Report on
Groundwater Contamination that Affects Drinking Water in Washington State

by

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Toxics Cleanup Program

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Department of Health
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Health

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In March 1999, Governor Locke requested that the departments of Ecology and Health produce a summary of statewide groundwater contamination. The attached information describes and shows where chemical contaminants are known to be polluting or threatening drinking water at specific sites and across large regional areas in Washington state.

This report provides the most-current information available about the status of cleanup or remediation at each site or area, and indicates the status of human exposure to the contaminated water. Because each contaminated site is different, health risks are assessed and follow-up actions determined on a case-by-case basis.

This report solely addresses chemical contamination that affects or potentially affects drinking-water sources; it does not include information about all groundwater contamination in Washington. In fact, it is likely that additional contaminated sites exist that have not been identified yet.

Area-wide vs. localized contamination

Some chemical contaminants are found across entire regions (*see attached maps, Ambient Groundwater Quality: Nitrate Levels" and "Ambient Groundwater Quality: Arsenic Levels"*). In particular, nitrates and arsenic are the state s most troublesome regional contaminants. They are found in various regions across the state and are typically widespread problems, not isolated to specific sites.

Addressing these problems takes a multi-agency approach involving federal, state and local governments. These efforts typically are initiated by local governments under Ecology s Groundwater Management Program (WAC 173-100). Health is involved with any public water supplies that are affected, as well as providing data and supporting education and outreach to affected residents.

Contamination of ground water by chemicals such as pesticides and industrial solvents usually is limited to a relatively small geographic area, and is not widespread (*see attached map, "Drinking-Water Contamination in Washington State"*). In these cases, the Department of Ecology leads efforts to identify contaminant sources and clean them from contaminated ground water. The Department of Health typically is involved if public water supplies are affected. Department of Health also aids in extending public water supplies to replace contaminated individual wells.

♦ Area-wide contamination

Nitrates

Nitrate is the most widespread area-wide drinking-water contaminant of concern. Sources of nitrates in drinking water include fertilizers, animal manure piles and septic systems. Nitrates usually affect shallow wells used by individual homes and very small public water systems.

Health risks of elevated levels of nitrates are generally limited to infants less than one-year-old, who drink the water in formula and beverages. Nitrates can decrease the oxygen-carrying capacity of the blood, which in severe cases can result in a rare condition called methemoglobinemia, or blue-baby syndrome. Symptoms include developing a bluish color, along with lethargy, vomiting and diarrhea. If not treated, it may lead to failure to thrive, mental retardation or death.

Between 1988 and 1994, 10 Washington children less than age one were hospitalized with methemoglobinemia. There are several causes of methemoglobinemia in addition to nitrates in drinking water, and the Department of Health does not have the information necessary to understand the causes of these cases nor link them to drinking water.

Because of its widespread nature, most local health jurisdictions require testing for nitrates prior to issuing a building permit for new-home construction. Public water systems are required to test for nitrates periodically, with increased testing required if nitrates nearing the limit standard are detected. When limits are exceeded, public water systems must notify all customers, so infants and other sensitive populations can be protected. Public water systems also are required to evaluate alternative water sources and treatment options to reduce nitrate concentrations.

Because nitrates in drinking water are so widespread, the Department of Health has taken additional steps to address this problem, including:

- Giving information about nitrates in drinking water to pregnant women, parents of babies, and the health care providers who serve them. Some of these materials, which are distributed by WIC clinics, health care providers, local health jurisdictions and others, are attached.
- Developing new, more-effective enforcement strategies for small public water systems that violate the nitrate standards, to be implemented in August 1999.
- Exploring options for statewide methemoglobinemia surveillance.

In addition, Ecology and Health participated with other federal, state and local agencies in forming a groundwater management area in the Columbia Basin. Adams, Grant and Franklin counties are most directly involved. Increased testing of individual wells has occurred, public information was disseminated, and groundwater management strategies are being developed.

Ecology and Health continue to work with the state s Interagency Ground Water Committee to address the statewide problem of nitrate contamination in ground water. The attached map shows both the sources of water that exceed the current limit for nitrates and those nearing the limit.

Arsenic

Arsenic is another source of regional groundwater contamination. It is a naturally occurring contaminant found in low levels in many areas across the state. It typically is a problem for individual well owners in certain geographic locations.

