
EPA Proposes Cleanup Plan for Former Tar Plant

Allied Chemical and Ironton Coke Site
Ironton, OH

July 2007

Share your opinions

EPA invites your comments on its proposed cleanup plan. Your input helps EPA determine the best course of action. You may fill out and mail or fax the enclosed form, or use an electronic form on EPA's Web site. Your comments must be postmarked by the last day of the comment period.

Public comment period July 16 - Aug. 14, 2007

If there is enough interest, EPA will hold a public hearing on this proposed cleanup plan so the public can provide comments orally. Contact EPA Community Involvement Coordinator Briana Bill, (see Page 7) by July 27 to request a hearing.

Note: This proposal addresses only the tar plant area of the former Allied Chemical and Ironton Coke facility. The former coke plant, waste lagoons and a former disposal area – called the Coke Plant Lagoon Area and Goldcamp Disposal Area, respectively – were cleaned up in the mid-1990s. The pumping out and treatment of polluted ground water and the monitoring of a restored wetland continues today across the entire facility.

For more information

Background material for the tar plant area is available on EPA's Web page: epa.gov/region5/sites/alliedchemical.

Files are available for review at the site information repository at Briggs Lawrence County Public Library, 321 S. Fourth St. in Ironton. An administrative record, which houses the documentation supporting EPA's proposal, is in the library and at the EPA offices in Chicago.

Soil and sediment at the former tar plant at the Allied Chemical and Ironton Coke site will be cleaned up or contained under a plan proposed by U.S. Environmental Protection Agency. EPA wants to cover the contaminated soil with a cap meeting the design requirements of Ohio solid waste regulations. This will prevent people and wildlife from coming in contact with pollutants and reduce the seepage of rain, snow and stormwater into the soil. The plan also calls for institutional controls to protect the public, future workers and wildlife from exposure to any contaminants remaining after the cleanup. In addition, EPA proposes to dig out some of the polluted sediment (mud) from the Ohio River and dispose of it at an off-site facility and cap the remainder with sand, gravel or other material. Ground water (underground water) under the tar plant is already being managed by EPA's 1990 cleanup decision prepared for the Coke Plant Lagoon Area. EPA's proposal is a combination of soil Alternative 3b, sediment Alternative 5 and air Alternative 2 described on Pages 4 and 6. The proposed plan protects human health and the environment and once in place will complete the cleanup at the site.

