



The report is produced by an independent technical advisor to interpret and help the community understand technical information about our Superfund Sites.

Annual Superfund Sites Update



The Superfund Process

The Superfund process has many steps. Each of the three Brunswick sites is at a different place in the process.

The **Remedial Investigation** involves testing of the site to determine the nature, location and levels of contamination. In addition, this report estimates health risk to humans, animals and plants from the chemicals at the site.

A **Feasibility Study** describes the cleanup options being considered for the site to figure out the best cleanup that will protect human health and the environment from current or future exposure to the site chemicals. Cleanup can be accomplished in different ways, so the cleanup options must be compared to each other. 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 stating how a site will be cleaned up and the long-term monitoring that will be put in place. The **Record of Decision** is legally binding and must be filed with the court, usually as an **Consent Decree** between the agency and responsible parties. Next, the **Remedial Design** is developed, approved (or denied and then revised), and implemented in the **Remedial Action** phase, which is the physical cleanup process.

September 2018

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information about Glynn
County Superfund Sites
online at

www.glynnenvironmental.org or

contact the Glynn
Environmental Coalition by
phone (912) 466-0934 or email
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Brunswick Wood Preserving



Background

The Brunswick Wood Preserving Site housed wood treatment and preserving operations from 1958 to 1991. Regular use of chemicals such as creosote, pentachlorophenol, and copper chromium arsenate contaminated the site's groundwater and soil which requires a long-term cleanup. Other chemicals of concern include dense non-aqueous phase liquids and sediment chemicals such as naphthalene (pronounced nap-foe-lean), benzene, and semi-volatile organic compounds. 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.

Current Activities

- In situ stabilization of the shallow creosote located outside the Western Containment Area completed.
- Most of the equipment for the groundwater work at the Western Containment Area was removed, with some left in place for the State to use for long term operations and maintenance.
- The Eastern Containment Area water extraction and treatment system will be upgraded for long term use
- Permanent onsite burial of excess in situ stabilization soils east of the Eastern Containment Area.
- Additional monitoring wells will be installed where soils were treated last year and two will stop being used.

- More land restoration including topsoil and re-seeding will take place.
- Sampling groundwater monitoring wells continues.
- Surveying conducted to support the easement and covenants planned for the site.
- A Remedial Action Report will document the recent activities at the site along with previous site work.
- The Agency submitted a 5 Year Review and the state of Georgia is studying the report before agreeing to take responsibility.

Next Step

Finalize 5 year review and transfer site to the state of Georgia.

Historical Highlights

1997: Site added to the National Priorities List

June 1998: Remedial Investigation Report

June 2001: Final Feasibility Study (Upland)

June 2002: Record of Decision

September 2012: Five Year Site Review

December 2013: All groundwater treatment discontinued

March 2014: Seven new wells installed to measure groundwater levels

November 2015: Explanation of Significant Difference

Fall 2016: Stabilize contaminated soil

Five Year Review

EPA completed the latest Five-Year Review of the clean up effort in 2017 and sent the report to the state of Georgia for agreement. The Five-Year Review is a progress report that describes the condition of the site and if anything has changed. It is important that this report indicate if the cleanup is still working and if human health or the environment are affected by the contaminants from the site. The regional office of EPA must confirm that the site has not become a problem once again.

The problem at the Brunswick Wood Preserving Site is that groundwater contamination continues outside the western containment area and the "wall" in the ground. This area has been a problem for several years and EPA has not fixed the problem.

Because there is no company to pay for the clean up of this site, both EPA and Georgia share the cost of the

clean up. Once the site is cleaned up, the state of Georgia must assume all the cost, but only after the state is satisfied that no more work is needed. The state has to consider the matter of responsibility for the groundwater contamination.