The immediate health effects associated with high doses of arsenic are primarily abdominal pain and vomiting. Prolonged exposure can damage many parts of the body, including kidneys, blood vessels, nerves and skin. Cancers of the bladder, lung, liver, kidneys and skin have been associated with ingesting arsenic.

Arsenic problems in individual wells or small water systems are addressed at the local level by requiring testing for arsenic in known problem areas prior to issuing a building permit, by notifying consumers in areas of concern, and through increased testing and follow-up of new water sources and those found to have elevated arsenic.

The Department of Health requires public water systems with arsenic above drinking water standards to discontinue use, provide alternative supplies or blend contaminated water with other water that meets standards.

Early in 1999, the U.S. Environmental Protection Agency announced it may consider lowering the drinking-water standard for arsenic because of new research and increased concerns about cancer risk. State health officials are following closely this federal review of arsenic regulation to ensure public health is protected statewide. The attached map shows both the sources of water that exceed the current limit and those that would exceed the lower limit being considered.

♦ Site-specific contamination

The following 38 sites involve a variety of chemical contaminants. All of the contamination originated from agricultural and/or industrial practices. (Note: the numbers next to each entry correspond to the site numbers on the map entitled *Drinking-Water Contamination in Washington State.*)

1. Hamilton LaBree PCE, Lewis County

Description: Perchloroethylene (PCE) is present at very high levels in ground water, affecting a few small public-water systems and private wells. Concentrations are as high as 3,000 ppb in a drinking-water supply and 60,000 ppb in ground water.

Actions / status of human exposure: Bottled water is being provided by the Department of Ecology. A treatment system was installed by Ecology at one private residence. There are two small public-water systems using bottled water, provided by Ecology. Department of Health (DOH) has tested nearby drinking-water wells on several occasions and continues to test periodically. Ecology has identified a liable party for the contamination and is continuing its investigation, in preparation to start a cleanup action.

2. **Gebbers Farms, near Brewster, Okanogan County**

Description: The herbicide dinoseb was detected in the drinking-water supply for a migrant-worker camp at a concentration below the cleanup level but at the detection limit during a site-hazard assessment conducted by Ecology in 1991.

Actions: Ecology s further analysis of the drinking water in 1997 revealed no detectable concentrations of dinoseb, but did detect concentrations of copper, iron and manganese at concentrations below cleanup levels; these minerals may be naturally occurring in the aquifer. A former orchard dumpsite adjacent to the migrant camp was tested as a possible source of contamination, but the contaminants detected in the drinking water have not been detected in the dumpsite soil. The pesticides dieldrin, 4,4 -DDD and 4,4 -DDE were found in the dumpsite soil, but may have resulted from past legal applications. The source of drinking water is not documented. The owner has informed us it is from a groundwater well, but he will not supply us with documentation of construction or quantity withdrawn (its usage may be illegal). The Health Department recommended quarterly monitoring of the drinking water for one year to confirm that dinoseb is no longer a concern in this drinking-water supply. Ecology has begun correspondence with the dumpsite owner that will lead to an administrative order or consent decree, expected to be issued this summer. If approved by the assistant attorney general, the order or decree will require quarterly drinking-water monitoring and a remedial investigation/feasibility study for the dumpsite.

Status of human exposure: The state Health Department produced a technical-assistance report in December 1997 that concluded the metals posed no health concern to the migrant workers consuming the water.

3. **Yakima Railroad Area, Yakima, in Yakima County**

Description: The shallow groundwater aquifer is contaminated with perchloroethylene at concentrations that pose a health risk.

Actions: Ecology issued administrative orders and entered consent decrees to liable parties requiring them to take remedial actions. In addition, affected residents were offered the opportunity to connect to city water for free, using a 100% grant from Ecology.

Status of human exposure: The majority of the affected population (about 1,200) has been connected to city water (a couple of residents have declined the

offer). There may be additional residents needing connected if the contamination moves into new areas (see Yakima and Union Gap unincorporated areas below).

4. **Yakima and Union Gap incorporated and unincorporated areas, Yakima Co.**

   Description: The shallow groundwater aquifer in these areas is contaminated with nitrates and volatile organic compounds, including perchloroethylene.

   Actions: Ongoing communication with residents about health risks, and continued efforts to identify new sources of contamination.

   Status of human exposure: Although the majority of residences have been connected to city water, a significant number have not, either because they moved in after Ecology s mass mailings to residences where previous owners had refused connection to city water; or the current owner has refused to connect to city water.

