BURLINGTON NORTHERN SANTA FE
Skykomish ~ Cleanup Site

Questions and Answers

Q. What kind of contamination has been found in Skykomish?

A. The primary contamination beneath Burlington Northern Santa Fe's (BNSF) property and other parts of Skykomish is petroleum products used for fueling locomotives, specifically, diesel and Bunker C fuel. This type of petroleum has a consistency similar to molasses.

Depending on the location, the petroleum is found as an oil layer floating on the ground water, smeared onto the soil, or it is dissolved into the ground water.

Metals such as lead and arsenic and very low concentrations of PCBs are also known to exist in the soil on BNSF's property. Some metals have also been detected at low levels in the groundwater in the area. It is important to note that some metals, such as arsenic, are naturally occurring in soils and groundwater.

Q. How did the petroleum contamination get there?

A. The petroleum contamination is a result of train fueling and repair operations in Skykomish over the course of more than 80 years. It is likely the petroleum was released over time from spills and/or leaks from storage tanks. The oil releases originally occurred on BNSF's property, but over time the petroleum has moved below the ground surface in the general direction in which ground water flows in the area (down hill, in a northwesterly direction towards the Skykomish River).

Q. Where exactly is the contamination?

A. The petroleum has been found both on BNSF's property at and below the ground surface and under parts of town at depths 3.5 to 4 feet below the ground surface. In some areas, a layer of petroleum (sometimes referred to as "product") is floating on top of the ground water (see attached map). This layer extends from BNSF's property towards the Skykomish River. Oil from this layer is, and has been for some time, slowly seeping through the river bank and into the River.

Dissolved petroleum has been found in ground water surrounding and below the petroleum layer. Petroleum has also been found in the soils in and around the area where the petroleum layer exists. The petroleum has contaminated the soil because the petroleum adheres to the soil as it moves both horizontally and vertically with the ground water.

At this time it is not possible to be completely certain about exactly where the contamination is and is not. Based on the many soil and groundwater samples collected and tested to date, we do have a good idea of where contamination exists. However, additional sampling may be needed to more exactly define the boundaries of the area of contamination.

Q. Is petroleum dangerous? Is there a possible threat to my family's health?

A. According to the state law known as the Model Toxics Control Act (Chapter 70.105D, Revised Code of Washington), petroleum is considered a hazardous substance which requires investigation and cleanup. Some of the petroleum beneath Skykomish is found in concentrations above levels considered "clean" by the Department of Ecology (Ecology).

Petroleum is a hazardous substance but only poses a health threat when people come into contact with it on a regular basis. Because most of the petroleum contamination in Skykomish is below the ground surface, the potential for you to come into contact with it during day-to-day activities is slight and therefore the possibility of it affecting your health is minimal. Ecology is concerned, however, about the potential long-term threat to human health if the contamination is left untreated. See the answer to the next question for precautions you can take to minimize the possibility of coming into contact with the petroleum contamination.

The Washington State Department of Health (DOH) has confirmed that the petroleum contamination found below the ground surface is not a threat to the Skykomish drinking water supply. DOH collected and analyzed water samples and the results indicated that petroleum contaminants were not entering the drinking water supply system. Because the Skykomish drinking water supply wells are located upgradient or uphill from the contaminated area and the water supply lines appear to be outside or above the area of contamination, Ecology and DOH do not believe that sampling results will change over time. Therefore, no additional water supply system samples will be collected or analyzed by DOH for petroleum contaminants.

DOH also analyzed indoor air samples collected by BNSF. Beginning in August of 1997 until February 1999, samples were collected during seven different quarters from the school, post office, and four residences. The purpose of the evaluation was to determine whether harmful levels of petroleum vapors from the underlying petroleum layer were rising into indoor air in buildings. Small amounts of chemicals were found in the indoor air samples but are not expected to be a health hazard for people who use the buildings. The levels found were similar to levels typically found in the air inside normal homes and do not appear to have originated from the petroleum layer. The results of the sampling and the evaluations can be found at the Skykomish Library repository.

Q. What precautions should I take?

A. The best way to protect yourself and your family is to ensure that you do not come into contact with the petroleum. At some places along the river bank petroleum is

visibly seeping into the river. BNSF has placed signs on the river bank to warn people about the presence of petroleum. It is best to avoid these areas.

Precautions should be taken if you are within the area where contamination is known to exist and are planning to excavate or dig on your property at or below a depth of 3.5 feet (for example to work on your septic system). Please contact Ecology and BNSF before you begin work (contact names and numbers are listed at the end of this pamphlet). Do not attempt to deal with the contamination yourself.

Q. What does it mean if my property is within the area of contamination?

A. In general, Ecology does not hold residential property owners liable for contamination on their property when there is clear evidence that the owner did not cause the contamination.

