ROY F. WESTON, INC.

REMOVAL PROGRAM
PRELIMINARY ASSESSMENT/
SITE INVESTIGATION REPORT
FOR THE
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE
11 AUGUST 1999

WESTON®
MANAGERS DESIGNERS CONSULTANTS

REMOVAL PROGRAM
PRELIMINARY ASSESSMENT/
SITE INVESTIGATION REPORT
FOR THE
MOHAWK TANNERY SITE
NASHUA, NEW HAMPSHIRE
11 AUGUST 1999

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
One Congress Street, Suite 1100
Boston, MA 02114-2023

CONTRACT NO. 68-W5-0009

TDD NO. 99-07-0005

PCS NO. 7328

DC NO. R-2072

Submitted By:

Roy F. Weston, Inc.
Superfund Technical Assessment and Response Team
217 Middlesex Turnpike
Burlington, MA 01803

October 1999

TABLE OF CONTENTS

I. Preliminary Assessment/Site Investigation Forms

EPA REGION I
REMOVAL PRELIMINARY ASSESSMENT

Site Name and Location

Name: Mohawk Tannery **Location:** 11 Warsaw Avenue
Town: Nashua **County:** Hillsborough **State:** New Hampshire

Site Status: ( )NPL (X)NON-NPL ( )RCRA ( )TSCA
( )ACTIVE ( )ABANDONED ( )OTHER

(X)Attached USGS Map of Location ( )Site I.D. No. None

Latitude: 42° 45' 54.12" North **Longitude:** 71°29' 4.32" West

Referral

( )Citizen ( )City/Town (X)State ( )Preremedial
( )RCRA ( )Other:
Name of referring party: John Splendore **Phone:** (603) 271-2900
Address: New Hampshire Department of Environmental Services
P.O. Box 95, 6 Hazen Drive, Concord, NH 03302-0095

Contacts Identified

1) Laura Games, City of Nashua, New Hampshire **Phone:** (603) 594-3351

2) Michael Buxton (Assistant Fire Chief) **Phone:** (603) 594-3652
3) **Phone:** ( )

Source of Information

(X) **Verbal:** Laura Games, City of Nashua
(X) **Report:** Phase II Site Investigation by Goldberg Zoino Associates (GZA), Inc., (1985)
Roy F. Weston, Inc., Technical Assistance Team (TAT), Preliminary Assessment/Site Investigation (1989)
( ) **Other:**

Potential Responsible Parties

Owner: Warren Kean **Phone:** (603) 883-3227
Address: P.O. Box 453
Nashua, NH 03061
Operator: **Phone:** ( )
Address:

REMOVAL PRELIMINARY ASSESSMENT

Site Access

Authorizing Person: Warren Kean
Date: 5 August 1999 **(X)Obtained** **( )Verbal**
Phone: (603) 883-3227 **( )Not Obtained** **(X)Written**

Physical Site Characterization

Background Information: The former Mohawk Tannery is located on 30 acres of land along the west side of Warsaw Avenue in Nashua, New Hampshire. Previously known as Granite State Leathers, the industrial site produced tanned hides for leather between 1924 and 1984.

From 1924 until 1974, the tannery produced an alkaline wastestream of approximately 50,000 gallons per day (gpd) and an acid wastestream of approximately 100,000 gpd. The acid wastestream, which contained spent chromium tanning materials, hide "pickling" wastes, re-tanning materials, and alkaline liquids, was discharged into on-site lagoons.

A replacement waste treatment plant comprised of five settling basins, also known as the wastewater clarifier, was built on or near a sludge disposal area and began to treat effluent in 1981. A component of the system known as the primary clarifier received neutralized waters from the acid and alkaline wastestreams prior to discharge to a lagoon.

In 1980 and 1984, releases of 100 gallons and 1,282 gallons, respectively, of sodium hydrosulfate were reported spilled from a "NASH" storage tank east of the main building. Tests of soils affected by the release indicated pH readings up to 10.7.

A comprehensive Phase II study by GZA in 1985 indicated elevated levels of volatile organic compounds (VOC), Acid Extractables, and toxic metals in sludge wastes on the property. Elevated levels of methylene chloride, tetrachloroethylene, toluene, acetone, 2,4,6-trichlorophenol, pentachlorophenol, chromium, barium, lead, arsenic, selenium, mercury, and silver were reported. Additionally, a known asbestos disposal area on the southeastern portion of the property was referenced in the report.

In May 1989, under EPA direction, Roy F. Weston, Inc., TAT sampled soils and sludges at various locations on the property. Laboratory analyses of the samples revealed maximum levels of fluoranthene [1.4 parts per million (ppm)], pyrene (0.82 ppm), Phenol (27 ppm), 1,2-dichlorobenzene (23 ppm), 2-pentanone, 4-hydroxy-4-methyl (1,700 ppm), chromium (24,200 ppm), copper (257 ppm), lead (323

Physical Site Characterization (Concluded)

ppm), mercury (1.57 ppm), and zinc (230 ppm).

According to an 8 February 1999 letter from New Hampshire Department of Environmental Services-Waste Management Division (NHDES-WMD), no remedial activities have been conducted at the site to date. Some of the structures on the site have been demolished, but the debris has not been removed. Several businesses are reported to be operating on site against local zoning ordinances, and some dumping of debris has taken place on the property.

Description of Substances Possibly Present, Known or Alleged: Various levels of VOCs, semivolatile organic compounds (SVOCs), and toxic metals in sludge waste were found on the property. Additionally, a known asbestos disposal area on the southeastern portion of the property was referenced in the report.

Existing Analytical Data

( ) **Real-Time Monitoring Data:**

(X) Sampling Data: In May 1989, under EPA direction, WESTON-TAT sampled soils and sludges at various locations on the site.

Potential Threat

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Potential Threat (Concluded)

vi. Threat of fire or explosion.

vii. The availability of other appropriate federal or state response mechanisms to respond to the release.

viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Prior Response Activities

( ) **PRP** (X) **STATE** (X) **FEDERAL** ( ) **OTHER**

Brief Description: In 1985, GZA Environmental performed a Phase II Site Assessment of the site which included collecting soil samples from areas throughout the site. In May 1989, under EPA direction, WESTON-TAT sampled soils and sludges at various locations on the property.

Priority for Site Investigation

(X) **High** ( ) **Medium** ( ) **Low** ( ) **None**

Comments: Due to the nearby location of the Nashua River, a high priority is given to this investigation.

Report Generation

Originator:	Eric D. Ackerman	**Date:**	25 August 1999
Affiliation:	Roy F. Weston, Inc.	**Phone:**	(781) 229-6430
TDD No.:	99-07-0005	**PCS No.:**	7328

EPA REGION I
REMOVAL SITE INVESTIGATION

Inspection Information

Site Name: Mohawk Tannery **Address:** 11 Warsaw Avenue
Town: Nashua **County:** Hillsborough **State:** New Hampshire
Date of Inspection: 11 August 1999 **Time of Inspection:** 0845
Weather Conditions: Overcast, Showers
Site Status at Time of Inspection: **(X) ACTIVE** **( ) INACTIVE**
Comments: Tannery operations are no longer on-going, but a car repair business was noted to be on site at the time of the inspection.

Agencies/Personnel Performing Inspection

	Names	Program
(X) EPA:	Gilberto Irizarry	Emergency Planning and Response Branch
(X) EPA Contractor:	Eric Ackerman	Roy F. Weston, Inc. Superfund Technical Assessment and Response Team(START)
	Mandy Butterworth	WESTON - START
	Thomas Campbell	WESTON - START
( ) State:		
( ) Other:		

Current Owner Based on Field Interview: Warren Keane

Physical Site Characteristics

See Site Diagram - Appendix B

Parameter	Quantities/Extent

(X) Cylinders: One 4-foot tall oxygen cylinder is located on the east side of the building within the burned area of the main site building.
(X) Drums: Six 55-gallon steel and two 55-gallon poly drums were sampled. Five of the drums contained clear liquid; one was crumpled; one contained a yellow liquid; and one contained a white, viscous liquid. Additional rusted and empty drums were located throughout the property.
(X) Lagoons: Two lagoons were noted to be on site. One was overgrown with vegetation; and the other lagoon was open, contained some liquid, and emitted a foul odor.

Physical Site Characteristics(Concluded)

Parameter	Quantities/Extent

(X) Tanks: (X) Above: A 100-gallon home heating oil-type tank was located on site at the base of a hill to the rear of the main site building. This 100-gallon home heating oil tank was found on its side and was noted to be leaking a small amount of dark, viscous liquid (suspected to be oil). A second 100-gallon home heating oil-type tank was found inside the main site building. An estimated 4000-gallon fiberglass tank was located on the eastern side of the main site building.

( ) Below:

(X) Asbestos: Exposed friable asbestos pipe wrap was located on piping and on the floor inside the main site building. In addition, transite asbestos wall covering and wall board was located outside the control room in the main site building.

( ) Piles:

( ) Stained Soil:

( ) Sheens:

( ) Stressed Vegetation:

( ) Landfill:

(X) Population in Vicinity: Residences were located adjacent to the site.

( ) Wells: ( ) Drinking:

( ) Monitoring:

(X) Other: A building containing a concrete clarifier was located northwest of the main site building. The clarifier building is approximately 200 yards from the main site building. One large clarifier unit was inside the building. The clarifier contained an estimated 43,000 gallons of aqueous liquid, and its dimensions were 60 feet (length) by 20 feet (width) by 6 feet (depth).

Several small laboratory chemical jars were located in plastic tubs inside the main site building. Some of the labels noted were: Ammonia Ferrous Sulfate; Calcium Chloride; Calcium Carbonate; Sodium Phosphate; EDTA Disodium; and Stearic Acid. There were approximately 60 containers with several illegible labels.

One steel pressure vessel was located on the northern side of the main site building.

Two 1-gallon containers labeled "Aqua Shock" and "Antifreeze" were located near the oxygen cylinder.

Physical Site Observations

The Mohawk Tannery site consists of one large main site building, several former concrete slabs and foundations, two lagoons, and one one-story wooden clarifier building located 200 yards from the main site building. The general topography of the site slopes from the main site building in a westerly direction toward the Nashua River. The site is heavily vegetated along the perimeter of the site, with a large, open expanse between the main site building and the two former lagoon areas to the west.

The main site building is in a dilapidated condition, with the southern portion of the site open to the elements. Several large wooden tumblers were noted inside the main site building, as was a large steel pressure vessel. The perimeter of the main site building is crowded with vehicles in various states of disrepair, large locked box-type trailers, and drums.

Field Sampling and Analysis

Matrix	Analytical Parameter	Field Instrumentation				
		CGI/O_2 %LEL/%O_2	RAD μR/hr	PID (ppm)	FID (ppm)	Other
Background Readings:		0/20.8	15	<1.0	<1.0	
Air:	Main Facility	0/20.8	15	<1.0	<1.0	
	Clarifier	0/20.8	15	<1.0	<1.0	
Drums:	Drum 001			1.6	6.0	pH=6.5
	Drum 002					pH=6.5
	Drum 003			825	1345	
	Drum 004			1241	3908	
	Drum 005			0	0	pH=5.0
	Drum 006			1325	3908	
	Drum 007			0	6.7	pH=6.5
	Drum 008			0	9.0	
Vats:						
Lagoons:						
Spillage:						
Run Off:						
Piles:						
Sediments:						
Groundwater:						
Other:						

Field Quality Control Procedures

(X) SOP Followed ( ) Deviation From SOP

Comments: Roy F. Weston, Inc., START document entitled, *Sampling Quality Assurance/Quality Control Plan for the Mohawk Tannery Site Preliminary Assessment/Site Investigation Nashua, New Hampshire.*

Description of Sampling Conducted

START personnel collected four sludge samples from the clarifier unit for metals analysis, one composite sludge sample from the clarifier unit for volatile organic compound (VOC) and semivolatile organic compound (SVOC) analysis, and sampled five drums for VOC and SVOC analyses. START collected three asbestos samples from locations within the main site building for asbestos content. In addition, START performed on-site pH analysis of the liquid remaining in the large aboveground storage tank (AST) located outside the main site building.

