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WELLS G AND H ADMINISTRATIVE RECORD

# FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES

## FIT PROJECT

TDD # F1-8005-01E-03

December 1, 1980

**TASK REPORT TO THE ENVIRONMENTAL PROTECTION AGENCY  
CONTRACT NO. 68-01-6056**

SITE INSPECTION REPORT  
of  
JOHN J. RILEY COMPANY  
(A Division of Beatrice Foods)  
228 Salem Street  
Woburn, Massachusetts

Submitted to:  
John Hackler, Chief  
Office of Uncontrolled Waste Sites  
U.S. EPA, Region I

Submitted by:  
David Cook, Project Leader  
Ecology and Environment, Inc. (E & E)  
FIT Team, Region I

Prepared by:  
Lori Fucarile and David Cook  
Ecology and Environment, Inc.  
FIT Team, Region I

**ecology and environment, inc.**

International Specialists in the Environmental Sciences

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SITE INSPECTION REPORT

FOR

JOHN J. RILEY COMPANY  
(a Division of Beatrice Foods)

TDD #: F1-8005-01E-03  
Firm Name: John J. Riley Company  
Address: 228 Salem Street  
Woburn, Massachusetts  
Telephone: 933-5900  
Owner: Beatrice Foods  
Principal Contact at Site: Mr. John J. Riley

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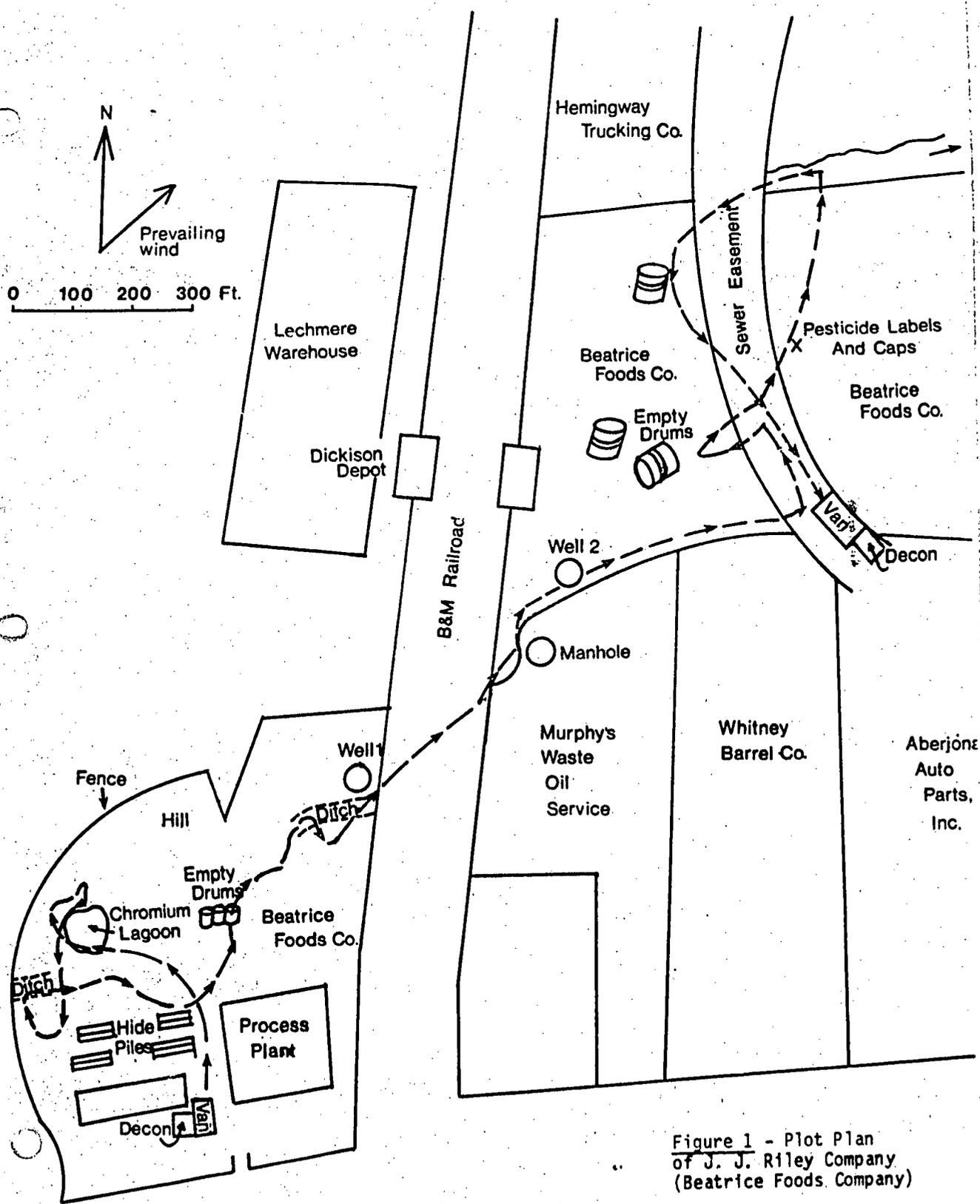


Figure 1 - Plot Plan of J. J. Riley Company (Beatrice Foods Company)

Site Inspection Itinerary

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### 3. Background:

#### 3.1 Description - continued

Barrel Company, south of Hemmingway Trucking Company on Olympia Avenue, and west of the contaminated Woburn drinking water wells G and H. This area consists of a wooded field bordered on the east by the Aberjona River and its marshlands. There is a well-defined dirt road located next to the marshland along which are deposited numerous rusted tanks and drums. Drums have also been deposited near the Boston and Maine railroad tracks. At the southern tip of the land, just north of Whitney Barrel Company property, is located one of J. J. Riley's private wells.

#### 3.2 Primary Site Activity:

During a telephone interview between Lori Fucarile of Ecology and Environment, Inc. (E & E) and John J. Riley of Riley Tannery, it was learned that the chrome tanning process is used at this tannery.

3.2.1 Figure 2 is a flow diagram illustrating the chrome tanning process (from "Chemical Process Industries," Shreve and Brink, 1977).

3.2.2 Chrome Tanning Procedure. The following steps are involved in the chrome tanning procedure.

The skins are opened, examined, trimmed and graded. They are then water-soaked with sodium tetrasulfide and surfactants to hasten hydration. Hides may be stored after brine or salt curing and subsequently soaked and washed before using.

Liming is used to loosen and remove the epidermis and hair from the hides. During liming, hides are soaked in

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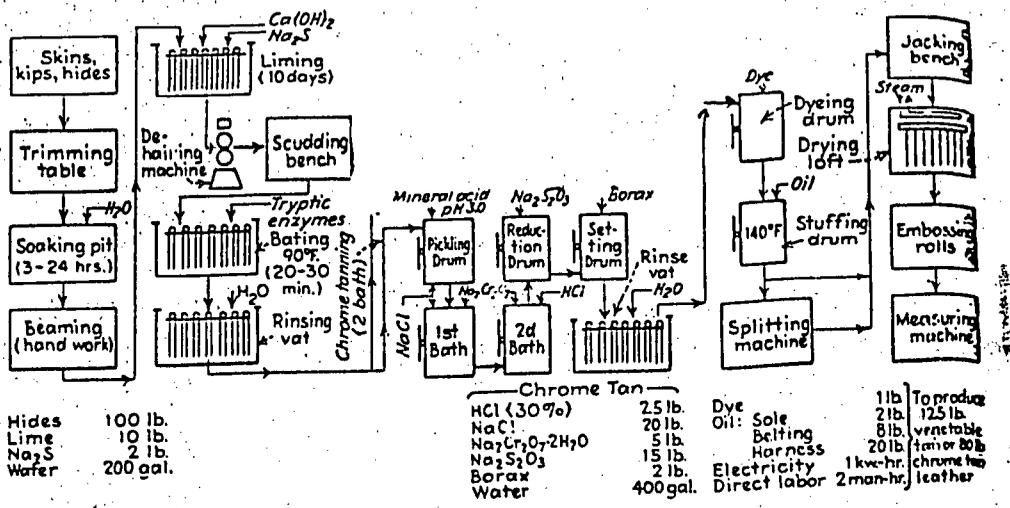


Figure 2: Flow Diagram of Chrome Tanning Process (Shreve and Brink, Chemical Process Industries, 1977)

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### 3. Background:

#### 3.2 Primary Site Activity

##### 3.2.2 Chrome Tanning Procedure - continued

a 10% lime and 2% sodium sulfide solution (based on hide weight) containing dimethylamine, sulfhydrate, and cyanide which are accelerating agents for plumping the hides and swelling the flesh. Periodically the hides are moved to vats with fresher lime. A by-product of the liming process is hydrogen sulfide. Prior to dehairing, the hides are placed in a vat of warm water which relaxes the hides and eases hair removal. Dehairing is accomplished by rubbing the hides with dull blades.

