



9 CROSBY DRIVE
EDFORD, MASSACHUSETTS 01730
J1 71 275-2870

MOHAWK	
Site:	TANNERY
Break:	1.2
Other:	ARRESTED/CA AUGUST 1980

6739

C-583-7-7-135
July 31, 1987

**Preliminary Assessment
Mohawk Tannery
Nashua, New Hampshire**

04-12
**TDD No. F1-8703-10
Reference No. \$375NH50PA
CERCLIS No. NHD981889629**

INTRODUCTION

The NUS Corporation Field Investigation Team (NUS/FIT) was requested by the Waste Management Division of the Region I U.S. Environmental Protection Agency (EPA) to perform a Preliminary Assessment of the Mohawk Tannery facility located in Nashua, New Hampshire (Figures 1 and 2). The PA was completed under Technical Directive Document (TDD) Number F1-8704-12, issued in April 1987.

This Preliminary Assessment complies with the requirements set forth under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. It does not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA). The Preliminary Assessment is not intended to be a definitive study of the site, so it is not suitable for use in planning site remediation or undertaking enforcement actions against potentially responsible parties. The Preliminary Assessment is the first step of the site screening process set forth by the National Contingency Plan (NCP).

The New Hampshire Division of Environmental Services (NH DES) has requested that a PA be performed of the site because wastewater treatment sludge from tannery wastes has been disposed of in unlined lagoons at the site, and because low levels of dioxin have been detected in soil onsite.

FACILITY DESCRIPTION AND HISTORY

The former Mohawk Tannery, also known as Granite State Leathers, is located at the west end of Fairmount Street, along the west side of Warsaw Avenue in Nashua, New Hampshire (Figures 1 and 2). From 1924 until 1984, Mohawk Tannery tanned hides for leather on the 41-acre property. Of this property, a 16-acre parcel is undeveloped (GZA, 1985). The facility, which is partially surrounded by a fence, is bordered to the west and south by the Nashua River; to the east by a residential area; and to the north by the Fimbel Door facility (NUS/FIT, 1987; GZA, 1985). Since the facility ceased operation, the property has been owned by Warren Kean.

While in operation, the facility produced an acidic and an alkaline waste stream. Until 1981, when a treatment system was installed, treatment consisted of discharging the two waste streams together into unlined lagoons located to the west of the main building (Lybarger, 1986; Novak, 1987a). One lagoon, located adjacent to the Nashua River, is still open (Novak, 1987a). The waste streams were

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BASE MAP IS A PORTION OF THE FOLLOWING U.S.G.S. 7.5 SERIES QUADRANGLE(S):