Analyses

Analytical Parameter	Media	Laboratory
(X) VOC	( ) AIR	( ) NERL
( ) PCB	( ) WATER	( ) CLP
( ) PESTICIDE	( ) SOIL	(X) PRIVATE
(X) METALS	(X) SOURCE	( ) SAS
( ) CYANIDE	(X) SEDIMENT	( ) SOW
(X) SVOC		
( ) TOXICITY		
( ) DIOXIN		
(X) ASBESTOS		
( ) OTHER		

Analytical results: See Appendix F of PA/SI Report

Receptors

	Comments
( ) Drinking Water	( ) Private:
	( ) Municipal:
( ) Groundwater:	
(X) Unrestricted Access:	The site is surrounded by a chain-link fence but is accessible through gaps and breaks in the fence.

Receptors (Concluded)

(X) Population in Proximity: Residential housing is adjacent to the site.
(X) Sensitive Ecosystem: Beavers were observed on site
(X) Other: The Nashua River is adjacent to the site.

Additional Procedures for Site Determination

( ) Biological Evaluation **( ) ATSDR**
To be determined by the OSC.

Site Determination

Depending on further information, criteria that may be met by the site include 40 CFR 300.415 [b] [2], parts:

i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.

v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

vi. Threat of fire or explosion.

vii. The availability of other appropriate federal or state response mechanisms to respond to the release.

viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Report Generation

Originator:	Eric Ackerman	**Date:** 25 August 1999
Affiliation:	Roy F. Weston, Inc.	**Phone:** (781) 229-6430
TDD No.:	99-07-0005	**PCS No.:** 7328

II. Narrative Chronology

II. Narrative Chronology

On 11 August 1999, U.S. Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) Gilberto Irizarry and Roy F. Weston, Inc., Superfund Technical Assessment and Response Team (START) members Eric Ackerman, Mandy Butterworth, and Tom Campbell mobilized to the Mohawk Tannery Site (the site) located in Nashua, Hillsborough County, New Hampshire [see Appendix A - Site Location Map (Figure 1)]. Upon arrival at the site, START personnel calibrated the Photovac MicroFID flame ionization detector (FID), the Photovac photoionization detector (PID), the Industrial Scientific Model LTX310 lower explosive limit/oxygen (LEL/O_2) meter, and the Ludlum Model 19 radiation meter. Following a review of the site health and safety plan, EPA and START personnel performed a perimeter tour of the site.

The perimeter tour began at the western (rear) portion of the property where OSC Irizarry led START personnel to a large, single-story wooden building, which was secured with plywood sheathing over doorways and windows to prevent entry [see Appendix B - Site Diagram (Figure 2)]. OSC Irizarry informed START that this building was the tannery clarifier building and that the building would be entered for the collection of sludge and liquid samples [see Appendix C - Site Diagram and Sample Location Map (Figure 3)]. START and EPA then proceeded toward the main site building along a dirt road between the main site building and two lagoons; one lagoon was overgrown with vegetation, and the other lagoon was open and contained liquid. In addition, there were several concrete slabs and structures in this area that were reported to have been the foundations of other tannery water treatment plant buildings. The tour continued as EPA and START personnel passed a 100-gallon home heating oil-type tank, which was noted to be leaking a small amount of oil. The tour then went up a hill toward the main site building where several cars were located and car repairs were being performed. The perimeter tour concluded with a walk along the northern portion of the site building, where there was a large fiberglass aboveground storage tank (AST) reported to contain a caustic liquid. The OSC informed START that the tank would be sampled, but that the clarifier building would be sampled first. EPA and START personnel returned to the START vehicle and proceeded to the clarifier building area.

Once at the clarifier building area, START personnel donned modified level D personal protective equipment (PPE) in anticipation of removing the plywood sheathing covering the entrance doorway. START used crow bars and hammers to remove the nails holding the plywood in place, and placed the wood aside for re-use following the sampling of the clarifier tank. After placing the plywood aside, START personnel returned to the START vehicle, donned level B PPE, gathered air monitoring instruments and prepared to enter the building.

START personnel entered the clarifier building and found it to contain one concrete clarifier unit and associated piping. START proceeded to perform a perimeter reconnaissance of the building interior and found no air monitoring levels above background. After performing the air monitoring, START set aside the instruments and used a tape measure to measure the dimensions of the tank. The tank dimensions were found to be 60 feet in length, 20 feet in width, and 6 feet in depth. The level of liquid/sludge in the tank was found to be 4.8 feet. The volume of liquid in the tank was estimated to be 43,000 gallons. START personnel then collected the following samples from the clarifier:

Table I: Samples Collected from the Clarifier Unit

Sample Identification	Analyte
CLAR-01	Metals
CLAR-02	Metals
CLAR-02 DUP	Metals duplicate
CLAR-03	Metals
CLARCOMP	VOC, SVOC Composite of CLAR -01, -02, -03

VOC = Volatile Organic Compound
SVOC = Semivolatile Organic Compound

START placed samples in zip-lock style plastic bags after tagging, labeling, and completing chain-of-custody forms (see Appendix D - Chain-of-Custody Documentation). The samples were then placed on ice before START donned modified Level D PPE to re-seal the entrance to the clarifier building. START photodocumented the clarifier building prior to sealing the building (see Appendix E - Photodocumentation Log). Prior to departure to the site main building, New Hampshire Department of Environmental Services (NHDES) representatives John Splendore and Tony Guinta were taken on a tour of the site by OSC Irizarry.

Following the tour of the site, NHDES personnel departed from site. EPA and START personnel then donned proper PPE and performed a tour of the main site building. During the walk-through, EPA and START noted areas where suspected asbestos-containing material (ACM) was located on piping, roof material, and wallboard. OSC Irizarry noted those areas where sampling would occur. In addition, several plastic tubs were found which held small containers of laboratory chemicals. START photodocumented the location of these jars and noted several of the chemicals contained within the tubs, including ammonia ferrous sulfate; calcium chloride; calcium carbonate; sodium phosphate; EDTA; disodium; and stearic acid. Approximately 60 containers were noted, most without labels. While performing the tour of the main site building, START observed one 4-foot tall oxygen cylinder, and two 1-gallon containers labeled "Aqua Shock" and "Anti-Freeze" were located outside of the control room area.

EPA and START personnel exited the main site building. OSC Irizarry met with City of Nashua representative Laura Games and discussed site activities. START personnel donned proper PPE and entered the main site building to collect samples of asbestos from those areas indicated by the OSC. START personnel collected three suspected ACM samples from the following locations: A-001 - hanging wall board outside the control room entrance; A-002 - transite board on floor of the facility outside the control room entrance; and A-003 - exposed pipe wrap inside the main site building. Following the collection of these samples, START personnel exited the main site building and labeled and tagged the samples, and logged them on chain-of-custody forms.

START personnel then proceeded to the large AST and took measurements for a volume estimate. The estimate in size was 10,000 gallons and the pH of the liquid was 10. The estimated volume of the liquid inside the vessel was 500 gallons.

Table II: 10,000-Gallon Aboveground Storage Tank Information

Aboveground Storage Tank Location	Volume Estimate of Liquid Inside Tank	pH of Liquid Contents
Eastern Side of Main Site Building	500 gallons	10

START personnel then donned level B PPE and proceeded to collect a number of samples from a series of drums located on the property. The following table indicates the drum number, type, label, air monitoring results, and what substances, if any, the drum was sampled for.

Table III: Air Monitoring Results of Drums Located On Site

Drum Number	Type	Label	Air Monitoring Results	Sample Collected
D-001	55-gallon Steel	"Paint Stripper NP-70NC Aircraft Type"	pH=6.5 FID= 1.6 units PID= 0.0 units	Yes:VOC, SVOC, Metals
D-002	55-gallon Steel	No Label	pH=6.5 FID= 0.0 units PID= 0.0 units	No Sample Collected
D-003	55-gallon Steel	"High Seal"	pH=NA FID= 1345 units PID= 825 units	Yes:VOC, SVOC, Metals
D-004	55-gallon Steel	"Cure-N-Seal, Action Supply, Candia, NH"	pH=NA FID= 3908 units PID= 1241 units	Yes:VOC, SVOC, Metals
D-005	Crumpled 55-gallon Steel	No Label	pH=7.0 FID= 0.0 units PID= 0.0 units	No Sample Collected
D-006	55-gallon Steel	No Label	pH= NA FID= 3910 units PID= 1325 units	Yes:VOC, SVOC, Metals
D-007	55-gallon Polyethylene	No Label	pH=6.5 FID= 6.7 units PID= 0.0 units	No Sample Collected
D-008	55-gallon Polyethylene	No Label	pH=NA FID= 9.0 units PID= 0.0 units	Yes:VOC, SVOC, Metals

VOC=Volatile Organic Compound, SVOC=Semivolatile Organic Compound, FID=Flame Ionization Detector
PID=Photoionization Detector

Following the documentation of samples and their placement on ice, START personnel packed equipment into the START vehicle. OSC Irizarry and START member Butterworth photodocumented site conditions and sample locations. After photodocumenting site conditions, EPA and START personnel departed the site for the day.

START personnel packaged samples according to the site quality assurance/quality control sampling plan entitled, *Quality Assurance/Quality Control Sampling Plan for the Mohawk Tannery Site, Nashua, New Hampshire*. Analytical results can be located as an appendix to this report (see Appendix F - Analytical Results). The summary table below shows the highest contaminant level for each sample location.