The bating or deliming process is performed with ammonium sulfate, or chloride, and proteolytic enzymes. This process removes and alters certain proteins for improved absorption of the tanning agent. The pickling process treats the delimed hides with solutions of acid, usually sulfuric, and salt. Either a one-bath or two-bath chromium process may be used. The first bath contains chromic sulfate, sodium chloride and sulfur dioxide. The second bath contains sodium dichromate and hydrochloric acid. The hides are then put in a reduction drum containing sodium thiosulfate after which they are rinsed in a vat with borax to reduce the acidity of leather.

Chrome tanning results in leather that is more pliable and looser in structure with a low content of water-soluble materials. After tanning, the leather may be dyed, split or stuffed in any order. Most dyes used are synthetic coal-tar derivatives. If the leather is not smooth, it is shaved by a splitting machine.

Stuffing, or fat liquoring, involves the

### 3. Background:

#### 3.2 Primary Site Activity

##### 3.2.2 Chrome Tanning Procedure - continued

incorporation of oils and greases into the leather. In this process, sulfonated oils blended with raw oils, magnesium sulfate, and cellulose are stuffed into the leather either by hand or in a rotating drum. Finishing steps may involve the use of the following materials: cellulose ethers, waxes, resins, dyes, pigments, lacquer materials, antiseptics, solvents, perfumes, soaps, sulfonated oils, metal salts, plasticizers, acids, and alkalies. Mechanical finishing operations include glazing, buffing, trimming, rolling, brushing, and plating.

The preceding description is a general outline for typical chrome tannery. This information was gathered during a field trip to the Mohawk Associates Tannery near Nashua, New Hampshire (See Appendix C for additional information). Section 7.2 of this report presents details of the process used at the J. J. Riley Tannery.

#### 3.3 Secondary Site Activity

According to John J. Riley, the piece of property located north of Murphy Waste Oil and Whitney Barrel Company is not utilized. However, during a survey along the Boston and Maine railroad tracks conducted by L. Fucarile and R. DiNitto (E & E), stacks of drums were noted at several locations along a well-defined truck path which runs parallel to the tracks. The interior of the land could not be assessed due to the thick vegetation. Some areas of distressed vegetation were noted. During an investigation performed by the Massachusetts Department of Environmental Quality Engineering in May 1980, empty oil tanks, several piles of 55-gallon drums and miscellaneous debris were found along the dirt road which passes through the interior of the land. The drums are in a variety of conditions: new and rusted, open and closed.

### 3. Background:

#### 3.4 Hazards Identified or Alleged:

- 3.4.1 The October 30, 1980 Federal Register contains a final rule amending the May 19, 1980 (Section 261.4) Federal Register. Only those chromium wastes containing hexavalent chromium are considered hazardous. This exempts all tannery chromium wastes from the list of hazardous wastes as only trivalent chromium is present in these wastes.
- 3.4.2 In 1970, 200 to 500 five-gallon drums of arsenic trioxide were found just north of the Dickison Depot on the east side of the Boston and Maine railroad tracks. It was stated in the Preliminary Assessment of this site that the drums were found on Riley's property. However, during Ecology and Environment, Inc.'s site investigation, it was learned from Mr. Riley that this land is owned by Hemingway Trucking Company.
- 3.4.3 A complaint was received by the Massachusetts Department of Environmental Quality Engineering (DEQE) on May 7, 1980 relative to "potential improper liquid and solid waste disposal activities." The complaint stated that "metallic green wastes were floating in large pits behind J. J. Riley Company and that other materials were being buried." The complaint was submitted by a resident of Hinston Road which is located off Wildwood Street. No visible traces of green chromium wastes were found in the runoff from the paved lot area either during this site inspection or the May 13, 1980 investigation by DEQE.

The investigation by Ecology and Environment, Inc. determined that the paved lot area is used for storing stacks of chromed split hides and bales of chrome shavings. Leaching of this material could account for green chromium runoff. However, no hazard resulting from chromium runoff was confirmed during the site inspection.

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3. Background:

3.4 Hazards Identified or Alleged - continued

3.4.4 In the report of the, May 13, 1980, DEQE investigation, it was stated that Riley was excavating an area to the west of the paved lot and depositing the excavated material in a wetlands area. During the site inspection, no hazards resulting from excavation or the filling of wetlands were observed.

3.4.5 According to the May 13, 1980 DEQE investigation of the J. J. Riley Company, two chromium lagoons (See Figure 3) are located in a swampy area to the northwest of the paved area. At the time of the DEQE visit, the lagoons were partly covered with a "dirty, white, foamy substance of unknown origin". During this site investigation, one small four foot by seven foot area of standing water was present in the chromium lagoon area. The lagoon had a white crusted top, and the area surrounding it was densely vegetated. According to John Riley, chromium and benzidine dye wastes were dumped in the lagoons until ten years ago when use of the dyes was discontinued. The site inspection indicated no evidence of recent use of the lagoons. However, the lagoons pose a potential hazard from leaching of materials into the groundwater. Analysis of the well water samples should indicate if this has taken place.

3.4.6 The following analysis of well #2 (See Figure 1) was obtained by Lori Fucarile (E & E) during an interview with Brian Kelleher, Division of Hazardous Materials, Massachusetts Department of Environmental Quality Engineering.

1,1 dichloroethylene	1.2 ppb
1,1 dichloroethane	2.2 ppb
1,2 transdichloroethylene	54.9 ppb
chloroform	17.3 ppb
1,1,1 trichloroethane	104 ppb
trichloroethylene	400 ppb
tetrachloroethylene	18.6 ppb

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Figure 3 - 1966  
Aerial Photograph  
J. J. Riley Company

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3. Background:

3.4 Hazards Identified or Alleged

3.4.6 - continued

The well is significantly contaminated with 1,1,1 trichloroethane and trichloroethylene which may be the resulting from on-site leaking drums and buried material contaminating the groundwater. During the site inspection of the "unused" land no evidence of active seeps, spills, leaking drums or buried materials was observed. Adjacent to Dickison Depot on Riley's land, the site entry team discovered approximately 100 pesticide caps with labels. See Appendix D for copies of caps and labels. Present or past illegal dumping of pesticides and other wastes in this area may be contributing to groundwater contamination. Analysis of the well water from Well #2 may indicate if this is taking place.

3.4.7 A potential hazard reported on J. J. Riley Company property is the landfilling of sludge material from the sedimentation tank. During a conversation between Lori Fucarile, (E & E) and John J. Riley, Mr. Riley stated that the sedimentation tank is cleaned approximately once a month and the tannery waste sludge is disposed of beside the chromium lagoons. During the site inspection there was no evidence of sludge disposal on the property. If the sludge is allowed to dewater on the property this could result in contamination of the groundwater. However, no hexavalent chromium should be present in the sludge.

3.4.8 A potential hazard at this site results from the disposing of tannery wastewater into the MDC sewer. The letter from the MDC presented in Appendix E describes the apparent hazard.

During a telephone conversation between Lori Fucarile (E & E) and Wayne Grandon, MDC Permits Division, it was learned that J. J. Riley applied for an MDC permit to discharge into the MDC sewer in August 1977. Shortly after the permit request, it was learned by the MDC that the Riley Tannery was out of business (the tannery had actually been purchased by Beatrice Foods Company). MDC subsequently placed the Riley discharge application request into the inactive file.

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### 3. Background:

#### 3.4 Hazards Identified or Alleged

##### 3.4.8 - continued

Prior to August 1979, MDC corresponded with Mr. Riley requesting and receiving an analysis of their tannery waste stream. The MDC found that the tannery was in violation of MDC discharge permits. Since Riley's application request has been dropped, MDC did not pursue the issue. Mr. Grandon stated in a telephone conversation that MDC inspected the Riley Tannery during the week of November 10, 1980. No samples were taken, but after a tour of the process, it was determined by the MDC that Riley is discharging in excess of its limit of trivalent chromium, oils and greases. Mr. Grandon assured me that appropriate actions are now being implemented regarding the Riley Tannery.

Orthodichlorobenzene, a priority pollutant, is leaving the site through the MDC sewer system. It is used in the disinfecting stage of the tannery process and is stored in barrels inside the process plant.

- 3.4.9 Riley Tannery takes in hexavalent chromium into its process plant and, through a closed system, changes it to trivalent chromium before use. Hexavalent chromium is stored on site, and improper handling could present a health hazard.

### 4. Concept of Organization

A six-person team investigated the site. Two members left the site after the tannery process plant tour was completed. The chromium lagoon and the swampy area surrounding it was examined using a soil auger and the Century organic vapor analyzer (OVA). The dried drainage ditches leading to and from Riley's property were also examined with the soil auger and OVA. Drums were tapped with a wooden pole to determine if they were empty. Wells and manholes were sampled and examined with the OVA.

4. Concept of Organization - continued

All samples collected were taken to the EPA Regional Laboratory in Lexington, Massachusetts, for screening with the OVA and further analysis if warranted. Appropriate decontamination measures were followed prior to leaving the site. The safety plan and report are included in Appendix A.

5. Logistics and Site Set-up:

Figure 1 shows the location of the command post (van) and decontamination areas and the itinerary of the work party. No hot line was delineated because no "hot spots" were indicated either during the preliminary assessment or the site inspection. No logistical problems were encountered during the planning and performance of this site inspection.

