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RCRA FACILITY ASSESSMENT
WATERLOO INDUSTRIES, INC.
300 ANSBOROUGH AVE.
WATERLOO, IOWA 50704
EPA ID NO. IAD005277959

TASK 7
FINAL RCRA FACILITY ASSESSMENT REPORT

SEPTEMBER 16, 1996

Submitted To:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

Submitted By:

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EPA CONTRACT NO. 68-W4-0005
EPA WORK ASSIGNMENT NO. R07022
SAIC PROJECT NO. 05-5029-07-2969

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Science Applications International Corporation
An Employee-Owned Company

September 16, 1996 DCN: RZ3-SAI-R07022-01-IS-02553

Ms. Alma Moreno-Lahm, IRSP
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Re: EPA Contract No. 68-W4-0005; EPA Work Assignment No. R07022
SAIC Project No. 05-5029-07-6955
Multiple Iowa RFAs
Final RFA Report

Dear Alma:

SAIC is pleased to submit the Final RFA Report for Waterloo Industries, Incorporated, Waterloo, Iowa, in partial fulfillment of Task 7 of the requirements of the subject work assignment. SAIC is also submitting the Final Conclusions and Recommendations and completed checklist with the signature page, according to the Statement of Work and the approved Work Plan.

If you have any questions or need any additional information, please do not hesitate to contact me at (816) 471-8660.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
Software and Systems Development Division
Environmental and Health Sciences Group

Jim Aycock
Work Assignment Manager

REC'D IRSP. BR.
SEP 17 1996

Enclosure

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WATERLOO

CHECKLIST AND SIGNATURE PAGE

- ✓ Completed in accordance with EPA Guidance
- ✓ Fulfills requirements of the EPA approved Work Plan
- ✓ Spell check ran on submittal
- ✓ Aerial photographs reviewed and information from them is incorporated into the submittal
- ✓ Historical operations and waste management practices investigated and incorporated into the submittal
- ✓ Summary/Table of Regulatory history which supports evidence of a release or potential release
- ✓ Figure illustrating surrounding land use
- ✓ Figure identifying each SWMU
- ✓ Figure illustrating surface water flow on and off site
- ✓ Figure illustrating groundwater flow direction
- ✓ Depth of groundwater stated
- ✓ Public and private wells identified within a one-half mile radius of the facility
- ✓ Groundwater use within a one-half mile radius of the facility
- ✓ SWMU summary table
- ✓ All statements, ideas, and recommendations substantiated with references
- N/A Summary table of groundwater analytical data
- N/A Summary table of soil analytical data including background analytical data
- N/A Figure identifying sampling locations and sample identification numbers

Additional Comments

Reviewer's Signature

9/16/96
Date

(Complete and sign the above checklist and attach it to the front cover of the submittal.)

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1.0 INTRODUCTION

Under Contract No. 68-W4-0005 to the U.S. Environmental Protection Agency (EPA) Region VII (Work Assignment No. R07022), SAIC has been tasked to provide technical support to the RCRA Branch of EPA Region VII in conducting a RCRA Facility Assessment (RFA) at Waterloo Industries, Inc. (Waterloo) located at 300 Ansborough Avenue, Waterloo, Iowa 50704 (EPA ID No. IAD005277959).

The RFA is the initial step in the three-stage RCRA Corrective Action Program. "The primary objective of the Corrective Action Program is to clean up releases of hazardous waste or hazardous constituents that threaten human health or the environment." The purpose of an RFA is to compile existing information on a facility, evaluate solid waste management units (SWMUs) and other areas of concern (AOCs) with respect to the potential for releases to the environment, make preliminary determinations regarding the need for further investigation or interim measures at the facility, and screen from further investigation those SWMUs or AOCs that do not pose a threat to human health or environment. Additional investigation of the facility is accomplished in the second stage, the RCRA Facility Investigation (RFI). The RFI is intended to fully characterize the extent of any releases from the facility. The third stage in the Corrective Action Program is the determination of the need for corrective measures and the implementation of the appropriate measures for all problems identified.[1]

An RFA consists of three main components: the preliminary review (PR), the visual site inspection (VSI), and the sampling visit (SV), if necessary. The PR focuses on evaluating existing information on the facility files from EPA, the State of Iowa, and municipalities. The information reviewed may include inspection reports, permit applications, permits, historical monitoring data, and interviews with State personnel who are familiar with the facility. The VSI entails on-site collection of visual information and specific details on operation history and status for each SWMU or AOC to acquire additional evidence of a release. Information not available during the PR, such as recent modifications to a unit or impending closure of the unit by the facility, also are collected during a VSI. The sampling visit fills data gaps that remain upon completion of the PR and VSI by obtaining sampling and field data.[1]

In conducting the PR, documents from EPA Region VII, the Iowa Department of Natural Resources (IDNR), IDNR Geological Survey Bureau (IGSB), and U.S. Fish and Wildlife Service were reviewed.

SAIC personnel, Messrs. Jim Aycock and Jeff Robichaud, and EPA representative, Mr. Don Bahnke, conducted the VSI at the Waterloo facility on April 18, 1996. A map depicting the facility location is provided as Figure 1. Upon arrival at the facility, SAIC and EPA representatives met with Waterloo representatives Messrs. Barney Skiles, Jerry Stoll, Richard Welsh and Ms. Parthenia Evans, Legal Counsel for Waterloo Industries and presented their letter of credentials.

2.5 Regulatory History/RCRA Status

All references to EPA in this section mean EPA Region VII.

August 13, 1980	The facility submitted first "Notification of Hazardous Waste Activity" form (EPA form 8700-12-6-80) which listed the facility as a hazardous waste generator and treatment/storage/disposal facility. Hazardous wastes generated listed by the facility included D001, F017, and F018. EPA assigned the identification number IAD005277959 to the facility.[6]
November 15, 1980	The facility submits Part A Permit Application to EPA.[6]
January 26, 1981	EPA acknowledges the facility achieves Interim Status.[7]
June 10, 1981	Iowa Department of Environmental Quality (IDEQ) conducted a RCRA CEI. Ten discrepancies were noted including no waste analysis plan, no training plan and records, no contingency plan, no record of inspections, storing hazardous waste within 50 feet of property line, improperly labeling containers of hazardous waste, no secondary containment, failure to determine whether wastes are hazardous, not completing manifests, and no emergency coordinator.[8]
July 8, 1981	The facility requests change in classification of paint sludge from hazardous to non-hazardous.[6]
October 29, 1981	Iowa Department of Water, Air, Waste Management (IDWAWM) received from the facility a response seeking non-hazardous classification and to report possible uncontrolled waste disposal on the property during the 1950s and 1960s.[6,9]
November 16, and 17, 1982	IDEQ and EPA conducted a RCRA CEI. Violations noted during the inspection included: No training records at the facility, no inspections at hazardous waste storage areas were conducted, no contingency plan at the facility, no dates or labels on hazardous waste containers.[10]
November 24, 1982	IDEQ notified facility waste solvent mixture is hazardous even though it is recycled therefore, generator status would remain.[6]
January 20, 1983	Facility submits letter to IDEQ asking to terminate Interim Status.[11]
January 21, 1983	The facility submitted a subsequent "Notification of Hazardous Waste Activity" form (EPA form 8700-12 [6-80]) which listed the facility as a generator of D001, F003, and F005 hazardous waste.[12]

February 15, 1983	IDEQ conducted a RCRA CEI at the facility. One violation was noted: the plant's hazardous waste storage facility was located less than 50 feet from the facility property line.[13]
March 22, 1984	IDEQ conducted a RCRA CEI. No violations noted during the inspection.[14]
April 19, 1984	EPA responds to a facility request to terminate Interim Status. EPA did not grant termination from Interim Status because request from the facility was not submitted by "a principal executive officer of at least the level of vice-president."[15]
April 26, 1984	The facility submits a letter to EPA asking to terminate Interim Status.[16]
October 3, 1984	EPA releases a "Notice to Terminate Interim Status."[17]
April 5, 1985	IDWAWM recommends the facility be administratively taken out of the Hazardous Waste System as a protective filer.[18]
May 9, 1985	EPA returns Part A permit application to the facility. Because facility never achieved Interim Status, facility returned to < 90 day large quantity hazardous waste generator status.[19]
October 4, 1985	EPA conducts a RCRA CEI at the facility citing the following violations: storage of hazardous waste over 90 days, open satellite accumulation drum, satellite accumulation drum contents not identified, no 5 digit manifest document number on several manifests, no placards available for transporters, no documented arrangements with local authorities, no written description of annual training, no documentation of training given, inadequate contingency plan, and storage of ignitable hazardous waste within 50 feet of property boundary.[2]
January 6, 1987	EPA conducts a RCRA CEI at the facility citing five violations. Violations noted during the inspection included: drums in storage not dated, no weekly inspections of the hazardous waste storage area, storage of ignitable hazardous waste within 50 feet of the property boundary, satellite accumulation drum contents not identified, and manifests waste description name did not correspond with the waste identification number used.[20]
April 10, 1987	Ecology and Environment submits Preliminary Assessment report to EPA. Site visit conducted on November 19, 1986. The report findings show a significant amount of waste paint sludge, and possibly a much smaller quantity of sheet metal cleaning sludge, was buried in a low-lying area on the facility property during the 1950's and early 1960's.[21]

March 31, 1988	EPA issues the facility an 3008(a) Unilateral Administrative Order (Docket No. VII-88-H-0015) for RCRA violations. The order contains five counts: Count I alleges the facility operated a storage area without interim status or a permit; Count II alleges the facility stores ignitable hazardous waste within 15 meters of the property line; Count III alleges the facility failed to keep all satellite accumulation containers closed; Count IV alleges the facility failed to mark all hazardous waste containers with the words "Hazardous Waste" or with other words that identify the contents of the container; and Count V alleges the facility failed to complete the hazardous waste manifest in accordance with the instructions included in the Appendix to 40 CFR Part 262.[22]
October 24, 1988	The facility files a Answer and Request for Hearing in response to EPAs 3008(a) Unilateral Administrative Order (Docket No. VII-88-H-0015).[23]
July 6 and September 12, 1989	EPA performed a RCRA CEI. No violations noted.[24]
July 3, 1990	EPA issued executed copy of the Consent Agreement and Consent Order (CA/CO) to the facility. The facility agreed to pay $21,000 fine for the five counts listed in the CA/CO.[25]
October 25, 1990	EPA receives a letter from IDNR in regards to a complaint filed against the facility. The complaint alleges the facility dumped lead based paint from 1940 to 1970 in a lagoon area north of the plant (now a parking lot).[26]
July 30, 1991	EPA issued a Notice of Deficiency/Letter of Warning (NOD/LOW) to the facility acknowledging receipt of the closure plan dated October 19, 1990. EPA reviewed the plan and requested the facility to address comments that require revision or clarification. The NOD/LOW listed 13 items that required the facility to address.[27]
October 28, 1991	EPA tentatively approved the facility closure plan for one hazardous waste storage area dated August 26, 1991 and EPA's modifications to that plan dated October 7, 1991.[28]
December 26, 1991	EPA issued final approval to the facility closure plan.[29]
April 23-24, 1992	Metcalf and Eddy, Inc. performed a RCRA CEI on behalf of EPA, at the facility. Potential areas of non-compliance were noted during the inspection. The areas of non-compliance included: failure to determine whether wastes are hazardous, drums in the hazardous waste storage area were dented, the contingency plan had not been updated when required, failure to conduct weekly inspections, failure to remove excess quantities

of hazardous waste from satellite accumulation areas within 3 days, open satellite accumulation drums, failure to label satellite accumulation containers, personnel training records were not up to date, LDR notices were not completed as required. In addition, it was noted in the report that closure of the former hazardous waste temporary storage area had taken place in March 1992.[3,30]

June 10, 1992 — EPA issues letter to the facility accepting the closure report and certifications for the hazardous waste management unit (container storage area).[31]

August 1994 — EPA issued a Request for Information letter to the facility requesting a response to violations observed during the April 23-24, 1992 RCRA CEI.[32]

January 27, 1995 — EPA issues LOW to the facility after reviewing the April 23-24, 1992 RCRA CEI report and the facilities September 7, 1994 response to the Request for Information letter.[33]

3.0 ENVIRONMENTAL SETTING

This section presents the environmental setting at Waterloo as observed during the VSI. The surrounding land use is characterized as mixed residential and commercial. Located at the southeast side of the facility (corner of Maynard Ave. and Rainbow DR. is the J. E. Millet Company. The east side of the facility (east side of Ansbouorgh Ave.) is residential. Buzz's Bar, residences, Whittaker Foods, Sam Innis and Company, Fritter Foods, and Kitchen Plus occupy the area west of the facility. A surrounding land use map is included in this report as Figure 3.