Table IV: Samples Collected at Mohawk Tannery Site

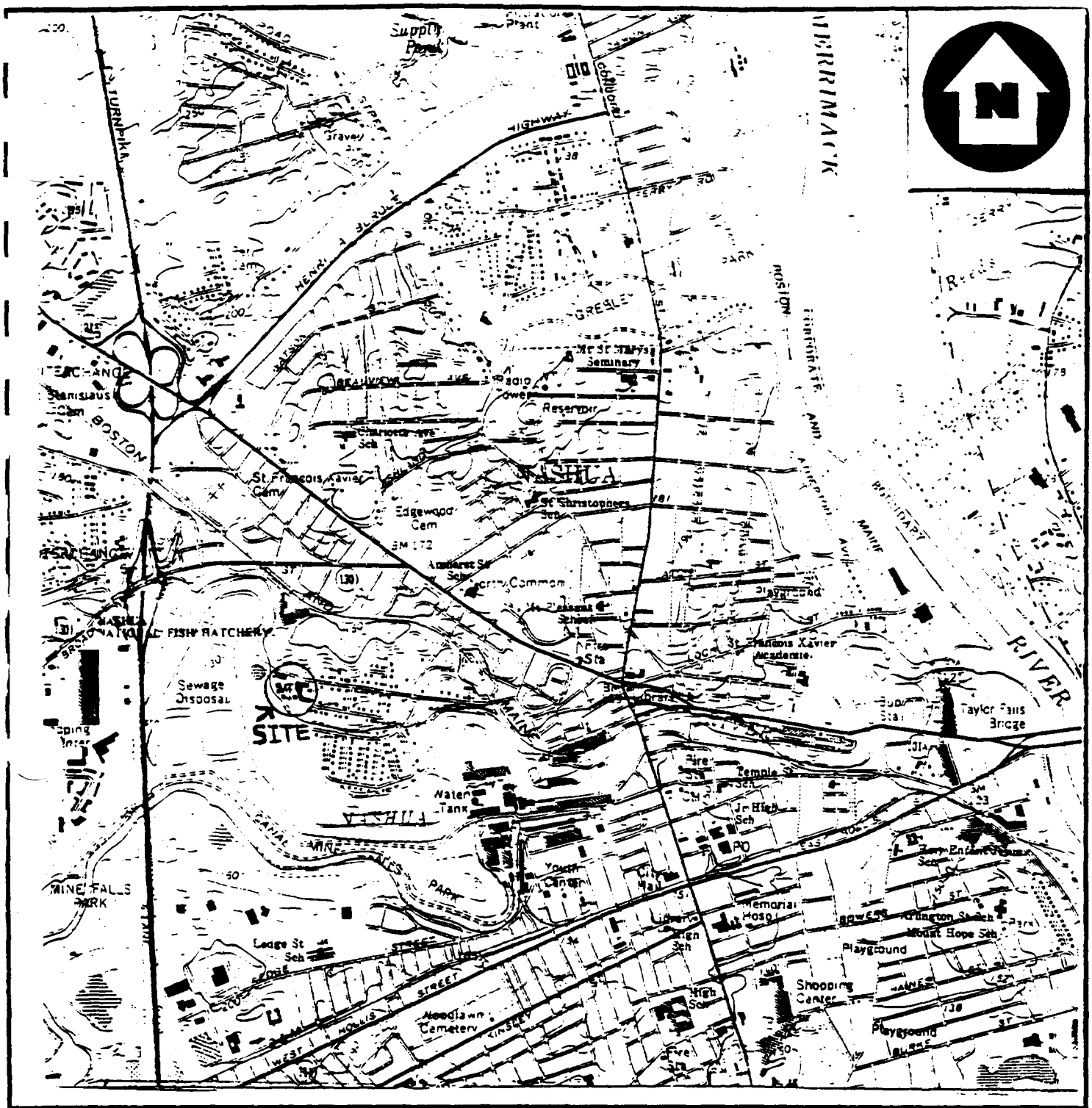
DAF Number	Station Description	Analyzed For:	Highest Level of Contaminant in parts per million (ppm), parts per billion (ppb), or asbestos % Following Tier I Data Validation
AR7	Clarifier Sludge - Near entrance	Metals	Chromium 22,300 ppm
AR8	Clarifier Sludge - Middle	Metals	Chromium 31,900 ppm
AR9	Clarifier Sludge - Far End	Metals	Chromium 32,100 ppm
AS1	Clarifier Composite Sample	VOC, SVOC	Pentachlorophenol 2,300 ppm
AS2	Drum 001	SVOC, Metals	Iron 350 ppb
AS3	Drum 003	VOC, SVOC, Metals	Styrene 1,200 ppm Xylene 310 ppm
AS4	Drum 004	VOC, SVOC, Metals	Styrene 1,300 ppm Xylene 15,000 ppm
AS5	Drum 006 Top Layer	VOC, SVOC, Metals	Styrene 2,400 ppm Xylene 19,000 ppm
AS5	Drum 006 Bottom Layer	VOC, SVOC, Metals	Xylene 41 ppm
AS6	Drum 008	VOC, SVOC, Metals	Chloromethane 160 ppb Hexachlorobutadiene 130 ppb Iron 77,300ppm
AS7	Hanging ACM Wallboard	Asbestos Content	Amosite 33%
AS8	ACM Transite Board	Asbestos Content	Chrysotile 15%
AS9	ACM Pipe Wrap	Asbestos Content	Amosite 25% Chrysotile 10%

VOC = Volatile Organic Compound, SVOC = Semivolatile Organic Compound, ACM = Asbestos-containing material

III. Appendices

APPENDIX A

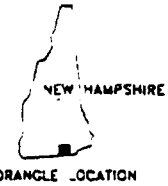
Site Location Map (Figure 1)



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15' U.S.G.S. QUADRANGLE(S):
NASHUA-NORTH, NH 1968, PHOTOREVISED 1985 - 1:24,000

1/2 0 1/2 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET



QUADRANGLE LOCATION

SITE LOCATION MAP

MOWHAWK TANNERY SITE
11 WARSAW AVENUE
NASHUA, NEW HAMPSHIRE

WESTON® MANAGERS DESIGNERS, CONSULTANTS

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

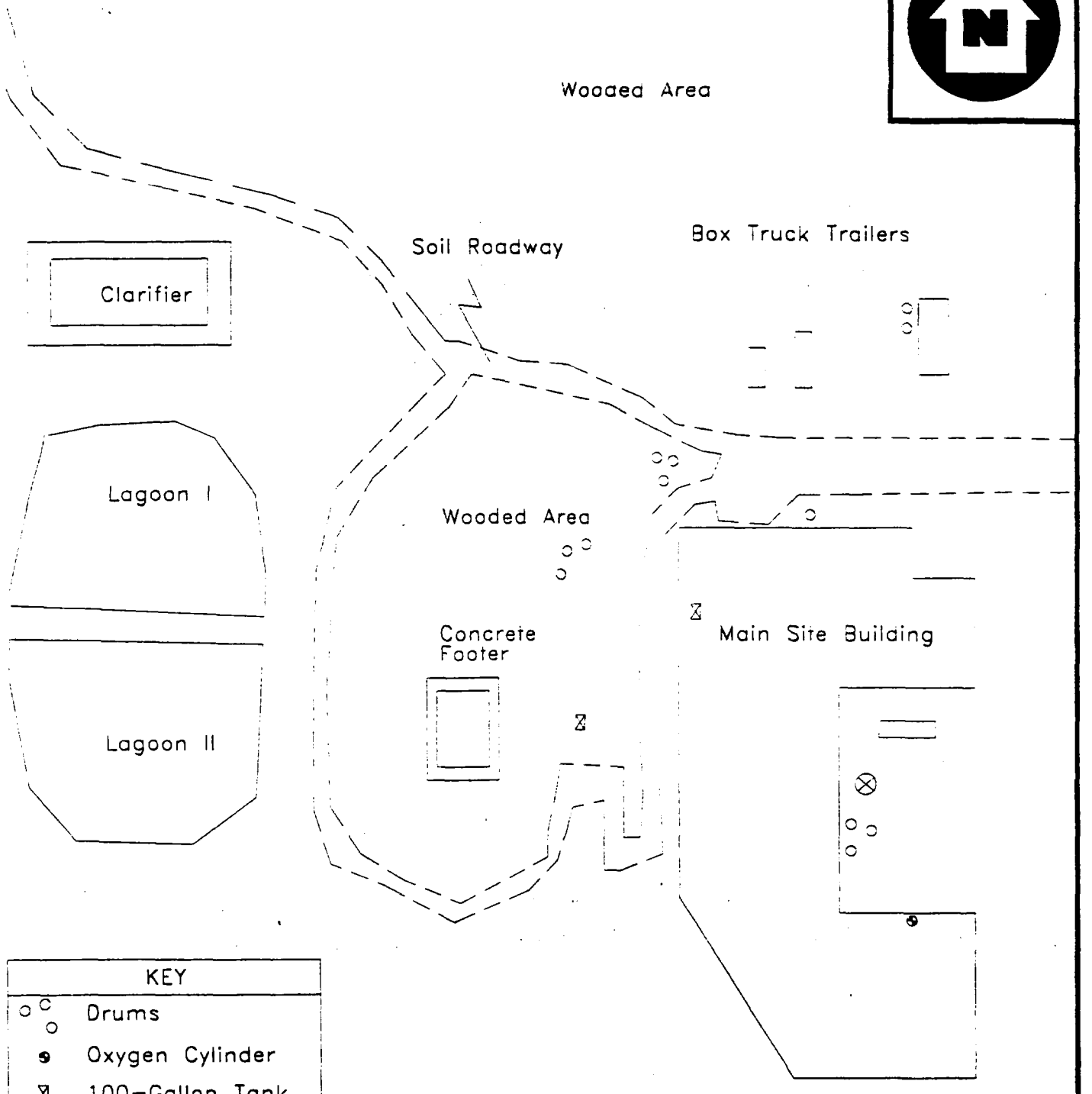
TDD #	DRAWN BY:	DATE
99-07-0005	E. ACKERMAN	9/99

FILE NAME: R:\99070005\FIG1.DWG

FIGURE 1

Appendix B

Site Diagram (Figure 2)



SITE DIAGRAM

MOWHAWK TANNERY SITE
11 WARSAW AVENUE
NASHUA, NEW HAMPSHIRE

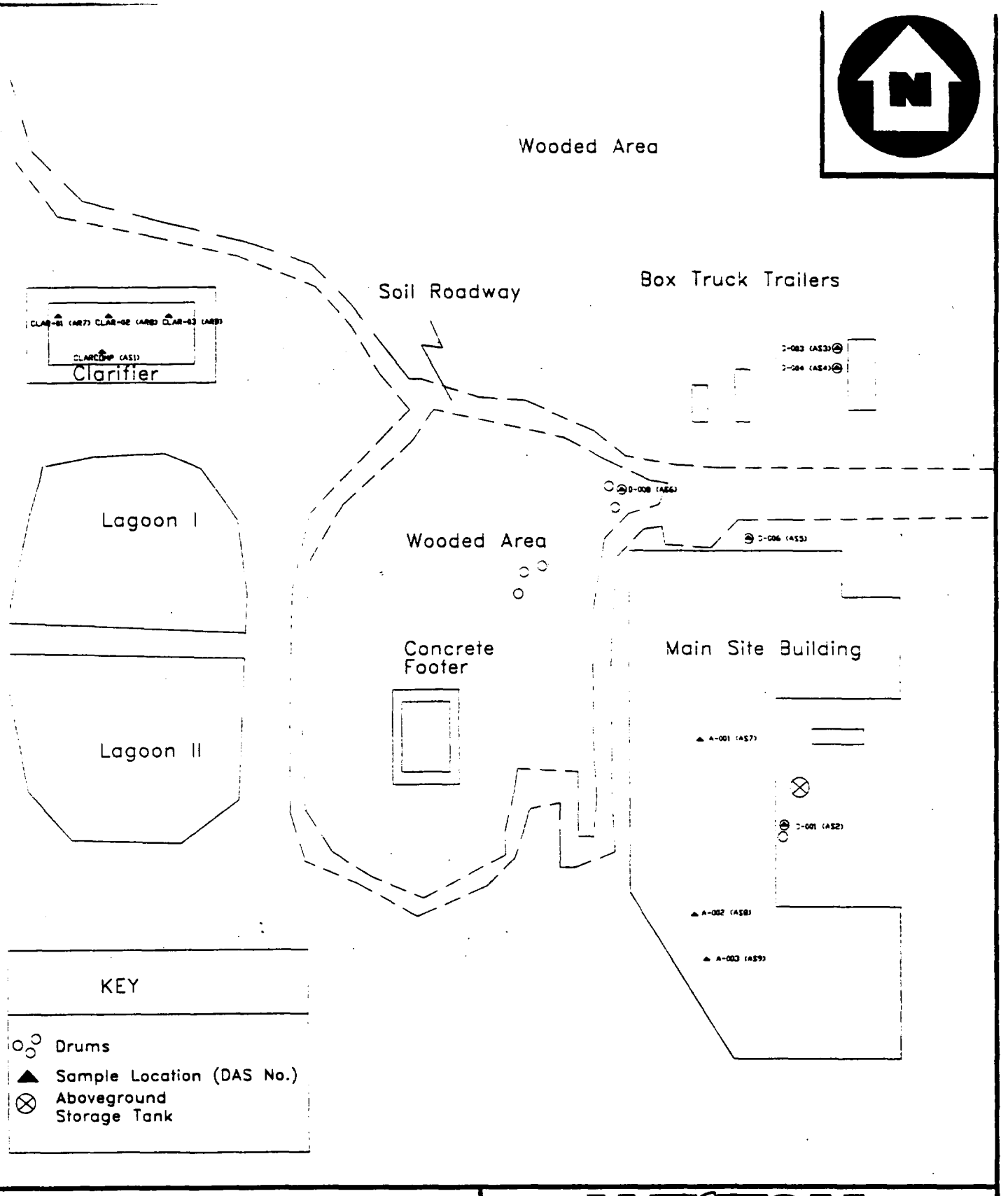
WESTON®
MANAGERS DESIGNERS/CONSULTANTS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
99-07-0005	E. ACKERMAN	9/99

FILE NAME:	
R:\99070005\FIG2.DWG	FIGURE 2

Appendix C

Site Diagram and Sample Location Map (Figure 3)



SITE DIAGRAM AND SAMPLE LOCATION MAP

MOWHAWK TANNERY SITE
11 WARSAW AVENUE
NASHUA, NEW HAMPSHIRE

WESTON® MANAGERS DESIGNERS/CONSULTANTS
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
99-07-0005	E. ACKERMAN	10/99