6. Team Organization and Task Assignment:

6.1 Site Entry Team:

David Cook	-	Site Entry Team Leader
Bob Young	-	Special Advisor
Paul Exner	-	Plant Representative Interviewer
Lori Fucarile	-	Safety Officer/Plant Representative Interviewer
Paul Clay	-	Work Party/Sampling
Margret Hanley	-	Work Party

6.2 Schedule of Events:

The site entry team was briefed by the team leader on November 13, 1980 (the day before site entry). The briefing included review of appropriate data obtained during the preliminary assessment for the purpose of making the team aware of all potential hazards. The briefing focused the team's attention on the questions raised by the preliminary site assessment.

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6. Team Organization and Task Assignment:

6.2 Schedule of Events - continued

The following is the schedule of events for the site entry:

- 0830 - The site inspection team arrives on site and meets Charles Bering, EPA Enforcement Division Legal Review. Team awaits arrival of John J. Riley and Beatrice Foods Company lawyer.
- 0850 - John J. Riley and Beatrice Foods Company lawyer, Joseph R. Radzius arrive on site and meet with site entry team in the company office conference room.
- 0855 - Bob Young and Dave Cook explain to John Riley, Joseph Radzius and Charles Bering, the site entry team's objectives, and sampling plan. Lori Fucarile explains the site entry team's safety procedures.
- 0910 - Meeting is concluded.
- 0915 - Bob Young (FIT), Dave Cook (FIT) Lori Fucarile (FIT), Paul Exner (FIT), Charles Bering (EPA), and James Radzius (Beatrice Foods Company) receive a tour of the process plant conducted by John Riley. Mr. Riley is interviewed by Exner and Fucarile (FIT).
- 0920 - Team enters the process plant and views revolving drums, fleshing machine, paddle tubs, tanning vats, greaser, and dye vats.
- 1030 - Tour concludes. Bob Young and Paul Exner return to FIT office. Work party proceeds to chromium lagoons with John Riley, and the two lawyers: Charles Bering, EPA; and James Radzius, Beatrice Foods Company.

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6. Team Organization and Task Assignment:

6.2 Schedule of Events - continued

- 1035 - Soil auger used to obtain sample from the swampy area surrounding the chromium lagoon. OVA reading was 1000 ppm methane.
- 1045 - Work Party arrives at drainage ditch entering Riley property from the west. No reading on OVA from soil auger hole.
- 1048 - Work Party walks through paved lot area. The rest of Riley land is a small hill with heavy vegetation.
- 1050 - Work Party walks by a few empty barrels on the paved back lot area. Orange barrels labeled CATO.
- 1051 - Team arrives at drainage ditch exiting east side of Riley property (beside manhole). No reading on OVA from soil auger hole.
- 1100 - Work Party crosses the B & M railroad tracks to the Riley storage land. OVA reading of the manhole behind Murphy Waste Oil, 110 ppm methane.
- 1105 - L. Fucarile leaves work party to drive the van from the Riley Tannery parking lot to the dirt road right of way on the Riley unused land.
- 1110 - Work Party unable to open Riley's private well because the key was unavailable.
- 1130 - L. Fucarile parks van on right of way on Riley's land opposite Lechmere Warehouse.
- 1132 - OVA reading taken of empty rusted drums next to Dickison Depot. Soil auger used; OVA reading 0 ppm.

6. Team Organization and Task Assignment:

6.2 Schedule of Events - continued

- 1135 - Work party discovers approximately one-hundred pesticide caps (See Appendix D) across the B & M tracks from Dickison Depot. Soil auger used; OVA reading 0 ppm.
- 1140 - Work party takes soil sample (Station 004) near the pesticide caps. Beatrice lawyer takes a duplicate sample tagged with E & E sample tag.
- 1150 - Work Party takes sediment sample (Station 005) opposite Lechmere garage #35. Beatrice lawyer takes a duplicate sample tagged with E & E sample tag.
- 1200 - Work Party takes sediment sample (Station 006) of surface water channel which leads to the Aberjona River. No duplicate sample taken.
- 1203 - Work Party decons.
- 1205 - Work Party leaves "unused" land and heads toward Riley process plant.
- 1215 - Work Party takes priority pollutant sample from the faucet of the new well located inside the process plant next to the paddle drums and defleshing machinery (Station 001). Beatrice lawyer takes one 1/2 gallon duplicate sample tagged with E & E sample tag.
- 1230 - Work Party takes a priority pollutant sample from faucet of the old well located near the dye drums (Station 002). Beatrice lawyer takes one 1/2 gallon duplicate sample tagged with E & E sample tag.

6. Team Organization and Task Assignment:

6.2 Schedule of Events - continued

1245 - Mr. Radzius, the Beatrice Foods' lawyer, asserts a claim of confidentiality with respect to the photographs.

1300 - Work Party fills out chain of custody forms, decons, and leaves site.

7. Results of Investigation:

7.1 Site Representative Interview:

Mr. John J. Riley met the team at the site and, prior to the tannery tour, held a brief meeting in his conference room. In attendance were Mr. Joseph R. Radzius, Beatrice Foods Attorney; Charles Bering, EPA Attorney, Robert Young (E & E); David Cook (E & E), Lori Fucarile (E & E); and Margret Hanley (E & E). Bob Young and David Cook explained to John Riley, Joseph Radzius and Charles Bering, the site entry team's objectives and sampling plan. Lori Fucarile explained the site entry team's safety procedures.

Mr. Riley commented that all of his wastes go into the sewer and that once a year he pulls his sewer to clean it. He believes that the MDC sewers are leaking "like a sieve" and he is very dissatisfied with the Woburn Sewer System claiming it is always backed up.

Mr. Riley informed E & E that he infrequently uses water from the well on the unused property but does regularly use water from the well on the tannery property. He stated that the only reason for purchasing the "unused" land was to obtain water from the Aberjona River. Mr. Riley added that this water is now not worth obtaining due to contamination. He claims that the land has no other use because it is a wetlands area.

Mr. Riley informed E & E that Mr. Murphy of Murphy's Waste Oil Service dumps all types of wastes into the MDC manhole located next to Riley's well on the unused land.

7. Results of Investigation:

7.2 Riley Tanning Tour: Process Description

Riley Tannery takes in 20% fleshy and 80% prefleshed hides. The hides are stacked in wooden crates and left outside on the back paved lot area. The turnover rate is approximately 17 days. Also stored in this back paved lot area are bales of chrome shavings which formerly were deposited in the Woburn Landfill. Approximately every 24 days, sufficient shavings accumulate to warrant removal by truck to an individual in New Jersey who in return sells them to an orange grower in Florida for fertilizer. Stacks of split chromed hides are stored outside on the back paved lot area prior to being trucked from site.

Inside the process plant, located on the east side of the property are 24 vats (22 paddle tubs and 2 revolving drums). The hides are brought into the plant and loaded into tubs and drums for washing, disinfecting and dehairing. The hides that require fleshing are sent to the fleshing machines where the flesh is stripped off and transported as a slurry to the grease tank. The rendered grease is sold to a soap manufacturer. The waste which was formerly sold to Stuffer Chemical, is now disposed of in the sewer.

After the hides are loaded into the vats, they are washed in water. To the water is added Dizene, a disinfectant manufactured by Allied Chemical, and Triton N101, a surfactant. When asked of Mr. Riley if Dizene contains benzene, Mr. Riley denied any knowledge of the use of any benzene compounds at his plant. He stated that if any benzene compounds are used, it is without his knowledge and against his approval. Some Dizene labels were found on drums located in the process plant. The compound is identified as Orthodichlorobenzene, which is on the EPA list of priority pollutants. Riley uses approximately 100 oz. of Dizene per 10,000 gallons of water for each complete cycle of tanning.

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## 7. Results of Investigation:

### 7.2 Riley Tanning Tour: Process Description - continued

The hides are left to soak in the disinfecting solution overnight and drained the next day. They are then rinsed with water.

The third step in the tanning process is dehairing which requires the use of sodium sulfhydrate. The hides are left in vats overnight and drained the next day. After the hides are rinsed with water, liming takes place with the addition of lime to each vat. The hides are left to soak overnight in the lime solution and drained the next day.

Deliming takes place in 12 vats. The deliming solution consists of ammonium sulfate, five gallons of Triton, and 106 fl. oz of Oropon supplied by Rohm & Haas. The vats are drained and the wastewater enters the sewer system.

The twelve revolving drums located beside the laboratory are utilized in the pickling and chrome tanning steps. Pickling solution consists of sodium formate, brine, Triton (2 1/2 gallons), and sulfuric acid.

The tanning procedure combines 2,500 gallons of water and 150 gallons of chrome liquor (sodium dichromate) with 15 fl. oz. of Busan, a mold inhibitor composed of 12-(thiocyanomethylthio) benzothiazole (from Buchman Labs). Sodium bicarbonate is used to neutralize the solution. Three gallons of Tamol 5D, a naphthalene-based syntan are added.