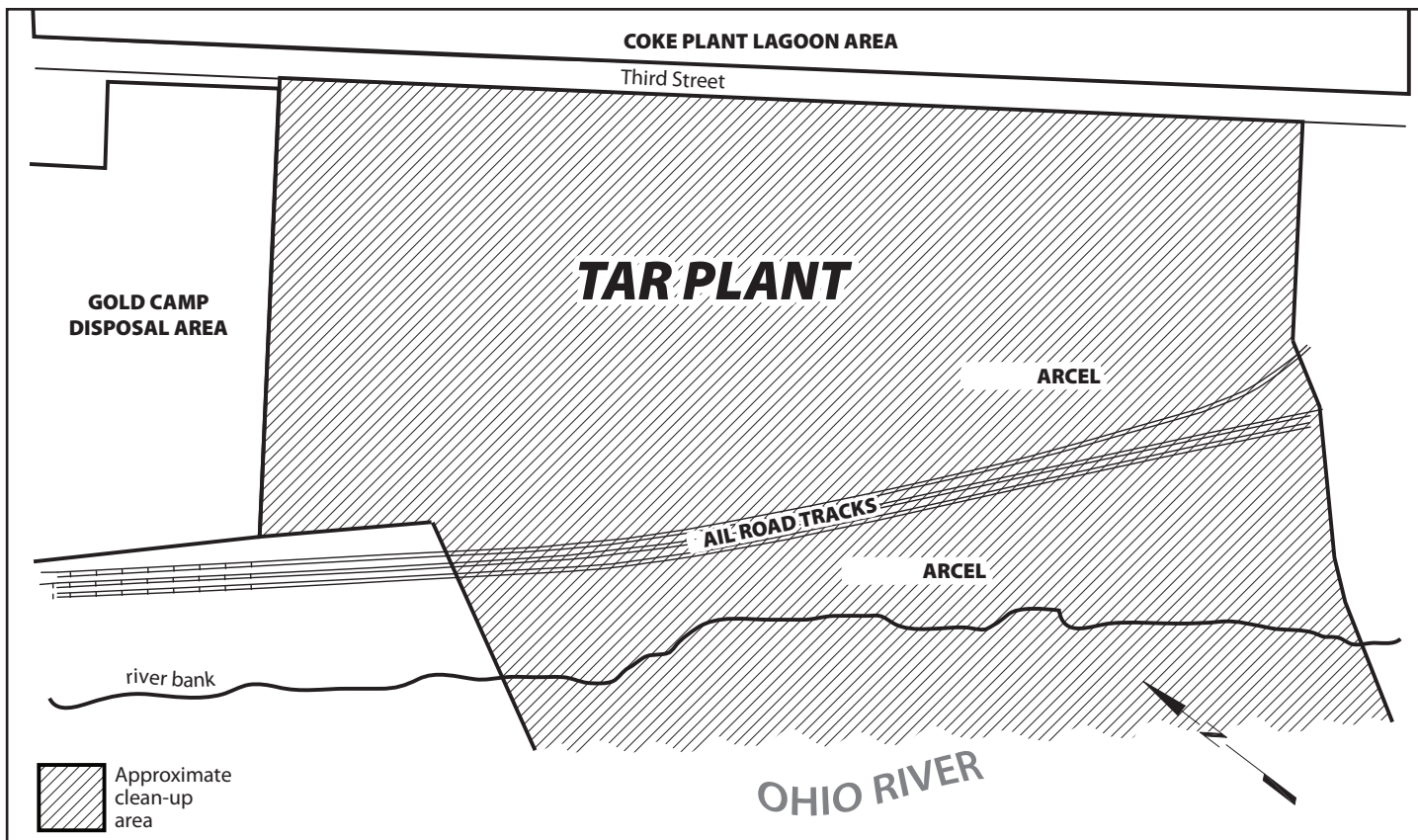
The public has 30 days to file written comments on EPA's proposed plan. See the box at the left to find out how. EPA could alter its proposed plan or even choose a new one based on public comments.¹

The recently completed remedial investigation and feasibility study shows what is known about the pollution at the former tar plant. It also explains the potential risks to people and the environment and describes various options for fixing the problems. The documents are available at the Briggs Lawrence County Public Library in Ironton and also posted on EPA's Web page.

Risks to people and the environment

People and animals who come in contact with soil from the site face health risks, mainly from contaminants called polyaromatic hydrocarbons. PAHs can cause lung, stomach and skin cancer and other health problems in humans and animals. Other contaminants include arsenic, and chemicals called volatile organic compounds such as benzene, toluene, ethylbenzene and xylene. Scientists who studied the situation concluded a person in direct contact with soil in certain portions of the site over a lifetime could face a higher risk of developing cancer. Air at the site is safe to breathe. However, vapor rising toward the surface from underlying soil could pose a risk of cancer and other health effects to occupants of any future buildings on the site and to workers digging in the soil. People are not expected to use the ground water at the site for drinking, but if they did over a lifetime, they would be at risk of exposure to dangerous levels of contamination. EPA's 1990 cleanup plan required the company (Honeywell International) liable for

¹Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act requires EPA to provide an opportunity for a public meeting and hold a comment period. It also requires a newspaper ad announcing the proposed plan and a brief analysis. This mailer summarizes the feasibility study and other site-related reports available in the Briggs Lawrence County Public Library and at the EPA office in Chicago.



the cleanup to manage the ground-water contamination. This work continues today. While scientists found polluted sediment in the Ohio River next to the site could harm bottom-dwelling organisms, swimmers would be unaffected by the contamination in the mud. EPA has determined the conditions in the former tar plant area pose an unacceptable risk to human health and the environment if left unattended. EPA's proposal outlined in this mailer is designed to reduce these risks.