5. **Washington State University, Buckley Dairy, Pierce County**

   Description: The site is a former hog-dipping operation (27 years since its last use). Results indicate substantial contamination of the pesticide toxafene that is migrating slowly off-site. The site is located in rural Pierce County.

   Actions: The ground water was re-tested recently, and new results were received on April 7, 1999. The state of Washington (DSHS and WSU) is the liable party for this site.

   Status of human exposure: Unknown at this time. Initial investigation is under way.

6. **Skyline Water System, Grant County**

   Description: Groundwater contamination was discovered when initial monitoring for volatile organic compounds (VOCs) occurred in 1988. The area is also a Superfund site, so EPA is the lead agency, and Ecology has no active involvement. Contamination levels have gradually increased in both sources of the system.

   Actions: DOH has issued compliance orders and penalties to the system to remediate the contamination. Current plans are to connect the system to Moses Lake s water system.

   Status of human exposure: One source, which currently has contamination 5-6 times the maximum limit, has been taken off-line and is now listed as emergency-use only. The other source is currently providing water to the system at a level right at the maximum limit. The Port of Moses Lake, a party in the Superfund issue, has provided bottled water to requesting customers for years.

7. **Centralia (Eshom Well), Lewis County**

Description: A contaminant plume of PCE approximately 1.5 miles long was discovered through routine, required testing for volatile organic compounds.

Actions: A mobile-home park that had very high concentrations (100 ppb) is now connected to Centralia water. Centralia's Eshom Road well was taken off-line to avoid pulling the plume toward the city well and other private residences.

Status of human exposure: City water was extended to serve private homes with the highest concentrations of PCE. However, there are about 130 private residences that still use water with detectable PCE (below the maximum limit). Centralia is working with Ecology to install a treatment and remediation system and to expand the city s water supply throughout the affected area. The city has received a grant from Ecology for this work and has raised water rates to provide local match.

8. **Milton Dry Cleaners, Clark County**

Description: The Milton Dry Cleaners discharged waste to a septic drainfield. A few private wells were contaminated with concentrations of PCE above or close to the maximum limit.

Actions: Residents at these four homes were notified of the problem and provided health-effects information by the local health jurisdiction. The Southwest Washington Health District is reviewing the status of homes in the area.
Status of human exposure: The local health jurisdiction is verifying the status of the wells, but none are believed to be currently used as drinking-water supplies. The four homes are believed to have been connected to Vancouver city water.

9. **Supply System, Satsop, Grays Harbor County**

Description: The water system that serves the Satsop Power Plant has detected volatile organic compounds (VOCs), such as tetrachlorethylene and others, occasionally above the maximum limit. The concentration of lead also has tested above safe limits.

Actions: The system is going to be turned over to a community-development group. It is uncertain whether the group will continue to use the existing source (with treatment for volatile organic compounds and corrosion) or pursue an alternate source.

Status of human exposure: The power plant is currently providing bottled water for its employees and conducts regular notification for VOCs and for lead.

10. Alexander Farms, near Grandview, Benton County

Description: In April 1998, the herbicide dinoseb was detected in two drinking-water wells at concentrations above the cleanup limit. One additional well had detections below maximum limits and no subsequent detections.

Actions Taken: The person responsible for the release of dinoseb is required to clean up the site and conduct a remedial investigation under an emergency enforcement order issued by Ecology. However, due to his inability to meet deadlines required in the order, EPA has taken over the source-removal portion of the work, and excavation of contaminated soil has been completed. Groundwater investigations are moving forward.

Status of human exposure: The residence adjacent to the source of contamination was abandoned, and Ecology paid for a new well to be drilled for the second residence.

11. Pasco Landfill, Franklin County

Description: While investigating contamination associated with the landfill, Ecology tracked the path of chemicals being released. Several small domestic and small, public drinking-water supplies were located in the low-income, semi-rural East Lewis Street area of Pasco. Ecology and the Benton Franklin Health District sampled the wells that we felt might be threatened. Several wells were found to be contaminated, and one well had volatile organic compounds at concentrations exceeding maximum limits established by EPA.

Actions / status of human exposure: Upon receiving the initial data, Ecology insisted that the potentially liable parties (PLPs) supply East Lewis Street residences with bottled water -- and they did so immediately. After confirmation samples were taken and the results were verified, Ecology negotiated with the PLPs to control the further spread of contaminants and to extend Pasco city water to affected residents. The problem was first discovered in June 1996, and hookups to more than 100 residents at several homes were completed by Christmas 1997. The Pasco PLPs paid to install the city-water hookups, and they provide that water at no cost to the residences. Meanwhile, a treatment system is working to restore that water source as drinking water. Final remedy selection is under way.