No final decisions have been made about how the contamination in Skykomish will be cleaned up. However, if your property is within or adjacent to the contaminated area, it is likely that BNSF will have to conduct some type of cleanup action on your property in the future. This does not necessarily mean that the contamination under your property will be actively treated, but it may mean that BNSF will ask you to work with them to limit the possibility of you or other people coming into contact with the contamination. One way to limit exposure to the contamination would be for BNSF to ask owners of contaminated property to limit certain activities on their property through restrictions on their deeds of ownership. It is important to note that neither Ecology or BNSF can require you to place a restriction on your property.

In addition, if your property is within or adjacent to the contaminated area, you should be aware that new laws require sellers of property to disclose knowledge of contamination to lenders and potential buyers.

If your property is within the area of contamination, Ecology recommends the following at this time:

- Attend the community meetings at City Hall. Representatives from Ecology and BNSF as well as citizen representatives are available in person to answer your questions.
- Talk with your neighbors about the situation.
- Educate yourself about some of the legal and financial impacts of having contamination on your property. The King County Assessor's Office is one source of information on this subject.
- If you are planning to excavate or dig on your property, contact Ecology and BNSF for assistance.
- If you notice evidence of contamination on your property, contact Ecology.

Q. What is being done about the contamination now?

A. BNSF has taken some interim measures to begin cleanup at the site. In 1995, four recovery wells, each six inches in diameter, were installed along West River Drive. These wells are equipped with skimming pumps designed to collect petroleum before it reaches the Skykomish River. The collected petroleum is pumped to storage containers and is later recycled. Approximately 20 gallons of petroleum are being collected each month from these wells.

Q. How will the contamination be cleaned up?

A. Petroleum contamination can be cleaned up or treated in a variety of ways depending on the type of petroleum and the specific conditions at the site. One important factor to be considered in Skykomish is the thickness or weight of the petroleum. The petroleum is "heavy" or thick and requires different treatments than would lighter petroleum contamination such as gasoline. Another important consideration in Skykomish is that much of the contamination is beneath homes, businesses, a portion of the School and under streets or other public properties.

Possible cleanup solutions for Skykomish may include: installing additional recovery wells along the River and in other places; installing barrier walls in the ground which would block the oil and collect it as it accumulates; treating the contamination in the ground by enhancing naturally-occurring microorganisms which break down the petroleum into non-hazardous substances; excavating contaminated soil and treating it either on BNSF's property or at an off-site facility; pumping and treating contaminated ground water; and containing the contamination by covering or enclosing it.

If the contamination is contained and not removed, cleanup actions can also include restricting how a piece of property can be used to prevent people from coming into contact with contamination.

Q. When will the problem be fixed?

A. BNSF has completed a Remedial Investigation which has determined the nature and extent of the contamination. BNSF will also be evaluating options for dealing with the petroleum contamination. This evaluation is known as a Feasibility Study. The Feasibility Study will describe a variety of possible ways to clean up the contamination. Following Ecology's review and approval of the Feasibility Study, a Cleanup Action Plan will be drafted. Ecology expects that BNSF will complete the Feasibility Study and the Cleanup Action Plan by the end of 1999. The public will be invited to review and comment on all these documents before they become final. Once a cleanup plan is developed, a system will be designed and installed. Operation of an actual cleanup system may continue for many years.

Q. Who is responsible for the contamination and who is paying for the study and cleanup?

A. BNSF is conducting the cleanup and is paying for all of the costs of the cleanup. Ecology is responsible for making sure the cleanup meets the requirements of the State and other laws. BNSF reimburses Ecology for their oversight costs.

Q. Who can I call for help?

A. ***Washington Department of Ecology***

Project Manager, John Lillie, (425) 649-4446
Public Involvement Specialist, Christine Corrigan,
(425) 649-7254.

Seattle-King County Health Department

Environmental Health Specialist, Ken Elliott, (206) 296-9739

Washington State Department of Health

Indoor Air Quality, Paul Marchant, (360) 236-3375
Drinking Water, Steve Hulseman, (206) 464-7962