About the former tar plant

The 27-acre former tar plant is one of three distinct cleanup areas that make up the Allied Chemical and Ironton Coke Superfund site. Located at 3330 S. Third St., the tar plant area consists of a 16-acre main parcel east of the railroad tracks and an 11-acre river parcel, a portion of which is in the river. During its 53-year history, the tar plant made products from the crude tar produced at the coke plant. Today, a small office building, an open-air shed, above-ground water lines, ground-water extraction and monitoring wells, roadways and vacated railroad beds are all that remain of the tar plant. Plant operations resulted in contamination of underlying soil and ground water, as well as sediment in the Ohio River. Due to contamination from the tar plant and the other two cleanup areas known as the Goldcamp Disposal Area and Coke Plant Lagoon Area, EPA placed the facility on the National Priorities List in 1983. Sites on this list are among the nation's most hazardous waste areas and are eligible for cleanup under the EPA Superfund program. The tar plant is the last of the three areas to be managed. Cleanup of the Goldcamp Disposal Area, a former sand and gravel pit used for the disposal of waste and foundry sand, and Coke Plant Lagoon Area were largely completed in 1996 and 2001, though ground-water pumping and treatment continues today at all three areas.

Future use of the site has not yet been determined but the property owner, Honeywell, has indicated an interest in retaining the site for industrial or commercial use.

What are institutional controls?

Institutional controls are the administrative or legal components of a cleanup that do not involve construction or physically changing the site. For the tar plant cleanup, the goals for institutional controls include:

- protecting the public and any future workers or building occupants from coming in contact with contaminants remaining in the soil and sediment; and
- keeping the soil and sediment caps intact.

Institutional controls could include zoning restrictions, environmental easements, recorded restrictive covenants, public notices and posted signs.

Recommended cleanup options

EPA considered a number of options for managing and cleaning up contaminated soil, sediment and vapor. The Agency evaluated each option against nine criteria required by law (see box below for an explanation of the criteria). The options presented here provide the best balance of the nine criteria and meet the requirements of federal law. They protect public health and the environment over the long term, comply with state and local regulations and are cost-effective. EPA's recommendation for soil, sediment and air are described below. The other alternatives EPA evaluated are described on Pages 4 - 7 respectively. Full details are provided in the remedial investigation and feasibility study reports on EPA's Web page and at the library.

Soil

EPA recommends that polluted portions of the tar plant area be covered with a cap meeting Ohio solid waste regulations. Such a cap is typically constructed of a waterproof, flexible membrane liner placed over

compacted clay. Placed on top would be a layer of soil serving as frost protection, along with vegetation to stabilize the soil. Nearly 22 acres of the site would likely need to be covered to adequately prevent people and wildlife from coming in contact with contaminated material. EPA would require any future construction or utility workers to use appropriate health and safety measures when doing excavation work. Restrictions would also be needed to protect the cap from damage by workers digging in the area. The site would be inspected periodically to ensure the soil cover remains intact and that institutional controls remain in effect and are enforced.

Sediment

EPA believes a combination of dredging and capping to be the best approach for reducing the potential harm to the organisms living in the Ohio River mud. Sediment in portions of the 5-acre affected area would be dredged and water removed from the dredged material. The dried sediment would be disposed of in a licensed landfill and the water would be cleaned and returned to the river.

Evaluation criteria

EPA uses nine criteria to compare cleanup options:

- 1. Overall protection of human health and the environment** addresses whether an alternative adequately protects both human health and the environment. The cleanup plan can meet this criterion by reducing or eliminating contaminants or by reducing exposures to them.
- 2. Compliance with applicable or relevant and appropriate requirements** assures that each project complies with federal, state and local laws and regulations.
- 3. Long-term effectiveness and permanence** evaluates how well an option will work in the long term, including how safely remaining contaminants can be managed.
- 4. Reduction of toxicity, mobility or volume through treatment** addresses how well the option reduces the toxicity – the chemical makeup of a contaminant that makes it dangerous – movement and amount of contaminants.
- 5. Short-term effectiveness** is how quickly the project achieves protection, as well as its potential to be harmful to human health and the environment while it's being constructed and operated.
- 6. Implementability** evaluates the technical feasibility of the cleanup plan, and whether materials and services are available to carry out the project.
- 7. Cost** includes estimated capital or startup costs, such as the cost of buildings, treatment systems and monitoring wells. The criterion also considers costs to implement the plan, and operate and maintain it over time. Examples include laboratory analysis and personnel to operate equipment.
- 8. State acceptance** is whether the state environmental agency, in this case Ohio EPA, agrees or disagrees with EPA's recommended alternative.
- 9. Community acceptance** evaluates how well the community near the site accepts the option. EPA evaluates community acceptance after it receives and evaluates public comments on its recommended alternative.