3.1 Surface Water Drainage

Surface water drainage is primarily to the west-northwest. A surface water runoff ditch located on the northeast side of the facility routes surface water from the east side of the facility to the north side of the facility. The surface water is routed along the north side of the facility and exits at the northwest corner of the facility. A surface water drainage map is included in this report as Figure 4.

3.2 Climate

The coldest month is January, with an average high temperature of 23.2°F and an average low temperature of 4.7°F. The warmest month is July, with an average high temperature of 83.4°F and an average low temperature of 61.8°F. The mean annual precipitation is 33.10 inches, with January as the driest month, and July as the wettest month.[34]

Background information obtained during the PR and the VSI are presented in Sections 2.0 and 3.0 of this report. The SWMUs and AOCs identified during the PR and VSI and potential for releases from these units to various media are discussed in detail in Sections 4.0 and 5.0. References cited in the text are designated with a unique number corresponding to the references listed in Section 6.0. The report is supplemented with appendices containing photographs taken during the VSI (Appendix A) and VSI Field Notes (Appendix B), Appendices C through K contain relevant documents collected during the PR and documents requested from the facility at the time of the VSI.

2.0 SITE BACKGROUND

This section of the report describes the facility, summarizes the facility's history and operation, discusses past investigations on- and off-site, and summarizes the facility's compliance history.

2.1 Facility Information

Facility Name: Waterloo Industries, Incorporated
EPA ID No. IAD005277959
300 Ansborough Avenue
Waterloo, Iowa 50704
(319) 235-7131

2.2 Facility Description

Waterloo Industries, Inc. consists of one main 150,000-160,000 ft^2 building and one smaller building located on a 43 acre site (Figure 1).[2,3,4] The smaller building is utilized for hazardous waste storage and stock room receiving. Sheet steel receiving is located on the southeast side and the shipping dock is located on the west side of the main building. A wastewater treatment addition is located on the north side of the main building. The main building and the smaller building are connected by a covered walkway. The facility is surrounded by an eight foot high chain-link fence that prevents unauthorized access to the facility.[3]

According to Mr. Barney Skiles, the main building was constructed in 1945 or 1946. Additions to the main building were made in 1965, 1966, 1967, 1969, and 1976. The smaller building was constructed in 1971 and an addition added on in 1972.[5] The main building is protected throughout with an overhead sprinkler system. The sprinkler is part wet and part dry, and is zoned and heat activated.[2] Two aerial photographs taken in 1951 depict the facility before the additions were constructed. Copies of the aerial photographs are included in this report as Appendix C.[5]

Currently, there are approximately 200 employees at this facility. The facility operates two shifts per day, five days per week.[4]

2.3 Site History

According to Mr. Ken Anderson, Vice President, Manufacturing, from the period 1946 to 1976, the facility was a closely held corporation owned by the Sulentic family. From 1976 to 1987, the facility was a wholly-owned subsidiary of Beatrice Foods Co. In April of 1987, the facility was acquired by B.C.I. and was held until July of 1987. From July 1987 to 1988, the facility was a wholly-owned subsidiary of E II Consumer Products, Inc. Currently, the facility is a wholly-owned subsidiary of MasterBrand Industries, Inc., which in turn is a wholly-owned subsidiary of American Brands, Inc. American Brands acquired the facility on June 27, 1988.[5]

2.4 Facility Operations

Waterloo Industries, Inc. manufactures roll-a-way tool cabinets made of fabricated sheet metal. Processes used in the production of tool cabinets include sheet metal shearing, forming, welding, finishing, and assembly.[2,3] A map that depicts the layout of the facility production areas is included in this report as Figure 2. There are three different painting systems utilized at the facility: an electrodeposition paint system, an electrostatic paint system, and dry filter paint system (manual spray paint booths). Prior to 1991, the facility also operated a waterfall paint system. The waterfall paint system was discontinued in August 1991.[3]

The electrodeposition paint system (E-coat) paint system consists of a seven-stage washer, an E-coat paint tank, a bake oven and assembly operations. The seven-stage washer consists of an alkaline cleaning tank, two water rinse tanks, two iron phosphatizing rinse tanks and two deionized water rinse tanks. There are two E-coat tanks. One tank is used for red paint and the other tank is used for gray paint. The tanks were installed in 1978.

The electostatic paint system is comprised of a three-stage washer, an electrostatic paint system, a bake oven, and assembly operations. The three stage washer consists of an alkaline cleaning tank, an iron phosphatizing tank, and a deionized water rinse. The tanks were also installed in 1978.

There is an on-site wastewater treatment system comprised of a 29,000-gallon tank and a 13,000-gallon tank for treatment of facility wastewater. The treatment is primarily gravity flow however, the pH of the wastewater is adjusted to help flocculate the solids. The effluent from the wastewater treatment system is discharged to the city sanitary sewer system under a discharge agreement. The wastewater treatment tanks are cleaned every eighteen months. Each cleaning generates approximately 10,000 to 20,000 gallons of dry sludge. Dried sludge is disposed at Black Hawk County Landfill.

A heat cleaning oven was installed in 1991 to bake off paint hooks and bake and/or incinerate waste paint filters. The heat cleaning oven was placed into operation in January 1992.[3] This unit is not a RCRA regulated unit.

3.3 Geology

The following section discusses the regional and site geology.

3.3.1 Regional Geology

Unconsolidated Quaternary-age sediments cover approximately 97% of the land surface in Iowa. These unconsolidated sediments are primarily glacial in origin and consist of glacial till and alluvium. In northeastern Iowa the unconsolidated sediments are thin and discontinuous covering bedrock that ranges in age from lower Ordovician to lower Mississippian. Because of the relatively thin cover of unconsolidated sediments, the topography in this area of the state closely mimics the bedrock geology. In Black Hawk County the bedrock geology consists of middle and upper Devonian-age sedimentary rocks.[35]

3.3.2 Site Geology

The site is located less than one half mile south of the Cedar River at an approximate elevation of 870 ft mean sea level (msl). It is underlain by a mixture of loamy, moderately permeable Bassett soils and sandy, highly permeable Chelsea soils. The Bassett soils have a high available water capacity while the Chelsea soils have a low available water capacity. This soil complex is generally poorly drained.

The site is situated along a transitional topographic boundary between the till-covered uplands and the alluvial plain. The nature of the underlying unconsolidated material is difficult to determine because of the facility's location relative to this transitional boundary. During drilling, a well located approximately three quarters of a mile southwest of the site encountered 113 feet of till overlying the Devonian Cedar Valley Limestone. Because the river valley wall near the site is not well developed, it is difficult to determine where the till begins to accumulate. The site is likely situated on the southern edge of the alluvial plain where a negligible amount of till would be expected to exist.[36,37]

3.4 Hydrogeology

The following section discusses the regional and site hydrogeology including information concerning groundwater wells found within a one-mile radius of the facility.

3.4.1 Regional Hydrogeology

In the vicinity of the site groundwater is found at depths varying from 25 ft to 35 ft below ground surface (bgs). Groundwater flow is to the north-northeast toward the Cedar River. The Quaternary alluvium and underlying Cedar Valley Limestone are the principal groundwater aquifers in the area. Both aquifers are relatively high yielding and are utilized by the city of Waterloo for its municipal water supply. Yields range from 1,500 gallons per minute (gpm) to 4,200 gpm in the alluvial wells and from 600 gpm to 4,250 gpm in the Cedar Valley Limestone wells. In the vicinity of the alluvial plain it is likely that the two aquifers are hydraulically

connected. Moving away from the Cedar River, the likelihood increases that the two water-bearing zones are separated by a clay aquiclude.[37]

3.4.2 Site Hydrogeology

In the area of the site groundwater occurs under relatively shallow unconfined conditions. It is anticipated that groundwater flow would mimic the surface topography and flow to the north-northeast toward the Cedar River. However, fluctuations in the water level of the Cedar River may temporarily effect the groundwater flow direction. Surface water would generally flow to the northeast. Groundwater would be expected to occur at approximately 20 ft bgs in the Quaternary alluvium, based on the elevation of the Cedar River relative to the site. No groundwater wells are known to exist at the site. Maps depicting groundwater wells located within one-mile radius of the facility and groundwater flow are included in this report as Figures 5 and 6 respectively.

3.4.3 Groundwater Well Locations

Information was obtained from the IGSB on groundwater wells within a one-mile radius of the site. The information included well depths, screened intervals, well type, installation date, type of construction, and analytical data. Wells in the IGSB databases that fall within a one-mile radius of the site are shown on Figure 5. Information on plugged and abandoned wells, obtained through IGSB's PLUGWELL database, is not shown on Figure 5.

According to IGSB information, three wells are located within a one-mile radius of the site. The closest of these wells is located approximately three quarters of a mile southwest of the site. Specific information supplied by the IGSB, including mineral analyses for specific wells, is included in this report as Appendix D.[38]

3.5 Endangered/Threatened Species

According to IDNR, there are four species that are classified as Endangered (3 animal and one plant species); 3 species that are classified as Threatened (1 animal and 2 plant species); and 5 plant species that are classified as Special Concern Species located around (including one mile downstream) or near the facility. A list of Threatened, Endangered, and Special Concern Species provided by IDNR, are compiled in Table 1.[39]

4.0 SOLID WASTE MANAGEMENT UNITS (SWMUs)

This section contains detailed information for each SWMU identified during the PR and VSI, including a description and history of the unit, wastes managed, and potential for release to the various media from the specific SWMU. SWMUs are defined as "any discernible (solid) waste unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste" as defined in 40 CFR 261.2 and Final RFA Guidance, 1986.[1] If the unit is undergoing closure a brief description of

the unit's closure activities are provided and analytical results for samples collected during closure are included. In addition, the consequences of findings from closure investigations with respect to potentials for release, are discussed. For units undergoing closure, the information on closure activities are from reports prepared by the independent contractors conducting the closure investigations at a specific SWMUs on behalf of Waterloo.

The units age, current conditional status, the quality of its operating procedures, and record of compliance problems were evaluated to determine the migration pathways, potential for release and exposure potentials.

4.1 SWMU NO. 1 FORMER WASTE LAGOON

A. Unit Characteristics *UNIT STATUS : CLOSED*

The former waste lagoon was used by a former owner of the facility. The lagoon was located near the northwest corner of the main building (Figure 7). The lagoon was designed to operate as a disposal area for virgin paint, sludge, floats and skims from waterfall paint booths and possibly iron phosphatizing wastewater sludge.[5,21] The lagoon was approximately 75 yards long and 30 to 40 yards wide (Appendix A, Roll 2, Photo 17). The lagoon was operated during the 1950's until approximately 1965.[5]

In 1969, the lagoon area was filled with sand and a building expansion was constructed over the area.[5] Information found in a telephone conversation record between IDNR and an anonymous caller suggests that the lagoon area is now part of an employee parking lot at the facility. The location of the parking lot was not mentioned in the document. The caller also suggested that lead based paint was dumped into the lagoon from the 1940's to the 1970's.[26] During the VSI, Mr. Skiles stated that the lagoon was filled in with sand and the northwest portion of main building was constructed over the filled in area. Mr. Skiles stated that approximately 25 feet of sand was brought in as fill material. Mr. Skiles stated that no additional information is available regarding the former waste lagoon.[4] Aerial photographs taken in 1951 do not reveal the location of the former lagoon.[5] Copies of the aerial photographs are included in this report as Appendix C.

B. Wastes Managed

According to Waterloo's SWMU response letter to EPA Region VII, the following wastes were disposed in the former lagoon:

(1) Virgin paint. Quantities of virgin paint disposed in the lagoon are unknown. The virgin paint was a valuable commercial product, therefore, the facility presumes that quantities disposed were minimal.

(2) Floats and skims off waterfall paint booths. Quantities of the material are unknown. The material was collected daily or weekly as needed.

(3) Sludge from the bottom of waterfall paint booths. Quantity of the waste material is unknown. The waste sludge probably contained Alkyd enamel paint sludge, D-100 and D-150, and a waterwash compound 54 DDST from Fremont Chemical Company. Some of the wastes were in 55-gallon barrels.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

There have not been any investigations conducted at this site to determine whether there has been a release to the environment from past operations at this unit. An April 10, 1987, Preliminary Assessment Report prepared by Ecology and Environment recommended groundwater and soil sampling to determine whether a release to groundwater has occurred. As of the date of this report, no sampling has been conducted.