FILE NAME: R:\99070005\FIG3A.DWG

FIGURE 3

Appendix D

Chain-of-Custody Documentation

ENVIRONMENTAL PROTECTION AGENCY
REGION 1

CHAIN OF CUSTODY RECORD

K5420

PROJ. NO.	PROJECT NAME
0279F	Mohawk Tannery, Nashua NH

SAMPLERS: (Signature) MButterworth Tm A Crisfield Jr

* Use the DAF #### for EPA Sample IDs on the report form

NO.	STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	SVOCs	VOCs	Metals	Asbestos TEM	REMARKS
1	DAF AR7	8/11/99	1040		X	Clarifier - next to entrance	1-40z			X		
2	DAF AR8		1055	X	X	Clarifier - middle	2-40z			X		Extra volume for QA/QC
3	DAF AR9		1105		X	Clarifier - far end	1-40z			X		
4	DAF AS1		1115	X		Clarifier - composite	2-20z 1-80z	X	X			Not Ran per client Email 8/16
5	DAF AS2		1350		X	Drum 001	3-80z	X	X	X		Extra volume - aqueous
6	DAF AS3		1405		X	Drum 003	2-80z	X	X	X		PID: 825 units FID: 1345 units
7	DAF AS4		1415		X	Drum 004	2-80z	X	X	X		PID: 1241 units FID: 3905 units
8	DAF AS5		1435		X	Drum 006	2-80z	X	X	X		PID: 1325 units FID: 3905 units Soupy
9	DAF AS6		1450		X	Drum 008	2-80z	X	X	X		Yellow liquid
10	DAF AT1		1700		X	PE V03406	1		X			
11	DAF AT2		1701		X	PE S02614 JW2	1	X				
12	DAF AT3		1702		X	PE ~~TT 05557~~ Iccousila	1			X		
13	DAF AT4		1703		X	TB-01	2		X			Aqueous: HCl, H2O2

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tm A Crisfield Jr	8/12/99 1100				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		[illegible] BAS-K	8/13/99 1000	Send Fax results to: Paul Killam, Roy F. Weston, Inc., 217 Middlesex Tnpk., Burlington, MA 0180, (781) 229-6430	

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

1-8969

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
	DAS Case No. 0280F

SAMPLERS: (Signature) Tim D. Crisfield

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Asbestos Method EPA/600/R93/116	REMARKS
DAF AS7	8/11/99	1305		X	Hanging ACM board	1-4oz	X	* 14-day turnaround
DAF AS8	↓	1307		X	Transite board	↓	X	
DAF AS9	↓	1310		X	Pipe wrap	↓	X	Lab QC Sample

24

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Tim D. Crisfield	8/12/99 1100				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks send/fax results to:	
		Chris Perot	8/13/99 10:05		

Paul Killian
Roy F. Weston, Inc.
217 Middlesex Turnpike
Burlington, MA 01803
phone: (781) 229-6430 Fax: (781) 272-3619

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

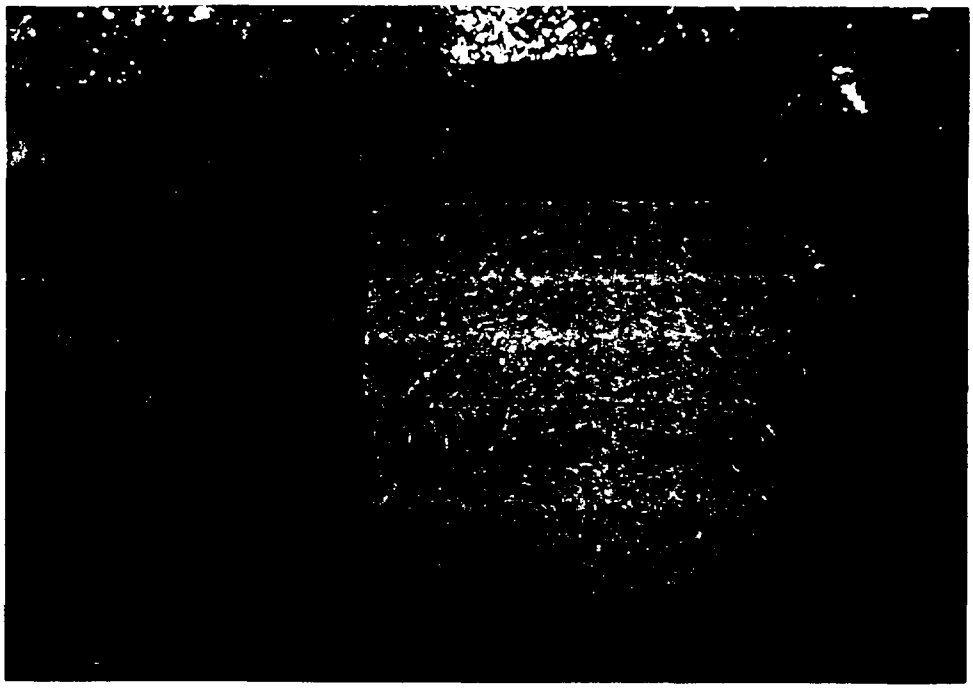
EPA Cooler No. 0221

1-8970

Appendix E

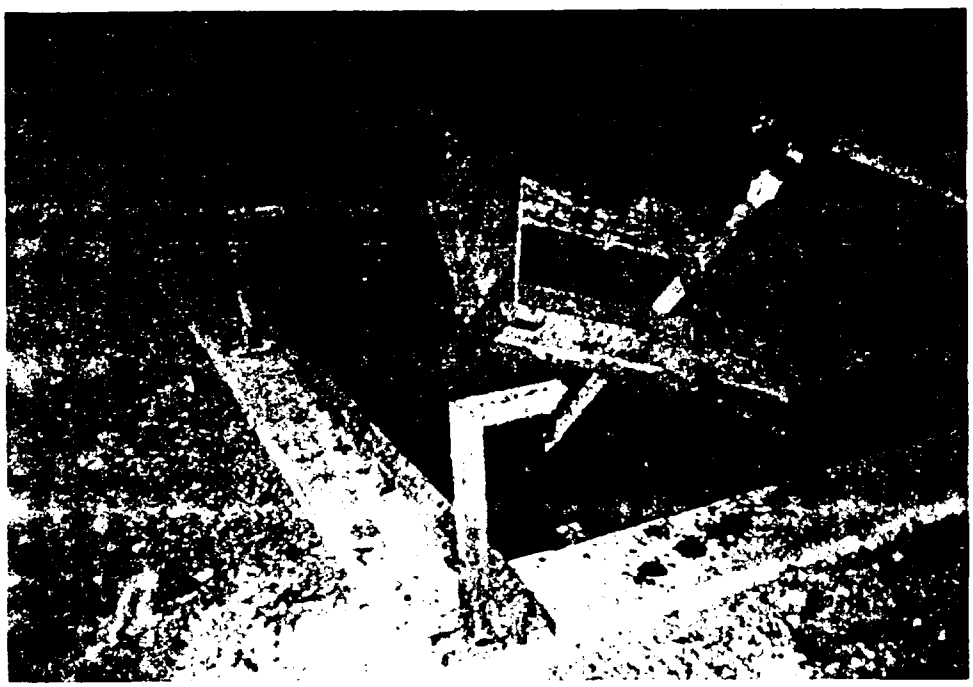
Photodocumentation Log

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of the particle board over the entrance to the clarifier unit. Photograph taken facing south.

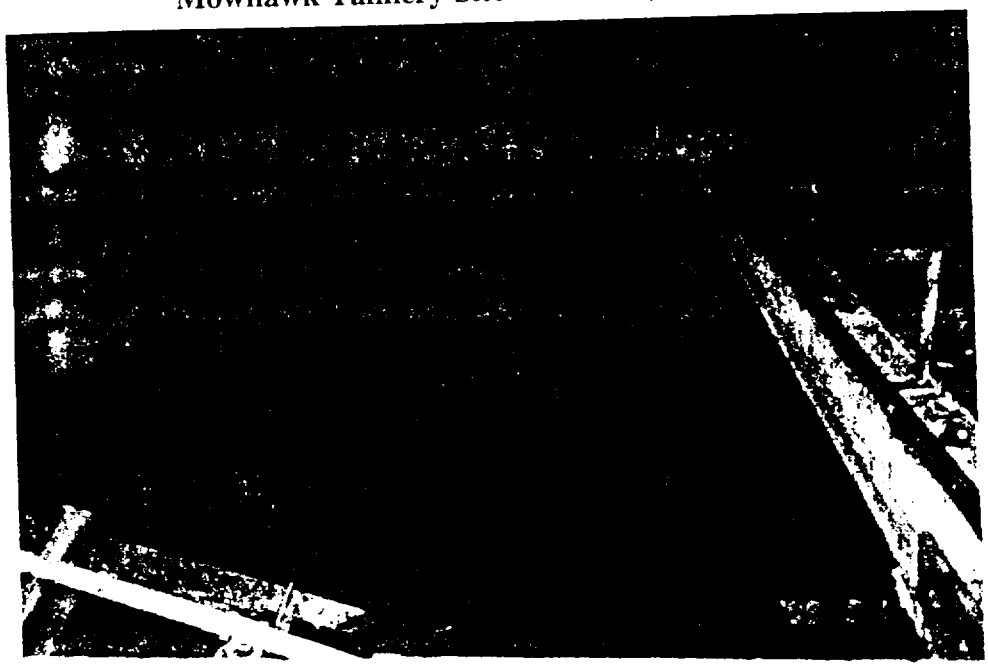
FRAME NUMBER: 01 **DATE:** 11 August 1999 **TIME:** 1000 **SKY CONDITION:** Sunny
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



SCENE: View of the northeast corner of the clarifier unit. Photograph taken facing southeast.

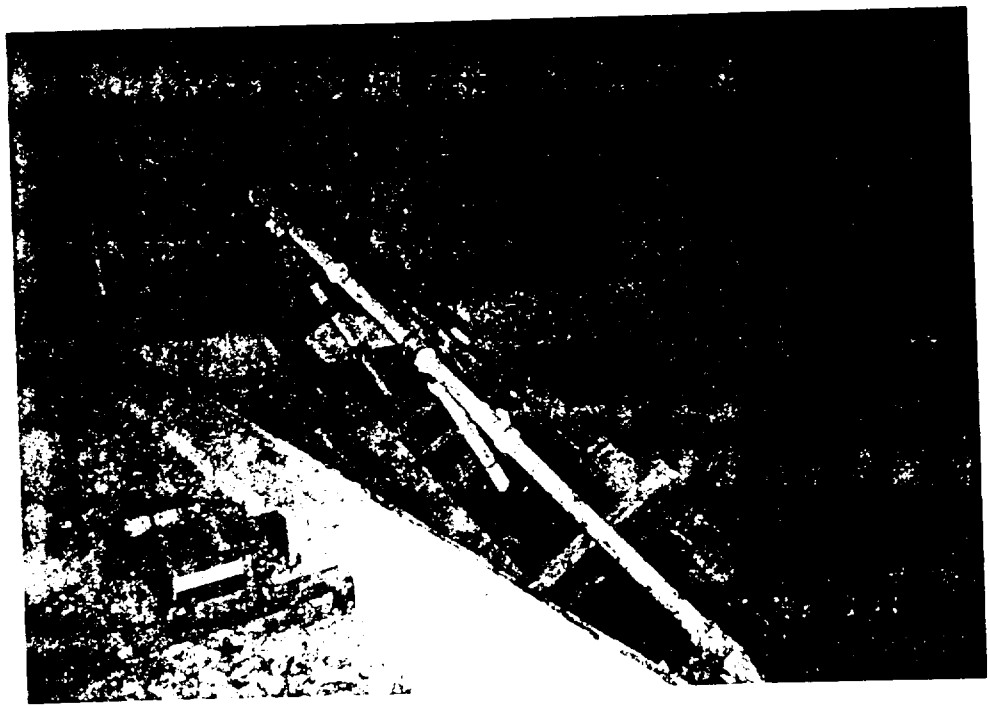
FRAME NUMBER: 02 **DATE:** 11 August 1999 **TIME:** 1030 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of the clarifier unit. Photograph taken facing east.