The remainder of contaminated river sediment would be capped with sand, gravel, cobbles or man-made materials. Specific techniques and materials would be evaluated during the design phase. EPA would require institutional controls be put in place to ensure the cap is properly monitored and maintained in the future.

Air

Even after the soil cleanup, EPA expects some contamination will remain in the ground. Vapor migrating upward could pose a threat to occupants of any buildings constructed on-site in the future and to workers digging in the soil. Health and safety measures would need to be in place during any subsurface construction work to protect workers. Additional institutional controls would require measures to protect people from exposure to vapor.

Ground water

Although ground water under the tar plant is polluted, options for managing and cleaning it are not presented or evaluated in this proposed plan. This is because EPA's 1990 final cleanup decision for the Coke Plant Lagoon Area included a provision for managing the ground water at the entire facility, including the tar plant (EPA's cleanup decision is available on its Web page for this site and in the library). Honeywell has been pumping out and treating polluted ground water from affected areas throughout the Allied Chemical and Ironton Coke site. EPA has been working with the company to make the ground-water extraction and treatment system more effective. Data collected during the tar plant study indicates that some additional work is necessary. EPA will require Honeywell to complete this work under existing legal agreements with the company.

Cleanup options for soil

EPA considered nine alternatives for managing and cleaning up soil. The options were designed to reduce the chance of people and animals coming in contact with harmful levels of PAHs, arsenic and volatile organic compounds. These alternatives are summarized below:

Alternative 1 – No further action: Nothing would be done to clean up or monitor the contamination. EPA always includes a no-action option for comparison purposes. **Cost: \$0**

Alternative 2 – Limited action, institutional controls: This option would rely only on institutional controls, fencing and signage to limit people's exposure to contamination. No other action would be taken. **Cost: \$160,000**

Alternative 3a – Soil cap: Eighteen inches of clean fill and 6 inches of topsoil would be placed across the main parcel and the upland portion of the river parcel, covering

the contamination. The steep slopes of the river parcel would be graded, covered with rocks, and planted with native grasses and trees. Institutional controls would require the land be used only for industrial purposes and that the soil cap periodically be checked and maintained. In addition, institutional controls would ensure a plan was in place to protect workers occupying any future buildings or disturbing soil. **Cost: \$3.9 million**

Alternative 3b – Ohio EPA solid waste compliant soil cover (EPA's recommended alternative): Like Alternative 3a, the contaminated parts of the main parcel and the upland portion of the river parcel would be covered. However, a special cap would be used on the main parcel that complies with Ohio EPA's regulations for landfill waste. A minimum of 30 inches of fill material would be placed on top of the solid waste (see Page 3) cap so that freezing and thawing do not affect the underlying cap. The steep slopes of the river parcel would be graded, covered with rocks and planted with native grasses and trees. Institutional controls would require the land be used only for industrial purposes and that the solid waste cap periodically be checked and maintained. Measures would be put in place to protect workers occupying any future buildings or disturbing soil. **Cost: \$5.6 million**

Alternative 4a – Limited excavation, off-site disposal and soil cap: This option calls for the most highly contaminated soil to be dug up from the river parcel and northern portion of the main parcel and disposed of in an off-site licensed landfill. EPA expects the depth of the excavation to be 5 feet. Remaining contaminated soil would be covered as described in Alternative 3a, and institutional controls put in place. **Cost: \$12.4 million**

Alternative 4b – Limited excavation, off-site disposal and Ohio EPA solid waste compliant cap: Like Alternative 4a, the most highly contaminated soil would be dug up from the river parcel and northern portion of the main parcel and disposed of in an off-site licensed landfill. EPA expects the depth of the excavation to be 5 feet. Remaining contaminated soil on the main parcel would be covered with an Ohio EPA solid waste compliant cap while soil on the river parcel would be covered by a plain soil cap. Institutional controls would be put in place. **Cost: \$13 million**

