



BFI Missouri City Landfill

Frequently Asked Questions

Why did BFI apply for a hazardous waste permit?

BFI currently has a hazardous waste permit for the BFI Missouri City Landfill. The permit contains facility-specific requirements regarding long-term care for a closed hazardous waste landfill and investigating releases of hazardous waste and hazardous constituents to the environment. The permit was issued for a 10-year period, the maximum period currently allowed by state and federal laws and regulations. BFI submitted the permit application to renew the permit in order to continue long-term care and investigations at the facility.

Can the permit not be issued at all?

Certain “inactive” hazardous waste treatment, storage and disposal facilities are required to get a hazardous waste permit in order to investigate, monitor and clean up releases of hazardous waste and hazardous constituents to the environment at their facility. These are facilities that are now closed, but treated, stored or disposed hazardous waste under the under interim status portions of the federal hazardous waste laws, while they either applied for a hazardous waste permit or closed those operations. If a hazardous waste facility is seeking or is required by law to get a hazardous waste permit and the facility meets all the requirements set in the law and regulations, the department is required to issue the permit.

A hazardous waste permit is a legally enforceable regulatory instrument. The department can change requirements in the permit, based on technical or legal issues brought up by comments submitted during the public comment period. By issuing a permit, the department is given the authority, under state law and regulations, to enforce the permit requirements and make sure the facility complies with the associated regulations. Without a permit or other similar enforceable regulatory instrument, the department’s ability to address the environmental issues and conditions at the facility would be greatly weakened.

How long will long-term monitoring and maintenance of the closed landfill be required?

Based on what the department currently knows about the environmental conditions at the facility and the large amount of hazardous waste left in place, post-closure care (i.e., long-term monitoring and maintenance) is essentially expected to continue indefinitely. The issue will be re-evaluated during future permit reissuances or if environmental conditions change at the facility.

How is BFI preventing wildlife from coming into contact with the hazardous waste and spreading it beyond the facility property boundaries?

Wildlife should not be able to come in contact with the waste. The groundwater, at its shallowest, is about six feet below the ground surface. The hazardous waste is encapsulated in the landfill under a three to four foot cap, made up of several layers of clay, plastic and geomembrane. Grass is grown on the cap to prevent the soil from eroding. Inspections are also conducted to make sure animals do not burrow into the cap. Any erosion or burrowing noted during the inspections is quickly repaired. Other corrective measures are in place to capture any seeps from the landfill.



What contaminants are BFI monitoring?

The contaminants listed in Table 1 of the permit represent the materials contained in the closed landfill and detected in related releases to groundwater. The main contaminants of concern are metals; volatile organic compounds (VOCs); semi-volatile organic compounds; organochlorine pesticides; organophosphorus pesticides; chlorinated herbicides; dioxin/furan compounds; 1,4-dioxane; cyanide and sulfide.

What regulatory standards are being used to compare the results of the groundwater sampling?

The permit is designed to protect groundwater beyond the facility property boundaries to drinking water standards. On-property groundwater is compared to risk-based thresholds.

How does the department know the sampling results are accurate?

The department periodically conducts an independent evaluation of BFI's monitoring and corrective action programs, where the geology, groundwater flow and analytical data are reviewed. Periodically the department collects and analyses "split" samples from select groundwater monitoring wells and sends them to the department's Environmental Services Program laboratory for independent analysis and comparison with BFI's analytical results.

The Corrective Measures Study was completed in 1995. How does the department know these corrective measures are still working?

Twice a year, BFI submits groundwater monitoring reports to the department. These reports contain information regarding maintenance of the monitoring system, wells, landfill, risk-calculations, analytical data trends and the actual groundwater and surface water monitoring results validated by a certified laboratory. The department reviews each report to determine if additional corrective measures are needed to address any issues. Increasing contaminant amounts in certain wells may lead to additional monitoring. If on-property risk levels are exceeded, it serves as a "trigger" for additional action(s).

Since the 1995 Corrective Measures Study, BFI has implemented several additional corrective measures at the facility, including improving the groundwater interceptor trench, installing additional monitoring wells and installing and operating a stream bank interceptor trench and additional sumps to capture impacted surface seeps, leachate and groundwater.

What would BFI be allowed to treat in the on-site treatment plant proposed in the Remedial Action Plan?

The language in the final permit will state BFI will only be allowed to treat leachate and groundwater collected at the facility. The permit will not authorize the facility to accept or treat wastes from off-site.

Will BFI be able to apply for a new permit to treat off-site contaminated water at this facility in the future?