FRAME NUMBER: 03 **DATE:** 11 August 1999 **TIME:** 1031 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



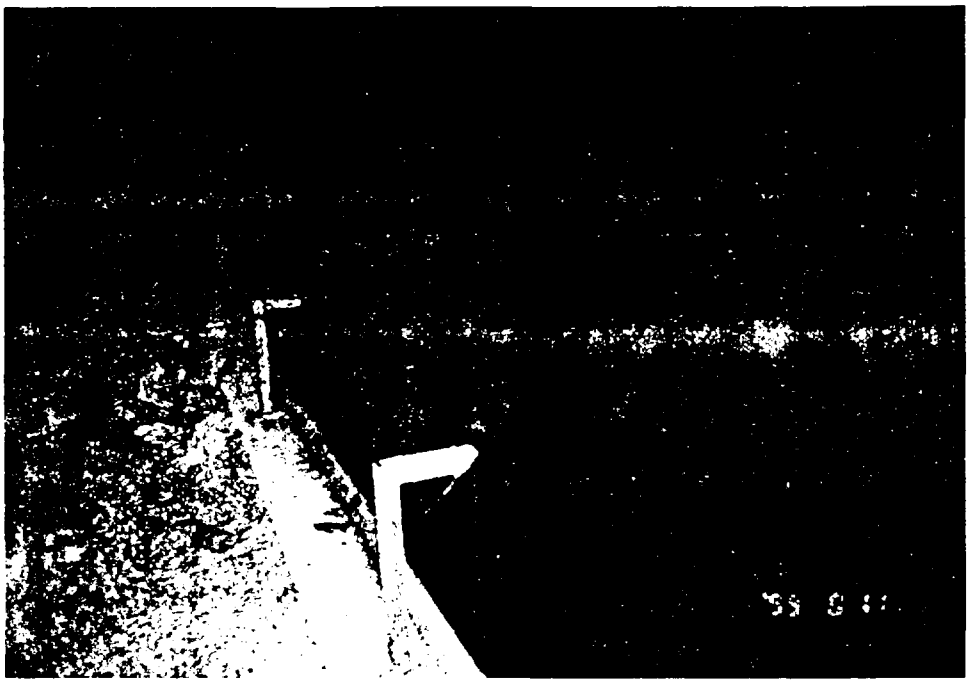
SCENE: View of piping for the clarifier unit in disrepair. Photograph taken facing northeast.

FRAME NUMBER: 04 **DATE:** 11 August 1999 **TIME:** 1034 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

SCENE: View of the broken piping in the clarifier. Photograph taken facing southwest.

FRAME NUMBER: 05 **DATE:** 11 August 1999 **TIME:** 1036 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



SCENE: View of the eastern end of the clarifier unit. Photograph taken facing east.

FRAME NUMBER: 06 **DATE:** 11 August 1999 **TIME:** 1044 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

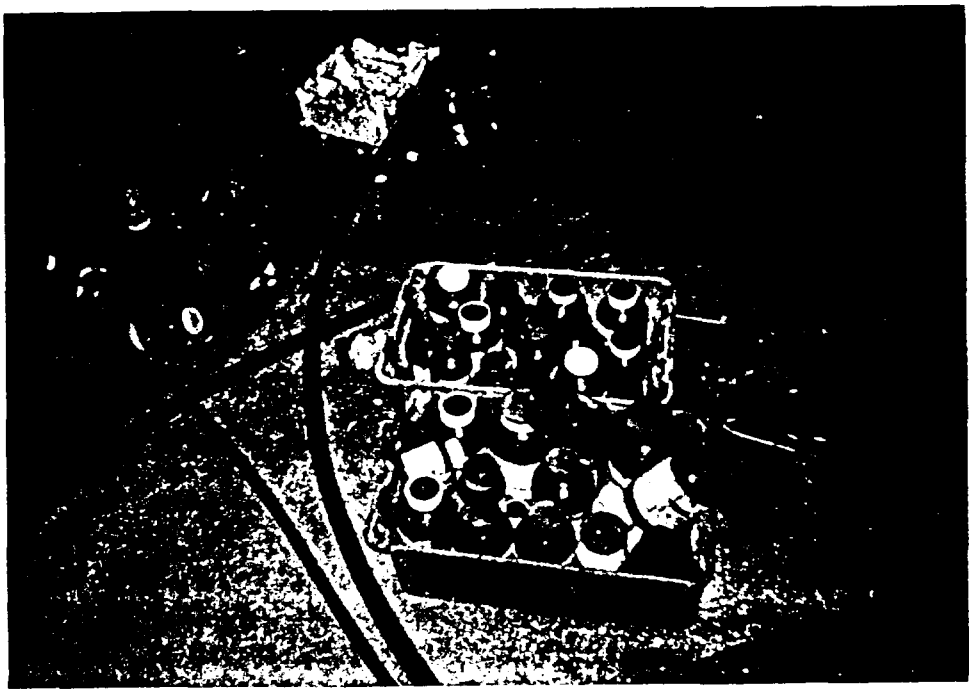
SCENE: View of particle board re-attached following entry into the clarifier unit. Photograph taken facing south.

FRAME NUMBER: 07 **DATE:** 11 August 1999 **TIME:** 1118 **SKY CONDITION:** Sunny
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

SCENE: View of miscellaneous laboratory containers found in the main site building. Photograph taken facing northeast.

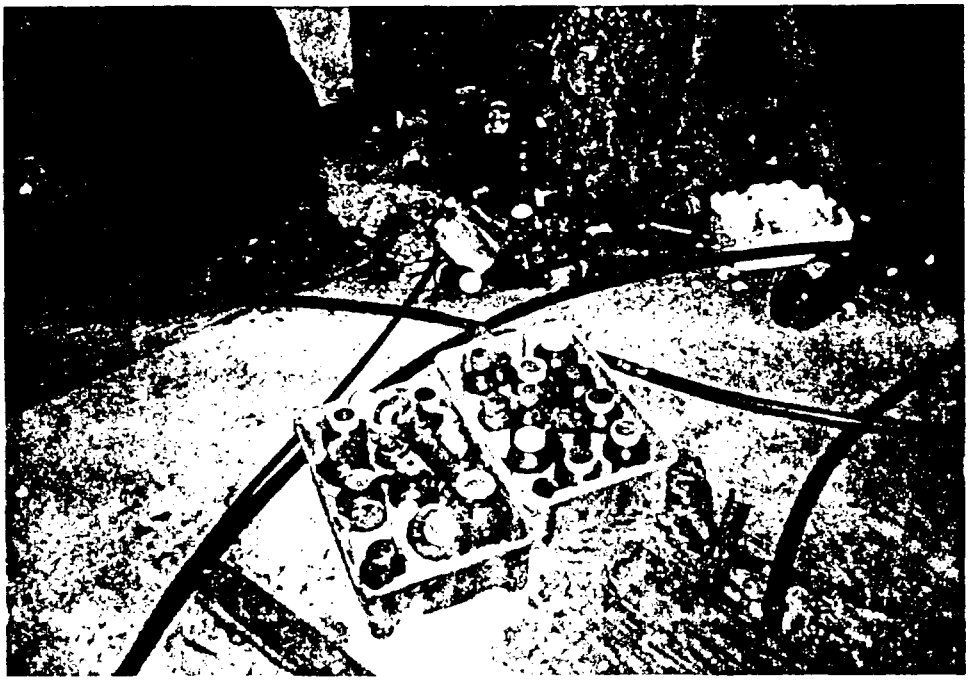
FRAME NUMBER: 08 **DATE:** 11 August 1999 **TIME:** 1150 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of laboratory containers staged in plastic tubs in the main site building.

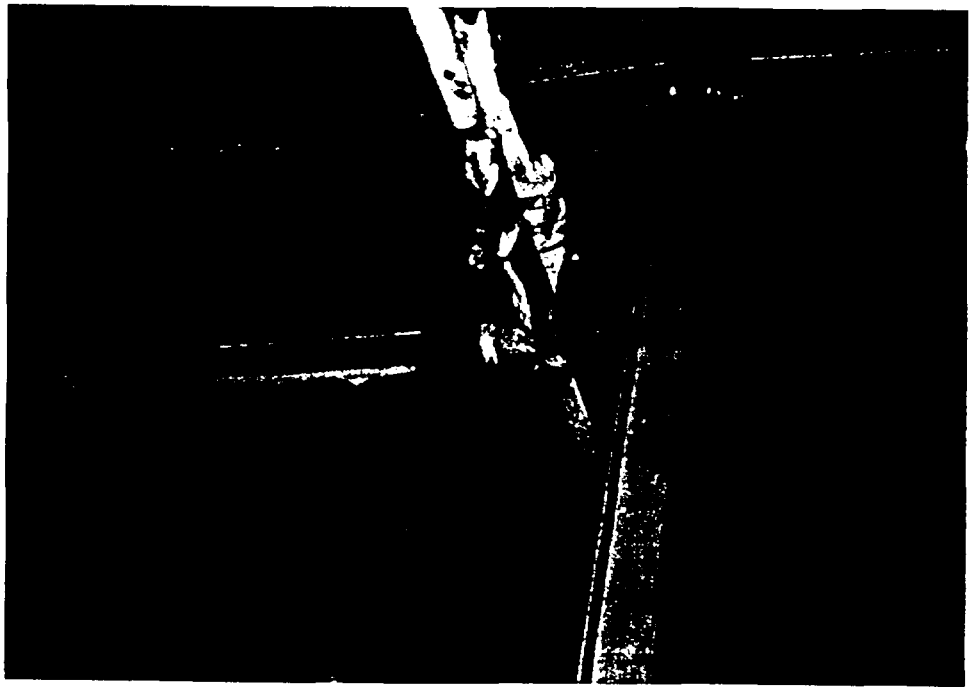
FRAME NUMBER: 09 **DATE:** 11 August 1999 **TIME:** 1151 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



SCENE: View of laboratory containers staged in plastic tubs in the main site building.

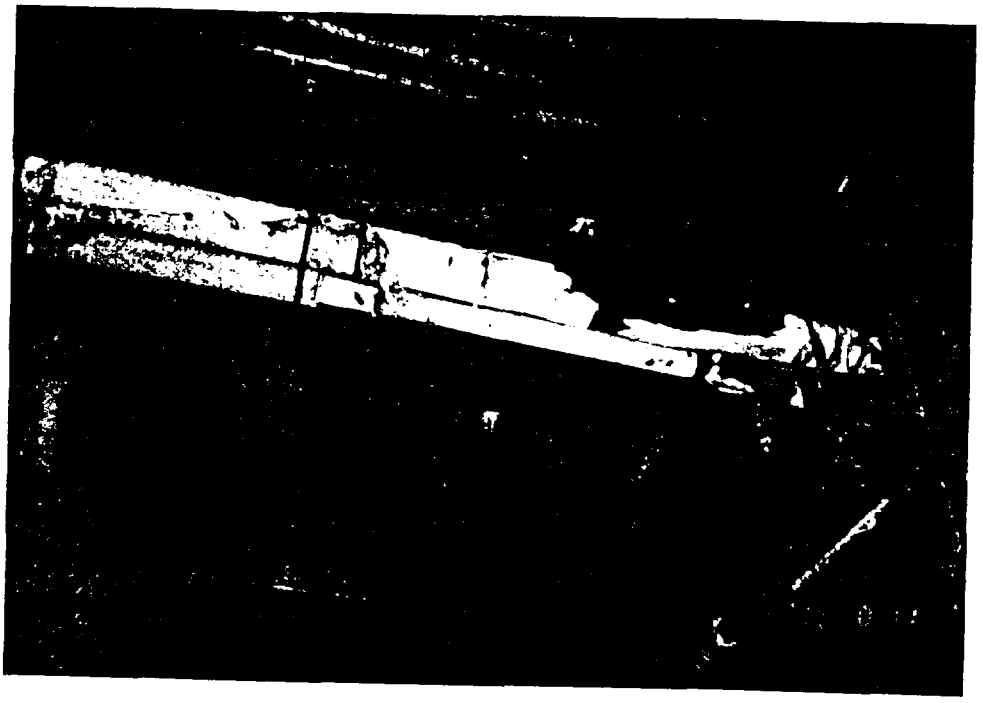
FRAME NUMBER: 10 **DATE:** 11 August 1999 **TIME:** 1152 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of suspected asbestos-containing material (ACM) on piping in the main site building.

