

FAIRBANKS DOWNTOWN CORRIDOR AREAWIDE MANAGEMENT PLAN

The Alaska Department of Environmental Conservation (DEC) is developing an areawide management plan for the Fairbanks Downtown Corridor. The downtown corridor includes the Fairbanks Central Business District, the Alaska Railroad Industrial Reserve, the Airport Road corridor, and the surrounding residential areas. Areawide management is a new approach for the DEC on non-military lands. To develop and test this approach, a pilot study area was chosen in Fairbanks. This pilot study is known as the Fairbanks Areawide Industrial Reclamation (FAIR) project (*see Figure 1*).

In order to develop an effective management plan for this area, we must first evaluate the risk associated with contamination in the Fairbanks Downtown Corridor. This requires a good understanding of the type, concentration, and extent of the contamination. We must also evaluate the movement and redistribution of these chemicals and understand the likelihood of people being exposed to some form of these compounds. Once the risk to human health and the environment is evaluated, reasonable management options will be developed. The goal of these options will be to allow for safe and effective handling of the chemical contamination, while enabling economic development and encouraging land transfers within the affected area.

In the summer of 2002, historical information was gathered to identify potential sources that may have resulted in contaminated soil and groundwater. Groundwater samples were also collected throughout the area to evaluate groundwater quality. Additional investigation into the nature and extent of contamination in this study area and evaluation of the risks to human health and the environment are currently underway.



HOW DID THIS AREA BECOME CONTAMINATED?

The Fairbanks Central Business District was first developed in the early 1900's when the City of Fairbanks was founded. Businesses developed primarily on the south side of the river, while an industrial area centered around the railroad developed on the north side. Residential areas intermixed with commercial enterprises grew and expanded on both sides of the river. Along with much of this development came the use and storage of chemicals and oil, which at times spilled overland, or disposed of beneath the ground surface. These practices resulted in widespread contamination of the soil and groundwater in the Fairbanks Downtown Corridor.

Contamination within the FAIR study area primarily consists of petroleum compounds released from several bulk-fuel storage facilities formerly located west of Illinois Street. There are also several locations where spillage from service stations resulted in contaminated soil and groundwater. Most of the service station sites that are known are undergoing some type of remediation to clean up the worst of the contamination.

Solvents are also present in the groundwater in many locations. These compounds are probably the result of spills at businesses such as drycleaners and mechanic shops, or where waste products were disposed of in injection wells or improperly managed septic systems. The specific locations where the solvents originate are still not known, and may include many commercial/industrial properties. Special solvents were also added to leaded gasoline. These compounds are present in several locations and are probably associated with leaded gasoline storage or fueling operations. While petroleum compounds are usually found near the surface of the groundwater table, solvents can be distributed deeper in the aquifer. This makes their assessment and cleanup more difficult and more costly.

WHAT ARE THE LIKELY EFFECTS OF THE CONTAMINATION?

People living or working in this area are not likely to be affected by the petroleum and solvent compounds, unless they come into contact with them through their daily activities. As the majority of the soil contamination is below the ground surface or covered by asphalt, contact is most likely to occur with excavation workers (e.g., utility repairers, road workers, builders). People that come into contact with groundwater may also be exposed to the contaminants. In this area, tap water is provided by the public water supply, and people are not generally exposed to groundwater. This may not be the case for someone that has a private well that they use for watering lawns or other uses. Excavation workers may also be exposed to groundwater when dewatering is necessary during construction operations.

It is possible that people may also be exposed to compounds in the air if the contaminants are volatile enough and concentrated enough to travel up through the ground and into the air. Exposure to contaminants in the air in this manner is more likely to be a problem inside buildings that are near concentrated sources of contaminants than in other places.

Another concern associated with this area is that contaminants in the groundwater will travel to the public drinking water wells. At this time, the drinking water wells do not appear to be affected by contamination from the railroad industrial area. The contamination in this area appears stable and does not seem to be expanding; however, long-term monitoring of the extent and movement of contaminated groundwater is important to ensure that the public drinking water wells are not threatened. Contaminants could also travel into surface water bodies, such as the Chena River, or Noyes Slough and impact fish or wildlife that live in or use these habitats.

HOW WILL THE MANAGEMENT PLAN WORK?

The management plan is a dynamic effort that will continue to develop as more investigations, risk evaluations, and cleanups are completed. The plan will capture ‘lessons learned’ about contaminant cleanup and management practices and encourage more consistent decision-making throughout the area. In order to be effective, the management plan must be a cooperative effort of all potential stakeholders associated with environmental issues. This includes not only the responsible parties and landowners, but also City and Borough governments and other state agencies, as well as interested private or public organizations. Steps that are planned or have been completed to develop a management plan for the FAIR study area include the following:

1. Areawide Management Goals

The DEC has outlined the following objectives for all contaminated properties in the FAIR study area:

- Determine the risks to human health and the environment resulting from commingling and large-scale (multi-property) groundwater contamination.
- Calculate contaminant levels at which areawide cleanup should occur to ensure a safe environment. These levels are known as remedial action levels.
- Assess the approaches leading to the rehabilitation and protection of the groundwater.
- Establish controls and tracking mechanisms to prevent unsafe or uninformed contact with contaminants known to exist in this area.
- Evaluate future land use potential for the contaminated properties and determine who will bear the costs of future management of the contamination.

Areawide management goals will emerge as work toward meeting these objectives is completed. The areawide goals should reflect community planning and economic development needs specific to the Fairbanks downtown area.

2. Areawide Investigation and Sampling

DEC investigated the areawide groundwater quality in 2002 to identify areas of concern. The results of areawide sampling lead the DEC to contact various responsible parties regarding contamination on their properties and require further assessment. In areas where the source of the contamination is unknown, DEC has allocated financial resources to conduct further investigation until a responsible party is identified. In 2003, the DEC initiated coordinated sampling in the railroad industrial area (west of Illinois Street) to characterize and monitor commingled petroleum contamination. ChevronTexaco, UNOCAL, and the Alaska Railroad are currently participating in the coordinated sampling program.

3. Risk Management Zones

The FAIR study area has been divided into three management zones based on the type of exposure to environmental contaminants that may occur. The management zones include residential use, commercial/industrial use, and ecological use areas. The risks associated with each management zone are expected to vary. For instance, if contamination is present in a residential area, the people in that neighborhood may experience longer exposures to chemicals than if the contamination was present in an equipment yard (industrial area) where people may only occasionally be present.

4. Risk Management Workplan

With the help of the Environmental Protection Agency (EPA), the DEC developed an areawide risk assessment workplan for the FAIR study area. The workplan is intended to identify data gaps and propose a consistent areawide approach for evaluating risk. The risk assessment workplan can be used to develop action levels for each management zone that will be protective of human health and the environment. Where contaminants are known or suspected to be above the action levels, DEC will require that cleanup steps be taken, or that controls be placed at the site to diminish the risk. Where contaminants are known to be below action levels, the DEC will determine what steps are needed to prevent contamination from being a risk to future users of the site.

5. Long-Term Monitoring Program

After deciding where additional cleanup is needed, and where it is not needed, DEC, the landowners, and the responsible parties will set up a monitoring and data management program under which all participants can track the contaminants for which they are responsible. By coordinating the collection of all of this information, all parties will have a better and more complete understanding of the environmental quality in this area. The DEC will also keep track of controls that have been put in place within each management zone to ensure that future users of these areas remain protected from contamination. These controls are often known as engineering controls, risk mitigation measures, and institutional controls.

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