M E M O R A N D U M

METRO

DATE: May 27, 1998

TO: Charlie Ciecko, Director, Regional Parks and Greenspaces

FROM: Jim Watkins, Engineering & Analysis Manager,
Regional Environmental Management

THROUGH: Bruce Warner, Director, Regional Environmental Management

RE: Policy Concerning Public Access to St. Johns Landfill

I am responding to your request for our current policy concerning public access to the St. Johns Landfill. First, I present a detailed account of the factors upon which our policy is based. Then, I present our policy, which I anticipate will be in effect as long as the gas collection system is operating. I expect that operation will continue until AD 2008 to 2013.

BACKGROUND

The closure of St. Johns landfill required the installation of an active gas collection system consisting of gas wells (extending above ground surface) and underground gas collection trenches. Each of these gas wells and collection trenches are connected to a network of gas collection pipes of various sizes. This network is exposed on the ground surface because experience at other landfills has shown that this accessibility makes operation and maintenance most feasible, especially in the management of gas condensate (the liquid which condenses out of the wet landfill gas). The gas wells and condensate collection pipes are made of various types of plastic.

Landfill gas contains substances which are hazardous to both health and safety. For example, landfill gas contains nearly 50% methane (natural gas) which is a fire and explosion hazard. In addition the landfill gas contains substances such as hydrogen sulfide and methyl mercaptans which are known health hazards. Finally the landfill gas contains small amounts of various volatile chemicals from the solid waste that have potential, but poorly understood, risks.

Nearly all of this landfill gas collected in the wells is transported in the network of pipes to a motor blower flare (MBF) facility. Here it is burned in enclosed flares in compliance with a permit issued by the Oregon Department of Environmental Quality, or is compressed and piped to Ashgrove Cement Company for use as fuel. However, gas pressures currently in the landfill can cause a small amount of the gas to escape untreated. For example, localized gas pockets exist under the membrane that can escape through a small hole in the membrane or through the soil at its edge. Thus there are localized areas on and around the cover where this gas is present.

Efforts are ongoing to detect these emissions and eliminate as many as are feasible. Metro operation and maintenance staff are trained and equipped to minimize risk of gas exposure to themselves and those they escort. This is not true for the general public.

There are significant risks from vandalizing or tampering with the mechanical and electrical equipment at St. Johns Landfill. One risk is the release of landfill gas as discussed above. Another risk is the prolonged shutdown of the motor blower flare and compressor facility. A third risk comes from above-ground fires and from underground fires in the solid waste caused by oxygen intrusion.

The motor blowers and flares automatically shut down if various sensors indicate problems including intrusion of oxygen into the collection pipes. Because there is a large quantity of gas being generated and because the cover system is a barrier to escape, there is a high probability that the cover will bubble up in numerous areas and be damaged if the blowers stop sucking gas out of the collection system for more than about one half day. Thus, there is a significant risk if the MBF facility is damaged to the point of a prolonged shutdown.

Underground fires and above-ground fires have historically been a problem at landfills. At the Woodburn Landfill, gas seeped into a building and caused a fire which injured several workers. In the 1970s Rossman's Landfill in Oregon City had an underground fire which resulted in air quality degradation. In Deschuttes County a child was injured by falling into a smoldering cavity in an old landfill. St. Johns Landfill has experienced several underground fires within the past two years. Due to the vigilance and prompt action of the landfill staff they were minor and are being suppressed. Periodically there are similar incidents throughout the country.

Controlling gas flow, at each of the 84 exposed gas wells, reduces the risk of underground fires and helps suppress them when they occur. Flow control, accomplished by adjusting a valve on each well, also balances flow in the well network for maximum efficiency. Preventing uncontrolled public access to the landfill reduces the risk that these valves will be tampered with.

In summer there is a risk of damage to the gas collection system from a grass fire. The collection system would itself become a source of fire and possible explosion if it was damaged by fire or vandalism and gas was ignited deliberately or accidentally.

The above risks and others make it desirable to limit access to the landfill to trained and equipped people until the gas collection system is no longer needed. It is also desirable to limit public knowledge about equipment on the landfill to reduce the number of people who might tamper with this equipment. However, it is recognized that a section of the planned 40 mile loop trail runs along the dike road on the south-east side of St. John's landfill adjacent to Smith lake. Past planning has been to connect one end of this section with a trail on the north bank of the North Slough via the water control structure and the other end with: 1) North Portland Road via a trail between Smith Lake and the Columbia Slough, and 2) Incinerator Park via a trail across the landfill and its bridge to a crossing at Columbia Blvd. It is also recognized that a guided tour of the landfill is a useful educational opportunity.

The policy set forth below balances the above risks and benefits:

POLICY

Access to the public is limited to the dike road along the south-east edge of the landfill adjacent to Smith Lake (see figure attached). Access shall not be from the landfill but could be from the trail over the water control structure on the north-east end. Access from the south-east end could be from a trail leading to North Portland Blvd.