Alternative 5 – Extensive excavation and off-site disposal: Under this alternative, soil with levels of organic chemicals over EPA standards would be excavated and disposed of off-site at an approved landfill. EPA estimates that approximately 900,000 cubic yards of contaminated soil would be excavated. Because the excavation within the river parcel would be taking place within the 100-year flood plain, special practices would

Evaluating cleanup choices against the nine criteria for soil									
Evaluation Criteria	Alt. 1	Alt. 2	Alt. 3a	Alt. 3b	Alt. 4a	Alt. 4b	Alt. 5	Alt. 6a	Alt. 6b
Overall Protection of Human Health and the Environment	□	□	■	■	■	■	■	■	■
Compliance with ARARs	□	□	□	■	□	■	■	□	■
Long-Term Effectiveness and Permanence	□	◆	■	■	■	■	■	■	■
Reduction of Toxicity, Mobility, or Volume through Treatment	□	□	□	□	□	□	□	□	□
Short-Term Effectiveness	□	◆	■	■	■	■	◆	■	■
Implementability	■	■	■	■	■	■	◆	■	■
Cost	\$0	\$160,000	\$3.9 M	\$5.6 M	\$12.4 M	\$13 M	\$134.5 M	\$6.1 M	\$6.8 M
State Acceptance	Ohio EPA supports EPA's recommended alternative (Alternative 3b).								
Community Acceptance	Will be evaluated after the comment period.								

■ = Meets Criteria □ = Does Not Meet Criteria ◆ = Partially Meets Criteria

be put in place to ensure contamination is not spread downstream in the event of a flood. **Cost: \$134.5 million**

Alternative 6a – Limited excavation, on-site consolidation and soil cover: Like Alternative 4a, the most highly contaminated soil would be dug up from the river parcel and northern portion of the main parcel. Instead of being disposed of off-site, however, the soil would be moved to the southern portion of the main parcel and covered with clean soil. Institutional controls would be put in place to protect workers and restrict access to contamination. **Cost: \$6.1 million**

Alternative 6b – Limited excavation, on-site consolidation and Ohio EPA solid waste compliant cap: Like Alternatives 4a, 4b and 6a, the most highly contaminated soil would be dug up from the river parcel and northern portion of the main parcel. Instead of being disposed of off-site, the soil would be moved to the southern portion of the main parcel. However, instead of a soil cover as in Alternative 6a, the remaining contaminated soil on the main parcel would be covered with an Ohio EPA solid waste compliant cap while soil on the river parcel would be covered with a plain soil cap as described in Alternative 3b. **Cost: \$6.8 million**

Evaluation of soil alternatives

EPA evaluated each cleanup option against the nine criteria required by the Superfund law and proposes Alternative 3b because it achieves the best balance among the nine

criteria. An Ohio EPA solid waste compliant cap over the contaminated portion of the main parcel and a plain soil cap on the river parcel provide for a cost-effective way to manage the most highly contaminated material. Use of these caps will eliminate the chance of exposure to soil contamination by people and animals. The soil cap described in Alternatives 3a, 4a and 6a would provide the same degree of long-term protection from exposure as Alternative 3b but would not prevent the continued seeping of certain chemicals out of the soil into the ground water as an Ohio EPA solid waste compliant cap would.

Alternatives 3a, 4a, and 6a with the plain soil cap, would not comply with state requirements. Ohio EPA solid waste compliant caps have been designed and constructed for decades and are not any more technically challenging to construct than a plain soil cap. Alternatives 4b and 6b protect human health and the environment and comply with state regulations but are significantly more expensive than most of the other options without additional benefit. Alternative 1, the no further action option, would not protect human health and the environment and does not comply with state regulations. Alternative 5 would protect public health and the environment and would comply with regulations. However, it is extremely challenging to implement and would not be cost-effective for the protection it offers when compared to Alternatives 3a, 3b, 4a, 4b, 6a and 6b.