Surface Water: There was a high potential for a release to surface water. Any time the lagoon overfilled or discharged to a creek a release to surface water occurred. There is no documentation or information that a discharge to surface water occurred. Currently, there is no release potential to surface water as the area has a building constructed over it.

Soils: There has been a release to soils. Paint wastes have been disposed in this unit.

Groundwater: There is a very high potential that a release to groundwater occurred or is occurring. Paint wastes were disposed in this unit.

Subsurface Soil Gas: There is a very high potential that a release to subsurface soil gas occurred or is ongoing for the reasons given above for soils. The paints contain solvents which may have been released to the subsurface soil gas.

Air: There is a very high potential that a release to air occurred. Paint wastes were disposed on the surface and in the ground. Any paint wastes lying on the ground surface would allow volatile solvents to be released to the air. Any volatiles released then would be nonexistent now because they would have volatilized long ago.

4.2 SWMU NO. 2 FORMER TRASH INCINERATOR

A. Unit Characteristics *UNIT STATUS: REMOVED*

A gas-fired trash incinerator with an exhaust burner was located along the west wall of the main building (Figure 7). The gas-fired trash incinerator consisted of a 6 feet by 8 feet concrete bottom with 10 feet high cinder block walls and a 29 foot high stack. The incinerator capacity was two cubic yards. The former trash incinerator was installed in 1971 and ceased operating in 1976. According to plant personnel, the incinerator was disassembled in 1981.[5] Additional information was received from Waterloo Industries on September 5, 1996 specifying the incinerator was disassembled and scrapped in 1991. The incinerator was sent to B. Schultz Company, Waterloo, Iowa for recycling.[40]

During the VSI, the former location of the incinerator was visually inspected (Appendix A, Roll 2, Photo 15). One large crack in the concrete floor was observed however, no evidence of releases were observed.[4]

B. Wastes Managed

According to the facility SWMU response, the following wastes were disposed in the incinerator:

(1) General plant trash of unknown quantities.

(2) Cardboard boxes of unknown quantities.

(3) Broken wooden pallets of unknown quantities.

(4) A small quantity of paint sludge. The facility did not report the quantity incinerated or the type of paint incinerated. According to the facility SWMU response, this practice was quickly discontinued because it plugged up the auger feeding the incinerator.[5]

Ash was generated from incinerating the above described wastes. No information on how much ash was generated and how often the incinerator was cleaned is available. The facility reported that all ash generated from the incinerator was disposed at Black Hawk County Landfill.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

The VSI and subsequent information collection did not reveal any evidence of releases to the environment from past operations at this unit. Waterloo Industries has no information to indicate that there were any releases from the incinerator. In addition, Waterloo Industries has no information that hazardous wastes or hazardous constituents were present in air emissions from the incinerator.

Surface Water: There was a high potential for release to surface water. Any releases from the unit could be carried by air to surface and/or storm water. Currently, the unit has been removed therefore, there is no potential for a release to surface water.

Soils: There was a high potential for release to soils for the reasons given above for surface water.

Groundwater: There was a low potential for release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There was no potential for a release to subsurface soil gas. Any volatile compound should have been destroyed during the combustion stage.

Air: There was a release to the air from this unit. Each time this unit was used there would have been a release to the air via the smokestack.

4.3 SWMU NO. 3 FORMER ABOVE GROUND USED OIL STORAGE TANK

A. Unit Characteristics *UNIT STATUS: REMOVED*

Used oil from company vehicles and equipment was accumulated and stored in a 300-gallon above ground storage tank (AST). The used oil AST was located on the southwest side of the main building (Figure 7). The used oil AST set inside a formed concrete containment berm. The used oil AST became operational in 1987. The facility ceased using the tank in 1992.[5]

According to information contained in a November 1, 1989 RCRA CEI Report, the used oil AST had a capacity of 500 gallons.[24]

According to Mr. Skiles and Mr. Stoll, a 300-gallon used oil AST was removed from service in 1992 and recycled. No visible oil stains to surface soil were observed during the VSI (Appendix A, Roll 1, Photo 2).[4]

B. Wastes Managed

Used oil from company vehicles and equipment was accumulated and stored in a used oil AST prior to pick up by Industrial Service Corp. for recycling and reprocessing. According to the facility, the used oil was not a hazardous waste. Analytical data provided by the facility in there September 3, 1996, response to EPA Region VII shows the used oil is nonhazardous.[40]

On September 21, 1990, Industrial Service Corp. picked up 400 gallons of used oil for recycling/reprocessing. On June 14, 1991, 350 gallons of used oil and on August 7, 1991, 150-gallons of used oil, were collected by Industrial Service Corp. for recycling/reprocessing.[5]

According to information contained in a November 1, 1989 RCRA CEI Report, the used oil was picked up by Aten Company, Waterloo, Iowa. Approximately 300 to 400 gallons of used oil was picked up every 6 to 7 months. The used oil was recycled for energy recovery.[24]

C. Migration Pathways, Evaluation of Release and Exposure Potential

The VSI and subsequent information collection did not reveal any evidence of a release to the environment from past operation at this unit. The secondary containment structure provided adequate secondary containment for minor leaks and spills. According to the facility, no releases of used oil have been documented. The secondary containment structure was wiped clean when the facility ceased using it. The secondary containment structure had some stains indicating that a release to the secondary containment structure had occurred. The top and sides of the secondary containment structure were not stained suggesting that if there was a spill it was completely contained.[5] During a April 23, and 24, 1992, RCRA CEI, the inspectors observed brown colored water within the secondary containment structure.[3]

Surface Water: There was low potential for a release to surface water. The used oil AST was within secondary containment structure that was never overtopped.

Soils: There was low potential for a release to soils. The used oil AST was situated on a concrete pad and was surrounded by a secondary containment structure.

Groundwater: There was low potential for a release to groundwater for reasons given above for soils.

Subsurface Soil Gas: There was low potential for a release to subsurface soil gas for reasons given above for soils.

Air: There was a high potential for a release to air from this unit. The used oil AST was open to the atmosphere and spilled oil released volatile compounds to the air.

4.4 SWMU NO. 4 FORMER WASTEWATER REDUCTION HOLDING TANK

A. Unit Characteristics *UNIT STATUS: REMOVED*

A 5-foot diameter metal wastewater reduction holding tank (Tank R-1) was used to precipitate chromic acid from parts washer wastewater from 1970 until 1976. The wastewater reduction holding tank had a capacity of 2,500 gallons. Tank R-1 continued to be used to precipitate nonhazardous particles from parts washers wastewater until 1981 or 1982. Tank R-1 was located near the center of the main building (Figure 7). Tank R-1 sat on a concrete platform with a drain to the plant wastewater pretreatment system (Appendix A, Roll 2, Photo 2).[4,5]

Although, it is not known what happened to the tank, Messrs. Skiles and Stoll stated they assume the tank was taken to a scrap dealer to be recycled.[4]

B. Wastes Managed

Limited information concerning waste characteristics, quantities of waste generated, and where wastes were disposed were found during the PR. A report contained in the facility SWMU response revealed that wastewater from two tanks (No. 33 and No. 25) were sent to Tank R-1. The information contained in the report states that the material in Tank R-1 was acidic and contained chromous acid. Wastewater generated from Tank R-1 was released to the facility pretreatment system.[5] Information about the tank and pretreatment system is included in this report as Appendix E.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The VSI and subsequent information collection did not reveal any evidence of releases to the environment form this unit. All waste handling transfers from this unit occurred within the main building having adequate secondary containment. According to the facility SWMU response, the current owner acquired the facility seven or eight years after the use of Tank R-1 was discontinued. The facility does not know whether additional information is available from the previous owner.[5]

Surface Water: There was no potential for a release to surface water. This unit was within the main building.

Soils: There was no potential for a release to soils. This unit was located on a concrete pad and inside the main building.

Groundwater: There was no potential for a release to groundwater for reasons given above for soils.

Subsurface Soil Gas: There was no potential for a release to subsurface soil gas for reasons given above for soils. In addition, the waste generated in this unit was not a volatile waste.

Air: There was a low potential for a release to air. An open top tank may have released some hazardous constituents to the air.

4.5 SWMU NO. 5 STILL BOTTOMS ACCUMULATION DRUM

A. Unit Characteristics *UNIT STATUS : ACTIVE*

One 55-gallon drum is used to accumulate still bottoms from the plant solvent distillation system. The drum and solvent distillation system are inside the main plant on a concrete floor with a four-inch formed concrete containment berm. The solvent distillation system and drum were installed in December 1992 and are still in service.[4,5]

According to the facility SWMU response and subsequent response, the facility owns and uses a Progressive Recovery, Inc. Model SC 100 solvent distillation system. The solvent distillation unit has a capacity of 35 gallons.[5,40] The solvent distillation unit is located in an area along the south side of the main building (Figure 7). Spent solvent is generated from cleaning paint lines and equipment. The solvent distillation unit is located near the paint pump room.

During the VSI, spilled paint was observed on the floor underneath the distillation unit. No cracks were observed in the concrete floor and most of the floor was covered with Kraft type paper to prevent spills from staining the floor (Appendix A, Roll 2, Photo 1).[4]

B. Wastes Managed

The still bottoms generated from the distillation system contain toluene, xylene, and residual paint pigments and are classified by the facility as RCRA F003 and F005 hazardous waste. Approximately 55-gallons of still bottoms are generated each week. The still bottoms are manifested off-site to Rineco for fuel blending.[5] Still bottoms analytical data provided in the facility SWMU response is included in this report as Appendix F.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The VSI and subsequent information collection did not reveal any evidence of releases to the environment form this unit. All waste transfers to and from the distillation unit and still bottoms accumulation drum occur within the main building having adequate secondary containment.

Surface Water: There is no potential for a release to surface water. The unit is inside the main building.

Soils: There is no potential for a release to soils for reasons given above for surface water.

Groundwater: There is no potential for a release to groundwater for reasons given above for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas for reasons given above for surface water.

Air: There is high potential for a release to air from this unit. Volatiles are released to the air inside the unit. When the door to the unit is opened, volatiles are released to the air.

4.6 SWMU NO. 6 SCRAP STEEL DUMPSTERS

A. Unit Characteristics *UNIT STATUS : ACTIVE*

Two dumpsters 22 feet long by 7.5 feet wide by 7.5 feet high were used to collect scrap steel. Each dumpster had a capacity of 30 cubic yards. The dumpsters are located between the southwest corner of the main building and the receiving stock room addition (Figure 7). The dumpsters became operational in 1971 and are currently in use.[5]

During the VSI, one dumpster was being used and was observed leaking some type of liquid (Appendix A, Roll 1, Photo 9). Several small stained areas were observed in front of the dumpster. Mr. Skiles stated that only one dumpster is used now instead of two.[4]

B. Wastes Managed

Scrap steel is managed at this unit. The scrap steel possibly has a thin coating of "tramp oil" and process oil on it when it is placed in the dumpsters. The tramp oil is of unknown proprietary composition which varies by manufacturer.[5]

The quantity of scrap steel generated each week or month is not known. During a four month period (Dec. 91-Mar. 92), 652,421 pounds of scrap steel was sent off-site to Schultz Scrap Metal for recycling.[5] Currently, the scrap steel is picked up by Schultz Scrap Steel approximately once per week or 10-days depending upon production levels.[4,5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

There are no known releases however, residual oils present on the scrap steel are washed off during rainfall and may drain out of the dumpster when the dumpster are removed from the facility.[5]

The VSI revealed that releases of a liquid material are occurring to the concrete driveway and possibly the soils and surface water.

Surface Water: There is high potential of a release to surface water. The unit is located on a concrete driveway with no secondary containment. Releases of a liquid material to the concrete driveway were documented during the VSI.

Soils: There is low potential of a release to soils. The unit is located on a concrete driveway with no secondary containment. No cracks in the concrete were observed.

Groundwater: There is low potential for a release to groundwater for the reasons given above for soils.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas for the reasons given for soils.

Air: There is a high potential for a release to air. Any volatiles released from the tramp oil would be released to the air. The dumpster is open and exposed to the environment.