FRAME NUMBER: 11 **DATE:** 11 August 1999 **TIME:** 1200 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



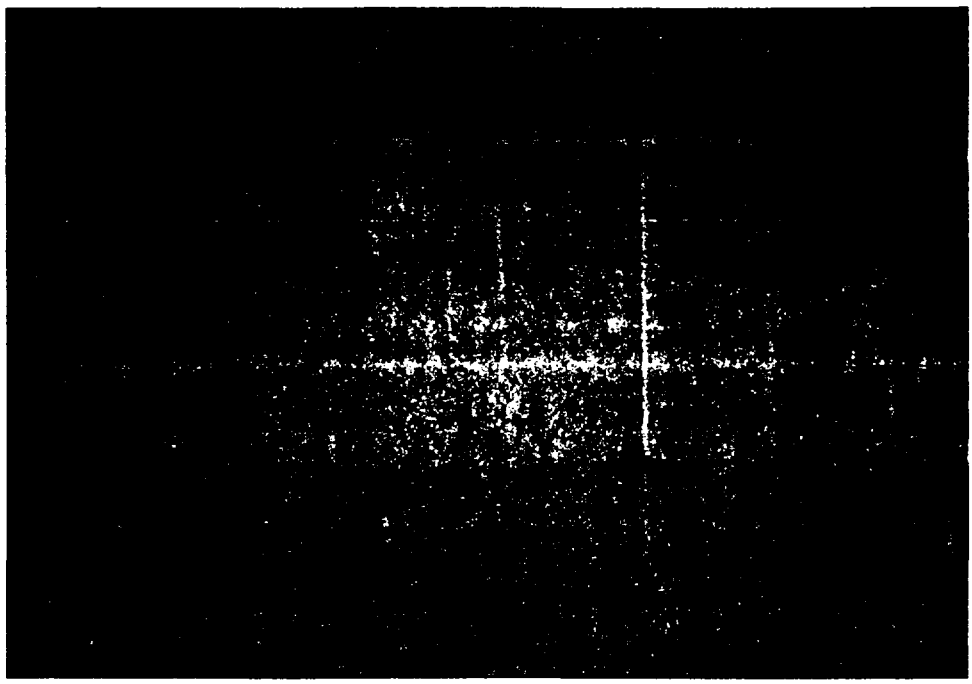
SCENE: View of suspected ACM on piping in the main site building.

FRAME NUMBER: 12 **DATE:** 11 August 1999 **TIME:** 1204 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

SCENE: View of suspected ACM on the floor beneath the piping. Photograph taken facing west.

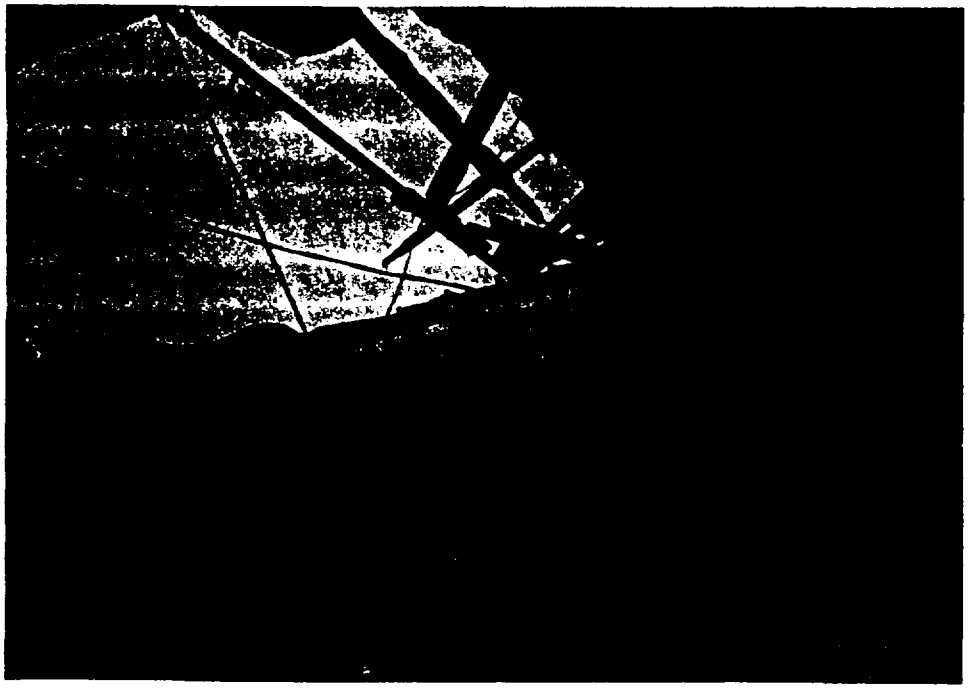
FRAME NUMBER: 13 **DATE:** 11 August 1999 **TIME:** 1230 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



SCENE: View of suspected ACM wallboard on the Control Room exterior. Sample location number A-001. Photograph taken facing north.

FRAME NUMBER: 14 **DATE:** 11 August 1999 **TIME:** 1232 **SKY CONDITION:** Indoor
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of collapsed ceiling of the main site building outside of the control room area.

FRAME NUMBER: 15 **DATE:** 11 August 1999 **TIME:** 1300 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

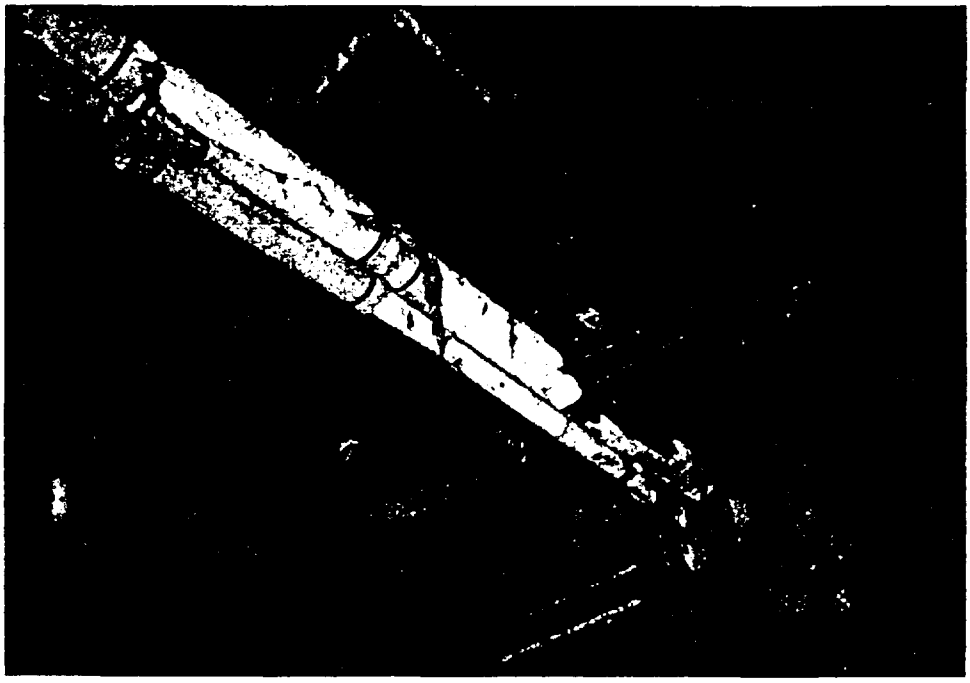
SCENE: View of the structural damage to the ceiling of the main site building. Photograph taken facing northwest.

FRAME NUMBER: 16 **DATE:** 11 August 1999 **TIME:** 1302 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

SCENE: View of suspected ACM debris on the floor of the main site building.

FRAME NUMBER: 17 DATE: 11 August 1999 TIME: 1320 SKY CONDITION: Indoor
PHOTOGRAPH BY: Mandy Butterworth WITNESS(ES): Gilberto Irizarry
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35-mm FILM ROLL: BC100200



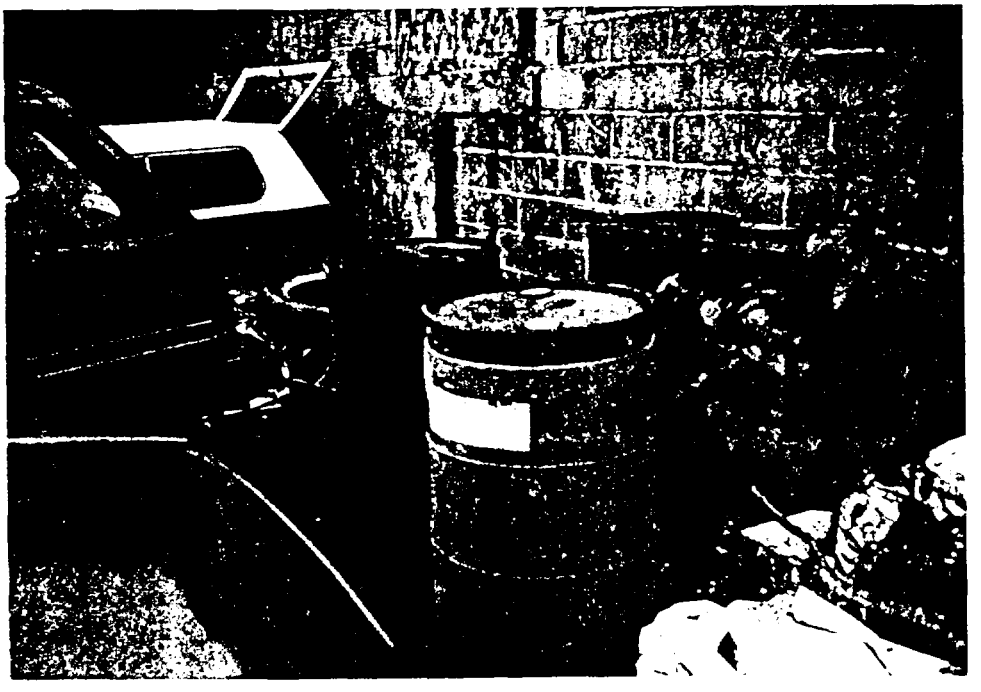
SCENE: View of suspected ACM sample location A-003.

FRAME NUMBER: 18 DATE: 11 August 1999 TIME: 1323 SKY CONDITION: Indoor
PHOTOGRAPH BY: Mandy Butterworth WITNESS(ES): Gilberto Irizarry
CAMERA: Minolta SETTING: Automatic FILM TYPE: 35-mm FILM ROLL: BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

SCENE: View of the 10,000-gallon fiberglass aboveground storage tank located to the west of the main site building. Photograph taken facing east.

