ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

1994 STATEWIDE WATER QUALITY ASSESSMENT

NAME OF WATERBODY: Lutak Inlet in Haines, AK

Location or Lat/Long: 59° 16' LAT 135° 26' Long

Is the waterbody in a national or state park, monument, refuge, preserve, or similar area?:
[ ] Yes / [X] No / Name: _____

Waterbody Type:	Waterbody Size:	Segment of Waterbody Addressed:
[ ] River/Stream	____ Miles	From: Entire Inlet especially Tanani
[ ] Lake	____ Acres	To: point, harbor & Sawmill area
[ ] Fresh Wetland	____ Acres	Other Description: _____
[ ] Tidal Wetland	____ Acres	
[ ] Estuary	____ Square Miles	Size of Segment: _____
[X] Coastal Shoreline	____ Miles	
[X] Groundwater		

Period of Assessment, From: various assessments from 84 **To:** 93

Assessment completed by: NOAA - Dec. 88 Ecology & Env. Inc - April 90 Harding Lawson Ass - June 93
see attached sources ADEC - October 90

Type of Documentation (attach if possible):

[X] Water quality data	[X] Written report
[X] Documented oil spill	[ ] Field notes
[ ] NOV / Enforcement action	[ ] Overflight
[ ] Photos with documentation	[X] Observation
[X] Fish / Habitat survey	[ ] Other (please describe below)

Assessment based on: [ ] Monitored water quality data [ ] Evaluated (Best professional judgement)

Describe Source and Nature of Pollution, Documentation Provided and Other Comments:
Attached find sections of the Harding Lawson Associates report of June 1993. page 7-2 lists only ~~major~~ toxins found in above benchmark RBCs. pages 2-3 through 2-6 summarize some of the past studies briefly. NOAA benthic studies confirm migration of toxins into Lutak inlet and fish there. Sawmill related pollution must also be assumed.

RESPONDENT INFORMATION:

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7.0 SUMMARY AND CONCLUSIONS

7.1 SUMMARY

HLA's site investigation identified the following 14 target analytes in HFT soil at concentrations exceeding benchmark RBCs:

VOCs

- Benzene
- Methylene chloride
- Tetrachloroethene

SVOCs

- Chrysene
- 2,6-dinitrotoluene

Dioxins/Furans

- 2,3,7,8-TCDD

PCBs

- Aroclor 1250

Petroleum Hydrocarbons

- Bunker oil (as No. 6 Diesel)
- Diesel fuel (as No. 2 Diesel)
- Diesel-range organics
- Gasoline
- K-1 kerosene

Metals

- Arsenic
- Lead

Four additional VOCs (ethylbenzene, toluene, m- & p-xylene, and o-xylene) and one additional petroleum hydrocarbon (jet fuel as JP-4) were

found in soil at concentrations below RBCs but above the benchmark concentrations specified in state guidelines for the cleanup of petroleum hydrocarbons in soil.

The following 18 target analytes were found in groundwater at the HFT at concentrations exceeding benchmark RBCs:

VOCs

- Benzene
- Isopropylbenzene
- Ethylbenzene
- Tetrachloroethene
- Toluene
- 1,2,4-trimethylbenzene
- o-xylene
- m- & p-xylene

SVOC

- Naphthalene

Dioxins/Furans

- 2,3,7,8-TCDD

Petroleum Hydrocarbons

- Diesel fuel (as No. 2 Diesel)
- Diesel-range organics
- K-1 kerosene

Metals

- Arsenic
- Barium
- Chromium
- Mercury

In addition, lead was detected in the groundwater at concentrations exceeding a National Primary Drinking Water Regulation action level for that metal and in surface water at a concentration exceeding an Ambient Water-Quality Criteria established by the EPA for the protection of aquatic life.

7.2 RECOMMENDATIONS

The exceedance of a benchmark concentration is used in this report as the criterion for assessing the potential need for additional action. HFT subsites which may require additional action based on this criterion are summarized in Table 7-1, along with potentially applicable remedial technologies.

The selection of an appropriate remedial alternative requires a detailed assessment of the extent of hazardous substances, human health and ecological risks, and cost. This type of detailed assessment was beyond the scope of this investigation.