Evaluating cleanup choices against the nine criteria for sediment					
Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Overall Protection of Human Health and the Environment	□	◆	■	■	■
Compliance with ARARs	■	■	■	■	■
Long-Term Effectiveness and Permanence	□	◆	◆	◆	■
Reduction of Toxicity, Mobility, or Volume through Treatment	□	□	□	□	□
Short-Term Effectiveness	□	□	■	■	■
Implementability	■	■	■	■	■
Cost	\$0	\$0.7 M - \$1 M	\$1.8 M - \$3.4 M	\$6.8 M - \$9.9 M	\$2.8 M - \$4.5 M
State Acceptance	Ohio EPA supports EPA's recommended alternative (Alternative 5).				
Community Acceptance	Will be evaluated after the comment period.				

■ = Meets Criteria □ = Does Not Meet Criteria ◆ = Partially Meets Criteria

Cleanup options for sediment

Alternative 1 – No further action: In this option, sediment would not be cleaned, nor would contaminant levels be monitored. EPA always includes a no-action option for comparison purposes. **Cost: \$0**

Alternative 2 – Monitored natural recovery: This option relies on natural processes such as decay and dilution to break down the PAHs that settled into the river mud after spills at the docks and discharges through an outfall pipe into the river. Although there would be no cleanup, Honeywell would test the sediment every five years to ensure contaminant levels were dropping.

Cost: \$700,000 - \$1 million

Alternative 3 – In-place capping: Contaminated sediment would be capped with natural materials such as sand, gravel, and cobbles, man-made material or a combination. The goal would be to isolate contaminants from the organisms living in or near the river mud. Restrictions would be put in place to ensure the cap is not breached and to ensure the area would be checked regularly.

Cost: \$1.8 million to \$3.4 million depending on the capping materials used

Alternative 4 – Dredging and off-site disposal: Under this option, contaminated sediment would be dredged. If EPA were to select this alternative, Honeywell would evaluate several options for minimizing the flow of contamination downstream as well as ways to remove water from the dredged sediment.

Cost: \$6.8 million to \$9.9 million

Alternative 5 – Combination of dredging and off-site disposal and capping (EPA's recommended alternative):

This alternative combines the capping in Alternative 3 with the dredging and off-site disposal of Alternative 4.

Specific areas and depths to be dredged and capped would be determined during the design phase. As in Alternative 3, institutional controls would be put in place to maintain the cap. **Cost: \$2.8 million to \$4.5 million**

Evaluation of sediment alternatives

EPA is proposing Alternative 5, a combination of dredging and capping, because this option offers the most flexibility in tailoring a cleanup that is both cost-effective and allows for future use of this part of the river. Alternatives 3 (capping), 4 (dredging) and 5 (combination of dredging and capping) all provide protection over the long term and comply with state and local laws and regulations. Alternative 3, however, would prevent the navigational dredging that might be required for future development of the river front. Alternative 4 would allow future use, but is not cost-effective, as other alternatives would provide a similar level of protection and cost less. Alternative 2, which relies on natural processes and monitoring, would be easy to implement, but would take a long time to work, if it worked at all. Alternative 1 does not protect aquatic organisms from exposure to chemicals.

Cleanup options for air

The goal for air is to protect future workers or future building occupants from exposure to vapors from soil.

Alternative 1 – No further action: No cleanup or monitoring would be conducted. EPA always includes a no-action alternative for comparison purposes. **Cost: \$0.**

Alternative 2 – Institutional controls (EPA's recommended alternative): This alternative would rely on institutional controls to ensure that people don't have contact with vapors in the soil. The institutional controls would be those used in the soil options. **Cost: \$75,000**

Evaluating cleanup choices against the nine criteria for air		
Evaluation Criteria	Alternative 1	Alternative 2
Overall Protection of Human Health and the Environment	□	■
Compliance with ARARs	□	■
Long-Term Effectiveness and Permanence	□	■
Reduction of Toxicity, Mobility, or Volume through Treatment	□	□
Short-Term Effectiveness	□	■
Implementability	■	■
Cost	\$0	\$75,000
State Acceptance	Ohio EPA supports EPA's recommended alternative (Alternative 2).	
Community Acceptance	Will be evaluated after the comment period.	

■ = Meets Criteria □ = Does Not Meet Criteria ◆ = Partially Meets Criteria

Alternative 2 best meets the nine criteria required by law. Alternative 1, the no further action option, would not protect occupants of any future buildings.