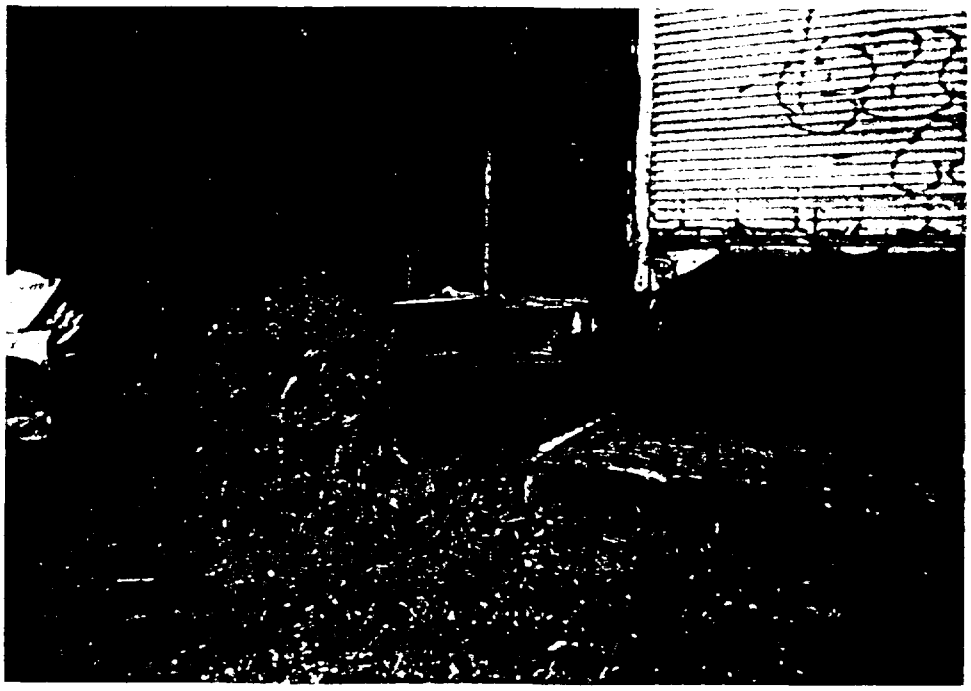
FRAME NUMBER: 19 **DATE:** 11 August 1999 **TIME:** 1400 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200



SCENE: View of drum sample location D-001. Photograph taken facing southwest.

FRAME NUMBER: 20 **DATE:** 11 August 1999 **TIME:** 1405 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



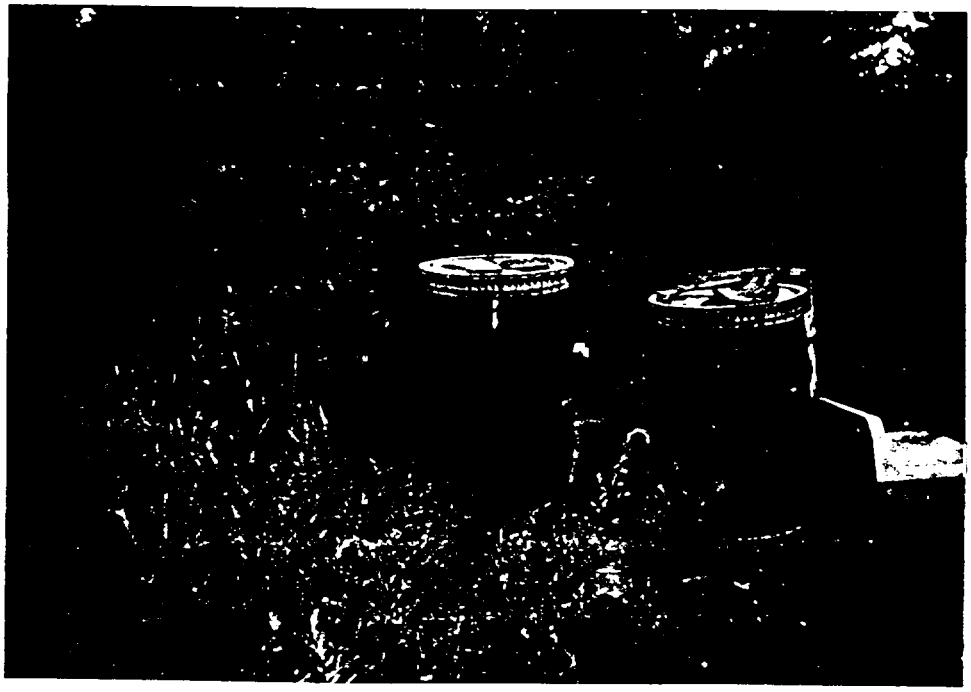
SCENE: View of drum sample locations D-003and D-004. Photograph taken facing northeast.

FRAME NUMBER: 21 **DATE:** 11 August 1999 **TIME:** 1425 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

SCENE: View of drum sample location D-006. Photograph taken facing southwest.

FRAME NUMBER: 22 **DATE:** 11 August 1999 **TIME:** 1430 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire



SCENE: View of drum sample location D-008. Photograph taken facing northwest.

FRAME NUMBER: 23 **DATE:** 11 August 1999 **TIME:** 1530 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

SCENE: View of suspected oil leaking from a 100-gallon home heating oil tank. Photograph taken facing east.

FRAME NUMBER: 24 **DATE:** 11 August 1999 **TIME:** 1535 **SKY CONDITION:** Cloudy
PHOTOGRAPH BY: Mandy Butterworth **WITNESS(ES):** Gilberto Irizarry
CAMERA: Minolta **SETTING:** Automatic **FILM TYPE:** 35-mm **FILM ROLL:** BC100200

PHOTOGRAPHY LOG SHEET
Mowhawk Tannery Site • Nashua, New Hampshire

NEGATIVES

FILM ROLL BC100200

WESTON®
MANAGERS DESIGNERS/CONSULTANTS

Roy F. Weston, Inc.
217 Middlesex Turnpike
Burlington, Massachusetts 01803-3308

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0009

Appendix F

Analytical Results

SITE: MO\ ANNERY
CASE: 0279\ SDG: K9905420
LABORATORY: COLUMBIA ANALYTICAL SERVICES

TABLE 1
VOLATILE SOIL ANALYSIS - MEDIUM LEVEL
µg/kg

SAMPLE NUMBER:		DAFAS1	DAFAS3	DAFAS4	DAFAS5	DAFAS6
SAMPLE LOCATION:		CLARIFIER-COMPOSITE	DRUM 003	DRUM 004	DRUM 006	DRUM 008
SAMPLE DESCRIPTION:						
LABORATORY NUMBER:		K9905420-004	K9905420-006	K9905420-007	K9905420-008	K9905420-009
COMPOUND	CRQL					
Chloromethane	1200	960 U	280000 U	4800000 U	4600000 U	160 J
Bromomethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Vinyl Chloride	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Chloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Methylene Chloride	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Acetone	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Carbon Disulfide	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,1-Dichloroethene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,1-Dichloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,2-Dichloroethene (Total)	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Chloroform	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,2-Dichloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
2-Butanone	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,1,1-Trichloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Carbon Tetrachloride	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Bromodichloromethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,2-Dichloropropane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
cis-1,3-Dichloropropene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Trichloroethene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Dibromochloromethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,1,2-Trichloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Benzene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
trans-1,3-Dichloropropene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Bromoform	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
4-Methyl-2-pentanone	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
2-Hexanone	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Tetrachloroethene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
1,1,2,2-Tetrachloroethane	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Toluene	1200	960 U	65000 J	4800000 U	300000 J	1000 U
Chlorobenzene	1200	960 U	280000 U	4800000 U	4600000 U	1000 U
Ethylbenzene	1200	960 U	280000 U	4800000 U	960000 J	1000 U
Styrene	1200	960 U	1200000	4800000 U	2400000 J	1000 U
Xylene (total)	1200	960 U	310000	4800000 U	19000000	1000 U
DILUTION FACTOR:		1.0	1.0	1000.0	1000.0	1.0
DATE SAMPLED:		08/11/99	08/11/99	08/11/99	08/11/99	08/11/99
DATE ANALYZED:		08/25/99	08/25/99	08/25/99	08/25/99	08/25/99
% MOISTURE:						

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS

43

SITE: MOHAWK TANNERY
CASE: 0279F SDG: DAFAR7
LABORATORY: COLUMBIA ANALYTICAL SERVICES, INC.

TABLE 2
INORGANIC AQUEOUS ANALYSIS
ug/L

SAMPLE NUMBER:		DAFAS2	DAFAS5 Bottom Layer
SAMPLE LOCATION:		Drum 001	Drum 006
LABORATORY NUMBER:		K9905420-005	K9905420-014

INORGANIC ELEMENTS	METHOD	INSTRUMENT DETECTION LIMITS (ug/L)			CONTRACT DETECTION LIMITS (ug/L)
ALUMINUM	P	8.9	76.2 U	27.0 U	200
ARSENIC	F	1.0	6.8 U	2.0 U	10
BARIUM	P	0.5	10.2 U	7.9 U	200
CADMIUM	P	3.1	3.4 J	6.2 U	5
CALCIUM	P	6.8	970	875	5000
CHROMIUM	P	2.8	8.1 UJ	5.6 UJ	10
IRON	P	2.6	350 U	9540	100
LEAD	F	1.0	3.4 U	2.0 U	3
MAGNESIUM	P	82.0	335 U	164 U	5000
MERCURY	CV	0.1	0.10 UJ	0.10 UJ	0.2
SELENIUM	F	2.0	2.0 U	2.0 U	5
SILVER	P	2.0	2.0 U	4.0 U	10

ANALYTICAL METHOD
F - FURNACE
P - ICP/FLAME AA
CV - COLD VAPOR
AS - SEMI AUTOMATED SPECTROPHOTOMETRIC
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J - QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
U - VALUE IS NON-DETECTED AND DETECTION LIMIT IS RAISED.
UJ VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.
R - VALUE IS REJECTED.

SITE: ML TANNERY
CASE: 0279F SDG: DAFAR7
LABORATORY: COLUMBIA ANALYTICAL SERVICES, INC.

TABLE 3
INORGANIC SOIL ANALYSES
mg/kg

SAMPLE NUMBER:	DAFAS3	DAFAS4	DAFAS5 Top Layer	DAFAS6
SAMPLE LOCATION:	Drum 003	Drum 004	Drum 006	Drum 008
LABORATORY NUMBER:	K9905420-006	K9905420-007	K9905420-008	K9905420-009
PERCENT SOLIDS:	100.0	100.0	100.0	100.0

INORGANIC ELEMENTS	METHOD	INSTRUMENT DETECTION LIMITS (mg/kg)					CONTRACT DETECTION LIMITS (mg/kg)
ALUMINUM	P	0.18	2.9 U	4.1 U	4.7 U	2160	4.0
ARSENIC	F	0.02	0.20 U	0.20 U	0.20 U	0.20 U	0.20
BARIUM	P	0.01	0.05 U	0.05 U	0.05 U	308	4.0
CADMIUM	P	0.06	0.31 U	0.31 U	0.31 U	0.31 U	0.1
CALCIUM	P	0.14	64.9 U	52.6 U	3.2 U	207	100
CHROMIUM	P	0.06	0.28 U	0.28 U	0.50 U	328	0.20
IRON	P	0.05	0.26 U	0.26 U	4090	77300	2.0
LEAD	F	0.02	0.20 U	0.20 U	0.36 U	63.5	0.06
MAGNESIUM	P	1.6	10.2 U	8.2 U	8.2 U	2190	100
MERCURY	CV	0.05	0.04 UJ	0.05 UJ	0.04 UJ	0.06 J	0.1
SELENIUM	F	0.04	0.20 UJ	0.20 UJ	0.20 UJ	0.20 UJ	0.1
SILVER	P	0.04	0.20 U	0.23	0.22	9.6	0.20

45

ANALYTICAL METHOD
F - FURNACE
P - ICP/FLAME AA
CV - COLD VAPOR
AS - SEMI AUTOMATED SPECTROPHOTOMETRIC
CA - MIDI-DISTILLATION SPECTROPHOTOMETRIC

NOTE:
J = QUANTITATION IS ESTIMATED DUE TO LIMITATIONS IDENTIFIED IN THE QUALITY CONTROL REVIEW (DATA REVIEW).
U = VALUE IS NON-DETECTED.
UJ = VALUE IS NON-DETECTED AND DETECTION LIMIT IS ESTIMATED.
R = VALUE IS REJECTED.
NA = NOT ANALYZED