Based on the results of this investigation, HLA offers the following recommendations:

- Perform a human and health and ecological baseline RA to evaluate potential receptors and exposure pathways.
  - Reduce the uncertainties associated with risk-based screening procedures.
  - Quantify possible on- and off-site exposures.
  - Provide a basis for establishing alternative cleanup levels.

- Perform an additional site investigation to:
  - Define the range of concentrations and the horizontal and vertical extent of the hazardous substances and petroleum hydrocarbons identified at the HFT.
  - Obtain other data needed to select a remedial alternative.
  - Assess naturally occurring concentrations.
- Restrict public access and use of Tanani Point to reduce potential impacts to human health by chemicals present in the former Burn Pit.

Diked containment areas surround each of the AGTs. Several of the containment areas have been either fully or partially lined with a synthetic material. The containment areas may act to retard the movement of hazardous substances spilled or discarded within the boundary of the dikes. However, water that collects within the impoundments discharges via drains into the Tank Farm drainage ditches.

The HFT is surrounded by a locked chain-link security fence and is regularly patrolled. Most of the identified releases are below the ground surface. However, affected surface soil is susceptible to transport by wind. No past or present users of the groundwater flowing beneath the HFT were identified. Surface water from the HFT drains into Lutak Inlet via man-made ditches. No past or present uses of the water in those ditches were identified.

2.3 INVESTIGATIVE AND REGULATORY HISTORY

Based on information collected during this SI and contained in the reports of previous investigations, the following history of investigative and regulatory events was developed:

- The USACE issued a Pollution Spill Control Plan for the HFT in June 1983. In it a 10- to 20-gallon fuel spill was reported to have occurred in 1974. Evidence of oily soil in some of the diked containment areas was noted.
- In response to worker complaints during site work on the reconstruction of containment dikes, the Department of the Army, Foundations and Materials Branch, collected five soil samples. In its November 18, 1985, report, the Department of the Army, Foundations and Materials Branch, documented the presence of ethylbenzene, naphthalene, toluene, and xylenes in soil samples. Metals were

detected at concentrations reported as "negligible." The Army advised that site workers wear air-purifying respirators in addition to other protective equipment.

- In December 1988, the National Oceanic and Atmospheric Administration (NOAA) released a report titled "National Benthic Surveillance Project: Pacific Coast, Summary and Overview of the Results for Cycles I to III (1984-86)," in which it reported concentrations of various chemicals found in the sediment and selected fish organs at 31 sites, including Lutak Inlet, Nahku Bay, and Skagway. Sediment samples were collected at six Lutak Inlet locations in 1984 and 1986. Analyses performed included PCBs, PAHs, pesticides, and metals. The mean concentration of PCBs in sediment samples was reported as 11 micrograms per kilogram (μg/kg). The mean concentrations of PAHs ranged from 1.2 μg/kg to 3.3 μg/kg, and the mean pesticide concentrations ranged from 6.6 μg/kg to less than the laboratory's detection limit. Mean metal concentrations of arsenic, cadmium, chromium, lead, mercury, selenium, and silver were 1.6 milligrams per kilogram (mg/kg), 0.71 mg/kg, 78 mg/kg, 19 mg/kg, 0.17 mg/kg, 0.46 mg/kg, and 0.26 mg/kg, respectively. The NOAA report also identified PCB and dichlorodiphenyltrichloroethane (DDT) concentrations in the livers of flathead sole caught in Lutak Inlet as averaging 530 parts per billion (ppb) and 210 ppb, respectively. Data from the NOAA project was included in the National Status and Trends Program for Marine Environmental Quality Progress Report released in April 1991.

background?

- Control (background) marine sediment samples collected as part of a study of trace metal concentrations near the ore loading facility at Skagway, Alaska, contained mean concentrations as follows: 257 mg/kg of zinc, 9 mg/kg of copper, 0.05 mg/kg of mercury, 0.9 mg/kg of cadmium, and 37 mg/kg of lead. These marine sediment samples were collected at Nahku Bay by the U.S. Fish and Wildlife Service and the Alaska Department of Environmental Conservation (ADEC) (Robinson-Wilson and Malinkey, undated "Everett Report").

- In a July 19, 1989, letter to the U.S. Army Engineer District, the city of Haines suggested a CERCLA audit of the HFT Landfill and the HFT.

