



Response to Questions about the Remedial Action Plan (RAP) for the Coastal Trail and Parkland at the GP Mill Site

There have been many questions concerning the RAP for the coastal trail and parkland (Operable Unit A, or OU-A) which the Department of Toxic Substance Control (DTSC) will consider for approval after the end of the public comment period. These responses are offered in an effort to clear up misconceptions and provide a factual basis for citizens to understand the “consolidate and cap” remedy proposed for dioxin-contaminated soil found on the trail and parkland area of the mill site.

Georgia-Pacific has been a part of this community for more than 40 years, and our former employees and friends still live here. We are committed to clean up the site in accordance with all regulatory guidelines, because it is our responsibility and because it is the right thing to do. We have demonstrated this commitment over the last five years, working closely with the City, regulatory agencies and the community as we move through the complicated investigation and remediation process. This process will ultimately allow the mill site to be redeveloped so it can once again become a vital recreational and economic asset for the citizens of Fort Bragg and the northern California coast.

Why is the soil contaminated with dioxin?

Low levels of dioxin (average of 100 parts per trillion - ppt) caused by burning of wood for fuel at the mill, as well as historical municipal burning from the community of Fort Bragg, were found in soil within small areas of OU-A. These low levels are 100 times **less** than the “hazardous waste” level. In fact, the concentrations of dioxins proposed to be placed in the cap area are 10 times below EPA's action level of 1000 ppt, which has been used at dozens of site cleanups across the U.S., including sites in California. In light of these figures, comparisons that have been made of the GP site to Love Canal are not at all applicable. Love Canal dioxin levels were measured at 670,000 ppt.

What does GP propose to do with this soil?

In the RAP for OU-A currently before the DTSC, GP has proposed to consolidate and cap the excavated soil on site that contains wood ash with dioxins and furans exceeding applicable guidelines. The consolidate and cap technology, which is scientifically viable and accepted by EPA and DTSC, is particularly appropriate for non-hazardous dioxin-containing soils since dioxins adhere strongly to soil and do not migrate like some contaminants. This method of cleanup has been used and approved by DTSC at hundreds of sites throughout California and at hundreds more sites throughout the rest of the nation by EPA or other state environmental agencies.

What does “consolidate and cap” mean?

Soil with ash containing dioxin will be put into this 1.3 acre consolidation area which consists of a trench, six feet deep and lined with 40 mil engineered polyethylene. According to guidelines established by the U.S. Environmental Protection Agency and studies conducted by others, a liner would be placed both below and above the dioxin-containing soils to isolate them from the environment. The liner is expected to last a minimum of 300 years but will more likely last 1,000 years or more. A crushed rock layer is then placed on top of the area and extended out from either side as a barrier to burrowing animals and to mark the location. Finally, the area is topped with approximately one foot of cover soil that is seeded with native plants. According to DTSC, this form of remediation presents no human health risk because the material is entirely encapsulated.

How can we be sure the liner won't break down in the soil over time?

You may recall that the City Council has recently been considering a ban on plastic grocery bags. These bags are much, much thinner - less than one mil thick vs. the 40 mil engineered liner proposed for the consolidation area. The grocery bags are routinely described as never degrading in a landfill setting. In addition, conditions are ideal in Fort Bragg for a long liner life – it will not be exposed to sunlight/UV rays, the climate has no extremes in temperature and the material encapsulated is soils and ash with dioxins only. These are not reactive and therefore will not degrade the liner.

Could the liner be compromised in some other way, and should we make it even thicker?

When the liner is installed there are very strict protocols for testing the seams and overall integrity of the liner. The manufacturer provides specialized personnel to oversee the installation, and Georgia-Pacific and DTSC provide additional quality control requirements and oversight. A thicker liner would not be effective. The flexible nature of the 40 mil material allows it to move if settlement occurs or there are seismic events. Further, a “double” liner as some had proposed would not improve the cap performance – having two layers adjacent to one another could actually decrease the liner life if water or air were to get trapped between the layers.

What measures will be in place to ensure the liner system is maintained over time?