Hexavalent chromium is used at Riley Tannery. It is pumped to a tank by a closed system, where it is oxidized and then pumped to the tanning drums as trivalent chromium.

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7. Results of Investigation:

7.2 Riley Tanning Tour: Process Description - continued

The dyes used at Riley Tannery are bought from Sandoz, North Carolina. Mr. Riley informed E & E that he stopped using benzidine dyes approximately ten years ago.

All wastes from the Riley Tannery process enter the floor drains and are collected in a sedimentation tank. This is solely for solids removal. There is no pH change, and therefore, the chromium does not settle out. The oil or grease from the process also do not filter out. The sludge from the settling tank is disposed of on the company's property. After 1928 a sewer discharge permit was obtained by Riley for the tannery waste water. Prior to 1928 all wastes were discharged into the Aberjona River.

7.3 Sample Acquisition and Analysis:

On Friday, November 14, 1980 Paul Clay, Dave Cook, and Margret Hanley of E & E collected soil and well water samples on the property of John J. Riley Company. The sky was overcast.

The first sample obtained (Sample Station 004) was a soil sample taken near the pesticide caps found across from Dickison Depot east of the B & M railroad tracks. The sample was retrieved by the use of a soil auger and a single 40 ml vial was filled by scooping the material into it while holding the vial with a rubber glove. The sample was properly tagged and iced in a Coleman Cooler. The Beatrice Foods Company representative, Mr. Radzius, took duplicate samples. The containers supplied by Mr. Radzius were used reagent jars and did not have Teflon liners. Mr. Radzius was informed of this prior to sampling.

7. Results of Investigation:

7.3 Sample Acquisition and Analysis - continued

The second sample (Sample Station 005) was collected at a small whitish green crusty spill area across from Lechmere Warehouse Garage #35 east of the B & M railroad tracks on Riley's property. The sample was retrieved by the use of a soil auger, and a single 40 ml vial was filled by scooping the material into it while holding the vial with a rubber glove. Mr. Radzius took a duplicate sample.

The third sample (Sample Station 006) was obtained at the ditch leading from Riley's property to the Aberjona River. A single 40 ml vial was filled with this mud sample. Mr. Radzius took no duplicate sample since this ditch is not on Riley's property.

The fourth sample (Sample Station 001) was obtained from a faucet inside the process plant. A priority pollutant sample was taken of the "new" well, located on the "unused" land. The faucet was allowed to run for several minutes to insure that a representative sample of the groundwater would be taken. Mr. Radzius took a duplicate sample in a single one gallon container.

The last sample (Sample Station 002) was obtained from another faucet located inside the process plant. Another priority pollutant sample was taken of the "old" well located on the tannery property. The faucet was allowed to run for several minutes so that a sample representative of the groundwater would be taken. Mr. Radzius took a duplicate sample in a single one-gallon container.

All samples were taken to the EPA Regional Laboratory in Lexington, Massachusetts for further screening and analysis. Proper sample presentation techniques and chain of custody procedures were followed for all samples analyzed.

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8. Recommendations for Further Investigation:

the results of the priority pollutant analyses of the water from Wells 1 and 2 should be available in six to eight weeks. Any further investigation of this site will be based upon the results of these analyses as any environmental hazard presented by this site should be evident in one or both of the on-site wells. If a contaminant is found in either well which can be attributed directly or indirectly to present or past activities on Riley property, further investigation will be warranted. At this time, no further investigation of the site is required. It is recommended that the integrity of the MDC sewer downstream of the tannery be determined, as potentially hazardous materials may be exfiltrating.

9. Conclusions:

1. Potentially hazardous materials including orthodichlorobenzene and grease are exiting the site by way of the MDC sewer.
2. Benzidine dyes were used on site prior to 1970 and were disposed of in the chromium lagoons.
3. Although Hexavalent chrome is stored on-site, no hazards appear to exist as a result.
4. Much solid waste exists on the unused property including possible evidence of pesticide disposal.
5. Priority pollutant analyses of both water wells will provide additional data regarding on-site contamination.
6. Existing Massachusetts DEQE data shows that Well #2, located on the unused property, is contaminated with the same chemicals in amounts similar to those present in Woburn Well "G" located one-half mile to the northeast.

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APPENDIX A

Site Safety Plan  
and  
Report



ECOLOGY AND ENVIRONMENT, INC.  
FIELD INVESTIGATION TEAM - REGION I  
WORK PLAN INSTRUCTIONS

I. PERIMETER ESTABLISHMENT: Map/Sketch Attached X<sup>C</sup> Site Control       
Public Perimeter Identified X Zone(s) of Contamination Identified     

NOTES:

<sup>C</sup> areas of special safety concern identified

II. PERSONAL CLOTHING"

Level of Protection: A      B      C X D     

Modifications: Wear ultra-twins while sampling

Surveillance Equipment and Materials: TLD badges

III. DECONTAMINATION PROCEDURES:

Hot Line Location (initial): public perimeter

Command Post Location (initial): public perimeter

PDS Stations: 1. boot wash 2. boot rinse

3.      4.      5.     

Equipment and Materials/Special Facilities: Sampling equipment will be decontaminated at hotline.

IV. SITE ENTRY PROCEDURES:

Team Size: E & E 5 State      Other EPA and Riley & Beatrice Food representatives

Entry Briefing (date) day before entry

Station Designation (name/responsibility): 1. Dave Cook, Project Leader

2. Bob Young, Special Advisor 3. Lori Fucarile, Safety/Documentation

4. Paul Clay, Work Party/Sampling 5. Paul Exner, Work Party/Equipment

6.      7.     

Work Schedule/Limitations: by arrangement with J. J. Riley

Notes: EPA will have an attorney present as Beatrice Foods Corporate attorney will be on site.

ECOLOGY AND ENVIRONMENT, INC.

FIELD INVESTIGATION TEAM - REGION I

WORK PLAN INSTRUCTIONS - continued

EMERGENCY PRECAUTIONS:

ACUTE EXPOSURE SYMPTOMS

FIRST AID

- 1. Exposure to chromium wastes-have a corrosive action on skin and mucous membranes
- 1a. Exposure to acids (hydrochloric or sulfuric) corrosive action
- 2. Exposure to ammonium/sulfate fumes
- 3. Exposures not expected due to ultra-twins and protective clothing

- 1. Rinse with water, remove contaminated clothing, seek medical help.
- 2. Get to fresh air, administer oxygen if needed, seek medical help.

HOSPITALS/POISON CONTROL CENTERS (address, telephone number)

See Resources List

EMERGENCY TRANSPORTATION SYSTEMS (Fire, police, ambulance)

See Resources List

VI. EMERGENCY ROUTES

Turn right onto Salem Street, Approximately 3 miles to Woburn Center. Left at lights. Through two sets of lights past common. At third set of lights, take left up hill (Warren Choate Hospital on top of hill).

EQUIPMENT CHECKOUT

SCBA	_____	Cylinders	_____
Ultratwin	X	Cartridges	X
Explosimeter	_____		X
O <sub>2</sub> Indicator	_____		X
Draeger Pump	X	Tubes	X
Radiation Survey Meter	_____		_____
Radiation Contamination Meter	X		_____

- Eye Wash Unit
- First Aid Kit
- Drinking Water Supply
- Personal Clothing
- Decontamination Mat's.

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WELLS G AND H ADMINISTRATIVE RECORD

WEL001



SITE: John J. Riley Tannery

TOD #: 1-8005-01E-03

DATE: 11/7/80

RESOURCES  
(locate resources on area map)

	NAME	TOWN	PHONE	NOTIFIED YES/NO
FIRE	Woburn	Woburn	911	No
POLICE	Woburn	Woburn	911	No
AMBULANCE	Woburn	Woburn	911	No
HOSPITAL ER	Choate Hospital	Warren Avenue, Woburn	933-6700	No
WATER SUPPLY	On van			
TELEPHONE	Riley Tannery	228 Salem Street, Woburn	933-5900	Yes
RADIO COMMUNICATIONS	N/A			
AIRPORT	N/A			
HELIPORT AREA	N/A			
EXPLOSIVES UNIT	State Police	Lynnfield	593-1122	No
EPA CONTACT	Rick Leighton	EPA Lexington, NFRL	861-6700	Yes

LIST OTHER RESOURCES:

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EMERGENCY NUMBERS

E & E, Inc., Woburn	(617) 935-0228	(0238) (4008)
E & E, Inc. Arlington, VA	(703) 522-6065	24 hr. number - call forwarding
Dr. Harbison - Vanderbilt	(615) 322-4754	
Dr. Harbison - home	(615) 747-6353	24 hr. number - 9 second message
Robert Young - home	(617) 545-4905	
Anne Marie Desmarais - home	(617) 897-5306	
Peter Bent Brigham, Occup. Ind. Health Clinic:		
Dr. Speizer, Dr. Shenker, Kay Jordan	(617) 732-5983	
24 hour number - ask for bellboy 904	(617) 732-6000	