- In its February 21, 1990, letter to EPA Region 10, Lynn Canal Conservation, Inc., petitioned the EPA to conduct a preliminary assessment of the HFT.

- In March 1990, the ADEC released the Alaska Water Quality Assessment, which listed Lutak Inlet as suspected of being affected by non-point sources of arsenic and polyaromatic hydrocarbons.

- In April 1990, Ecology and Environment (E&E) released a project report of its Haines Landfill Investigation conducted from August to November 1989. The report outlined the presence of contaminants (including trichloroethene and lead), contaminant migration pathways, potential contaminant receptors, and remedial alternatives. E&E generated an HRS score of 5.1 for the landfill.

- On April 12 and 13, 1990, inspection of several facilities in the Haines area revealed several potential sources of contamination, including a landfill near the Army Tank Farm, the Chilkoot Lumber Company, the Haines Landfill, and a Tank Farm at Highland Resources, Inc.

- On May 3, 1990, the ADEC wrote a letter documenting an April 1990 inspection of the HFT. During its inspection, the ADEC identified stained soil near a barrel storage area and collected two surface-water samples for tannins and lignins analyses. Both samples tested negative. In addition, ADEC reported that a 5,000-gallon AVGAS spill occurred in 1987.

- In a May 22, 1990, memorandum to the Alaska Department of Natural Resources, the ADEC noted reports of leaking USTs, leaking transformers, burn pits used for waste disposal, and herbicide use at the HFT. In a separate ADEC memorandum and a letter to the EPA, both dated May 22, 1990, the ADEC requested that the HFT be listed in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS).

- A September 13, 1990, Incident/Site Visit Report Form completed by ADEC reported that four USTs had been removed from the HFT in August 1990. The report form noted that "3 of the 4 (tank excavations) are clean" and the "4th has levels of 10K (thousand) to 16,000 ppm (part per million) of TPH."

- In October 1990, the ADEC released its Lutak Inlet Sampling Project Summary report. In it, the ADEC reported collecting sediment samples from Lutak Inlet, Tanani Bay near Tanani Point, and the Ferry Dock, among other sites. The highest concentration of arsenic was reported to be 6.66 mg/kg in a sediment sample collected in Tanani Bay. The highest concentration of cadmium in sediment was reported to be 0.590 mg/kg and occurred near Tanani Point. The highest lead concentration in sediment from Tanani Bay was reported to be 15.00 mg/kg. Petroleum hydrocarbons were detected at a maximum concentration of 14 mg/kg in the sediment from Tanani Bay near the HFT. PCBs were not detected in sediment samples.

- In a November 23, 1990, public notice, the USACE released for public comment a finding of no significant impact regarding the HFT Landfill.

- In February 1991, E&E released a Preliminary Assessment Report for the HFT. The preliminary assessment recommended additional investigation to characterize the site and the potential for migration of contaminants from the HFT to Lutak Inlet.

- In a March 6, 1991, letter to the Director of Engineering and Housing at Fort Richardson, the EPA recommended that a site inspection of the HFT be conducted.

- The HFT was listed on the EPA's Federal Agency Hazardous Waste Compliance Docket on September 27, 1991.

6.10 CONCLUSIONS AND RECOMMENDATIONS

The screening risk analysis performed for the site resulted in the identification of 24 target analytes and 14 TICs as COPCs. Seventy-one percent of the original chemicals detected (target analytes and known TICs, and counting dioxins/furans as one chemical, 2,3,7,8-TCDD) were eliminated as a result of this evaluation. Because of the overall conservative nature of this screening analysis, it is likely that the chemicals eliminated on the basis of not exceeding RBCs can be safely removed from any future baseline RA analysis.

Based on the results of the screening risk analysis, a human health and ecological baseline RA is recommended, because a substantial number of chemicals present at the site were found to exceed EPA Region 10 RBCs, and potentially sensitive ecological receptors are likely to frequent the area. A baseline RA would evaluate numerous potential receptors and exposure pathways, using site-specific exposure assumptions, for humans and ecological receptors. A baseline RA would reduce the uncertainties associated with this screening evaluation and could be used to quantify possible on-site and off-site exposures and human and ecological risks from site-related chemicals.