NASHUA NORTH, NH 1968, PHOTOREVISED 1974
NASHUA SOUTH, NH 1965, PHOTOREVISED 1979

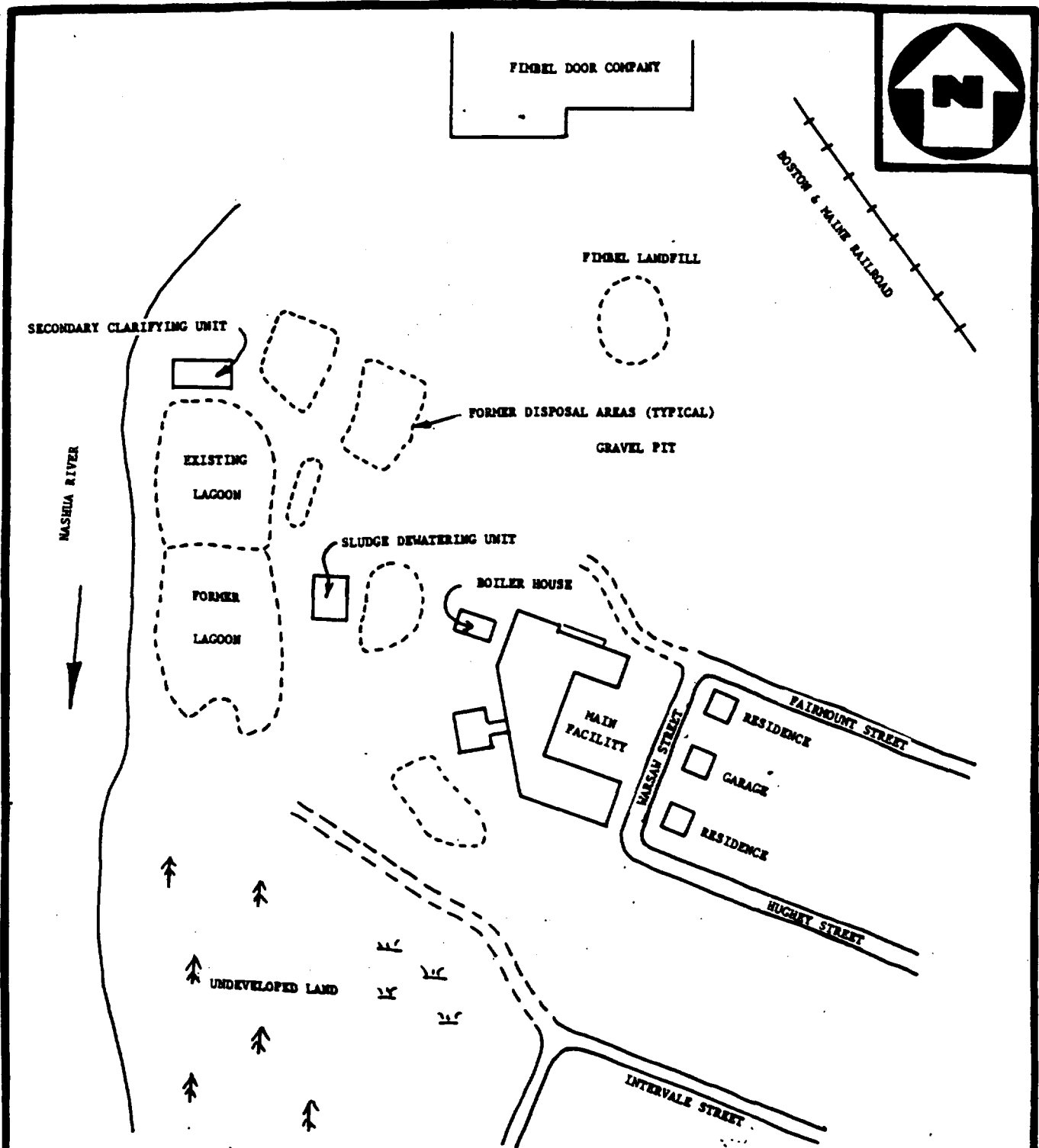
SOUTH MERRIMACK, NH 1968, PHOTOREVISED 1985
PEPPERELL, MA 1965, PHOTOREVISED 1979



LOCATION MAP
MOHAWK TANNERY
NASHUA, NH



FIGURE 1



NOT TO SCALE

ADAPTED FROM: GOLDBURG-ZOINO ASSOCIATES, 1985. HYDROGEOLOGIC STUDY OF
GRANITE STATE LEATHERS FACILITY, FIGURE 2., AND NUS/FIT, 1987
PERIMETER SURVEY CONDUCTED ON APRIL 15, 1987.

SITE SKETCH
MOHAWK TANNERY
NASHUA, NH



FIGURE 2

neutralized, a precipitate settled out, and the liquid was discharged to the Nashua River (Lybarger, 1986). Tannery waste generally contains phenol and chromium (EPA, 1980). Sludge from the lagoons, reportedly consisting primarily of chromium salts and other salts, was periodically dredged and disposed of in four other areas on the property (Figure 2) (Lybarger, 1986). An estimated total of 60,000 cubic yards of sludge were disposed of in all the areas on the property (GZA, 1985). In 1980, Mohawk Tannery notified EPA of its status as a hazardous waste generator under RCRA, but tannery waste was delisted as a RCRA waste in November of that year. In July 1984, Mohawk Tannery ceased operation (Novak, 1987a).