4.7 SWMU NO. 7 MAINTENANCE SCRAP STEEL DUMPSTER

A. Unit Characteristics *UNIT STATUS : INACTIVE*

There are two dumpsters used to collect scrap steel from the maintenance department. One small ½ yard dumpster is used in the maintenance department (SWMU 7A on Figure 7). The dumpster was situated on a concrete pad. When the small dumpster is full (anywhere form 3 days to 3 months) it is emptied into the large dumpster located near the southwest corner of the main building.[4,5] The second dumpster, 22 feet long by 7.5 feet wide by 7.5 feet high, was used to collect scrap steel from the maintenance department. The dumpster was located on the southwest side of the main building (SWMU 7 on Figure 7). The dumpster was placed in service in 1971 and is not in use. Prior to 1992, a smaller dumpster 4 feet by 3 feet by 3 feet was used. The smaller dumpster was used from approximately the middle 1970's until 1992.[5]

During the VSI, the former location of the large dumpster was observed (Appendix A, Roll 1, Photo 1 and Photo 3). The facility representatives could not recall where the second dumpster was located.[4]

B. Wastes Managed

Scrap steel, scrap machine parts, and sheet metal is placed in the dumpster for recycling. Tramp oil may be on the scrap steel and sheet metal and motor and/or lubricating oil may be on some of the scrap machine parts.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

The facility did not report any releases from this unit. It is possible that residual oils on the scrap metals were washed off during rainfall and the residual oils could have been released with the rainfall to the surface water and soils.

Surface Water: There was high potential for release to surface water from the large dumpster. The open dumpster is exposed to the environment and was on a graveled surface. Rain water and oil may be released to the surface water.

Soils: There was high potential for a release to soils for the reasons given above for surface water.

Groundwater: There was high potential for a release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There was high potential for a release to subsurface soil gas for the reasons given above for surface water.

Air: There was high potential for a release to air for the reasons given above for surface water.

4.8 SWMU NO. 8 FORMER HAZARDOUS WASTE TEMPORARY STORAGE PAD

A. Unit Characteristics *UNIT STATUS: CLOSED*

Drums of solid and hazardous waste were stored on a 35 feet by 10 feet concrete pad with a formed containment berm. The former storage pad was located near the southwest corner of the main building (Figure 7). The former storage pad is surrounded by a fence with a gate.[5] The fence is approximately 12 feet high with two "No Smoking" signs posted on the south side of the fence.[3]

According to a RCRA CEI Report conducted by EPA on October 4, 1985, the size of the former storage pad was 12 feet by 60 feet. The former storage pad was wide enough to store two single rows of pallets side by side leaving a very narrow aisle space between the pallets. The pallets each had four 55-gallon drums on them. One side of the former storage pad was for hazardous waste paint thinner and the other side was for "non-hazardous" waste paint sludge.[2]

According to a February 18, 1987 RCRA CEI Report, the former storage pad was wide enough to accommodate two single rows of pallets 5 deep. Pallets generally had four 55-gallon drums on them and were stacked two high. The report also stated the "non-hazardous" waste paint sludge was generated from spray booth skimming.[20]

According to a drawing showing the dimensions of the secondary containment structure, the former storage pad was 10 feet by 35 feet and could accommodate 64 drums. The drawings design calls for 4" concrete curbing and a capacity of 425 gallons . The concrete pad was to be sloped at one end to allow a lift truck to be driven in and was to be located 22 feet from the stockroom (small building) and 50 feet from the main building.[2]

According to an October 19, 1990, Closure Plan (Revised August 1991), the size of the former storage pad, as constructed in 1980, was approximately 35 feet long and 10 feet wide. The entire former storage pad is surrounded by a twelve-foot high chain link fence. There is a double gate on the east side of the storage pad which is used for entrance into the storage area.[41]

During the VSI, it was observed that a metal building has been constructed over the unit (Appendix A, Roll 1, Photo 6). No cracks in the concrete or visible releases from the unit were observed.[4]

Closure activities at this unit occurred in March 1992. On June 10 ,1992, EPA Region VII accepted the closure report and certifications from the facility.[31]

B. Wastes Managed

According to the facility's SWMU response, drums of solid and hazardous waste were stored on the pad until pick up for proper treatment or disposal off-site. Constituents in the waste include spent xylene, toluene, and methyl ethyl ketone.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There was low potential for release to surface water. The unit was enclosed in a secondary containment system. There were no reported releases from this unit. Currently, there is no potential for release from this unit because the unit has been clean closed and is no longer used for hazardous waste storage.

Soils: There was low potential for release to soils for the reasons given above for surface water.

Groundwater: There was low potential for release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There was low potential for release to subsurface soil gas for the reasons given above for surface water.

Air: There was low potential for release to air from this unit. There were no reported releases and all wastes were stored in closed drums.

4.9 SWMU NO. 9 HAZARDOUS WASTE TEMPORARY STORAGE AREA

A. Unit Characteristics *UNIT STATUS : ACTIVE*

A specially constructed 20 feet by 20 feet room addition for containers of hazardous waste was added to the stock room (Appendix A, Roll 2 Photo 14) in 1991 (Figure 7). The unit is currently in use. The building floor is concrete and the walls are constructed from cinder blocks and have appropriate ventilation (open grates around selected locations along the base wall).[4,5]

During the VSI, SAIC personnel observed the sealant around the base of the wall and floor joint was separating away from each other leaving a crack or gap between the floor and wall.[4]

B. Wastes Managed

According to the facility's SWMU response, hazardous wastes consisting of still bottoms and waste paints (F005), are stored for less than 90 days.[5] In addition, used oil is also stored in the building.[4] Wastes and used oil are stored in 55-gallon containers at this unit. Approximately 6 containers are present in the storage area at any time.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for a release to surface water. The unit is located inside main building. A sealant material between the wall and concrete floor is separating away from the wall creating a gap that could allow any release to escape the building.

Soils: There is low potential for a release to soils for the reasons given above for surface water.

Groundwater: There is low potential for a release to soils for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas for the reasons given above for surface water.

Air: There is a low potential for a release to air from this unit. All drums stored in this unit are closed. If a drum was to leak or be punctured a release to air could occur.

4.10 SWMU NO. 10 FORMER EMPTY DRUM STORAGE AREA

A. Unit Characteristics *UNIT STATUS: INACTIVE*

An asphalt paved storage area approximately 10 feet by 60 or 70 feet was used to store empty drums prior to pick up for refurbishing and reuse. The former empty drum storage area was located near the southwestern corner of the main building (Figure 7). The unit was placed into service in 1960 and was used until 1992. The empty drums stored in this unit once contained paints and solvents.[5]

During an April 23 and 24, 1992 RCRA CEI, inspectors observed one drum that held more than one-inch of material. The drum was labeled with the words "black baking enamel".[3]

During the VSI, an area approximately 10 feet by 60 feet was observed outside near the southwest corner of the main building (Appendix A, Roll 1, Photo 4). Mr. Skiles identified this area as the former area used as the empty drum storage area. According to Mr. Skiles, the drums were refurbished for reuse or for recycling.[4]

B. Wastes Managed

According to the facility's SWMU response, no wastes were stored in this unit. Only empty drums, approximately 70 to 220 drums were stored in this unit at any one time.[5] As stated previously, one drum did contain more than one-inch of material that the facility apparently was disposing through the refurbishing and reuse system.[3]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There was high potential for a release to surface water. Some of the drums were not empty and were exposed to the environment. The asphalt the drums were setting on broken into pieces and is not intact. Any leaks from drums that contained residue would be released to surface water. There was no secondary containment structures built around this unit.

Soils: There was a high potential for a release to soils. The drums set on asphalt that was not in good condition. The asphalt is broken into small pieces. There is no secondary containment structures built around this unit. Although there were not any releases reported, some of the drums were not empty and any released material could be released to the soils underlying the unit.

Groundwater: There is high potential for a release to groundwater for the reasons given above for soils.

Subsurface Soil Gas: There is a high potential for a release to subsurface soil gas for the reasons given above for soils.

Air: There was high potential for a release to air from this unit for the reasons given above for soils.

4.11 SWMU NO. 11 FORMER ASBESTOS INSTALLATION AND SCRAP COLLECTION AREA

A. Unit Characteristics *UNIT STATUS: REMOVED*

According to the facility's SWMU response, a production area approximately 50 feet by 100 feet was located near the southeast corner of the main building (Figure 7). Pre-cut asbestos sheets were installed into home storage boxes. Scrap and unusable asbestos were placed into fiber drums located in the production area. The scrap asbestos collection areas were in use from the 1950's. During the 1960's, the unit ceased operation.[5]

During the VSI, the general area where this SWMU was formerly located was inspected (Appendix A, Roll 1, Photo 23). The area appeared to be clean and no visible releases were observed.[4]

B. Wastes Managed

Fiber drums of scrap and unusable asbestos were collected in the production area.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There was no potential for release to surface water. The unit was always located inside the main building.

Soils: There was no potential for release to soils for the reason given above for surface water.

Groundwater: There was no potential for release to groundwater for the reason given above for surface water.

Subsurface Soil Gas: There was no potential for release to subsurface soil gas for the reason given above for surface water. In addition, this waste is not a volatile waste which would not be expected to migrate to the subsurface soil gas.

Air: There was high potential for a release to the air if the asbestos containing waste material (ACM) was friable. The waste characteristics are not known. The facility representatives did not know if the ACM was friable or non-friable. If the waste was not friable then the release potential would be low. If the waste is friable then there would be a high potential for a release to air. According to the facility SWMU response, there was a potential for releases of asbestos to the ambient air.[5]

4.12 SWUM NO. 12 USED DRY PAINT FILTER DUMPSTER

A. Unit Characteristics *UNIT STATUS : ACTIVE*

Non-hazardous used paint filters from plant spray paint booths are collected in one 13 feet by 7 feet by 5 feet high dumpster. The dumpster is located near the southwest corner of the main building (Figure 7). The dumpster became operational in 1991 and is still in use.[4,5]

During the VSI, the inspectors observed the paint dumpster had been relocated to an area southwest of the former location (12A on Figure 7, Appendix A, Roll 1, Photo 8). The inspectors also observed the former location of this unit (Appendix A, Roll 1, Photo 3) and observed paint chips on the soil and gravel.[4] No releases have been reported by the facility.[4,5]

B. Wastes Managed

Used paint filters (dried/baked) are collected in this dumpster. Analyses of the used filters are included as Appendix G. The used paint filters are disposed at Black Hawk County Landfill under Special Waste Authorizations (SWA's) from IDNR.[4] The SWA's also are included in Appendix G.

The facility has claimed the used paint filters are non-hazardous.[3,5] During the April 23 and 24, 1992 RCRA CEI, information was obtained that revealed that a TCLP test has not been conducted on the paint filters before being baked. The paint filters are baked before being placed into the dumpster.[3]

C. Migration Pathways, Evaluation of Release and Exposure Potential

According to the facility's SWMU response, there have been no releases from this unit although paint drips are near the dumpster.[5] However, paint stains were observed on the ground by inspectors conducting a RCRA CEI on April 23 and 24, 1992 and during the April 18, 1996, VSI.[3,4]

Surface Water: There is a high potential for a release to surface water. The dumpster is located outside the main building and is exposed to the environment. There are no secondary containment structures associated with this unit and the unit sets on a soil and gravel base.

Soils: There is a high potential for a release to soils for reasons given above for surface water.

Groundwater: There is high potential for release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for release to subsurface soil gas for the reasons given above for surface water. In addition, any volatile constituent would be released to the air.

Air: There is high potential for a release to the air. Although the filters are baked or dried before being placed in the dumpster, small amounts of volatile constituents, if organic paints are used, would be present and would be released to the environment.

4.13 SWMU NO. 13 EVAPORATOR TANK

A. Unit Characteristics *UNIT STATUS : ACTIVE*

One 10 feet by 30 feet by 8 feet high steel above ground storage tank with a 20,000-gallon capacity is used to evaporate liquid from sludge from the wastewater pretreatment plant and parts washers in the production process. The tank is an open top tank that is covered with a canvas cover. The evaporator tank is located on the north side of the main building (Figure 7; Appendix A, Roll 1 Photo 15). The evaporator tank was placed in service in 1988 and is currently in use.[4,5]

This tank is an independent system according to Mr. Stoll. Sludge is pumped out from the wastewater treatment plant into the evaporator tank. Any water that settles out of the sludge is returned to the wastewater treatment system.[4]

B. Wastes Managed

According to the facility's SWMU response, approximately 8,000 pounds of wastewater treatment settlings are generated every 18 months. The waste is disposed at Black Hawk County Landfill under SWA from IDNR (Authorization No. 0701063092). Analytical data provided with the SWA indicates the wastewater treatment sludge is non-hazardous.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for release to surface water. No releases have been reported by the facility. There is no secondary containment provided around the tank. The tank sits on a soil and gravel base.