Burlington Northern Santa Fe Railroad

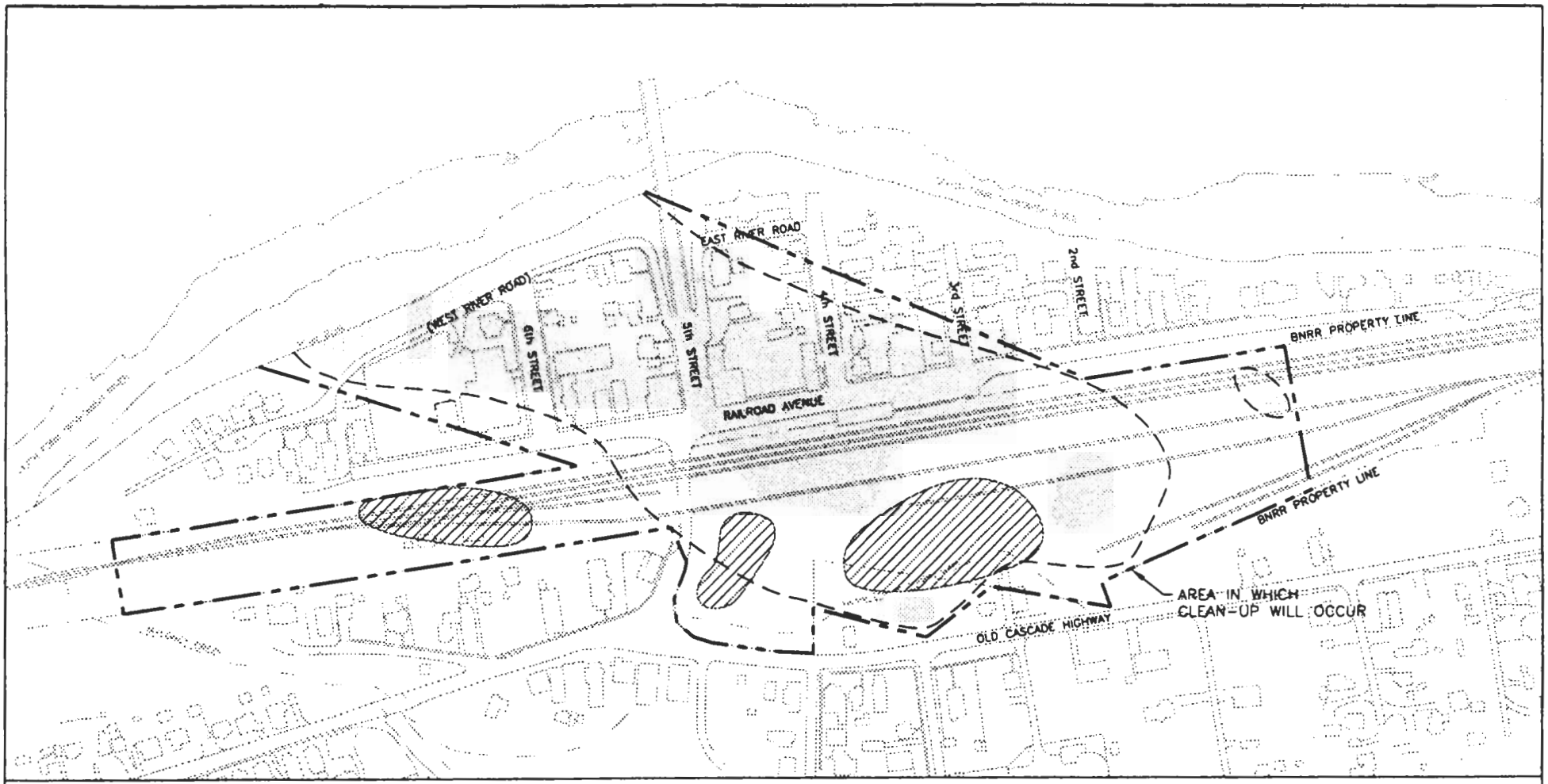
Project Manager, Bruce Sheppard, (206) 625-6035

Thermoretec (BNSF's environmental consulting firm),
Project Lead, Jill Nordstrom, (206) 624-9349.

Skykomish Environmental Coalition

Michael Moore, (360) 677-2410
Lorna Goebel, (360) 677-2812
Anne Sekor, (360) 677-2648

Special accommodations and language translation assistance are available upon request by calling 425-649-7254 (voice) or 425-649-4259 (TDD). Ecology is an affirmative action and equal opportunity employer.



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SCALE IN FEET

LEGEND

- AREA IN WHICH CLEANUP WILL OCCUR
- TPH CONCENTRATIONS ABOVE MTCA CLEAN-UP LEVEL
- SOIL METAL OR PCBs ABOVE CLEAN-UP LEVEL
- AREAS OF HISTORIC FREE FLOATING PETROLEUM OCCURRENCE

NOTE: ALL BOUNDARIES SHOWN ARE APPROXIMATE

REF DWG	DESC.
0	
0	E.F. 2/26/ FT
NO	DRWN DATE VISION

BNRR SKYKOMISH, WASHINGTON

J-2792-110

J.M. 2/26/97

CHKD DATE APPVD DATE

SCALE 1" = 300'

Burlington Northern Santa Fe

CAD FILE 116

SITE BOUNDARY AND AREAS EXCEEDING CLEAN-UP LEVELS

RETEC

REMEDIATION TECHNOLOGIES INC

DRAWING NO. REV. 0