US EPA ARCHIVE DOCUMENT

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ECOLOGY AND ENVIRONMENT, INC.  
FIELD INVESTIGATION TEAM - REGION I

SITE SAFETY REPORT

NAME OF SITE: John J. Riley Tannery DATE OF ENTRY: 11/14/80  
TDD #: F-1-8005-01E-03

Reason for Site Entry: To obtain information and samples for possible  
RCRA and/or 311/104 Clean Water Act actions  
regarding John J. Riley Tannery

Personnel on Site:

Site Entry Leader: David Cook  
Safety Person: Lori Fucarile  
Equipment Person: Paul Clay  
Work Party: Paul Clay, Margret Hanley

Other E & E Personnel: Robert Young, Paul Exner

Other Personnel on Site: Charles Bering, EPA Enforcement; Mr. John J.  
Riley; Joseph R. Radzius, Beatrice Foods Attorney

Explain Any <u>YES</u> Answer on an Attached Sheet:	<u>YES</u>	<u>NO</u>
1. Was the Safety Plan followed as presented? Explain any and all deviations in full.	<u>x</u>	
2. Did any team member report chemical exposure?		<u>x</u>
3. Did any team member report illness, discomfort, or unusual symptoms?		<u>x</u>
4. Did any team member report environmental problems? (heat, cold, etc.)		<u>x</u>
5. Did any team member report injury?		<u>x</u>
6. Did the site entry have to be curtailed for <u>any</u> reason? (rain, lack of air, etc.)		<u>x</u>
7. Were any emergency services or resources utilized?		<u>x</u>
8. Were there any unusual occurrences?		<u>x</u>
9. Was the Safety Plan adequate?	<u>x</u>	
10. What changes would you recommend? <u>None</u>		

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APPENDIX B

Potential Hazardous Waste Site

Site Inspection Report

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WELLS G AND H ADMINISTRATIVE RECORD

WEL 001

EPA		POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT		REGION I	SITE NUMBER (to be assigned by HQ)
<b>GENERAL INSTRUCTIONS:</b> Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.					
<b>I. SITE IDENTIFICATION</b>					
A. SITE NAME John J. Riley Tannery			B. STREET (or other identifier) 228 Salem Street		
C. CITY Woburn		D. STATE MA	E. ZIP CODE 01801	F. COUNTY NAME Middlesex	
G. SITE OPERATOR INFORMATION					
1. NAME John J. Riley			2. TELEPHONE NUMBER 933-5900		
3. STREET 228 Salem Street		4. CITY Woburn		5. STATE MA	6. ZIP CODE 01801
H. REALTY OWNER INFORMATION (if different from operator of site)					
1. NAME Beatrice Foods Company			2. TELEPHONE NUMBER		
3. CITY Chicago		4. STATE IL		5. ZIP CODE	
I. SITE DESCRIPTION cowhide/chrome tannery, two large process buildings, one small office, large unused wetlands area with two wells					
J. TYPE OF OWNERSHIP					
<input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE					
<b>II. TENTATIVE DISPOSITION (complete this section last)</b>					
A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.)		B. APPARENT SERIOUSNESS OF PROBLEM			
		<input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input checked="" type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE			
C. PREPARER INFORMATION					
1. NAME Lori Fucarile		2. TELEPHONE NUMBER 935-4009		3. DATE (mo., day, & yr.) 11/26/80	
<b>III. INSPECTION INFORMATION</b>					
A. PRINCIPAL INSPECTOR INFORMATION					
1. NAME David K. Cook			2. TITLE Senior Geological Engineer		
3. ORGANIZATION Ecology and Environment, Inc.				4. TELEPHONE NO. (area code & no.) 935-4009	
B. INSPECTION PARTICIPANTS					
1. NAME		2. ORGANIZATION		3. TELEPHONE NO.	
David Cook		Ecology and Environment, Inc.		935-4009	
Robert Young		Ecology and Environment, Inc.		935-4009	
Lori Fucarile		Ecology and Environment, Inc.		935-4009	
Margret Hanley		Ecology and Environment, Inc.		935-4009	
Paul Clay & Paul Exner		Ecology and Environment, Inc.		935-4009	
Charles Bering		EPA Enforcement		223-1129	
C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)					
1. NAME		2. TITLE & TELEPHONE NO.		3. ADDRESS	
John J. Riley		Past Owner, 935-5900		228 Salem Street, Woburn, MA	
Joseph Radzius		Beatrice Foods Atty. 312-641-2121		Burditt and Calkins, 135 S. LaSalle St. Chicago, IL 60603	

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III. INSPECTION INFORMATION (continued)			
<b>D. GENERATOR INFORMATION (source of waste)</b>			
1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
UNKNOWN			Possible Pesticides
<b>E. TRANSPORTER/Hauler INFORMATION</b>			
1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
N/A			
<b>F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.</b>			
1. NAME	2. TELEPHONE NO.	3. ADDRESS	
N/A			
<b>G. DATE OF INSPECTION (mo., day &amp; yr.)</b>			
11/14/80		<b>H. TIME OF INSPECTION</b>	
8:30 am		<b>I. ACCESS GAINED BY: (credentials must be shown in all cases)</b>	
		<input checked="" type="checkbox"/> 1. PERMISSION <input type="checkbox"/> 2. WARRANT	
<b>J. WEATHER (describe)</b>			
Cloudy			
IV. SAMPLING INFORMATION			
A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.			
1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER	X	EPA Lexington Laboratory, MA	End of December
b. SURFACE WATER	X	EPA Lexington Laboratory, MA	?
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL	X	EPA Lexington Laboratory, MA	?
h. VEGETATION			
i. OTHER (specify)			
<b>B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)</b>			
1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS	
OVA	constant monitoring at all potential sample points	0 ppm or methane reading	
Explosimeter	constant monitoring	no reading	
O <sub>2</sub> Meter	constant monitoring	20% O <sub>2</sub> reading	

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WELLS G AND H ADMINISTRATIVE RECORD

**WEL001**

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**IV. SAMPLING INFORMATION (continued)**

**C. PHOTOS**

1. TYPE OF PHOTOS:  a. GROUND  b. AERIAL

2. PHOTOS IN CUSTODY OF: Ecology and Environment, Inc.

**D. SITE MAPPED?**

YES. SPECIFY LOCATION OF MAPS: Ecology and Environment, Inc.

**E. COORDINATES**

1. LATITUDE (deg.-min.-sec.)

2. LONGITUDE (deg.-min.-sec.)

**V. SITE INFORMATION**

**A. SITE STATUS**

1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

2. INACTIVE (Those sites which no longer receive wastes.)

3. OTHER (specify):

**B. IS GENERATOR ON SITE?**

1. NO  2. YES (specify generator's four-digit SIC Code): 3111

**C. AREA OF SITE (in acres)**

approx. 30

**D. ARE THERE BUILDINGS ON THE SITE?**

1. NO  2. YES (specify): 2 process plant buildings, 1 office

**VI. CHARACTERIZATION OF SITE ACTIVITY**

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER		B. STORER		C. TREATER		D. DISPOSER	
<input checked="" type="checkbox"/> 1. RAIL		<input type="checkbox"/> 1. PILE		<input type="checkbox"/> 1. FILTRATION	<input checked="" type="checkbox"/>	<input type="checkbox"/> 1. LANDFILL	
<input type="checkbox"/> 2. SHIP		<input type="checkbox"/> 2. SURFACE IMPOUNDMENT		<input type="checkbox"/> 2. INCINERATION		<input type="checkbox"/> 2. LANDFARM	
<input type="checkbox"/> 3. BARGE	<input checked="" type="checkbox"/>	<input type="checkbox"/> 3. DRUMS		<input type="checkbox"/> 3. VOLUME REDUCTION		<input checked="" type="checkbox"/> 3. OPEN DUMP	
<input type="checkbox"/> 4. TRUCK		<input type="checkbox"/> 4. TANK, ABOVE GROUND		<input type="checkbox"/> 4. RECYCLING/RECOVERY	<input checked="" type="checkbox"/>	<input type="checkbox"/> 4. SURFACE IMPOUNDMENT	
<input type="checkbox"/> 5. PIPELINE		<input type="checkbox"/> 5. TANK, BELOW GROUND		<input type="checkbox"/> 5. CHEM./PHYS./TREATMENT		<input type="checkbox"/> 5. MIDNIGHT DUMPING	
<input type="checkbox"/> 6. OTHER (specify):		<input type="checkbox"/> 6. OTHER (specify):		<input type="checkbox"/> 6. BIOLOGICAL TREATMENT		<input type="checkbox"/> 6. INCINERATION	
				<input type="checkbox"/> 7. WASTE OIL REPROCESSING		<input type="checkbox"/> 7. UNDERGROUND INJECTION	
				<input type="checkbox"/> 8. SOLVENT RECOVERY	<input checked="" type="checkbox"/>	<input type="checkbox"/> 8. OTHER (specify):	
				<input type="checkbox"/> 9. OTHER (specify):			