Soils: There is low potential for release for the reasons given above for surface water.

Groundwater: There is low potential for release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for release to subsurface soil gas for the reasons given for surface water.

Air: There is a release to the air each time the unit is used provided there are volatile compounds in the wastewater and sludge.

4.14 SWMU NO. 14 TRASH COMPACTOR

A. Unit Characteristics *UNIT STATUS : ACTIVE*

One 20 feet by 8 feet by 8 feet high trash compactor with a 33 cubic yard capacity is used to compact office and general plant trash. The trash compactor is located along the west wall of the main building (Figure 7). The unit became operational in 1974 and is currently in use.[5]

During the VSI, the inspectors observed the dumpster leaking an unknown type of liquid. An absorbent material had been placed on the liquid material (Appendix A, Roll 1, Photo 11).[4]

B. Wastes Managed

General plant and office trash including floor sweepings are compacted. It is not known how much trash is generated each month. According to the facility SWMU response, trash does not contain hazardous wastes or hazardous waste constituents. There are no analyses of the compacted trash.[5]

According to a November 1, 1989, RCRA CEI Report, general trash consists of wood, cardboard, twine, and plastic banding and is accumulated on-site in a roll-off box with an attached hydraulic compactor. Approximately 300,000 pounds of general trash is generated each year. Approximately 80% of the trash was shipped to a John Deere, Waterloo, Iowa plant (Donald Street plant) for incineration and energy recovery.[24] The waste is now disposed at Blackhawk County Landfill.[4]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is high potential for a release to surface water. An unknown type of liquid material was leaking from the dumpster onto the ground. ~~There are no~~ secondary containment structures associated with this unit.

Soils: There is high potential for a release to soils for the reasons given above for surface water.

Groundwater: There is high potential for a release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas from this unit. Reportedly, there are no hazardous waste or hazardous waste constituents found in the waste stream managed by this unit.

Air: There is a release to the air each time the unit is used. Reportedly, there are no hazardous waste or hazardous waste constituents found in the waste stream managed by this unit.

4.15 SWMU NO. 15 FORMER WASTEWATER PRETREATMENT UNDERGROUND TANKS

A. Unit Characteristics *UNIT STATUS: INACTIVE*

The former wastewater pretreatment system consisted of three underground storage tanks (USTs). The system consisted of one 8,000-gallon holding tank, one 19,000-gallon settling tank and one 10,000- gallon overflow tank. The former wastewater pretreatment USTs were located on the north side of the main building (Figure 7). According to information in the facility SWMU response, the system began operation in 1966 or 1967 and ceased operation in 1993.[5]

The top of the settling tank was located approximately 6 inches below the ground surface. There, the sludge mixture was treated with sulfuric acid to balance the pH.[20] According to information contained in an October 4, 1985 RCRA CEI Report, the cleaning tanks associated with the E-Coat system and the spray system tanks were discharged to this system for gravity settling of solids.[2]

During the VSI, the inspectors observed the former location of the wastewater pretreatment USTs (Appendix A, Roll 1, Photo 13). According to Mr. Skiles the USTs were removed in the fall of 1995.[4]

B. Wastes Managed

Wastewater is discharged to the Waterloo wastewater treatment system under Industrial Wastewater Discharge Permit (IWDP) No. 73087-1. An average of 50,000 gallons of wastewater per day from plant operations including metal surface preparation wastewater and waterfall paint booth wastewater is discharged. Actual wastewater discharge rates to Waterloo wastewater treatment system averaged 40,000 gallons per day.[5] Copies of the IWDP that contains all applicable effluent limitations, previous IWDP, 1980 Industrial/Commercial Contributor Monitoring Reports, and Wastewater Treatment System procedure are included in Appendix E.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

According to the facility's SWMU response, there have been no releases from this unit. However, two bypasses to the facility's parking lot were reported. On August 6, 1978, partially treated wastewater overflowed the 19,000-gallon settling tank. Approximately 6,000 to 7,000 gallons of partially treated wastewater flowed into the facility parking lot. The wastewater may have contained small quantities of lead, aromatic hydrocarbon, red organic pigment, 2-butoxyethanol, triethanolamine, chromium, cadmium, manganese, copper, zinc, phosphorus, sulfuric acid, sodium hydroxide, toluene, naphtha, xylene, butylcellosolve, and total suspended solids. A second bypass occurred in 1980. The facility believes the second bypass was substantially similar to the 1978 bypass in circumstance, quantity, and response.[5]

Surface Water: There was high potential for a release to surface water. The facility did not report any releases from this unit. However, two bypasses were noted in the facility SWMU response to EPA.

Soils: There was a release to soils from this unit for the reasons given above for surface water.

Groundwater: There was high potential for a release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There was high potential for a release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There was a release to the air each time the unit was used. Any volatiles that were in the water would be released to the atmosphere. Any volatiles released would be nonexistent now because they would have been dispersed as the water evaporates.

4.16 SWMU NO. 16 WASTE PAINT TEMPORARY STORAGE AREA NEAR ELECTROSTATIC PAINT SYSTEM

A. Unit Characteristics *UNIT STATUS: INACTIVE*

During an April 23 and 24, 1992, RCRA CEI (CEI Report), four 55-gallon drums of waste paint and other materials were observed stored on a wooden pallet near the Electrostatic Paint System. The area is approximately 10 feet by 10 feet in size. The electostatic paint system is located near the center of the main building (Figure 7). According to information in the CEI Report, the facility representatives did not know how long the four 55-gallon drums had been stored at this location.[3]

B. Wastes Managed

Four 55-gallon drums of waste paint, paint skimmings, spray shield, other scrapings from paint booth walls, and gloves identified as F017 waste were stored in this unit. The waste material reportedly was to be shipped to Watts Landfill in Illinois for disposal.[3]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for a release to surface water from this unit. The unit is inside the main building. The concrete floor appeared to be in good condition. The facility has not reported any releases from this unit.

Soils: There is no potential for a release to soils from this unit for the reasons given above for surface water.

Groundwater: There is no potential for a release to groundwater for the reasons given above for the surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas for the reasons given above for the surface water.

Air: There is low potential for a release to the air from this unit as the drums stored in this unit are stored closed.

4.17 SWMU NO. 17 SATELLITE ACCUMULATION AREAS NEAR ELECTROSTATIC PAINT SYSTEM

A. Unit Characteristics *UNIT STATUS: REMOVED*

Satellite accumulation drums were located at the northwest corner of the northwest electostatic paint booth, northeast electrostatic paint booth, and robotic paint line. The electrostatic paint system is located near the center of the main building (Figure 7). Three 55-gallon drums and six 5-gallon containers were used to collect waste paint and spent solvent. The waste in the 5-gallon containers were transferred to a 55-gallon drum on a daily basis. When the 55-gallon drums were full, they were transferred to the Hazardous Waste Storage Area. It is not known when the satellite accumulation areas became operational. The satellite accumulation areas are not in operation.[5] The Electrostatic Paint System began operation in 1967 and is still in use. Waste paint and solvent are now transferred to a 55-gallon drum located in the paint pump room and is processed through the solvent distillation unit (SWMU 5).[4]

B. Wastes Managed

Waste paint and spent toluene (thinner) was generated from cleaning painting equipment. The cleaning occurs at the end of each shift and in between color changes. In the past, spent thinner also contained some isopropanol and acetone (amounts unknown). Approximately 2,300 to 2,400 pounds or 275 gallons of spent solvent is generated each month. The waste paint and spent toluene are a listed F005 hazardous waste. The waste paint and toluene were manifested off-site as a waste paint related material and were transported by Barton Solvents, EPA I.D. No. IAD981719909, to Waste Research and Reclamation, for reclamation.[3,24] Waste paint and solvent are now transferred to a 55-gallon drum located in the paint pump room and is processed through the solvent distillation unit.[4]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for a release to surface water. The unit is located inside the main building. The unit has a concrete floor and is surrounded by concrete block walls. The facility has not reported any releases from this unit however, waste paint was observed on the concrete floor and walls in this unit. Floor

drains observed in the area reportedly lead to the facility wastewater pretreatment system.

Soils: There is no potential for a release to soils from this unit for the reasons given above for surface water.

Groundwater: There is no potential for a release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There is a release to the air whenever waste organic paint and organic solvents are added or removed from the satellite accumulation drum.

4.18 SWMU NO. 18 WASTEWATER PRETREATMENT SYSTEM

A. Unit Characteristics *UNIT STATUS: ACTIVE*

A wastewater pretreatment system consisting of three compartments with a total of capacity of 42,000 gallons is located on the northeast side of the main building (Figure 7). The unit became operational in 1992 and is currently in use.[5] There are two outfalls associated with this unit. Outfall No. 1 is associated with pretreatment processes and Outfall No. 2 is associated with sanitary and unregulated flows. All discharges are to the City of Waterloo POTW. Waterloo Industries obtained an Industrial Sewer Users Permit No. 000002 from the City of Waterloo and became effective on August 1, 1992. The permit was valid until July 31, 1994. Waterloo Industries renewed the permit, which became effective on August 1, 1994, and expired on July 31, 1996.[5]

According to information obtained during an April 23 and 24, 1992, RCRA CEI, the wastewater pretreatment system consists of two tanks. One tank has a capacity of 29,000 gallons and the other tank has a capacity of 13,000 gallons. The pretreatment is primiarly gravity flow; however, the pH of the wastewater is adjusted to help flocculate the solids. The effluent is discharged to the city sanitary sewer system under a discharge agreement.[3]

During the VSI, the inspectors observed two tanks. One tank was a fiberglass tank used to monitor pH and one concrete tank that has three compartments (Appendix A, Roll 2, Photos 21 and 22).[4] According to information provided by Waterloo on September 3, 1996, states that there is one large compartment with two concrete dividers. The total compartment measurements are 31 feet by 18 feet by 10 feet deep. The measurements of the three internal compartments are 7 feet by 18 feet by 10 feet deep, 11 feet by 18 feet by 10 feet, and 23 feet by 18 feet by 10 feet deep.[40]

B. Wastes Managed

According to the facility SWMU response, wastewater from parts washers and strip tank rinse process is treated and discharged to the Waterloo POTW pursuant to a permit issued by the City of Waterloo (Permit No. 000002). The permit allows a daily maximum flow of 75,000 gallons and an monthly average of 50,000 gallons per day.[5]

Outfall No. 1 effluent limitations are as follows:

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Cadmium (Total)	0.69	0.26
Chromium (Total)	2.77	1.71
Copper (Total)	3.38	2.07
Lead (Total)	0.69	0.43
Nickel (Total)	3.98	2.38
Zinc (Total)	2.61	1.48
Silver (Total)	0.43	-
Cyanide (Total)	1.20	-
TTO[1]	2.13	-

*Notes (1) Total Toxic Organics = sum of all detectable concentrations over 0.01 mg/L for the compounds listed in 40 CFR 413.02.
- Not Applicable

Outfall No. 2 effluent limitations are as follows:

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Flow	0.075 (MGD)	0.050 (MGD)
BOD	300	300
TSS	350	350
Oil & Grease	100	100
pH	(5.0 Min. - 9.0 Max)	-

A copy of the permits and monthly monitoring reports are included as Appendix H.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is high potential for a release to surface water from this unit as any bypasses would be released outside the building and if not contained they could enter the storm water ditch located on the north side of the facility.

Soils: There has been a release to soils from this unit. Two releases have occurred. See AOC 7 for additional information.

Groundwater: There is high potential for a release to groundwater for the reasons given above for soils.

Subsurface Soil Gas: There is high potential for a release to subsurface soil gas for the reasons given above for soils.

Air: There is a high potential for a release to air for the reasons given above for soils.