There is nothing in the hazardous waste law or regulations that would prevent BFI from applying for a new permit. However, before BFI can apply for a new permit that suggests a major change to the facility's operation (as the case would be for changing the status to a commercial facility treating off-site contaminated water), State hazardous waste regulations require rigorous public involvement. This would include BFI notifying the public of their intent to apply for the permit and holding a pre-application public meeting before BFI can even submit a new permit application. The permit application would then go through lengthy and comprehensive reviews, comments and revisions before the department could decide whether to prepare a draft permit or issue a notice of intent to deny. If the department decided to prepare a draft permit, that permit would then be made



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available to the public for review and comment before the department could make a final decision to issue the permit. The department's factsheet, *Getting Involved in the Hazardous Waste Permitting Process*, gives more details on the permitting process and opportunities for public involvement. The factsheet is available online at dnr.mo.gov/pubs/pub916.htm.

In one of the stages of the filtering system, one of the components is to vent something out into the air. What is going to be vented and will this vented gas have an odor or contain any contaminated particles?

The vapor phase granular activated carbon is installed on the air stripper portion of the treatment system. An air stream is produced in the air stripper, which is part of the treatment system, and is used to remove small amounts of VOCs that may remain in the liquid phase after treatment by the advanced oxidation portion of the treatment system. The particles and VOCs will remain adsorbed on the filter media (carbon media) until the spent carbon is removed and returned to the manufacturer for reactivation or sent for proper off-site disposal.

We do not anticipate the air stream will have any odor upon exiting the granular activated carbon treatment. We base this expectation on current use of granular activated carbon treatment to treat any vapors coming out of the existing 30,000-gallon storage tanks that contain untreated leachate/groundwater, essentially a worst-case situation when compared to the proposed new treatment plant operation. We have not experienced or received any complaints regarding odors related to the current operation.

What will happen to the waste after it is treated?

The impacted groundwater and leachate will be treated using several treatment steps to remove the different contaminants. The treated waste will be rigorously tested to make sure it meets all applicable water quality standards listed in a separate permit. If the standards are not met, the waste will be retreated. When the standards are met, the treated water will be discharged to a permitted discharge location. The proposed discharge amount is expected to range from 45 to 180 gallons per minute, over a 12- to 24-hour period, every two weeks. For batch discharges, the department's Water Protection Program places conditions in the Missouri State Operating Permit that specifically limit the amount of treated water that can be released in one day. For these types of discharges, the department also places a condition in the permit that requires the applicant to dissipate the energy of the batch discharge, often by a riprap rock diffuser, so it does not adversely affect the hydrology of the receiving stream.

With regard to wastewater operating permits, it is important to note the department only has authority to place conditions on permits to protect water quality issues. The statutory provisions of the Missouri Clean Water Law do not explicitly grant the department or the Missouri Clean Water Commission the power to determine riparian rights. This issue was adjudicated in 1979 (see *Curdt v. Mo. Clean Water Commission*, 586 S.W.2d 58 Mo. App. 1979). In fact, if this proposed discharge does cause downstream problems and violates riparian rights, the applicant would not be released from liability by the operating permit. Also note that BFI will work with the Missouri City Mayor's office to get a process in place in situations such as closed floodgates.

What is the dollar amount of the bond or fund DNR is requiring BFI to maintain in case there is a hazardous spill or contamination of the waterway going through Missouri City?

Currently, BFI has \$5,842,035 set aside in financial assurance for this facility. This amount does not include the cost of building and operating the proposed treatment plant. After the permit is finalized, BFI will be required to submit to the department for review and evaluation, an updated cost estimate for post-closure care of the landfill, corrective action and operation and closure of the treatment plant under the remedial action plan.



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Following the department's final written response regarding the updated cost estimate, BFI will be required to provide financial assurance at least equal to the updated amount. This amount will also be adjusted once a year for inflation until all post-closure care, corrective action and treatment plant related activities required by the permit are complete.

Will the department get a baseline of the water and air quality before the treatment plant goes online?

The department will seek input in developing a sampling plan to establish water and air quality baseline before startup of the treatment system. It has been suggested to take samples from three locations in the Missouri City stream and take an air sample at the intersection of MO Hwy 210 and Stillhouse Road.

What if I have more questions about the facility after the public comment period is closed?

If you need to know something about the facility, have a concern, or would like something explained to you, please contact the department any time, not just during designated public comment periods.

For more information, please call the Missouri Department of Natural Resources' Hazardous Waste Program, at 573-751-3553 or 800-361-4827, or visit the department's website at:
dnr.mo.gov/env/hwp/permits/mod000624452/information.htm.