



PVT Landfill Construction Material Recycling-Health Risk Concerns

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Introduction

PVT seeks a permit to expand operations to include material recycling for production of feedstock for a planned waste-to-energy facility. Construction and demolition waste that is not suitable as waste-to-energy feedstock will be separated and recycled elsewhere or disposed of in the landfill. Proposed activities include:

- More shredding of construction and demolition materials
- Mining, removing and shredding buried material from some parts of the landfill

Some materials shredded for recycling will contain wood treated with chromium, copper, and arsenic (CCA) and other chemicals to protect against termites and other pests. Lead and other metals may also be present. These new activities at the landfill raised some concerns for DOH, specifically:

- Transport and inhalation of airborne dust (PM₁₀ particulates) by neighbors;
- Transport and inhalation of metals attached to dust by neighbors; and
- Leaching of arsenic into surface or ground water from CCA treated wood

Chemicals of Concern

The primary concern with shredding CCA treated wood, is the possible release of inorganic arsenic into the environment. The majority of materials to be converted to feedstock will be wood, and a small amount of the wood will have been treated with CCA, a wood preservative. CCA was and is used in some pressure treated wood to protect wood from rotting due to insects and microbes. Pressure treated wood containing CCA is no longer being produced for use in most residential settings, including decks and play sets, but is still used in industrial applications. Additionally, during mining, stockpiling, separation, and shredding of materials, particulates that could contain arsenic and other metals could be released into the air. Based on the information available, arsenic is the primary chemical of concern.

Health Risk Concerns

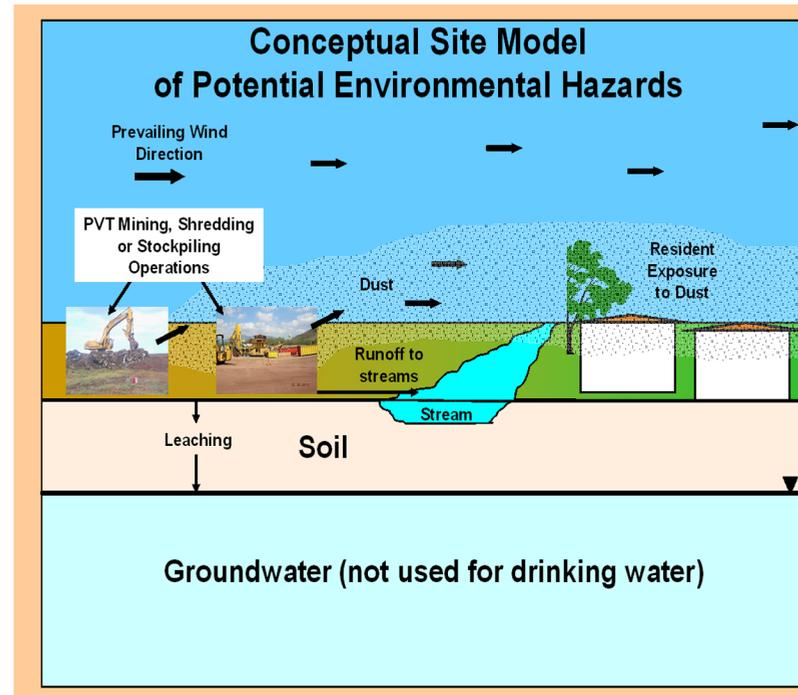
Arsenic- Arsenic occurs naturally in the environment and is widely distributed in the earth's crust. Everyone is exposed to some arsenic by eating food, drinking water or breathing air. Exposure to higher levels of arsenic can occur by accidentally eating soil contaminated with arsenic. **Inhaling dust with arsenic is usually not a significant source of exposure** unless you are directly sawing or sanding arsenic treated wood.

Health concerns associated with from long term exposure to high levels of arsenic include:

- discoloration of skin and appearance of small corns or warts
- neurological effects
- circulatory effects
- increased risk of cancer

These types of health effects have been identified in smelter, mine and chemical workers as well some countries where drinking water is contaminated with high amounts of arsenic.

Dust and fine particulates. The larger dust particles are called PM₁₀ and the smaller particles PM_{2.5}. The proposed recycling will produce fugitive dust that contains the larger PM₁₀ particles. Apart from any chemicals or metals in the dust, exposure to high levels of PM₁₀ particles can result in respiratory health effects especially in people with pre-existing disease. The Environmental Protection Agency (EPA) has a 24 hour standard for air concentration of PM₁₀ of 150 ug/m³ which will protect against human health effects.



Dust plume during pilot study of Mining Operations-PVT Landfill Limited Human Health Risk Assessment Construction Debris Recycling.

How are health concerns being addressed? Studies, monitoring, and controls

- 2005 Human Health Risk Assessment for fugitive dust and surface soil at PVT from disposal of contaminated soil- Hawaii DOH
 - No significant risk to surrounding community from disposal of contaminated soil
- 2010 PVT Landfill Human Health Risk Assessment-PVT Landfill Human Health Risk Assessment-Construction Debris Recycling (draft under review)
 - No significant risk to surrounding community from proposed recycling activities
- Air monitoring for dust and heavy metals at fence boundary with neighbors
- DOH air permit for shredder
- Dust control measures required in DOH solid waste permit
- Phone lines for complaints: PVT - 668-4561; DOH - 586-4226
- Low permeability clay surface in recycling area
- Ground water under landfill is not a drinking water source
- DOH storm water runoff permit for entire landfill

Conclusion

The PVT facility recycling operations will not pose a significant risk to the surrounding neighbors with effective dust controls as required by the permit. Fence line sampling for dust and heavy metals will provide additional information to DOH so it can monitor and evaluate dust heading toward the community.