4.19 SWMU NO. 19 USED OIL COLLECTION DRUMS

A. Unit Characteristics *UNIT STATUS : ACTIVE*

The facility uses three 55-gallon drums to collect used oil from presses, lift trucks, and other machines for recycling. This activity began in 1992.[5] One of the 55-gallon drums is located in the maintenance shop. The maintenance shop is located near the southeast corner of the main building (Figure 7). In addition to the used oil collection drum, there is a separate 55-gallon drum that is used to collect used oil filters.[4]

During the VSI, four areas were visited that collect and store used oil. One area is located in the maintenance room. A second area visited that is used for collecting and storing used oil was the compressor room (Figure 7; Appendix A, Roll 1, Photo 21). The two remaining areas that are used to collect and store used oil are the accumulation drums for the oil skimmers (See SWMU 20). All storage areas have concrete floors without cracks or gaps.[4]

B. Wastes Managed

As described in the previous section, used oil and used oil filters are generated in the maintenance department from routine maintenance on lift trucks, compressors, presses, and company trucks.[5] Industrial Service Corporation (ISC) collects the used oil approximately two to three times per year. ISC recycles the used oil.[3] In 1992, used oil filters were allowed to drain for 24 hours before they were placed into a 55-gallon drum for recycling. The facility had experimented with incinerating the oil filters, but that did not appear to be a viable method of disposal.[3] In 1996, used oil filters are allowed to drain for at least 24 hours before they are placed in a 55-gallon drum. Full drums of used oil filters are recycled by Schultz Scrap Metal Company.[4]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for release to surface water. The unit is located inside the main building. The collection drums sit on wood pallets on a concrete floor. The facility has not reported any releases from this unit.

Soils: There is no potential for a release to soils for the reasons given above for surface water.

Groundwater: There is no potential for a release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas for the reasons given above for surface water.

Air: There is low potential for release of hazardous constituents to air from this unit whenever oil is added to the drums.

4.20 SWMU NO 20 TWO OIL SKIMMERS FOR PARTS WASHERS

A. Unit Characteristics *UNIT STATUS : ACTIVE*

According to the facility SWMU response, two oil skimmers are used to skim tramp oil from the aqueous detergent in two parts washers (Figure 7). Two 55-gallon drums are used to collect the tramp oil (Appendix A, Roll 2, Photos 13 and 18). The oil skimmers and collection drums are located in the plant.[5] Additional information provided by the facility reveals that one of the oil skimmers has been removed from service in May 1996. However, the facility did not identify the location of the oil skimmer that was removed from service. The oil skimmer was sent to Weissman Iron and Metal of Cedar Falls, Iowa as scrap metal. The oil skimmer that is still in service is an Abanaki model POTE-IT4. This oil skimmer was installed in April 1994.[40]

B. Wastes Managed

Tramp oil is generated by skimming the aqueous detergent in two parts washers in the plant. The tramp oil picked up by Rineco for fuel blending.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for a release to surface water. The unit is located on concrete floors inside the main building. The facility has not reported any releases from this unit.

Soils: There is no potential for a release to soils from this unit for the reasons given above for surface water.

Groundwater: There is no potential for a release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There is low potential for release to air from this unit. Some volatile constituents may be released when exchanging full drums with empty drums.

4.21 SWMU NO. 21 DRUM CRUSHER

A. Unit Characteristics *UNIT STATUS : ACTIVE*

In 1992, the facility purchased a drum crusher from Drumbeaters of America Inc (Appendix A, Roll 2, Photo 11). Empty drums without any free-standing liquid are crushed and recycled as scrap steel. The drum crusher is located inside the plant near the southwest corner of the main building and is used approximately 8 to 10 times per week (Figure 7).[4,5] Crushed drums are placed on a wooden pallet. The crushed drums are then placed in a roll-off dumpster (Appendix A, Roll 1, Photo 8) for recycling.[4]

B. Wastes Managed

Empty steel drums are crushed in this unit. The crushed drums are placed into a dumpster that measures 11 feet by 7.5 feet by 7.5 feet high. The dumpster holds 15 cubic yards. Schultz Scrap Metal picks up the crushed drums for recycling.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for release to surface water from this unit. All the drums that are crushed are empty, washed, and or baked dried prior to being crushed. The facility has not reported any releases from this unit.

Soils: There is low potential for release to soils from this unit for the reasons given above for surface water.

Groundwater: There is low potential for release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There is low potential for release to air from this unit for the reasons given above for surface water.

4.22 SWMU NO. 22 DUMPSTER FOR CRUSHED DRUMS

A. Unit Characteristics *UNIT STATUS : ACTIVE*

The facility use one dumpster that measures 11 feet by 7.5 feet by 7.5 feet high to collect crushed steel drums. The facility began using the dumpster in 1992 and is currently in use.[5] The dumpster is located near the southwest corner of the main building (Figure 7; Appendix A, Roll 1, Photo 7). The dumpster sets on a soil/gravel base.[4] The dumpster holds a maximum of 15 cubic yards. The crushed drums are periodically collected by Schultz Scrap Metal for recycling.[5]

B. Wastes Managed

Scrap steel crushed drums without free-standing liquids are generated by the facility. It is not known what types of materials were in the drums however, paint, oils, and solvents are routinely used in the production processes.[4,5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

The unit is located inside the main building and any floor drains in the area are connected to the facility wastewater pretreatment system.

Surface Water: There is low potential for a release to surface water. All crushed drums are completely emptied and rinsed clean before being crushed.

Soils: There is low potential for a release to soils for the reason given above for surface water.

Groundwater: There is low potential for a release to groundwater for the reason given for surface water.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas for the reason given for surface water.

Air: There is low potential for a release to air for the reason given above for surface water.

4.23 SWMU NO. 23 BURNED OUT FLUORESCENT TUBE STORAGE AREA

A. Unit Characteristics *UNIT STATUS : ACTIVE*

In the fall of 1994, the facility began collecting burned out fluorescent tubes. The burned out fluorescent tubes are stored in cardboard tubes in the compressor room (Figure 7).[4,5] During the VSI, the inspectors observed three cardboard tubes of burned out fluorescent tubes. The storage area, located at the northwest corner of the compressor room, is approximately 3 feet by

6 feet in size. The burned out tubes are stored in an upright position inside the cardboard tubes (Appendix A, Roll 1 Photo 22).[4]

B. Wastes Managed

Burned out fluorescent tubes are collected by Dynex Environmental for recycling.[5] According to Mr. Anderson, Waterloo Industries, the facility is shipping the burned out tubes off-site as hazardous waste.[40]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for a release to surface water. The unit is inside a compressor room near the east central portion of the main building.

Soils: There is no potential for a release to soils for the reason given above for surface water.

Groundwater: There is no potential for a release o groundwater for the reason given above for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas for the reason given above for surface water.

Air: There is a low potential for a release to the air from this unit. Although, no broken fluorescent tubes were observed during the VSI, any contaminants released from broken tubes, would be released to the ambient air.

4.24 SWMU NO. 24 SOLVENT RECYCLING SYSTEM FEED DRUM

A. Unit Characteristics *UNIT STATUS : ACTIVE*

One 55-gallon drum of spent solvent, located in the paint pump room (Figure 7), is used to feed the distillation unit.[4,5]

During the VSI, SAIC personnel examined the feed drum (Appendix A, Roll 2, Photo 6). Numerous paint stains were observed on the floor and wall surrounding the feed drum.

B. Wastes Managed

Spent solvent consisting of toluene, acetone, and residual paint from paint line and equipment cleaning is recycled in the distillation unit. The spent solvent is classified as an F003/F005 hazardous waste.[4] Still bottoms are generated during the distillation process and are classified as an F003/F005 hazardous waste.[4]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is no potential for a release to surface water. This unit is located inside the main building enclosed by concrete floor and walls.

Soils: There is no potential for a release to soils for the reason given for surface water.

Groundwater: There is no potential for a release to groundwater for the reason given for surface water.

Subsurface Soil Gas: There is no potential for a release to subsurface soil gas for the reason given for surface water.

Air: There is a release to air from this unit. The unit is located in the paint pump room and any volatiles that are released to the air, when adding waste to the drum, are vented to the outside air.

4.25 SWMU NO. 25 PAINT MIX ROOM HAZARDOUS WASTE ACCUMULATION DRUM

A. Unit Characteristics *UNIT STATUS : ACTIVE*

The facility uses one 55-gallon drum to collect waste paint and solvent from operations in the paint mix room. The paint mix room is located at the southwest corner of the main building (Figure 7).[4] During an April 23 and 24, 1992, RCRA CEI, two 55-gallon drums were observed in the paint mix room that were being used as satellite accumulation drums. One of the drums was located near the south wall of the paint mix room and the second drum was located near the center of the paint mix room. The second drum was open and not labeled. The inspectors observed a bucket and funnel on top of the drum. When the drum is full, it is moved to the hazardous waste storage area.[3] It is not known when this unit became operational however, the unit is currently in use.[4]

During the VSI, SAIC field personnel observed one 55-gallon drum near the southwest corner of the paint mix room (Appendix A, Roll 2, Photo 12). Kraft paper had been placed on the floor around the 55-gallon drum and around the top half of the drum and device utilized to place waste paint/solvent into the drum (square funnel with lid) to prevent spills from reaching the floor.[4]

B. Wastes Managed

Waste paint and solvent (mainly toluene) are collected in a 55-gallon drum. The waste paint and solvent is classified as an F005 hazardous waste. The waste paint and solvent is manifested off-site to Rineco where it is fuel blended.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for a release to surface water. The unit is located inside the main building. The walls and floor have contained all spills to inside the main building. Any floor drains in the area are connected to the facility wastewater pretreatment system.

Soils: There is low potential for a release to soils for the reasons given above for surface water.

Groundwater: There is low potential for a release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas for the reasons given above for surface water.

Air: There has been a release to air from this unit. During CEI's open drums of hazardous waste were observed. In addition, each time the hazardous waste drum is opened to accept waste, volatile contaminants are released to the air. The air is vented to the outside ambient air.

4.26 SWMU NO. 26 USED COMPRESSOR OIL COLLECTION CONTAINERS

A. Unit Characteristics *UNIT STATUS : ACTIVE*

Five-gallon buckets are used to convey used oil from a series of 55-gallon drums used to collect oil drips from the compressor and compressor blow down. The air compressors are located near the southeast corner of the production area in the main building (Figure 7).[4,5] Whenever the air compressors turn-on or shut-off, air is released into the series of 55-gallon drums (Appendix A, Roll 1, Photo 21). The air is allowed to vent to the ambient air leaving the oil in the drum. Oil is removed from the drums by a valve installed near the bottom of the drum. The used oil is conveyed with a 5-gallon container to a 55-gallon used oil drum located in the maintenance room.[4]

B. Wastes Managed

Used oil, air, and water is generated from this unit. The used oil is placed in the used oil accumulation drums for recycling.[4,5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for a release to surface water. The unit is near the center of the main building.

Soils: There is low potential for a release to soils for the reason given above for surface water.

Groundwater: There is low potential for a release to groundwater for the reason given above for surface water.

Subsurface Soil Gas: There is low potential for a release to subsurface soil gas for the reason given above for surface water.

Air: There is a release of hazardous constituents to the air each time used oil is removed from the 55-gallon drums and conveyed in 5-gallon container to another 55-gallon drum.

4.27 SWMU NO. 27 DRUM FOR STRIPPED CURED PAINT

A. Unit Characteristics *UNIT STATUS: ACTIVE*

One 55-gallon drum is used in the strip room to collect non-hazardous paint stripped from imperfectly painted parts. The strip room is located along the south wall of the main building (Figure 7).[4,5]

During the VSI, SAIC personnel observed one 55-gallon drum in the southeast corner of the stripping room (Appendix A, Roll 1, Photos 24 and 25) that is used to accumulate stripped cured paint from equipment and parts. The drum was labeled and appeared to be in good condition. The area where the drum is stored is approximately 3 feet by 3 feet in size. It is not known when the unit began operating however, the unit is still active. [4]

B. Wastes Managed

The facility reports non-hazardous paint stripped from imperfectly painted parts are stored in a 55-gallon drum. When the drum is full, it is taken to the evaporator tank for disposal (SWMU 13).[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There is low potential for a release to surface water. The unit is located inside the main building. There are no doors that lead to the outside near the unit. No releases from this unit have been reported.

Soils: There is low potential for release to soils for the reasons given above for surface water.

Groundwater: There is low potential for release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: There is low potential for release to subsurface soil gas for the reasons given above for surface water.

Air: There is low potential for release to air as the drum is kept closed and the paint is cured before it is stripped from parts or equipment.