Until there is no longer a significant risk to health, safety, and the environment, access to the remainder of the landfill is limited to Metro staff who have been trained and equipped to minimize risk to themselves and others. Public tours of the landfill will be allowed if conducted by a trained Metro staff person. Access restrictions shall be enforced by a fence and gates which prevent unauthorized access by land, by warning signs, and by challenging (and reporting to proper authority) unauthorized persons on the landfill. At this time it is not considered feasible to fence the landfill from access by water.

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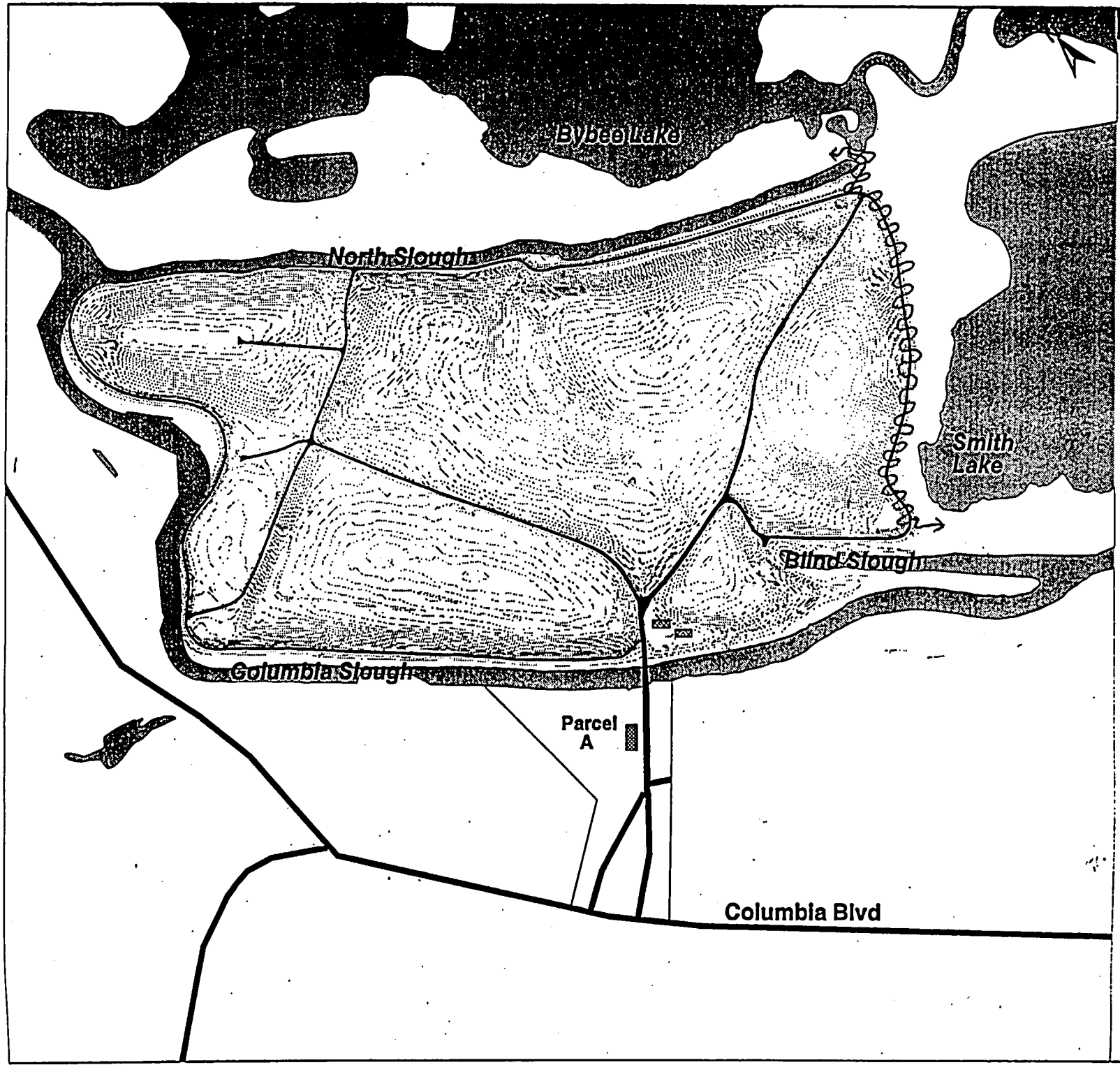
JW:DO:gbc
Attachment
cc: Emily Roth, Regional Parks and Greenspaces
s:\share\onei\memos\ciec0598.mmo



R L I S

REGIONAL LAND INFORMATION SYSTEM

St Johns Landfill

ACCESS

0 400 800 1200 Feet

1"= 800 feet

METRO

600 NE Grand Ave.
Portland, OR 97232-2736
503 797-1742 FAX 503 797-1909
Email: drc@metro.dst.or.us

Plot date: Apr 21, 1998; /disc/disc2/sw/proj/98038/dennis2.apr