Mohawk Tannery had samples of the waste sludge analyzed for metals in 1975 and again in 1983. The sludge was found to contain total chromium at levels up to 11,000 milligrams per kilogram (mg/kg) (GZA, 1985). In 1985, Goldberg-Zoino Associates (GZA) conducted a hydrogeologic study for the owner of the property. In some samples of groundwater, arsenic, chromium, and mercury were detected at levels of up to 0.07 milligrams/liter, as well as organic compounds including tetrachloroethylene at levels up to 250 parts per billion (ppb) (GZA, 1985). GZA analyzed samples of sludge from each disposal area, and detected organic compounds including 2,4,6-trichlorophenol at up to 140,000 ppb and pentachlorophenol at up to 510,000 ppb (Anon., undated).

In addition to metals and volatile organic compounds, results of sampling by EPA in 1986 detected dioxin isomers in onsite soil at levels of up to 326 ppb. In 1986, the U.S. Agency for Toxic Substances and Disease Registry (ASTDR), using equivalency calculations, determined that the highest possible concentration of the most toxic form of dioxin, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), on site was 2.27 ppb. ASTDR concluded that the dioxin detected on site did not present a public health hazard because of the low concentrations and because the site is abandoned, fenced in, and intended for commercial use only. ASTDR noted, however, that if the land were rezoned for residential use, levels of TCDD above 1.0 ppb in soil would be considered a health hazard (Lybarger, 1986). The land was officially zoned for residential use in 1974, but Mohawk Tannery was allowed to continue operating because it was in operation at the time that the zoning was changed. Now that the facility has been out of business for over a year, however, the land has reverted to residential zoning (Novak, 1987b).

In May 1987, NH DES conducted an inspection of the property, and observed a release of material from the berm area of the lagoon along the Nashua River. NH DES sent a letter to the property owner, Warren Kean, ordering him to conduct sampling to determine the source of the release. NH DES has also ordered Kean to conduct a study to characterize the contamination at the site. According to an NH DES official, the state is working with Kean to remediate the site, but the state is concerned that Kean will not have enough money to carry out the work (Novak, 1987a).

ENVIRONMENTAL SETTING

The area surrounding the Mohawk Tannery facility is primarily urban residential, with some commercial areas (USGS, 1965 and 1968). The nearest residences are located across Warsaw Avenue from the property (NUS/FIT, 1987). A sewage disposal facility is located directly across the Nashua River from the property (USGS, 1968). A fish hatchery, which raises salmon to restock the Merrimack River, is located 0.6 miles upriver from Mohawk Tannery. The fish hatchery does not obtain water from the Nashua river; it obtains water from onsite wells. These wells are not used for drinking, but are used to provide water to the hatchery (Novak, 1987c).

The Mohawk Tannery facility is located 50 to 80 feet from the eastern bank of the Nashua River (Lybarger, 1986). In some areas of the property, groundwater was observed to be at the level of the ground surface. Groundwater is believed to flow in a westerly to southwesterly direction beneath the site (GZA, 1985).

The city of Nashua obtains drinking water from a series of four ponds, the nearest of which is located 1.8 miles north of the site. In dry periods, the water system can draw supplementary water from an intake on the Merrimack River, located approximately three miles upstream of the site. The system serves an estimated 90 percent of Nashua's 80,000 residents. The remaining 10 percent obtain water from private wells, but the number of these wells within three miles of the site is unknown (Jackson, 1987).

CONCLUSION AND RECOMMENDATIONS

An estimated 60,000 cubic yards of wastewater treatment sludge from tannery operations has been disposed of in unlined lagoons and pits on the property. High levels of chromium and volatile organic compounds have been detected in the sludge. In addition, dioxin isomers have been detected in soil onsite at levels which ASTDR has stated would be considered "unacceptable" if the property were used for residential buildings, for which it is presently zoned.

The site is located adjacent to the Nashua River, and a release from the open lagoon has recently been observed during a state inspection. The state has been working with the property owner to obtain an investigation and cleanup of the contamination, but the state is concerned that the owner may not have the money to conduct a cleanup. The site has received publicity recently because of the dioxin detected there, and because the owner has reportedly proposed to develop the property for residential use.