4.28 SWMU NO. 28 FORMER WASTE PAINT SLUDGE STORAGE AREA

A. Unit Characteristics *UNIT STATUS: INACTIVE*

During a June 10, 1981, RCRA CEI conducted by IDEQ, four barrels of what was believed to be paint sludge were stored in the same area as empty drums.[8] Two photographs taken of drums of paint sludge and spent gun cleaner were located in EPA files and when compared to a photograph taken of AOC 7 (Appendix A, Roll 1, Photo 5) taken during the VSI and there are similarities between the three photographs. It is possible the location of this storage location was at the southwest corner of the main building, outside the paint mix room.[5,8]

During the VSI, SAIC field personnel asked Messrs. Skiles and Stoll if they knew where the storage area might have been located. They did not know or remember anything about another storage area besides the hazardous waste storage area (SWMU 8).[4]

B. Wastes Managed

Four 55-gallon drums of paint sludge were stored in the empty drum storage area. The facility classified the contents of the drums of paint sludge however, the first set of analytical data reveals the paint sludge exhibited a flashpoint of 109°F. Subsequent testing shows the paint sludge exhibited a flashpoint of over 200°F.[5]

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There was high potential for a release to surface water from this unit. There was no secondary containment structure or any other type of release control employed at this unit. Any spills or releases could have been released to surface water during rain events. The facility has not reported any releases from this unit. Currently, there is no potential for a release to surface water.

Soils: There was high potential for a release to soils from this unit for the reasons given above for surface water.

Groundwater: There was moderate potential for a release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There was high potential for a release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There was high potential for a release to air from this unit for the reasons given above for surface water.

5.0 AREAS OF CONCERN (AOC's)

Areas of Concern (AOCs) include those units which do not meet the definition of a SWMU but may have released or have the potential to release hazardous constituents to the environment on a non-routine basis. The eleven potential AOCs identified during the preliminary file review and VSI are discussed below.

5.1 AOC NO. 1 TWO FORMER SPRAY LINE PAINT BOOTHS AND TWO ASSOCIATED BAKE OVENS

A. Area Characteristics *AREA STATUS: REMOVED*

According to Mr. Barney Skiles and Gerald Culver, Waterloo Industries, Inc. representatives, two spray paint lines and associated bake ovens were used in the plant production process. The approximate date the unit became operation was 1949. In approximately 1976, the unit ceased operating. Air emissions from the booths and ovens were prior to Clean Air Act requirements and no information about emissions is available.[5]

During the VSI, the SAIC field personnel observed two areas where the former spray paint line were located. The first area was located near the southeast corner of the main building (Appendix A, Roll 1, Photo 18), and the second area was located approximately 50 feet west of the first area (Appendix A, Roll 1, Photo 19). No paint stains were observed on the walls or on the floor in or around either locations of the spray paint lines or bake ovens. The concrete floors in both locations appeared to be in good condition with no cracks.[4]

B. Materials Managed

Waste paint and solvent were generated at this unit.

C. Migration Pathways, Evaluation of Release and Exposure Potential

Surface Water: There was low potential for a release to surface water from this unit. Although, the unit was inside the main building, (near the southeast corner of the main building) there was an overhead door located just to the south of the unit. Any

spills or releases could migrate out of the building, underneath the overhead door, and come in contact surface water. No releases have been reported by the facility.

Soils: There was low potential for a release to soils from this unit for the reasons given above for surface water.

Groundwater: There was low potential for a release to groundwater from this unit for the reasons given above for surface water.

Subsurface Soil Gas: There was low potential for a release to subsurface soil gas from this unit for the reasons given above for surface water.

Air: There were releases to the air from this unit. Each time the unit was used there was a potential for volatile organics to be released to the air.

5.2 AOC NO. 2 FIVE SPRAY LINE PAINT BOOTHS

A. Area Characteristics *AREA STATUS : ACTIVE*

According to the facility's SWMU response, five spray line paint booths are currently part of the production process. The paint booths were installed in 1967 and were updated in 1991. The paint lines are currently in use. The spray line paint booths are located near the center of the main building (Figure 7). Air emissions from the paint booths are permitted by IDNR (Permit Numbers 91-A-183S, 184S, 185S, 186S, and 187S dated August 16, 1991 and December 20, 1991 modifications). The permits are included in this report as Appendix I.[5]

During the VSI, SAIC personnel examined the paint booths and observed that each spray line was equipped with a paint gun cleaning station (Appendix A, Roll 2, Photos 3-5). Extensive paint stains were observed on the walls and floors around the gun cleaning stations and spray paint lines.[4]

B. Materials Managed

Spent paint and solvent.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The unit is inside the main building with all floor drains routed to the facility wastewater pretreatment system.

Surface Water: No release potential because the unit is located inside the main building. All floor drains are routed to the facility wastewater pretreatment system.

Soils: No release potential for the reasons given above for surface water..

Groundwater: No release potential for the reasons given above for surface water.

Subsurface Soil Gas: No release potential for the reasons given above for surface water.

Air: There is a release of volatiles to the atmosphere whenever the unit is operated. The releases are permitted by IDNR.

5.3 AOC NO. 3 SPRAY LINE DRY OFF OVEN

A. Area Characteristics *AREA STATUS : ACTIVE*

One dry off oven is used on the plant spray paint line. The dry off oven is located on the roof of the main building (Figure 7). The dry off oven was installed and became operational in 1993 and is still in use. The dry off oven is used to dry parts before painting and emits water vapor and natural gas emissions.

The dry off oven emissions are permitted under IDNR Permit 93-A-311. A copy of the IDNR Permit 93-A-311 is included as Appendix J.[5]

During the VSI, SAIC personnel examined the dry off oven (Appendix A, Roll 2, Photo 8). The dry off oven was in use at the time of the VSI therefore, the dry off oven could not be visually inspected. Red and black colored residue was observed on the roof of the building all around the dry off oven. Mr. Skiles and Ms. Evans stated that the residue on the roof was from the John Deere facility located approximately one-half mile to the east of the facility.[4]

B. Materials Managed

Natural gas emissions, and water vapor.

C. Migration Pathways, Evaluation of Release and Exposure Potential

Paint residue was observed on the roof of the main building therefore, there is high potential for a release to surface water and soils. Because paint residue was observed on the roof a release to the air occurs each time the bake off oven is operated. There is no potential for a release to subsurface soil gas and groundwater.

Surface Water: High release potential.

Soils: High release potential.

Groundwater: High release potential.

Subsurface Soil Gas: No release potential.

Air: There is a release of paint residue, natural gas emissions and water vapor to the atmosphere each time the bake off oven is used and there is a release of natural gas emissions and water vapor to the air each time the dry off oven is used.

5.4 AOC NO. 4 ABOVE GROUND SOLVENT STORAGE TANKS

A. Area Characteristics *AREA STATUS: ACTIVE*

Three 560-gallon ASTs for virgin solvent storage are used by the facility. The types of solvents stored in the ASTs are toluene, D-150, and glycol ether. The ASTs are on a concrete secondary containment pad that has a dead sump. The ASTs were installed and placed into service in September 1991, and are currently in use. The ASTs are located near the southwest corner of the main building (Figure 7).

Reportedly, this unit is not used for waste management and does not experience systematic and routine releases. Because some material dripped from a loose fitting and because the vendor overfilled one of the ASTs, there was a release to the secondary containment structure and there may have been a release to the air from this unit.[5]

During the VSI, SAIC personnel examined the ASTs (Appendix A, Roll 1, Photo 10) and observed no cracks in the secondary containment structure and minor staining under one of the ASTs.[4]

B. Materials Managed

Toluene, D-150 solvent, and glycol ether.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The unit is provided with secondary containment. During the VSI, minor staining was observed on the concrete secondary containment structure. The secondary containment structure appeared to be free of cracks and gaps.

Surface Water: Low potential for a release.

Soils: No potential for a release.

Groundwater: No potential for a release.

Subsurface Soil Gas: No potential for a release.

Air: There was a release to the air because a leaking valve and overfilling the tank caused material to be released to the secondary containment structure.

5.5 AOC NO. 5 ABOVE GROUND STORAGE TANK FOR RUST PREVENTION DEGREASER

A. Area Characteristics *AREA STATUS: INACTIVE*

One 400 to 500-gallon AST was used to store virgin degreaser rust preventer (Barsol D-19 hydrocarbon solvent). The AST was located along the south wall of the main building (Figure 7). The AST was installed and became operational in 1986 or 1987. The facility ceased using the AST in 1992.

The facility reported a one-time release of approximately 5 to 10 gallons of Barsol D-19 hydrocarbon solvent. The solvent was released to a storm sewer because the emergency drain from this area to the plant wastewater pretreatment system was temporarily plugged. The drain entry was split for entry to both the storm sewer and to the plant wastewater pretreatment systems. Because the side to the plant wastewater pretreatment plant was plugged, the material overflowed to the storm water drain. Booms were placed on the water going to the Cedar River. The facility believes none of the released solvent reached the Cedar River.[5]

B. Materials Managed

Barsol D-19 solvent.

C. Migration Pathways, Evaluation of Release and Exposure Potential

Barsol D-19 solvent was released to the storm sewer. The condition or integrity of the storm sewer system piping is unknown or if the material was discharged directly to a storm water runoff ditch.

Surface Water: There may have been a release to Cedar River.

Soils: There may have been a release.

Groundwater: There may have been a release.

Subsurface Soil Gas: There may have been a release.

Air: There may have been a release.

5.6 AOC NO. 6 FIVE UNDERGROUND SOLVENT STORAGE TANKS

A. Area Characteristics *AREA STATUS: REMOVED*

Five USTs each with a 560-gallon capacity were used to store virgin solvent and unleaded gasoline. The USTs were located at the southwest corner of the main building (Figure 7). The USTs were installed and became operational in 1985. The use of the USTs ceased in 1991 and were removed in 1991. The USTs held D-100, D-150, D-19, A-1005 solvents; and unleaded gasoline.

While the USTs were being removed, soils were sampled and analyzed for acetone, total hydrocarbons, and BETX. One soil sample contained 570 parts per million (ppm) total hydrocarbons including 16 ppm toluene and 3.2 ppm xylene. Soil in the affected area was over-excavated and disposed under a special waste permit and the excavation hole was backfilled with clean soil. The tank removal report by Shive-Hattery, dated November 21, 1991, is included as Appendix K.[5]

During the VSI, SAIC personnel examined the former location of the underground storage tanks (Appendix A, Roll 1, Photo 5) and observed that the area had been paved with concrete. There was a large rust or red colored stain on the west side of the concrete pad.[4]

B. Materials Managed

D-100, D-150, D-19, A-1005 solvents, and unleaded gasoline.

C. Migration Pathways, Evaluation of Release and Exposure Potential

There was no potential for a release to surface water because the tanks were underground. ~~There~~ was a release to soils as reported in the November 21, 1991, Shive-Hattery report. ~~The materials stored~~ in the tanks contained volatile materials which could have been released to subsurface soil gas and groundwater. When the tanks were removed, a release to the air may have occurred because contaminants were detected in the soils.

Surface Water: No potential for a release.

Soils: There was a release to soils.

Groundwater: High potential for a release.

Subsurface Soil Gas: High potential for a release.

Air: There was a release to the atmosphere when the USTs were removed.

5.7 AOC NO. 7 TWO PARTIALLY TREATED WASTEWATER BYPASSES

A. Area Characteristics *AREA STATUS: INACTIVE*

Treated wastewater is discharged from the pretreatment system to the City of Waterloo POTW. In August 1978, partially treated wastewater overflowed the 19,000-gallon settling tank. Approximately 6,000 to 7,000 gallons of partially treated wastewater flowed into the facility parking lot (Figure 7).[5] It is not known how much of the wastewater released to the parking lot was recovered and discharged to the city POTW.

The partially treated wastewater may have contained small quantities of lead, aromatic hydrocarbon, red organic pigment, 2 butoxyethanol, triethanolamine, chromium, cadmium, manganese, copper, zinc, phosphorus, sulfuric acid, sodium hydroxide, toluene, naphtha, xylene, butylcellosolve, and total suspended solids.