New drums of orthodichlorobenzene and hexavalent chromium

disposing of tannery wastewater in the MDC sewer

**E. SUPPLEMENTAL REPORTS:** If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

1. STORAGE  2. INCINERATION  3. LANDFILL  4. SURFACE IMPOUNDMENT  5. DEEP WELL

6. CHEM/BIO/PHYS TREATMENT  7. LANDFARM  8. OPEN DUMP  9. TRANSPORTER  10. RECYCLOR/RECLAIMER

**VII. WASTE RELATED INFORMATION**

**A. WASTE TYPE**

1. LIQUID  2. SOLID  3. SLUDGE  4. GAS

**B. WASTE CHARACTERISTICS**

1. CORROSIVE  2. IGNITABLE  3. RADIOACTIVE  4. HIGHLY VOLATILE

5. TOXIC  6. REACTIVE  7. INERT  8. FLAMMABLE

9. OTHER (specify):

**WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

no

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WELLS G AND H ADMINISTRATIVE RECORD

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VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNK	UNK	UNK	UNK	UNK	UNK
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS see below	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	X (2) OTHER(specify): animal grease	(2) NON-HALOGNTD. SOLVENTS	X (2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER(specify): orthodichlorobenzene a priority pollutant	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
X (5) OTHER(specify): tannery wastes			(5) DYES/INKS X	(5) NON-FERROUS SMLTG. WASTES	X (5) OTHER(specify): possibility of pesticides
			(6) CYANIDE	(6) OTHER(specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			X (10) METALS chromium		
			(11) OTHER(specify)		

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')			3. TOXICITY (mark 'X')				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VA-POR	a. HIGH	b. MED.	c. LOW	d. NONE			
orthodichlorobenzene		X		X					UNK	
chrome/tannery wastes		X				X			UNK	
greases/oils		X					X		UNK	
pesticides (possible)	X			X					UNK	

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

A. HUMAN HEALTH HAZARDS

Due to past and present disposal of tannery wastes which have included orthodichlorobenzene and benzidine dyes.

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VIII. HAZARD DESCRIPTION (continued)

B. NON-WORKER INJURY/EXPOSURE

C. WORKER INJURY/EXPOSURE

D. CONTAMINATION OF WATER SUPPLY

possibility of pesticide dumping approximately 1/4 mi. west Woburn wells G & H

E. CONTAMINATION OF FOOD CHAIN

F. CONTAMINATION OF GROUND WATER

Due to the possibility of pesticide dumping on the "unused" land; past disposing of tannery wastes in the chromium lagoons, and present nonsecure landfilling of tannery waste sludge, contamination of groundwater is a strong possibility. Also, exfiltration from MDC sewer.

G. CONTAMINATION OF SURFACE WATER

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VIII. HAZARD DESCRIPTION (continued)

H. DAMAGE TO FLORA/FAUNA

I. FISH KILL

J. CONTAMINATION OF AIR

K. NOTICEABLE ODORS

Tannery Odors

L. CONTAMINATION OF SOIL

Possibility of pesticide dumping on unused land, past disposing of tannery wastes in the two chromium lagoons and present nonsecure landfilling of tannery waste sludge. Also exfiltration from MDC sewer.

M. PROPERTY DAMAGE

Continued From Page 6

VIII. HAZARD DESCRIPTION (continued)

N. FIRE OR EXPLOSION

O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

P. SEWER, STORM DRAIN PROBLEMS

Discharge of tannery wastes into the MDC sewer

Q. EROSION PROBLEMS

R. INADEQUATE SECURITY

S. INCOMPATIBLE WASTES

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VIII. HAZARD DESCRIPTION (continued)

T. MIDNIGHT DUMPING

On unused property east of B&M railroad tracks

U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE					
A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)	
1. IN RESIDENTIAL AREAS	N/A				
2. IN COMMERCIAL OR INDUSTRIAL AREAS	N/A				
3. IN PUBLICLY TRAVELLED AREAS	N/A				
4. PUBLIC USE AREAS (parks, schools, etc.)	N/A				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY	
< 20 feet	South	formally municipal water	
D. POTENTIAL YIELD OF AQUIFER	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)	F. DIRECTION TO DRINKING WATER SUPPLY	
> 3 MGD	1.5 miles	SW	

G. TYPE OF DRINKING WATER SUPPLY

1. NON-COMMUNITY < 15 CONNECTIONS

2. COMMUNITY (specify town): Woburn

3. SURFACE WATER

4. WELL & MDC

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WELLS G AND H ADMINISTRATIVE RECORD

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**X. WATER AND HYDROLOGICAL DATA (continued)**

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')
G	88 Feet	1/4 mile northeast from the unused land		X
H	89.3 Feet	1/4 mile northeast from the unused land		X
Both wells closed due to TCE contamination				

I. RECEIVING WATER

1. NAME \_\_\_\_\_

2. SEWERS                       3. STREAMS/RIVERS

4. LAKES/RESERVOIRS             5. OTHER (specify): \_\_\_\_\_

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS \_\_\_\_\_

**XI. SOIL AND VEGETATION DATA**

LOCATION OF SITE IS IN:

A. KNOWN FAULT ZONE             B. KARST ZONE                       C. 100 YEAR FLOOD PLAIN             D. WETLAND

E. A REGULATED FLOODWAY         F. CRITICAL HABITAT                 G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

"unused" land is a

**XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED**

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

A. OVERBURDEN	B. BEDROCK (specify below)	C. OTHER (specify below)
X 1. SAND		
X 2. CLAY		
X 3. GRAVEL		

**XIII. SOIL PERMEABILITY**

A. UNKNOWN                       B. VERY HIGH (100,000 to 1000 cm/sec.)             C. HIGH (1000 to 10 cm/sec.)

D. MODERATE (10 to .1 cm/sec.)             E. LOW (.1 to .001 cm/sec.)                       F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

1. YES             2. NO            3. COMMENTS: \_\_\_\_\_

H. DISCHARGE AREA

1. YES             2. NO            3. COMMENTS: \_\_\_\_\_

I. SLOPE

1. ESTIMATE % OF SLOPE            2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC. \_\_\_\_\_

J. OTHER GEOLOGICAL DATA \_\_\_\_\_

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WELLS AND ADMINISTRATIVE RECORD

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XIV. PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE <i>(e.g., RCRA, State, NPDES, etc.)</i>	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED <i>(mo., day, &amp; yr.)</i>	E. EXPIRATION DATE <i>(mo., day, &amp; yr.)</i>	F. IN COMPLIANCE <i>(mark 'X')</i>		
					1. YES	2. NO	3. UNKNOWN
NONE							

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

NONE  YES (summarize in this space)

The week of 11/10/80 MDC inspected Riley Tannery and found their tannery waste discharge to be nonpermitted and to be violation of their permit standards.

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

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WELLS G AND H  
ADMINISTRATIVE RECORD

WELLS 001

APPENDIX C

Trip Report  
for  
Mohawk Associates  
Fairmont Street  
Nashua, New Hampshire

Submitted to:

David Cook, Project Leader  
Ecology and Environment, Inc.  
Region I, FIT Team

Date Submitted:

November 6, 1980

Submitted by:

Lori Fucarile  
Ecology and Environment, Inc.  
Region I, FIT Team

Prepared by:

Lori Fucarile and Paul Exner  
Ecology and Environment, Inc.  
Region I, FIT Team

Trip Report  
for  
Mohawk Associates  
Fairmont Street  
Nashua, New Hampshire

Firm Name: Mohawk Associates

Address: Fairmont Street  
Nashua, New Hampshire

Telephone: (603) 883-5242

Principal Contacts at Site:

Mr. Anton Mayer, Vice President in charge of  
operations

Mr. Charles Ruder, Plant Manager

F1-8005-01E-03

1. Purpose of Trip:

To gather information concerning the chrome tanning process. This information will be used during the preliminary assessment of the J. J. Riley tannery located in Woburn, Massachusetts (TDD #F1-8005-01E-03).

2. Trip Attendance:

Lori Fucarile, Ecology and Environment, Inc.  
Paul Exner, Ecology and Environment, Inc.  
Rob Palermo, Ecology and Environment, Inc.  
Mr. Anton Mayer, Mohawk Associates  
Mr. Charles Ruder, Mohawk Associates

3. Background:

During a telephone conversation between Lori Fucarile, (E & E) and Anton Mayer, Vice President of Mohawk Associates, a tour of the Mohawk Associates facility was scheduled for November 4, 1980.

It was decided upon to visit this facility after a conversation between Lori Fucarile (E & E) and Steve Silver, permits branch, EPA. Mohawk Associates uses cow hides with a chrome tanning process and uses a state of the art wastewater treatment method for their tannery wastes.

4. Tanning Process Description:

Figure A1 is a flowsheet of the tanning process used by Mohawk Associates.

The cow hides brought into the tannery are prefleshed, pretanned and pregraded. Thus, there are virtually no scrap wastes from the pretanned skins. These hides are brine cured and stored.