The Brunswick Wood site from outside the Western Containment Area

LCP Chemical Site/Turtle River



Background

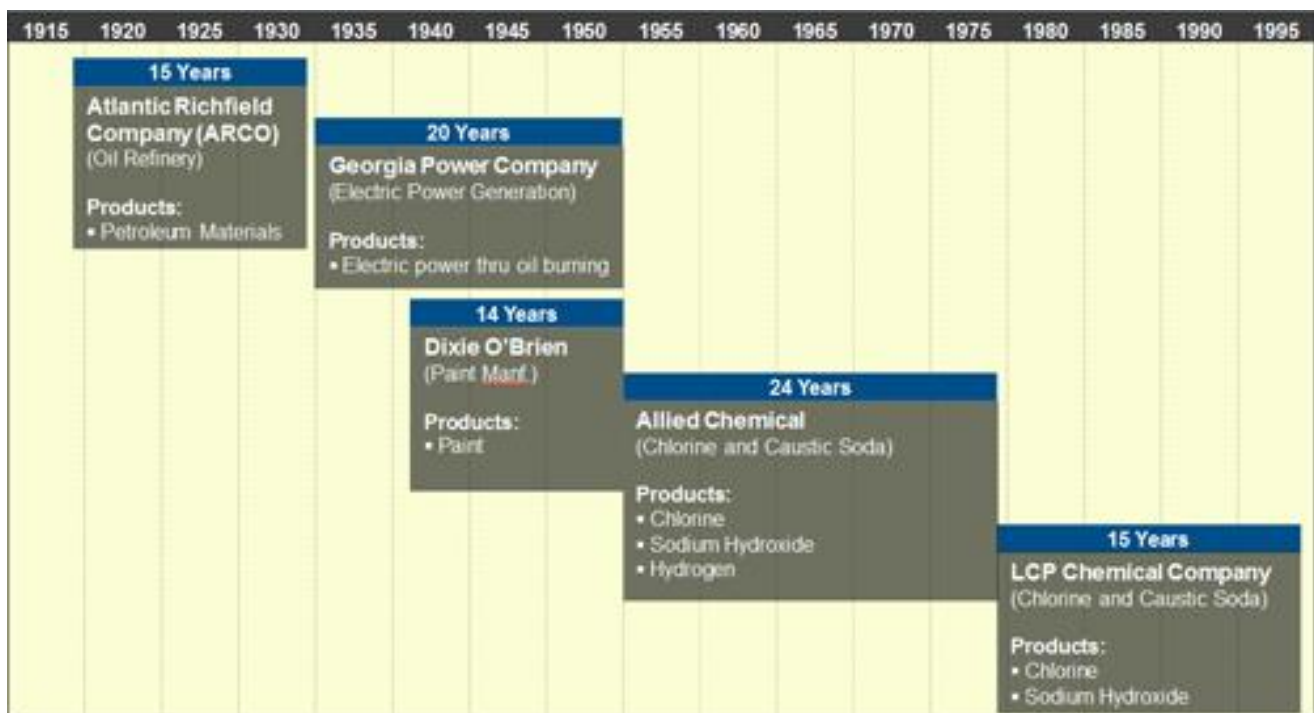
From the 1920s through 1994, various industries (i.e. oil refinery, electrical power, paint/varnish, and a chlor-alkali chemical plant) used this site. Contaminants, including polychlorinated biphenyls, mercury, lead, dioxins, and cancer-causing hydrocarbons, are still present as runoff and are impacting the soil, groundwater, tidal marsh sediment, and marsh plants and animals. The site cleanup is being managed in three parts, 1) the estuary and salt marsh, 2) the groundwater, and 3) the upland soils and sediments where the chemical plant was located. Each of these efforts has its own documents and schedule.

Current Activities– Marsh and Estuary

- The Unopposed Motion to Enter Consent Decree and Response to Comments was released May 2017 for the estuary and marsh area.
- The Consent Decree and Statement of Work for the estuary were finalized later in 2017. The work began with a pilot study that placed a thin layer of sand or soil on the marsh in March 2018. Two years of monitoring will provide information on containing the contamination.
- ESC and GEC raised concerns over what will be monitored and how Honeywell and EPA can know if

the pilot projects works to isolate contamination.