Under DTSC oversight, Georgia-Pacific will maintain and inspect the cap, and wells near the cell will be monitored for any unexpected impacts to groundwater. Land use controls (i.e., a deed restriction recorded with the County Assessor’s office as well as a written operations and maintenance plan) will also be used to prevent activities that might damage the cap or cell, such as digging, driving posts or other activity. A barrier layer of crushed rock will not only mark the location of the cap, but will prevent burrowing by animals. In addition, DTSC’s standard practice requires a financial assurance mechanism such as a letter of credit or corporate guarantee to provide long-term funding so that the cell, cap and monitoring program can be maintained over time.

Will dioxin-containing soils stored on site be safe over the long term?

Yes. Dioxin molecules bind strongly to soil particles, making them largely immobile in the environment. Even if they were not encapsulated within the sealed liner of an engineered containment cell, the soil and dioxins would stay put. The liner system provides an extra measure of safety and will prevent rain water or groundwater from entering the cell.

Will all excavated soils from the trail be stored on site?

No. Soils excavated from the Coastal Trail/OU-A containing lead and PCBs (polychlorinated biphenyls) above DTSC-approved cleanup levels will be trucked offsite to licensed landfills. Some of these soils have contamination at levels that cause them to be classified as regulated “hazardous wastes” and will not be disposed of onsite. Trucks will follow DTSC-approved routes out of Fort Bragg, along Highway 20 to Route 101, then south to landfills near the Bay Area or in southern California.

Can the 1.3-acre capped area be safely used for anything in the future?

Yes. A variety of land uses are compatible with the capping remedy being proposed. For example, the area could be used for parking or roadways, open space, recreational facilities (such as ball fields), or commercial buildings provided that their foundations are designed so that they do not penetrate or otherwise impair the encapsulation cell. Similar remedial actions have been approved by DTSC in communities throughout California.

Why not transport dioxin-containing soils to an offsite landfill?

The targeted soils do not have dioxin concentrations high enough to be managed as hazardous waste under either state or federal law, so they do not need to be disposed of in an off-site licensed landfill. In addition, transporting soils between Fort Bragg and the Bay Area landfills comes with its own risks. About 1,000 truckloads would be needed to carry the soils to landfills, adding up to hundreds of thousands of miles on local and state roads, and causing thousands of pounds of carbon to be released into the air. It also would cause unnecessary wear on the roads and increased traffic and likelihood of accidents.

Is Georgia-Pacific a proponent of bioremediation?

Last year, Georgia-Pacific did a series of successful pilot tests on land farm bioremediation to treat petroleum-impacted soils. These tests opened the door to land farm treatment of petroleum-impacted soils across the mill site.

Can mushroom bioremediation be used to treat dioxins in soil?

Not at this time. As stated in the RAP, the DTSC and other treatment scientists consider bioremediation of dioxins in soil with mushrooms to be an unproven and thus far ineffective technology. The studies to date have largely been limited to laboratory scale. A few field trials have been done, but success was limited as the mushrooms only reduced concentrations of dioxin about 50% over more than a year in just a few cubic yards of material.

Are you at least looking into the future viability of mushroom bioremediation?

DTSC, Georgia-Pacific, and the City of Fort Bragg are working in cooperation along with DTSC's Office of Pollution Prevention and Technology Development (OPPTD) at possible future use of fungus/mushrooms for bioremediation and are exploring a demonstration project. Georgia-Pacific is always willing to consider viable contaminant treatment alternatives.

Are sands and sediments in the intertidal zone (beach, shoreline) hazardous?

No. A new report of findings from recent sampling in the intertidal zone indicates that wading, swimming or playing on the beaches is perfectly safe for the public once the Coastal Trail is extended to areas such as Glass Beach.

Would slowing down the cleanup process help create a more effective solution?

No. The process is in no way moving quickly as remedial planning and cleanup projects at the mill site have been underway for more than five years. Delays could jeopardize millions of dollars pledged by the Coastal Conservancy for extension of the coastal trail. The cleanup must be completed this year in order to complete the transaction before the Coastal Conservancy's June 2009 deadline. Losing the Coastal Conservancy grant would, in turn, affect the Georgia-Pacific donation of over two miles of coastline for the trail. In addition, delays could derail the City of Fort Bragg's plans to purchase over 30 acres of parkland, thereby impacting its efforts to reenergize the land use planning process for all 415 acres of the site.

And obviously, we would like to begin the clean-up as soon as possible so any environmental risk posed by on-site conditions is dealt with expeditiously.