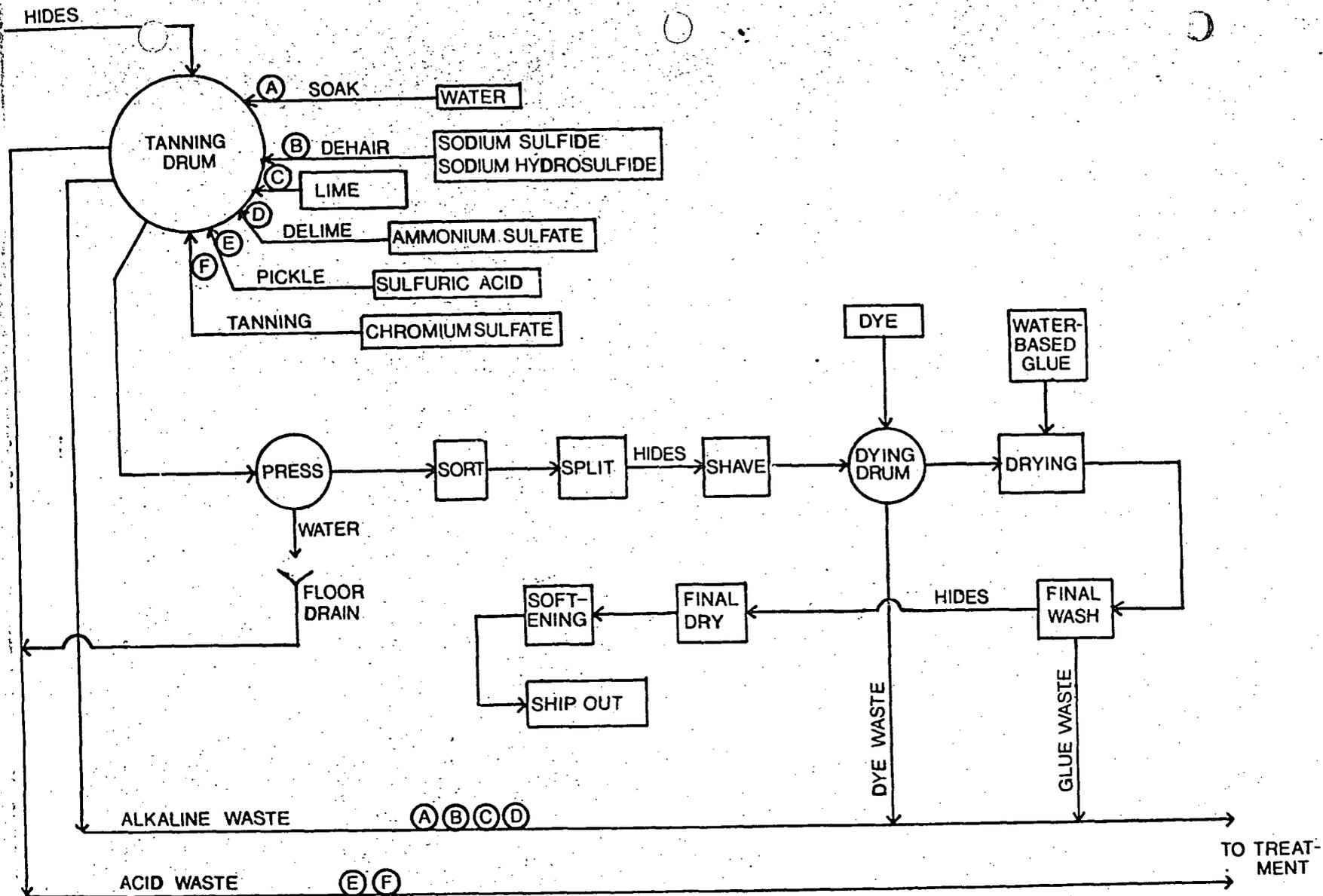


Figure 1A: Chrome Tanning Process  
 Mohawk Associates  
 Nashua, New Hampshire

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## 4. Tanning Process Description - continued

The hides are put into four large revolving drums where six procedures take place:

1. The hides are soaked in water.
2. Sodium sulfide and sodium hydrosulfide are added to "burn the hair" or dehair the skins. This process water is drained and enters the alkaline wastewater stream (described later).
3. The skins are "limed" with calcium hydroxide. This process water is also drained and enters the alkaline wastewater stream.
4. The deliming procedure takes place with the addition of ammonium sulfate into the drum. This process water is drained and enters the alkaline wastewater stream.
5. The chrome tanning process begins with the "pickling" of the hides by the addition of sulfuric acid.
6. The hides are tanned with chromium sulfate. This combination process water enters the acidic wastewater stream.

The "blue hides" are removed from the large revolving drums and brought to the pressing area where the excess process water is pressed out of the hides. Some of this "chromium-water" settles in puddles on the floor, but most of it is collected by the floor drains and enters the acidic wastewater stream.

The "blue hides" then go through separate procedures of sorting, splitting, and shaving.

4. Tanning Process Description - continued

They are put into "dyeing drums" and dyed to a specified color. The dye is drained and enters the alkaline waste stream. It was noted that benzidine-based dye has never been used at Mohawk Associates.

The final drying and softening is performed before the leather is shipped out to the buyer.

5. Wastewater Treatment Process

There are two streams of wastewater which are processed at this facility. Figure 2A outlines this wastewater treatment procedure.

The acid waste stream proceeds through a grit screen which removes debris (cans, scraps, etc.) which is subsequently removed by a hauler. The pH of this stream is raised in an equalization tank from 4-5 to 10 by the addition of lime. This causes the chromium to settle to the bottom of the equalization tank.

The alkaline waste stream also proceeds through a grit screen filtering out the miscellaneous debris which is subsequently removed by a hauler. An oxidizing agent is added to the stream which is then fed to an aeration tank causing the sulfides to be oxidized.

The material from the aeration tank is added to the supernatant from the equalization tank and fed into a primary clarifier.

The chromium sludge from the equalization tank is combined with the sludge from the primary clarifier and sent to a sludge holding tank. Flocculants such as ferric sulfate are added to the sludge which is pumped to an Imhoff tank. It is then sent to a mechanical screen where polymers are added to dewater the sludge. This material (15% solids) is trucked to a secured landfill on site.

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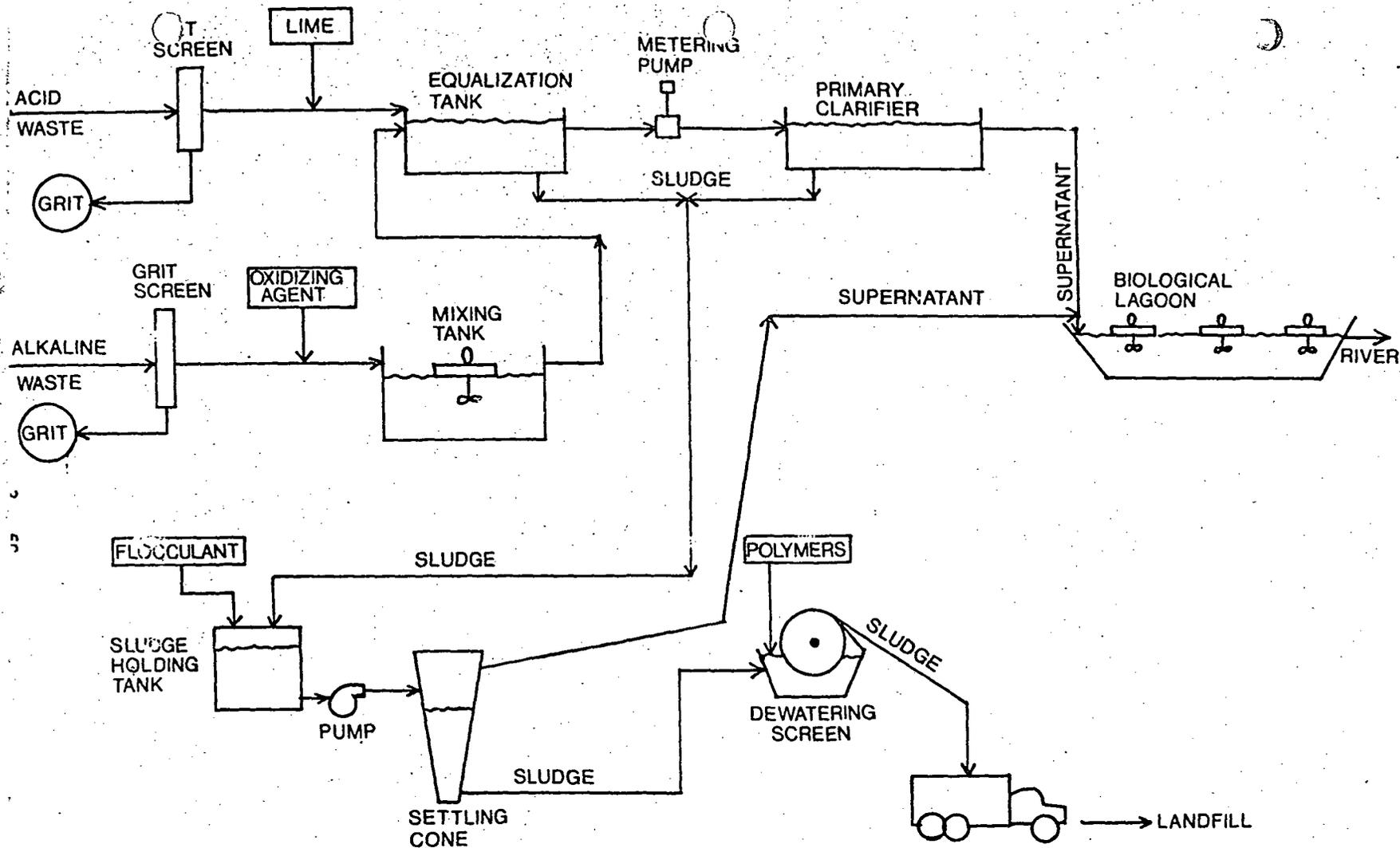


Figure 2A: Wastewater Treatment Process  
 Mohawk Associates  
 Nashua, New Hampshire

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5. Wastewater Treatment Process - continued

The supernatant from the primary clarifier, the Imhoff tank, and the dewatering screen are piped to the biological lagoon which reduces the BOD to 80 ppm. This material is then discharged into the river.