- The estuary and marsh clean up work plan is being written by the consultants for Honeywell according to the schedule in the Consent Decree.
- The GEC will be monitoring the results of the pilot project in the marsh. Honeywell is expected to collect information every six months and report to EPA.
- GEC initiated an extensive outreach program to the Brunswick community, with support from ESC. GEC distributed fact sheets for medical professionals, teachers, parents and the general public on the risks of consuming PCB contaminated fish
- Groundwater contamination remains beneath the site of the chemical plant and EPA has not finished. working on the clean up plans for the mercury in groundwater . EPA indicates that they will complete the Feasibility Study and release a Proposed Plan by the end of 2018.
- Contaminated soil remains at the location of the former chemical plant and no final action has been carried out and no final decision has been made for this part of the site.



Current Activities (Continued)

- Honeywell conducted a pilot project on the marsh during March 2018. The pilot project was to spread a thin layer of sand or soil over the marsh in an attempt to cover and isolate or encourage breakdown of the contaminants in the sediments.
- The Uplands area that has contaminated sediment has not been completed. Honeywell submitted their latest report on ways to clean up that area. EPA reviewed that report and rejected it, telling Honeywell to correct a number of problems.
- The other clean up area is the groundwater; the results of the Phase 3 sparging and groundwater sampling is still under review by EPA. EPA says that a Proposed Plan will be released in 2018.



Example of thin layer being implemented on the marsh.

Groundwater contamination

Honeywell conducted a new treatment of groundwater by pumping carbon dioxide gas into the groundwater to make the groundwater more acidic. This treatment also took mercury out of the water and left it in the sediment. The treatment worked as hoped and the next step is to complete the reports on the remaining clean up. After that, Honeywell will need to complete cleaning up the site by treating or removing contamination. In a draft Project Plan report on the next steps, Honeywell indicated the next activities they would do. But EPA rejected that report because it has too many errors and missing information. The revised report was due to EPA in July 2018.

Upland Soils

The third area of contamination is where the main plant site was located and left contaminated soil. Honeywell has not submitted any major report or conducted any

significant work on the Upland Soils in several years. Earlier in 2018, Honeywell sent EPA a report on different options for cleaning up the soils.. This report on Remedial Alternatives was not acceptable to EPA and the agency rejected the report, indicating to Honeywell the corrections that are needed. The corrected report should have been sent back to EPA by the time this newsletter comes out.

Next Steps

Complete Work Plan and monitor the pilot project in the Marsh

Historical Highlights

August 1980: Site discovery

1995: Remedial Investigations/Feasibility Studies begin

1996: Site added to the National Priorities List

July 2011: Human Health Baseline Risk Assessment for the Estuary and for the Uplands Soils

March 2013: Estuary Feasibility Study Tech Memo

April 2013: Final Uplands Feasibility Study Technical Memo

June 2014: Estuary Feasibility Study

November 2014: Estuary Proposed Plan

October 2015: Record of Decision/Responsiveness Summary for Estuary

July 2016: Consent Decree and Statement of Work

July 2017: Consent Decree finalized

March 2018: Conduct pilot project



One end of a monitoring well drilled at an angle across the LCP site to assess groundwater contamination.

Terry Creek/Hercules Outfall



Background

From 1948 to 1980, the Hercules Brunswick pesticide production facility discharged their wastewater into Dupree Creek, which flows into Terry Creek. The wastewater contained waste from making toxaphene, a pesticide. Wastes still contaminate the outfall ditch sediments, Terry and Dupree Creek sediments, and dredge disposal areas. Fish remain contaminated with the wastes from the site and are not safe to eat.

EPA separates the Terry Creek site into three areas for clean up: 1) the Outfall Ditch flowing into Terry Creek, 2) Terry Creek and Dupree Creek and 3) the areas where dredged materials were dumped in the marsh off the creek and off to the side of the causeway. These are shown in the large image in this report. All of the effort has been directed to the Outfall Ditch which is only 2.5 acres.