Because of the concentrations of contaminants detected on site, including dioxin, and because of the demonstrated threat that the contents of the disposal lagoon could be released to the Nashua River, NUS/FIT recommends that a Site Inspection (SI) of high priority be conducted at the site. The SI should include sampling of soil, surface water, and groundwater around the disposal areas to determine the extent of contamination.

The SI should also include further investigation into whether the owner is planning to develop the property for residential use. If residential development is planned, soil at the site should be sampled to determine whether the level of dioxin contamination exceeds nationally advised levels.

The state has been working with the owner, and has ordered him to conduct an investigation of the disposal lagoons at the site. Therefore NUS/FIT recommends that any investigation of the lagoons be coordinated with NH DES personnel who have been working on the site.

Submitted By :

Pamela Novak

Pamela Novak
Project Manager

Approval :



R. DiNitto
Regional Manager

PN/ej

REFERENCES

Anon., undated. Memo summarizing dioxin sampling results at Mohawk Tannery. Found in files of New Hampshire Department of Environmental Services (NH DES), Waste Management Division, Mohawk Tannery site.

GZA. 1985. Phase I Hydrogeologic Study of Granite State Leather facility (Mohawk Tannery). Prepared for Fairmount Height Associates (Warren Kean), dated April.

Jackson, S. (NUS/FIT). 1987. Telecon with B. Russo (Nashua Pennichuck Water Treatment Plant), RE: Nashua water supply, May 5.

Lybarger, J. (Agency for Toxic Substances and Disease Registry). 1986. Memo to M. DiSirio (Public Health Advisor, EPA), RE: Granite State Leather facility (Mohawk Tannery), dated July 7.

Novak, P. (NUS/FIT). 1987. Telecon with J. Minichiello (NH DES); RE: Mohawk Tannery, June 23.

Novak, P. (NUS/FIT). 1987b. Telecon with R. Nelson (Nashua Planning Office, Nashua, New Hampshire), RE: Mohawk Tannery Property zoning, June 9.

Novak, P. (NUS/FIT). 1987c. Telecon with V. Segarich (National Fish Hatchery), RE: use of water, June 8.

NUS/FIT. 1987. Logbook No. 87-910, .p. 2, perimeter survey of Mohawk Tannery, April 15.

USGS. 1965 and 1968. 7.5' series (Topographic) quadrangles: a) Nashua South, New Hampshire, 1965, photorevised 1979; b) Pepperell, Massachusetts, 1965, photorevised 1979; c) Nashua North, New Hampshire, 1968, photorevised 1974; and d) South Merrimac, New Hampshire, 1968, photorevised 1985.



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE NH 02 SITE NUMBER D981889629

II. SITE NAME AND LOCATION

01 NAME (Legal, common, or descriptive name of site) Mohawk Tannery		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Fairmount Street			
03 CITY Nashua	04 STATE NH	05 ZIP CODE 03061	06 COUNTY Hillsborough	07 COUNTY CODE 011	08 CONG DIST
09 COORDINATES	LATITUDE 42°45'55"N	LONGITUDE 071°29'10"W			

10 DIRECTIONS TO SITE (Starting from nearest public road)

From the Everett Turnpike take Rt. 101A east. Travel about 1 mile and turn right on Baldwin St. Travel 0.3 miles and turn right on Fairmount St. The site is at the west end of Fairmount St.

III. RESPONSIBLE PARTIES

01 OWNER (IF KNOWN) Warren Kean/Fairmount Height Associates		02 STREET (Business, mailing, residential) P.O. Box 453			
03 CITY Nashua	04 STATE NH	05 ZIP CODE 03061	06 TELEPHONE NUMBER (603)883-2227		
07 OPERATOR (if known and different from owner) Mohawk Tannery (former)		08 STREET (Business, mailing, residential) Fairmount St.			
09 CITY Nashua	10 STATE NH	11 ZIP CODE 03061	12 TELEPHONE NUMBER none at present		