12. Palermo Well Field, Thurston County

Description: This wellfield provides water for Tumwater and has been contaminated with PCE and trichloroethylene (TCE).

Actions / status of human exposure: Ecology turned this project over to the Environmental Protection Agency, and treatment systems were put in place to clean the water being supplied to the public.

13. Boomsnub, Clark County

Description: Metal-plating waste was threatening Vancouver water-supply wells.

Actions / status of human exposure: The state initially stabilized the site and then turned it over to the Environmental Protection Agency. Waste from the site will be intercepted by a treatment system being installed by EPA.

14. Thurston County ethylene dibromide (EDB)

Description: In the mid 1980s, EBD contamination was discovered in the ground water affecting the drinking-water supplies to nearly 300 homes near Lacey. Most of the homes were on shallow individual wells, although a few very small public-water supplies were also polluted.
Actions: The EDB problem in Thurston County was remediated by providing public water supplies to the affected homes. This problem was dealt with in the late 1980s.

Status of human exposure: No known contaminated wells are still in use as a source of drinking water.

15. Lakeview Park, Grant County

Description: Routine sampling for volatile organic compounds detected several soil fumigants in 2 of 3 wells at Lakeview Park.

Actions: The system rehabilitated one of the wells and eliminated the contamination. DOH is currently working with the system to remediate contamination in the other well, which currently is not being used.

Status of human exposure: There is no known exposure to contaminated drinking water occurring at this time.

16. County Corner Mobile Home Park, Grant County

Description: DOH sampled for EDB in the Quincy area in the early 1990s as a result of contamination being found in a nearby water system. The sampling discovered contamination in the Neilson Trailer Park (now Country Corner) wells.

Actions: DOH provided the system with health-effects information for public notification and directed the system operator to distribute it to the water users. DOH has received a copy of one of the notifications provided. The system is currently under order to do required sampling and public notification and to remediate the contamination. To date, the system has been fined $5,490 for lack of timely monitoring and failing to provide notification as frequently as it should have.

Status of human exposure: Latest sampling results indicate that EDB concentrations are within acceptable drinking-water standards.

17. Sportsman's Trailer Park, Adams County

Description: EDB contamination was discovered in 2 system wells in the mid-1990s. EDB levels have fluctuated between low-level detections and non-detectable over the years.

Actions: DOH provided the system with health-effects information to distribute to the residences, and required system operators to do additional monitoring. The system has neglected to accomplish required levels of EDB monitoring in recent years, and compliance action by DOH is pending.

Status of human exposure: Latest samples results show no detection of EDB in the drinking water supply.

18. City of Warden, Grant County

Description: In the early 1990s, EDB contamination was discovered in two wells that served approximately 500 homes.

Actions: DOH provided health-effects information for public notification, which the city distributed to water customers. DOH also required increased monitoring frequency. The system changed managers, and monitoring by the system diminished below required levels. DOH is initiating compliance action on the system.

Status of human exposure: Levels of EDB have been at non-detectable levels in recent years.

19. Colbert Landfill, Spokane County

Description: Pollution from the old Colbert Landfill contaminated several public water-system wells and many private wells.

Actions / status of human exposure: DOH worked with Ecology and Spokane County to get Whitworth Water System to extend lines to the area and hook up contaminated systems and individual homes. Spokane County continues to monitor area wells, and DOH reviews sample data, recommends sampling schedules and recommends those with problem wells be connected to Whitworth Water.

20. Bethel Wells, Kitsap County (north of Port Orchard)

Description: This former gas station was demolished, and its active underground tanks were removed. However, several 50-year-old abandoned underground tanks were not removed, and they subsequently contaminated three or four private wells near the site.

Actions / status of human exposure: The Department of Ecology entered into a consent decree with the property owner to provide financial assistance for the cleanup. Bottled water was provided for a time, but then Ecology worked with the local water district to extend water lines to the properties. Various

remediation technologies have been used (primarily source control and vapor extraction), and cleanup is nearly completed.

21. Bainbridge Island Landfill, Kitsap County

Description: Vinyl chloride has been found in the aquifer and drinking-water wells.