Current Activities

An Interim Record of Decision is part of the Consent Decree filed with the court earlier this summer, and this Consent Decree is available for public comment until September 21, 2018. The public comment period was extended twice. The first extension was at the request of the public. The second extension was granted because the agency released the toxicity report on "weathered toxaphene." ESC comments on this report are inserted below.

The report on the toxicity of "weathered toxaphene" is



Terry Creek Outfall and former Wood Storage Yard

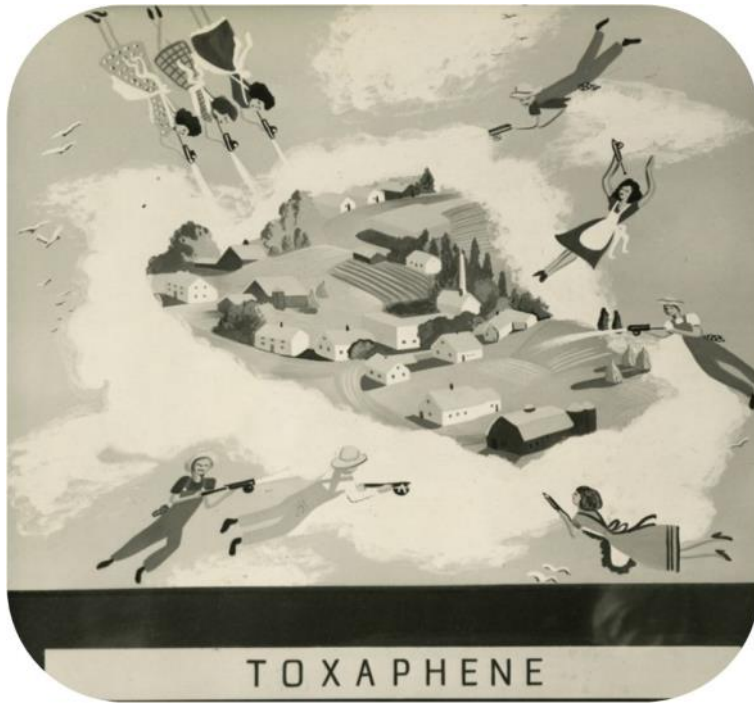
important for several reasons. One reason has to do with the Consent Decree for the Outfall Ditch cleanup. The Consent Decree includes the Interim Record of Decision from 2017. The Record of Decision was labeled "interim" because EPA did not have the toxicology information on toxaphene to make a "final" decision on "weathered" toxaphene and removal or treatment. In fact, in the Interim Record of Decision, EPA repeatedly stated that the lack of toxicity information was the reason for the interim status.

Next steps

Remedial Design for Interim Remedy

Historical Highlights

- 1997: Site proposed for the National Priorities List but never finalized
- 1999: EPA enters into agreement with Hercules to conduct a Remedial Investigation/Feasibility Study
- 2001: Remedial Investigation/Feasibility Study Work Plan submitted but work suspended
- December 2014: Focused Remedial Investigation/Feasibility Study for the Outfall Ditch
- June 2015: Proposed Plan for Outfall Ditch
- July 2017: Interim Record of Decision
- May 2018: Consent Decree
- August 2018: Release of "Toxaphene" toxicity report
- Next steps: Public comment period on the Consent Decree until September 20, 2018



Toxaphene Toxicity Report

In early August, the EPA headquarters office that deals with scientific technical matters completed an important report on toxaphene. This report reviewed the issues of how toxic are the toxaphene wastes. Earlier this year, ESC completed a technical report that summarized the difficulties with understanding the toxicity of all types of toxaphene. In short, toxaphene is chemically named polychlorinated camphenes, consisting of hundreds of specific chemicals. It is not possible to measure the toxicity of every one of these chemicals. EPA staff working on the Terry Creek site could not sort out the toxicity of all the different chemicals in the waste and had an office at the headquarters office research the matter and report on the toxicity of what EPA called “weathered” toxaphene. EPA headquarters completed and released the report on “weathered toxaphene” in early August.