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE: ☐ B. FEDERAL: ☐ C. STATE: ☐ D. COUNTY: ☐ E. MUNICIPAL:
☐ F. OTHER: (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☒ A. RCRA 3001 DATE RECEIVED: 8/18/80 ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103c) DATE RECEIVED: ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION ☒ YES DATE: 5/87 ☐ NO		BY (Check all that apply) ☒ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☒ D. OTHER CONTRACTOR ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: CONTRACTOR NAME(S): Goldberg-Zoino Associates (Specify)	
02 SITE STATUS (Check one) ☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN		03 YEARS OF OPERATION 1924 1984 BEGINNING YEAR ENDING YEAR ☐ UNKNOWN	

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Wastewater treatment sludge from tannery operations has been disposed of in lagoons and pits onsite. Contaminants detected onsite include chromium, phenols, tetrachloroethylene, and dioxin isomers. Neutralized wastewater was discharged into the Nashua River.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

One lagoon adjacent to the Nashua River is open, and a release of material from the lagoon has been observed by the state. The property is zoned for residential use, and the levels of dioxin detected are above those allowed for a residential area. In addition, an unknown number of private wells are located within 3 miles of the site.

V. PRIORITY ASSESSMENT

PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☒ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required promptly) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT: John Minichiello	02 OF (Agency/Organization): N.H. Dept. of Environmental Services	03 TELEPHONE NUMBER: 603-271-2900
04 PERSON RESPONSIBLE FOR ASSESSMENT: Pamela Novak		05 AGENCY NUS 06 ORGANIZATION: FIT 07 TELEPHONE NO. (617)275-2970 08 DATE: 7-31-87





POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE NH 02 SITE NUMBER D981889629

HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 02 ☒ OBSERVED (DATE: 1985) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

Sampling in 1985 indicated contamination, including chromium, tetrachloroethylene, and trichloroethylene, in groundwater. Wastes are buried below the water table in some areas of the site.

01 ☒ B. SURFACE WATER CONTAMINATION 02 ☒ OBSERVED (DATE: May 1987) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

Surface water was not sampled. An open lagoon is located within 100 feet of the Nashua River, and a release of material from this lagoon was observed during an inspection by NHDES.

01 ☐ C. CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

No air monitoring has been conducted onsite. Low levels of volatile organic compounds were detected in sludge which has been disposed of in open lagoons and pits, so there is some potential for air contamination.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

The waste consists primarily of metal salts, so a fire or explosion hazard is unlikely.

01 ☒ E. DIRECT CONTACT 02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

Dioxin isomers have been detected in soil onsite, and access to the property may not be entirely restricted.

01 ☒ F. CONTAMINATION OF SOIL 02 ☒ OBSERVED (DATE: March 1986) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 41 ACRES 04 NARRATIVE DESCRIPTION

Dioxin isomers were detected in onsite soil by EPA sampling in March 1986.

01 ☒ G. DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

Groundwater contamination has been detected on site, and an unknown number of private wells are located within three miles of the site.

01 ☐ H. WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

The facility has been closed, so there are no workers on the site.

01 ☒ I. POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

See B, E, F, and G



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE NH	02 SITE NUMBER D981889629

HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Available information showed no evidence of damage to flora.

01 ☐ K. DAMAGE TO FAUNA 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

Available information showed no evidence of damage to fauna.

01 ☐ L. CONTAMINATION OF FOOD CHAIN 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Available information showed no evidence of contamination of food chain.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) 02 ☒ OBSERVED (DATE: May 1987) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown 04 NARRATIVE DESCRIPTION

During a state inspection in May 1987, a release of material was observed from the open lagoon located adjacent to the river.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Available information showed no evidence of damage to offsite property.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Available information showed no evidence of contamination of sewers or storm drains.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Available information showed no evidence of illegal or unauthorized dumping.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: unknown

IV. COMMENTS

N.H. Department of Environmental Services has issued several letters or orders to the property owner, and is working with the owner regarding remediation of the site. However, the state is concerned that the owner will not have the money to carry out a site remediation.

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Goldberg-Zoino Associates. 1985. Phase I Hydrogeologic study, Granite State Leathers (Mohawk Tannery).

2. NUS/FIT. 1987 Logbook No. 87-910, P.2., perimeter survey of Mohawk Tannery, April 15.