Actions: Ecology and Kitsap County are investigating the extent of contamination and options for remediating contamination.

Status of human exposure: Ecology is coordinating with DOH, Bremerton-Kitsap County Health District, Kitsap County, and the local citizens on possible short-term efforts to ensure safe drinking water at the homes affected by the Bainbridge Is. landfill.

22. Hansville Landfill, Kitsap County

Description: Vinyl chloride has been found in the groundwater aquifer, but no contaminants have been detected in any drinking-water wells.

Actions: Ecology and potentially liable parties are investigating the extent of the contamination and options for remediating the contamination.

Status of human exposure: Drinking-water wells in the vicinity of the landfill are screened in a lower aquifer and have not been contaminated by the vinyl chloride.

23. J.H. Baxter & Company, Arlington, Snohomish County

Description: Volatile organic compounds are in the drinking-water aquifer, and they ve been detected in the well of a nearby trailer park.

Actions: Ecology and J.H. Baxter are investigating the extent of the contamination and options for remediating it.

Status of human exposure: The well has been abandoned, and residents are now hooked up to the local municipal water supply.

24. Northside Landfill, Spokane, Spokane County

Description: A plume of volatile organic contamination from the landfill was threatening neighboring wells.

Actions / status of human exposure: The plume has been remediated through groundwater pumping and discharge to Spokane s treatment plant. It is not clear, without research, whether the wells were actually used for drinking; the potential existed, although only a few wells were involved.

25. Well 12-A/Time Oil Company, Tacoma, Pierce County

Description: A plume of volatile organic contamination from the Time Oil Company reached one of Tacoma's wellfields, threatening a significant portion of the city's population.

Actions: Remediation has been done at the wellfield, and the plume is being remediated through groundwater pumping and activated carbon absorption.

Status of human exposure: The plume was remediated before it reached drinking water.

26. Acme Leaking Underground Storage Tanks (LUSTs), Whatcom County

Description: The city s well was contaminated with gasoline from a failing underground storage tank at a logging company.

Actions: Ecology removed the tanks we could find, and arranged with the state Dept. of Community Development to help Whatcom County obtain funding to construct a replacement well.

Status of human exposure: The well was double-cased through the first two aquifers/aquitards to reach a usable aquifer verifiably separated from the contaminated aquifer. Subsequent testing hasn t shown contamination of the lower aquifer.

27. Quilcene, Jefferson County

Description: Ecology found gasoline in individual drinking-water wells in this rural setting.

Actions / status of human exposure: Ecology first provided bottled water, then tanked in water (provided through a temporary distribution system). A community water system to replace the contaminated domestic wells was investigated, along with the option of contributing to a larger public-water-supply system for Quilcene. There was little support from the residents for either option. About one year after the contamination was first detected in the wells, the homeowners began using their wells again. The water was tested and found to be free of petroleum products. No source of gasoline contamination was ever discovered.

28. Pacific Powder, Thurston County

Description: Contamination in this rural setting is from industrial activities of the past, specifically an explosives-manufacturing plant in the area.

Actions / status of human exposure: When Ecology first found out about the site, we provided bottled water to the nearby residences. This continued until their water supplies were proved to be clean. Ecology continues work on the site to conduct a full-scale cleanup.

29. Cenex, Quincy, Grant County

Description: 1,2-Dichloropropane and other agricultural chemicals (including EDB) have been released to ground water in the industrial east end of Quincy.

Actions: Groundwater monitoring wells have been installed to define the extent of contamination. A well survey was conducted largely by the Grant County Health Department, finding no individual domestic supplies. At present, the area of contamination has been fairly well identified, equipment has been installed to remove source chemicals and treat contaminated ground water on-site, and monitoring is continuing.

Status of human exposure: All studies to date indicate no complete exposure pathways exist from current site conditions.

30. Olympic Pipeline, Maplewood, King County

Description: Located about 1/2 mile from backup water-supply wells for Renton, ground water at this site is contaminated with gasoline, JP-4 and diesel.

Actions: Treatment is under way through Ecology s Voluntary Cleanup Program. Initial, emergency response in 1988 removed about 250,000 gallons of product via pumping and vapor extraction/incineration.

Status of human exposure: The contamination did not reach drinking-water supplies.

31. CENEX, Auburn, King County

Description: Gasoline was released from above-ground storage tanks about 1.4 miles from an Auburn water-supply well.