The next step

EPA will review public comments received during the public comment period before making a decision on the cleanup plan. Based on new information in public comments, EPA may change its proposed options or select other options presented in this plan. EPA will respond to comments in a document called a responsiveness summary. This is part of a document called a record of decision that describes the final cleanup plan for the site. The Agency will announce the final cleanup plan in the Ironton Tribune. A copy will be posted on EPA's Web site and placed in the local library. EPA will negotiate with Honeywell for the company to conduct the cleanup under the Agency's oversight. The cleanup choices will then be designed and constructed, which could take several years.

Activities at the Goldcamp Disposal and Coke Plant Lagoon Areas

Construction work associated with cleanup of the Goldcamp Disposal Area was completed in 1995. A slurry (clay) wall was installed 90 feet into the ground to support the hydraulic controls through the ground-water pumping and prevent contaminated ground water from moving into uncontaminated areas. A cap was constructed over the area to prevent rain from seeping into the waste and making ground-water contamination worse. High-volume pumps continue to extract millions of gallons of ground water per year. The water is treated until it meets surface water guidelines and is discharged into the Ohio River.

Among the cleanup activities at the Coke Plant Lagoon Area was the demolition of the coke plant and off-site

disposal of contaminated soil. Lagoon waste was cleaned in several ways including off-site disposal, recycling and treatment. Wetland vegetation was planted in the cleaned area with the hope it would develop into a quality habitat for local plants and wildlife. Honeywell continues to monitor this process.

A ground-water pump-and-treat system serving the entire location is in place to prevent off-site movement of contaminated ground water that had previously escaped from the Goldcamp Disposal Area, coke plant and the tar plant.

If you have questions contact:

U.S. Environmental Protection Agency
77 W. Jackson Blvd.
Chicago, IL 60604

Briana Bill
 Community Involvement Coordinator
 bill.briana@epa.gov
 312-353-6646 or
 800-621-8431, 10 a.m. - 5:30 p.m. weekdays

Brenda R. Jones
 Remedial Project Manager
 jones.brenda@epa.gov
 312-886-7188
 or 800-621-8431, 10 a.m. - 5:30 p.m. weekdays

Ohio EPA, Southeast District
2195 Front St., Logan, OH 43138

Kevin C. O'Hara
 Site Coordinator
 kevin.ohara@epa.state.oh.us
 740-380-5247

Public comment period: July 16 — Aug. 14, 2007

proposal. Read inside to learn more.

You have 30 days to submit written comments on EPA's proposed plan. See the box on the front page to find out how. Based on public comments, EPA may modify the

other material.

River and dispose of it at an off-site facility and cap the remainder with sand, gravel or
addition, EPA proposes to dig out some of the polluted sediment (mud) from the Ohio
workers and wildlife from exposure to any contaminants remaining after the cleanup. In
into the soil. The plan also calls for institutional controls to protect the public, future
coming in contact with pollutants, and reduce the seepage of rain, snow and storm water
requirements of Ohio solid waste regulations. This will prevent people and wildlife from
Agency. EPA wants to cover the contaminated soil with a cap meeting the design
will be cleaned up or contained under a plan proposed by U.S. Environmental Protection
Soil and sediment at the former tar plant at the Allied Chemical and Ironton Coke site

Learn about EPA's proposed cleanup



United States
Environmental Protection
Agency

Region 5
Office of Public Affairs (P-19J)
77 West Jackson Blvd
Chicago, IL 60604

First Class Mail
Postage and Fees Paid
EPA
Permit No. G-35

**ALLIED CHEMICAL AND IRONTON COKE SITE:
EPA Proposes Cleanup Plan for Former Tar Plant**

**ALLIED CHEMICAL AND IRONTON COKE SITE
PUBLIC COMMENT SHEET**

Detach this page, fold on dashed lines, staple, stamp, and mail

Name _____
Address _____
City _____
State _____ Zip _____

FIRST CLASS

Bri Bill
Community Involvement Coordinator
Office of Public Affairs (P-19J)
EPA
77 W. Jackson Blvd.
Chicago, IL 60604-3590