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS

SITE: MOHAWK TANNERY
CASE: 0279F SDG: K9905420
LABORATORY: COLUMBIA ANALYTICAL SERVICES

TABLE 4
SEMIVOLATILE AQUEOUS ANALYSIS
µg/L

SAMPLE NUMBER:		DAFAS2	DAFAS3	DAFAS5	DAFAS6
SAMPLE LOCATION:		DRUM 001	DRUM 003	DRUM 006	DRUM 008
LABORATORY NUMBER:		9905420-005	K9905420-005	K9905420-005	K9905420-005
COMPOUND	CRQL				
Phenol	10	37 U	400 U	17000 U	40 U
bis(2-Chloroethyl)ether	10	37 U	400 U	17000 U	40 U
2-Chlorophenol	10	37 U	400 U	17000 U	40 U
1,3-Dichlorobenzene	10	37 U	400 U	17000 U	40 U
1,4-Dichlorobenzene	10	37 U	400 U	17000 U	40 U
1,2-Dichlorobenzene	10	37 U	400 U	17000 U	40 U
2-Methylphenol	10	37 U	400 U	17000 U	40 U
2,2'-Oxybis(1-chloropropane)	10	37 U	400 U	17000 U	40 U
4-Methylphenol	10	37 U	400 U	17000 U	40 U
N-Nitroso-di-n-propylamine	10	37 U	400 U	17000 U	40 U
Hexachloroethane	10	37 U	400 U	17000 U	21 J
Nitrobenzene	10	37 U	400 U	17000 U	40 U
Isophorone	10	37 U	400 U	17000 U	40 U
2-Nitrophenol	10	37 U	400 U	17000 U	40 U
2,4-Dimethylphenol	10	37 U	400 U	17000 U	40 U
bis(2-Chloroethoxy)methane	10	37 U	400 U	17000 U	40 U
2,4-Dichlorophenol	10	37 U	400 U	17000 U	40 U
1,2,4-Trichlorobenzene	10	37 U	400 U	17000 U	40 U
Naphthalene	10	37 U	1100 U	7400 J	16 J
4-Chloroaniline	10	37 U	400 U	17000 U	40 U
Hexachlorobutadiene	10	37 U	400 U	17000 U	130
4-Chloro-3-methylphenol	10	37 U	400 U	17000 U	40 U
2-Methylnaphthalene	10	37 U	130 U	2600 J	6 J
Hexachlorocyclopentadiene	10	37 U	400 U	17000 U	16 J
2,4,6-Trichlorophenol	10	37 U	400 U	17000 U	40 U
2,4,5-Trichlorophenol	25	93 U	1000 U	42000 U	100 U
2-Chloronaphthalene	10	37 U	400 U	17000 U	40 U
2-Nitroaniline	25	93 U	1000 U	42000 U	100 U
Dimethylphthalate	10	37 U	400 U	17000 U	40 U
Acenaphthylene	10	37 U	400 U	17000 U	40 U
2,6-Dinitrotoluene	10	37 U	400 U	17000 U	40 U
3-Nitroaniline	25	93 U	1000 U	42000 U	100 U
Acenaphthene	10	37 U	400 U	17000 U	40 U
2,4-Dinitrophenol	25	93 U	1000 U	42000 U	100 U
Dibenzofuran	10	37 U	400 U	17000 U	40 U
4-Nitrophenol	25	93 U	1000 U	42000 U	100 U
2,4-Dinitrotoluene	10	37 U	400 U	17000 U	40 U
Diethylphthalate	10	37 U	400 U	17000 U	40 U
Fluorene	10	37 U	7 U	17000 U	40 U
4-Chlorophenyl-phenylether	10	37 U	6 U	17000 U	40 U
4-Nitroaniline	25	93 U	1000 U	42000 U	100 U
4,6-Dinitro-2-methylphenol	25	93 U	1000 U	42000 U	100 U
N-Nitrosodiphenylamine(1)	10	37 U	400 U	17000 U	40 U
4-Bromophenyl-phenylether	10	37 U	5 U	17000 U	40 U
Hexachlorobenzene	10	37 U	400 U	17000 U	370
Pentachlorophenol	25	93 U	1000 U	42000 U	83 J
Phenanthrene	10	37 U	400 U	17000 U	40 U
Anthracene	10	37 U	400 U	17000 U	40 U
Carbazole	10	37 U	400 U	17000 U	40 U
Di-n-butylphthalate	10	1 J	36 U	17000 U	2 J
Fluoranthene	10	37 U	400 U	17000 U	40 U
Pyrene	10	37 U	400 U	17000 U	40 U
Butylbenzylphthalate	10	37 U	5100 U	1100 U	40 U
3,3'-Dichlorobenzidine	10	37 U	400 U	17000 U	40 U
Benzo(a)anthracene	10	37 U	400 U	17000 U	40 U
Chrysene	10	37 U	400 U	17000 U	40 U
bis(2-Ethylhexyl)phthalate	10	37 U	5 U	120 U	*1200
Di-n-octylphthalate	10	37 U	400 U	17000 U	40 U
Benzo(b)fluoranthene	10	37 U	400 U	17000 U	40 U
Benzo(k)fluoranthene	10	37 U	400 U	17000 U	40 U
Benzo(a)pyrene	10	37 U	400 U	17000 U	40 U
Indeno(1,2,3-cd)pyrene	10	37 U	400 U	17000 U	40 U
Dibenz(a,h)anthracene	10	37 U	400 U	17000 U	40 U
Benzo(g,h,i)perylene	10	37 U	400 U	17000 U	40 U
DILUTION FACTOR:		1.0	100.0	100.0	
DATE SAMPLED:		08/11/99	08/11/99	08/11/99	
DATE EXTRACTED:		08/17/99	08/17/99	08/17/99	
DATE ANALYZED:		08/21/99	08/27/99	08/23/99	

SITE: MOHAWK TANNERY
CASE: 0279F SDG: K9905420
LABORATORY: COLUMBIA ANALYTIC SERVICES

TABLE 5
SEMIVOLATILE SOIL ANALYSIS
µg/kg

SAMPLE NUMBER:		DAFAS1	DAFAS4	DAFAS5
SAMPLE LOCATION:		RIFIER COMPOSITE	DRUM 004	DRUM 006
LABORATORY NUMBER:		K990542-004	K990542-007	K990542-007
MPOUND	CRQL			
Phenol	330	1400 U	500 U	500 U
bis(2-Chloroethyl)ether	330	1400 U	500 U	500 U
2-Chlorophenol	330	1400 U	500 U	500 U
1,3-Dichlorobenzene	330	1400 U	500 U	500 U
1,4-Dichlorobenzene	330	1400 U	500 U	500 U
1,2-Dichlorobenzene	330	1400 U	500 U	500 U
2-Methylphenol	330	1400 U	500 U	500 U
2,2'-Oxybis(1-chloropropane)	330	1400 U	500 U	500 U
4-Methylphenol	330	1400 U	500 U	500 U
N-Nitroso-di-n-propylamine	330	1400 U	500 U	500 U
Hexachloroethane	330	1400 U	500 U	500 U
Nitrobenzene	330	1400 U	500 U	500 U
Isophorone	330	1400 U	500 U	500 U
2-Nitrophenol	330	1400 U	500 U	500 U
2,4-Dimethylphenol	330	1400 U	500 U	500 U
bis(2-Chloroethoxy)methane	330	1400 U	500 U	500 U
2,4-Dichlorophenol	330	1400 U	500 U	500 U
1,2,4-Trichlorobenzene	330	1400 U	500 U	500 U
Naphthalene	330	20 J	540	540
4-Chloroaniline	330	1400 U	500 U	500 U
Hexachlorobutadiene	330	1400 U	500 U	500 U
4-Chloro-3-methylphenol	330	1400 U	500 U	500 U
2-Methylnaphthalene	330	1400 U	170 U	210 J
Hexachlorocyclopentadiene	330	1400 U	500 U	500 U
2,4,6-Trichlorophenol	330	1400 U	500 U	500 U
2,4,5-Trichlorophenol	830	3400 U	1300 U	1200 U
2-Chloronaphthalene	330	1400 U	500 U	500 U
2-Nitroaniline	830	3400 U	1300 U	1200 U
Dimethylphthalate	330	1400 U	500 U	500 U
Acenaphthylene	330	1400 U	500 U	500 U
2,6-Dinitrotoluene	330	1400 U	500 U	500 U
3-Nitroaniline	830	1400 U	1300 U	1200 U
Acenaphthene	330	1400 U	500 U	500 U
2,4-Dinitrophenol	830	3400 U	1300 U	1200 U
'trophenol	830	1400 U	500 U	500 U
nzofuran	330	3400 U	1300 U	1200 U
Dinitrotoluene	330	1400 U	500 U	500 U
methylphthalate	330	1400 U	500 U	500 U
4-Chlorophenyl-phenylether	330	1400 U	500 U	500 U
Fluorene	330	1400 U	500 U	500 U
4-Nitroaniline	830	3400 U	1300 U	1200 U
4,6-Dinitro-2-methylphenol	830	3400 U	1300 U	1200 U
N-Nitrosodiphenylamine(1)	330	1400 U	500 U	500 U
4-Bromophenyl-phenylether	330	1400 U	500 U	500 U
Hexachlorobenzene	330	1400 U	500 U	500 U
Pentachlorophenol	830	2300 U	28 J	32 J
Phenanthrene	330	1400 U	500 U	500 U
Anthracene	330	1400 U	500 U	500 U
Carbazole	330	1400 U	500 U	13 U
Di-n-butylphthalate	330	1400 U	500 U	500 U
Fluoranthene	330	1400 U	500 U	500 U
Pyrene	330	100 U	500 U	500 U
Butylbenzylphthalate	330	1400 U	31 J	31 J
3,3'-Dichlorobenzidine	330	1400 U	500 U	500 U
Benzo(a)anthracene	330	1400 U	500 U	500 U
Chrysene	330	1400 U	500 U	500 U
bis(2-Ethylhexyl)phthalate	330	2500 U	500 U	500 U
Di-n-octylphthalate	330	1400 U	500 U	500 U
Benzo(b)fluoranthene	330	1400 U	500 U	500 U
Benzo(k)fluoranthene	330	1400 U	500 U	500 U
Benzo(a)pyrene	330	1400 U	500 U	500 U
Indeno(1,2,3-cd)pyrene	330	1400 U	500 U	500 U
Dibenz(a,h)anthracene	330	1400 U	500 U	500 U
Benzo(g,h,i)perylene	330	1400 U	500 U	500 U
DILUTION FACTOR:		1.0	50.0	50.0
DATE SAMPLED:		08/11/99	08/11/99	08/11/99
DATE EXTRACTED:		08/24/99	08/18/99	08/18/99
DATE ANALYZED:		08/24/99	08/23/99	08/23/99
% MOISTURE:		93	500	500

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS

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SCILAB BOSTON, INC.
8 SCHOOL STREET
WEYMOUTH, MA 02189
TEL: (781) 337-9334 • FAX: (781) 337-7642

PLM Bulk Asbestos Report

Roy F. Weston Inc.
Attn: Paul Killian
217 Middlesex Turnpike

Burlington, MA 01803

Date Received 08/13/99 **SciLab Job No.** 99088609
Date Examined 08/17/99 **P.O. #** DAS Case No. 0280F
Page 1 **of** 2
RE: DAS Case No. 0280F; EPA; Mohawk Tannery

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
DAF AS7	99088609-01	*Yes*	33 %

Location: Hanging ACM Board

Description: Off-White, Homogeneous, Hanging ACM Board
Asbestos Types: Amosite 33. %
Other Material: Non-fibrous 67. %

AS8	99088609-02	*Yes*	15 %

Location: Transite Board

Description: Grey, Homogeneous, Cementitious, Transite Board
Asbestos Types: Chrysotile 15. %
Other Material: Non-fibrous 85. %

DAF AS9	99088609-03	*Yes*	35 %

Location: Pipe Wrap

Description: Off-White, Homogeneous, Pipe Wrap
Asbestos Types: Amosite 25. %, Chrysotile 10. %
Other Material: Non-fibrous 65. %

DAF AS9 QC	99088609-04	*Yes*	30 %[1]

Location: Pipe Wrap

Lab Duplicate

Description: Off-White, Homogeneous, Pipe Wrap
Asbestos Types: Amosite 20. %, Chrysotile 10. %
Other Material: Non-fibrous 70. %