Due to the inadequacy of the biological lagoon during the winter months, Mohawk Associates is using, in addition, a small diffused aeration tank which will be increased to ten times its present size to handle the waste stream. The material from the aeration tank will also ultimately be discharged to the river.

6. Conclusions:

Mohawk Associates takes pride in its efficiently and effectively run tannery and wastewater treatment process. They graciously allowed E & E to tour the facility, answered all questions, and provided E & E with all requested information regarding the chrome tanning procedure and its waste products.

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APPENDIX D

Pesticide Labels and Caps  
Found on J. J. Riley Company Property

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Figure D-1  
Malathion LV  
Concentrate Label  
Found on J. J. Riley  
Company Property

**DIRECTIONS FOR USE**

Do not use this product for any uses other than those specified on this label.  
 MALATHION LV CONCENTRATE is used undiluted for ultra low-volume aerial applications to control the insects indicated.  
 Aerial applications should be made at altitudes of 10 to 20 feet.  
 Repeat applications should be made as necessary unless otherwise specified.  
 Consult your state experiment station or state extension service for proper timing of sprays.  
 NOTE: MALATHION LV CONCENTRATE may cause spotting on automobile paint finish. Cars should not be sprayed directly. If accidental exposure does occur, the car should be washed immediately.

Crop	Pests Controlled	Fluid Ounces per Acre	Interval Between Last Application and Harvest
Alfalfa, Clover, Pasture and Range Grass, Grass, Grass Hay, Non-agricultural Land (wastelands, roadsides, soil bank lands)	Grasshoppers	8	May be applied on day of harvest or grazing. Do not apply to alfalfa and clover in bloom. Do not apply to seed alfalfa.
Cereal Crops and Grasses	Cereal Leaf Beetle	4-8	Cereal Crops: 7 days of harvest or forage use. Grasses: May be applied on day of harvest or grazing.
Grain Crops	Grasshoppers	8	7 days. Corn: 5 days of harvest or forage use.
Cotton	Boil Weevil	8-12 16	0 day 2 days
	Grasshoppers	8	0 day
	Lygus Bugs	8-12 16	0 day 2 days
	Early Season Insects Thrips, Fleahoppers, Leafhoppers	4-8	0 day
Safflower	Grasshoppers, Lygus Bugs	8	3 days of harvesting seeds.
Soybeans	Mexican Bean Beetle, Grasshoppers, Japanese Beetle	8	7 days of harvest or forage use.
Sugar Beets	Grasshoppers	8	7 days, if tops are to be used as feed.
Corn	Adult Corn Rootworm	4	5 days
Beans (Lima, green, snap, navy, kidney, wax, dry, blackeye)	Mexican Bean Beetle, Leafhoppers, Green Clover Worm, Japanese Beetle, Lygus Bugs	8	1 day
Blueberries	Blueberry Maggot	10	0 day
Nonagricultural Lands.	Beet Leafhopper (on wild host plants)	8	0 day
Beef Cattle - Feed Lots and Holding Pens	Adult Flies and Mosquitoes	6-8	0 day

Alfalfa, Clover, Pasture and Range Grass, Grass and Grass Hay, Grain Crops, Beans, Rice, Tomatoes and Nonagricultural Lands (wastelands, roadsides, soil bank lands): Adult Mosquitoes and Flies—Apply MALATHION LV CONCENTRATE at the rate of 2 to 4 fluid ounces for control of adult mosquitoes and at 6 to 3 fluid ounces per acre for control of adult flies and mosquitoes. Repeat applications as necessary. On alfalfa, clover, pasture and range grass, grass and grass hay, may be applied on day of harvest or grazing. Do not apply to alfalfa and clover in bloom. Do not use on seed alfalfa. On grain crops, make no application within 7 days of harvest or forage use; on corn, within 5 days of harvest or forage use; on rice, within 7 days of harvest; on beans and tomatoes, within 1 day of harvest.

Before using MALATHION LV CONCENTRATE for the preparation of malathion insecticides, manufacturers should consult American Cyanamid Company for manufacturing and safe handling instructions.

SELLER makes no warranty of any kind, express or implied, concerning the use of this product. BUYER assumes all risk of use or handling, whether in accordance with directions or not.

**BEFORE USING—STOP, READ THE LABEL**  
**AMERICAN CYANAMID COMPANY**  
 AGRICULTURAL DIVISION  
 PRINCETON, N. J.

Printed in U.S.A.  
 D43

Figure D-2  
 Instructions for  
 use of Malathion  
 LV Concentrate

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The distance between the left and right outboard nozzles should be at least  $\frac{3}{4}$  of the wing span. The total number of nozzles used should be equally spaced across this span if the aircraft is flown at twenty feet or higher. Trailing edge booms are desirable and the nozzles should be placed on boom where pilot can readily see them to check any plugging of nozzles during spray operation. A bleed line at least  $\frac{3}{16}$  inch in diameter should be attached to the outer end of each boom and routed back to the top of the spray tank but above the liquid level. This line will bleed off pressure and assure sharp cut-off. If a nozzle is placed at each end of boom, as many Ag Cat spray booms are assembled, this bleed line is not necessary.

Use at least 4 to 6 flat fan nozzles, such as Spraying Systems 8001, 80015 or 8002 for small aircraft, such as Piper Pawnees and Stearmans. For aircraft operating at 150 mph or faster, use 10 to 14, 8010 or 8015 flat fan nozzles. Nozzles should be pointed straight downward on small aircraft and straight back for faster aircraft. Use 100-

mesh screens with 8001, 80015 and 8002 nozzles and a large-volume 50-mesh screen should be used in spray systems. No screens are required for the 8010 or 8015 nozzles. Diaphragm check valves should be used on each nozzle to insure positive cut-off of spray during flight. Do not use cone nozzles.

Rotary atomizers, commonly known as Mini-Spin nozzles, developed by the Plant Pest Control Division, USDA, can be substituted for the flat fan nozzles. Use the same flat fan nozzle tips as mentioned above when using the Mini-Spin nozzle.

**CAUTION!**

**KEEP AWAY FROM CHILDREN**

**HARMFUL BY SWALLOWING, INHALATION  
OR SKIN CONTACT**

Avoid Breathing Spray Mist

Avoid Prolonged or

Repeated Contact With Skin

Wash Thoroughly After Handling

Change Contaminated Clothing

Do Not Contaminate Food or Feed Products

Highly toxic to fish. Do not contaminate any body of water, by direct application, cleaning of equipment or disposal of wastes and containers.

Figure D-3  
Warning Regarding  
use of Malathion LV  
Concentrate

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Figure D-4  
Pesticide Caps  
found on J. J.  
Riley Property

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APPENDIX E

Letter from Metropolitan District Commission  
Regarding Wastewater Effluent



*The Commonwealth of Massachusetts*  
*Metropolitan District Commission*  
*20 Somerset Street, Boston 02108*

SEWERAGE DIVISION

November 26, 1980

ECOLOGY AND ENVIRONMENT, INC.  
30 East Cummings Park  
Woburn, Massachusetts

ATTENTION: Ms. Lori Fucarile

Dear Ms. Fucarile:

This confirms our recent conversations regarding John J. Riley Company, Woburn, Massachusetts.

As requested by the U. S. Environmental Protection Agency, we are forwarding to your office the attached analytical data for the subject company's wastewater effluent as submitted to this Division with their Industrial Wastewater Discharge Permit Application.

It is apparent from the data that the discharge of a waste with a pH of 10.8 (range 6.3 - 12.8) and a chromium concentration of 246 mg/l and a lead concentration of 1.8 mg/l and a grease content of 11,600 mg/l is in violation of Metropolitan District Commission Rules and Regulations as indicated in the enclosed copy of the regulations.

I trust this information will be of value to you in your research of this company.

If we can be of further assistance in this matter, please do not hesitate to contact me at 727-8989.

Very truly yours,

*Wayne T. Grandin*  
WAYNE T. GRANDIN  
Associate Sanitary Engineer

WTG/kw  
Enclosure

cc: J. F. Hackler, U.S. EPA

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