This report is important for several reasons. First, the Record of Decision was only an “Interim” Record of Decision because EPA did not have enough information to clearly estimate the danger to humans and animals from the waste. Second, the report estimates that the wastes are more toxic than the toxaphene manufactured and sold to farmers for controlling pests.

In the “Weathered Toxaphene” report, EPA used a standard approach to understand and explain the harm to human health from “weathered toxaphene.” This approach is based on estimating how much a person can consume in food each day and expect no harm. To account for people of different sizes, especially men and

women, this number is based on amount of chemical per kilogram of body size (1 kilogram = 2.2 pounds). An average adult man weighs about 70 to 80 kilograms. This estimate is called the “Reference Dose” and is given as milligrams of chemical per day per kilogram of body size (mg/kg-day).

But there is not enough information on “weathered toxaphene” to complete the toxicity estimate the same way that they do for a single chemical. EPA must rely on what they know about “technical toxaphene.” The Reference Dose for “weathered toxaphene” was based on the same information used for the commercial product, termed “technical toxaphene.” The toxicology information for “weathered toxaphene” is sparse, especially compared with the toxicology information for “technical toxaphene.” As a result, EPA uses their standard procedure for estimating an Reference Dose for one chemical based on the toxicology information for a related chemical. That procedure calls for applying

