

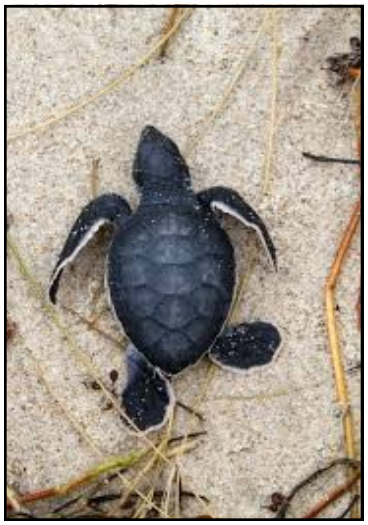
Current Activities
Cleanup actions have begun and site studies are in progress. Human exposure is still a concern, and fish consumption advisories remain in place for the estuary. The contaminated groundwater is also still a problem, and will need continued treatment in the years to come.

July 2013: Wells were installed near the caustic brine pools so that carbon dioxide could be pumped into the water in a process called sparging. The carbon dioxide helps to lower the pH of these pools, making them less caustic.

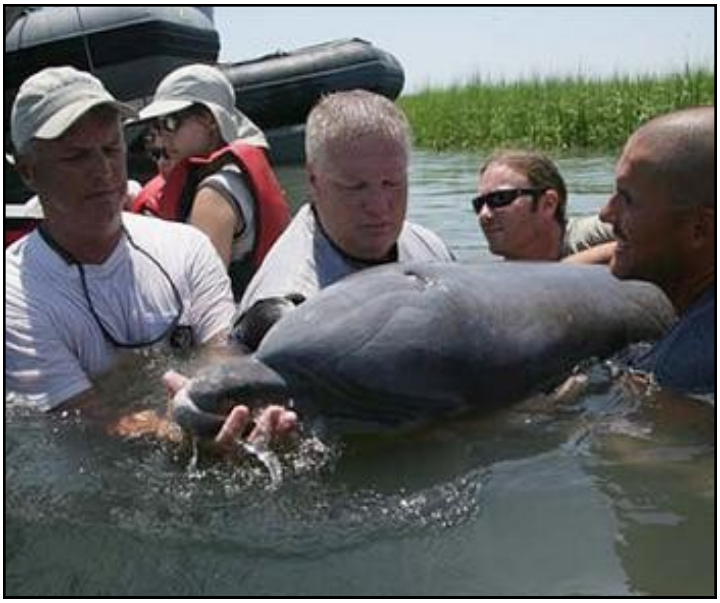
October 2013: The Feasibility Study for the estuary was submitted for review. The chosen cleanup option for the contaminated sediment relies mainly on capping and natural recovery, and very little on removal - which is the more protective and effective option. Capping is the placement of clean sediment over contaminated sediment and natural recovery relies on transported sediment eventually covering the contaminated sediment over a long period of time.

January 2014: Results from a 2009 study on dolphins were published, showing that dolphins living in estuaries near the LCP site have 10 times the levels of PCBs found in dolphins anywhere else in the world. PCBs can cause a number of serious health problems, and some of the dolphins captured for the study were smaller than expected for their age, had low thyroid hormone levels, and/or had anemia, which affects oxygen getting to their organs.

January & February 2014: Carbon dioxide sparging was conducted on the caustic brine pools for both months. Groundwater monitoring showed that the groundwater pH went down and did not go back up after the sparging stopped. More sparging is planned for Fall 2014 to reach areas not affected the first time.



Baby loggerhead sea turtle Source: southeasternoutdoors.com



A dolphin near Brunswick is released after a veterinary exam. Source: Todd Speakman, courtesy of NOAA

Terry Creek/Hercules Outfall

Background
The Terry Creek Spoil Area/Hercules Outfall site consists of three disposal areas and the Hercules Outfall Ditch. Toxaphene, a pesticide, was produced at the plant from 1948 to 1980, and the plant discharged wastewater into Dupree Creek, which flows into Terry Creek. Toxaphene contamination is present in the outfall ditch sediments, Terry and Dupree Creek sediments, and the dredge disposal areas.

Historical Highlights
- **January 2012:** *Draft Focused Remedial Investigation/Feasibility Study for Outfall Ditch*
- **December 2012:** *Draft Remedial Alternative Screening Technical Memo*
- **February 2014**: *Revised Draft Focused Remedial Investigation/Feasibility Study for Outfall Ditch*

Current Activities
Early cleanup actions have begun and site studies are in progress. Human exposure is still a concern, and fish consumption advisories remain in place.

February 2014: A revised draft of the Remedial Investigation/Feasibility Study failed to address many of the concerns raised by the previous draft from 2012. For a full explanation of this document and its numerous weaknesses, please see "The Terry Creek Remedial Investigation/Feasibility Study: What's Missing?" document from March 2014 on GEC's website.

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Upcoming Activities

Brunswick Wood Preserving

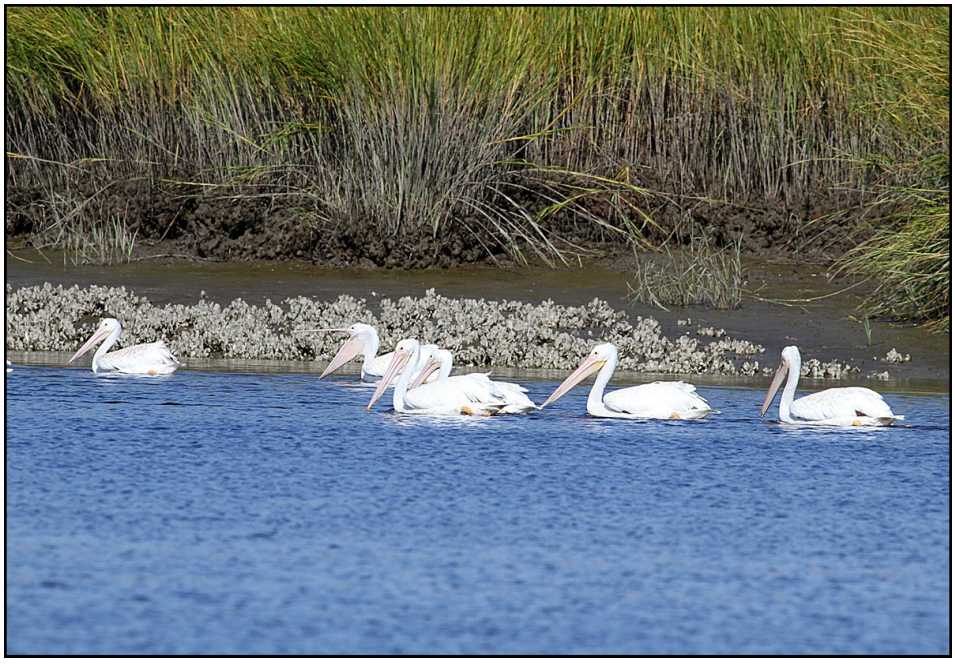
- Results from more monitoring wells will be used to determine how contamination might be moving outside of containment.
- A new plan needs to be developed to address remaining contamination and discuss groundwater treatment.

LCP Chemicals Site

- A finalized Feasibility Study and a draft of the Proposed Plan for the Estuary are expected Fall 2014.

Terry Creek

- The revised draft Remedial Investigation/Feasibility Study is under review and will need to undergo significant changes before being finalized.



Brunswick, GA marshlands Source: James Holland

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