Actions: 14,000 gallons of gasoline were recovered, and most of the risk has been remediated.

Status of human exposure: The contamination did not reach drinking-water supplies.

32. Frederickson, Pierce County

Description: Frederickson Industrial Park is a 527-acre site located south of 176th Street East and east of Canyon Road in Pierce County. Industrial activity at the site resulted in carbon tetrachloride (an industrial cleaning solvent) contaminating ground water and drinking-water wells.

Actions / status of human exposure: Bottled water has been supplied to the neighborhood by the liable parties, at Ecology s direction. We anticipate the neighborhood will be hooking up to municipal water supplies.

33. DNR Webster Nursery, Thurston County

Description: The DNR Webster Nursery, located in rural Thurston Co., has pesticide contamination.

Actions / status of human exposure: Initial concerns about drinking-water supplies have been eliminated, since testing has shown that the contamination problem has not migrated. Bottled water was supplied to the neighborhood by DNR until tests showed that the water was safe.

34. Fairchild Air Force Base Craig Road Landfill, Spokane County

Description: The site is adjacent to a mobile-home park on the west end of Airway Heights. The mobile-home park was originally served by three water-supply wells. In 1989, the Air Force began investigating the landfill as a potential source of contamination and discovered TCE in groundwater samples from the site. The Air Force then tested the wells at the mobile-home park, which were found to be contaminated with TCE at 80 ppb, 16 times the limit established in the federal Safe Drinking Water Act.

Actions / status of human exposure: In response, the Air Force provided the park with an alternate water supply. Initially, the alternate supply consisted of bottled water for consumption, then the Air Force connected the park to the base's water supply. The base continued to provide water from its system until October 1998, when the mobile-home park was connected to the Airway Heights municipal water system, which had recently been extended to the western edge of the city.

35. Submarine Base Bangor Operable Unit 8, Kitsap County

Description: In February 1994, the Bremerton-Kitsap County Health District identified volatile organic chemicals (VOCs) in a newly installed well at a private residence in a neighborhood adjacent to Submarine Base Bangor. The base Public Works Area, located approximately 1,500 feet to the northwest, was suspected to be the source of contamination. The initial sampling and subsequent investigation have identified VOCs (principally 1,2-DCA and benzene) at levels above maximum limits, extending to about 1,600 feet beyond the base boundary, affecting water wells for 23 residences and one commercial property.

Actions / status of human exposure: In response, the Navy provided the residents with bottled water as a precautionary measure and began sampling private water-supply wells in the neighborhood. In December 1994, the Navy began connecting the affected properties to the Silverdale municipal water system, and completed the project by autumn 1995.

36. Tacoma Landfill, Pierce County

Description: A plume of volatile organic contamination from the landfill threatened off-site private wells.

Actions / status of human exposure: Landowners were immediately connected to the city water supply. The plume currently is being remediated by groundwater pumping and discharge to Tacoma s treatment plant.

37. Keyport OU 1 (the landfill), Kitsap County

Description: This old, unlined landfill is located at the western edge of the Naval Undersea Warfare Center Division at Keyport. It contains many contaminants, but the primary risk potential is from chlorinated aliphatic hydrocarbons such as PCE, TCE, DCE, vinyl chloride, DCA, etc. The chemicals are constrained from moving toward water-supply wells by the site geology and hydrology. Instead, they flow toward a marsh and an associated tide flat, and then toward a small bay.

Actions: Although the potential for drinking-water contamination is very low, the chemicals are being removed from the ground water by the innovative method of Phytoremediation. This involved planting trees in the plume so they act as a pump-and-treat system to draw up the contaminated waters and turn the contaminants into CO2 and water. The planting of the trees will start with a celebration on Earth Day, April 22, this year. As a backup, in the unlikely event the monitoring shows the contaminants are moving toward any water-supply wells, the Navy has committed to providing alternative water supplies to any potentially affected homes via a new well to a deeper, clean aquifer, or connection to local water systems as appropriate.

Status of human exposure: The community is well advised of the situation through an active public-outreach program by the Navy and a very active restoration advisory board. Currently, no drinking-water wells have been contaminated, so no bottled-water program is necessary.

38. Yakama Indian Reservation, Yakima County

Description: There are a large number of confirmed and suspected contaminated sites on the reservation.

Actions: The Yakama Indian Nation has jurisdictional authority within the boundaries of the reservation.

Contaminated Drinking Water Sites in Washington State