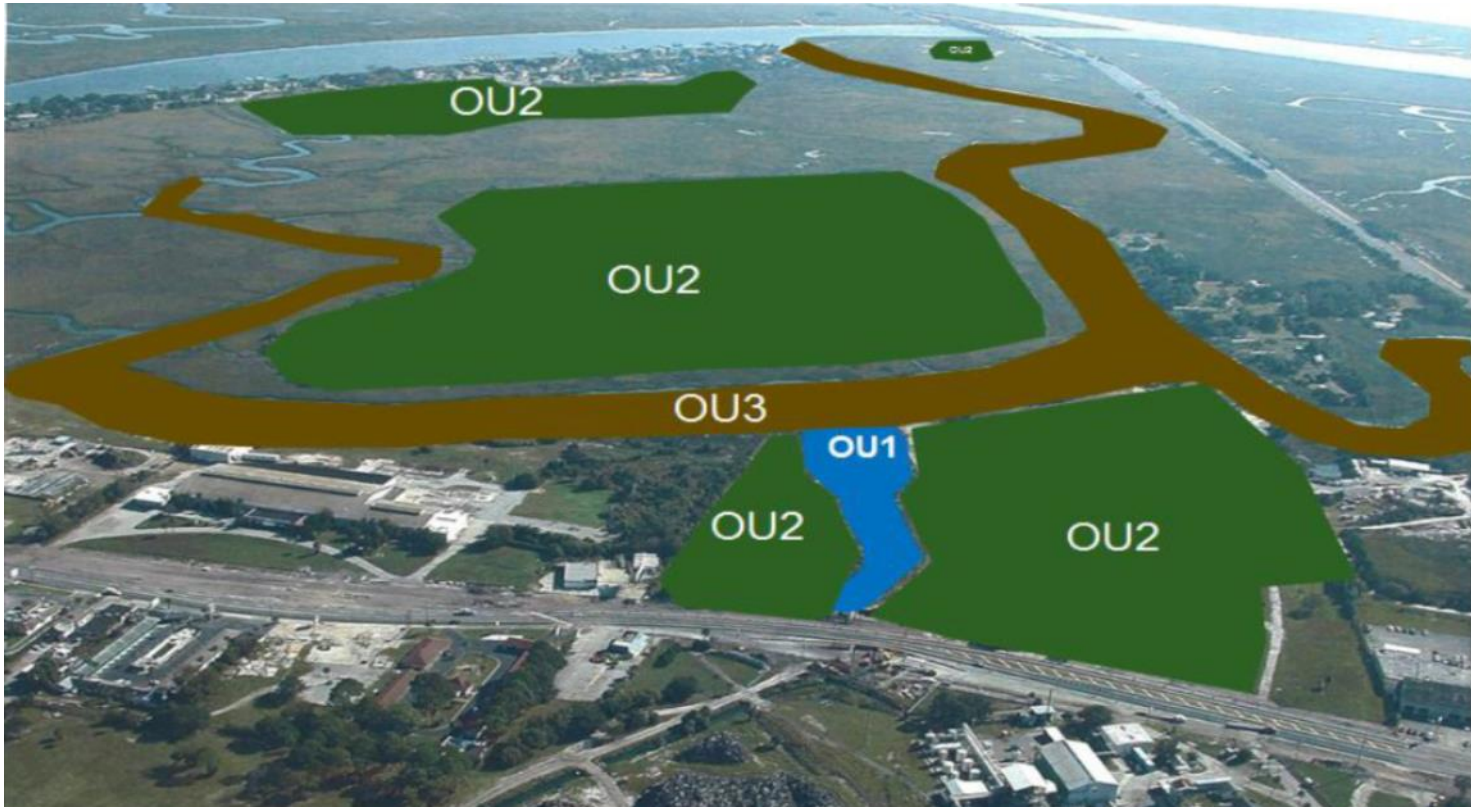


Mouth of the outfall ditch where it enters Terry Creek

uncertainty factors to the Reference Dose for the known chemical, in this case, “technical toxaphene.” The uncertainty factors total 300 and thus the Reference Dose for “weathered toxaphene” is the Reference Dose for “technical toxaphene” divided by 300, and that number is 300 times smaller.

Now that the toxaphene report is public, the contamination in the Outfall Ditch can be seen as more toxic and widespread than EPA believed before. EPA will need to take the new information into account in finishing the Record of Decision

The Terry Creek Dredge Spoils Areas/ Hercules Outfall Site has been divided into areas by the EPA called Operable Units. Operable Unit One (OU1) is the Outfall Ditch, Operable Unit Two (OU2) is the Wood Storage and Dredge Spoil Areas, and Operable Unit Three (OU3) is Dupree and Terry Creeks.



ESC has several concerns and recommendations:

- | | |
|---|--|
| <ul style="list-style-type: none">1) the Interim Record of Decision should be finalized before the Consent Decree is finalized;2) the road crossing needs to use the 4 box culvert urged by Brunswick City and Glynn County;3) the Consent Decree needs to direct an enhanced public outreach and education effort concerning | <ul style="list-style-type: none">contaminated seafood, as the Consent Decree for the LCP Site did in 2017;4) EPA needs to require sampling and measurement using the proper approved lab method;5) the new toxicity report does require greater removal or treatment to account for the more harmful wastes;6) new methods of treating chlorinated chemicals can and should be used here on this site. |
|---|--|

To Comment on the Consent Decree for Terry Creek, Outfall Ditch, please send comments by September 21, 2018. Comments can be submitted via:

Email

pubcomment-ees.enrd@usdoj.gov

Subject Line: United States v Hercules, LLC, D.J.
Ref. No. 90-11-3-11685

U.S. Mail

Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resource Division
P.O. Box 7611
Washington, D.C. 20044-7611

All comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and should reference to ***United States v. Hercules, LLC, D.J. Ref. No. 90-11-3-11685.***



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Current and Upcoming Activities

Brunswick Wood Preserving

- Additional sampling and groundwater monitoring will continue.
- A Remedial Action Report needs to be completed and released to the public.

LCP Chemicals Site

- An Upland Groundwater Remedial Investigation and Feasibility Study needs to be completed and released to the public.
- Results of the third phase of carbon dioxide sparging and groundwater monitoring need to be completed and released to the public.
- Honeywell needs to complete the Feasibility Study and EPA will then prepare a Proposed Plan, which the agency indicates will be done by the end of 2018.

Terry Creek

The EPA report on “weathered toxaphene” was released in early August and the court extended the comment period on the Consent Decree by 30 days to September 21.



Brunswick Wood Preserving Site: Treated soil stockpile relocation

Photo: Black&Veatch