Sometime in 1980, a second partially pretreated wastewater bypass occurred. According to the facility, the second bypass was similar to the first bypass in circumstance, quantity and response.[5]

During the VSI, SAIC personnel examined the location of the bypasses (Appendix A, Roll 1, Photo 14). The bypasses were released to a graveled parking lot located on the north side of the facility.[6]

B. Materials Managed

Partially treated wastewater may have contained small quantities of lead, aromatic hydrocarbon, red organic pigment, 2 butoxyethanol, triethanolamine, chromium, cadmium, manganese, copper, zinc, phosphorus, sulfuric acid, sodium hydroxide, toluene, naphtha, xylene, butylcellosolve, and total suspended solids.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The facility did not report a release to surface water. The facility reportedly diked and cleaned up the released material before it left the property. There was a release to soils as the bypasses were released to a graveled parking lot. No sampling was conducted to determine whether there was a release to soils, groundwater, or subsurface soil gas. There was a release to the atmosphere if the wastewater contained volatiles.

Surface Water: High potential for a release.

Soils: High potential for a release.

Groundwater: High potential for a release.

Subsurface Soil Gas: High potential for a release.

Air: High potential for a release.

5.8 AOC NO. 8 HEAT CLEANING OVEN

A. Area Characteristics *AREA STATUS: ACTIVE*

One heat cleaning oven manufactured by Ace was installed in September 1991 (Figure 7). The heat cleaning oven measures 8 feet by 7 feet, by 7 feet plus a 26 foot stack with a 60 pounds per hour capacity. The oven is used approximately once per week to burn excess paint off of hooks that hold parts painted in the spray booths and in the electrodeposition paint system. For a short period of time, used dry paint filters from paint booths were baked in the oven.[3]

Permitted air emissions (Permit No. 91-A-220 dated September 27, 1991) and permitted ash disposal began in September 1991. Non-hazardous oven ash is disposed at a local landfill under Special Waste Authorizations (0701082091 dated August 16, 1991 and 0701021792 dated February 17, 1992, May 27, 1993, and June 24, 1994. Analyses of ash and filters, manufacturer's information on the oven, Special Waste Authorizations, and the IDNR air permit are included in this report as Appendix L.[5]

During the VSI, SAIC personnel examined the heat cleaning oven (Appendix A, Roll 2, Photo 7). The heat cleaning oven was not in use at the time of the VSI.[4]

B. Materials Managed

Heat cleaning ash consisting of organic paint burned off paint hooks.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The unit is inside a building therefore, there is no potential for a release to surface water, soils, subsurface soil gas, and groundwater. There is a release of volatiles to the air when the unit is used to burn off excess organic paint off hooks.

Surface Water: No potential for a release.

Soils: There is no potential for a release.

Groundwater: No potential for a release.

Subsurface Soil Gas: No potential for a release.

Air: There is a release to the air.

5.9 AOC NO. 9 ELECTRODEPOSITION BAKE OVEN

A. Area Characteristics *AREA STATUS : ACTIVE*

A bake oven for the electrodeposition paint system is located near the northwest corner of the main building (Figure 7). The bake oven was installed in 1967 and is currently in use. Air emissions from this unit are permitted by IDNR Air Quality (grandfathered) for VOCs and carbon dioxide.[5]

During the VSI, SAIC personnel observed the bake oven and observed red and black paint residue on the roof around the bake off oven (Appendix A, Roll 2, Photos 8-10). The bake off oven is located on the roof of the main building.[4]

B. Materials Managed

Paint residue.

C. Migration Pathways, Evaluation of Release and Exposure Potential

Paint residue was observed on the roof surrounding the bake oven. Ms. Evans and Mr. Skiles stated that the source of the paint residue was from the John Deere Facility located northeast of the facility. After examining the inside of the bake oven and comparing the paint residue on the roof, it appeared that the source of the residue was from the bake oven. Mr. Stoll stated that the source of the residue was from the bake oven. The paint residue was emitted from the air stack.

Surface Water: High potential for a release to surface water. Paint residue was observed on the roof of the facility all around the bake oven and surrounding area. Wind could disperse the paint residue to the surface water.

Soils: High potential for a release to soils for the reasons given above for surface water.

Groundwater: High potential for a release to groundwater for the reasons given above for surface water.

Subsurface Soil Gas: No potential for a release to subsurface soil gas. Any volatile constituents in the paint residue would be released during the baking process and would be emitted with the air emissions.

Air: There is a release to the air from this unit. Any volatile constituents in the paint residue would be released during the baking process and would be emitted with the air emissions.

5.10 AOC NO. 10 FORMER ABOVE GROUND FUEL OIL STORAGE TANK (DUCK POND)

A. Area Characteristics *AREA STATUS: REMOVED*

During the VSI, SAIC personnel observed a concrete secondary containment structure located on the north side of the facility (Appendix A, Roll 1, Photo 12). A slight hydrocarbon odor was detected in the air while SAIC personnel were examining the structure. In addition, a slight hydrocarbon sheen was observed floating on top of the water that had accumulated inside the structure. Water was observed entering the structure on the south side of the structure. Mr. Skiles stated that the water was coming from a natural spring that was located between the structure and main building. Further examination revealed the source of the water was from the north side of the main building. Mr. Skiles stated that the unit was the former location of an aboveground fuel oil tank.[4] According to Mr. Skiles, the concrete structure measures 42 feet by 24 feet by 6 feet high and was constructed in the 1970s.[40].

B. Materials Managed

Wastewater

C. Migration Pathways, Evaluation of Release and Exposure Potential

There is no potential for a release to surface water because the unit is a secondary containment structure for a former aboveground fuel storage tank. There is a high potential for a release to soils, groundwater, and subsurface soil gas because a hydrocarbon sheen and odor were detected while examining the unit. Because hydrocarbon odor was detected there is a release to the air from this unit.

Surface Water: No potential for a release.

Soils: High potential for a release.

Groundwater: High potential for a release.

Subsurface Soil Gas: High potential for a release.

Air: Release.

5.11 AOC NO. 11 FORMER ALKALINE PARTS CLEANER

A. Area Characteristics *AREA STATUS: REMOVED*

An alkaline parts cleaner was observed near the northwest corner (Figure 7) of the facility during the VSI. Water and a dark colored substance was observed between the alkaline parts cleaner and the north wall (Appendix A, Roll 2, Photo 19). Several areas of the north wall were severely corroded to the point that there were holes in the wall (Appendix A, Roll 2, Photo 20). Ms. Evans stated that the water was caused from condensation generated when parts cleaner was operating and there is nothing to be concerned about.

According to Mr. Skiles, the alkaline parts cleaner was installed in 1978 or 1979 and was disassembled in May or June 1996. The parts cleaner was 145 feet long and 14 feet wide. The system was a parts cleaner with an alkaline cleaner with two rinse stages, followed by an iron phosphate stage, followed by another rinse, and finally a deionized water rinse. Mr. Skiles reports that because of heavy rain on the date of the VSI, a roof leak allowed water to leak into the building and eventually onto the floor between the parts cleaner and the wall. Mr. Skiles further stated that any discoloration in the water was caused by rust and dirt leaching from the building roof.[40] During the examination of this unit, SAIC personnel recollect that there was no water dripping or leaking onto the floor anywhere in the area and the discolored water was very slick when walking between the wall and parts cleaner.[4]

B. Materials Managed

Alkaline water.

C. Migration Pathways, Evaluation of Release and Exposure Potential

The north wall of the building was severely corroded to the point insulation in the wall was exposed and falling onto the floor. In addition, several holes in the wall were observed where the wall and foundation interface. This would allow any alkaline water or condensation to be released to the surface water, soils and air therefore, there is a high potential for a release to surface water, soils, and the air for the reason noted above. There is low potential for a release to groundwater and subsurface soil gas.

Surface Water: High potential for a release.

Soils: High potential for a release.

Groundwater: High potential for a release.

Subsurface Soil Gas: Low potential for a release.

Air: High potential for a release.

6.0 REFERENCES

1. RCRA Facility Assessment Guidance Document, U.S. EPA, 1986.

2. RCRA CEI Report, by David Whiting, U. S. EPA, October 4, 1985.

3. RCRA CEI Report, by Susan Rodgers and Jim Aycock, Metcalf & Eddy Inc., April 23 and 24, 1992.

4. VSI Field Notes, Jim Aycock and Jeff Robichaud, SAIC, April 18, 1996.

5. Information on Solid Waste Management Units, Waterloo Industries, Inc., Ken Anderson, Waterloo Industries, Inc., May 24, 1995.

6. IDEQ Memorandum, dated September 23, 1983, from Rod Vlieger, to Waterloo Industries file.

7. U.S. EPA Part A Checklist and Attachments, dated January 26, 1981.

8. RCRA CEI Report, from Ron Kolpa, IDEQ, to Frank Martin, Waterloo Industries, June 29, 1981.

9. EPA Form 2070-11, Potential Hazardous Waste Site Identification Form, dated October 29, 1981.

10. RCRA CEI Report, from J. Sanfilippo, IDEQ, to B. Skiles, Waterloo Industries, December 7, 1982.

11. Letter from B. Skiles, Waterloo Industries, to B. Cook, IDEQ, dated January 20, 1983.

12. EPA Form 8700-12, Notification of Hazardous Waste Activity Form, dated February 12, 1983.

13. RCRA CEI Report, from R. Stellick, IDEQ, to B. Skiles, Waterloo Industries, dated February 24, 1983.

14. RCRA CEI Report, from J. Sanfilippo, IDEQ, to B. Skiles, Waterloo Industries, dated April 3, 1984.

15. Letter from R. Morby, U.S. EPA, to B.Skiles, Waterloo Industries, dated April 19, 1984.

16. Letter from J. Chandler, Waterloo Industries, to M. Rivas, U.S. EPA, dated April 26, 1984.

17. Memorandum from R. Morby, U.S. EPA to D. Wagoner, U.S. EPA, no date.

18. Letter from R. Campbell, IDEQ, to C. McLaughlin, U.S. EPA, dated April 5, 1985.

19. Letter from D. Wagoner, U.S. EPA, to J. Chandler, Waterloo Industries, dated May 9, 1985.

20. RCRA CEI Report, from Robert Dona, U.S. EPA to Michael Sanderson, U.S. EPA, February 18, 1987.

21. Preliminary Assessment Report, prepared by Ecology and Environment, Inc./Field Investigation Team, to Paul Doherty, U. S. EPA, April 10, 1987.

22. Letter and Complaint, Compliance Order and Notice of Opportunity For Hearing, from R. Lancaster, U.S. EPA, to M. Kay, U.S. EPA, dated March 31, 1988.

23. Letter from L. McKenzie, U.S. EPA, to Honorable G. Harwood, U.S. EPA, dated October 27, 1988.

24. RCRA CEI Report, from John Bosky, U.S. EPA to Michael Sanderson, U.S. EPA, November 1, 1989.

25. Letter from L. McKenzie, U.S. EPA, to P. Evans, Spencer, Fane, Britt & Browne, dated July 2, 1990.

26. Letter from C. Lundberg, IDNR, to October 19, 1990.

27. Notice of Deficiency/Letter of Warning, from M. Sanderson, U.S. EPA, to F. Martin, Waterloo Industries, dated July 30, 1991.

28. Letter from K. Herstowski, U.S. EPA, to , J. Martin, Waterloo Public Library, dated October 28, 1991.

29. Letter from D. Wagoner, U.S. EPA, to F. Martin, Waterloo Industries, dated December 26, 1991.

30. RCRA CEI Report, by Dave Whiting, U.S. EPA, from John Bosky, U. S. EPA, to James Callier, U.S. EPA, May 12, 1992.

31. Letter from M. Sanderson, U.S. EPA, to L. Kjar, Waterloo Industries, dated June 10, 1992.

32. Letter from J. Callier, U.S. EPA, to B. Skiles, Waterloo Industries, dated August 1994.

33. Letter of Warning from J. Callier, U.S. EPA, to B. Skiles, Waterloo Industries, dated January 27, 1995.

34. Iowa State University (ISU), 1996.

35. Harding Lawson Associates, June 1995. RCRA Facility Investigation Report for Sauer-Sunstrand Facility, Ames, Iowa.

36. U.S. Geological Survey, Cedar Falls and Waterloo North, Iowa, quadrangle maps, 7.5 minute series, 1963.

37. Ecology and Environment, Inc. (E&E), 1987. Preliminary Assessment, Waterloo Industries, Inc., Waterloo, Iowa.

38. Iowa Department of Natural Resources, 1996, Geological Survey Bureau.

39. Letter from L. Wilson, IDNR, to J. Robichaud, SAIC, dated April 10, 1996.

40. Letter from K. Anderson, Waterloo Industries, to B. Koesterer, U.S. EPA, dated September 3, 1996.

41. Information For Closure of a Hazardous Waste Container Storage Area, U.S. EPA, November 1991.

FIGURES

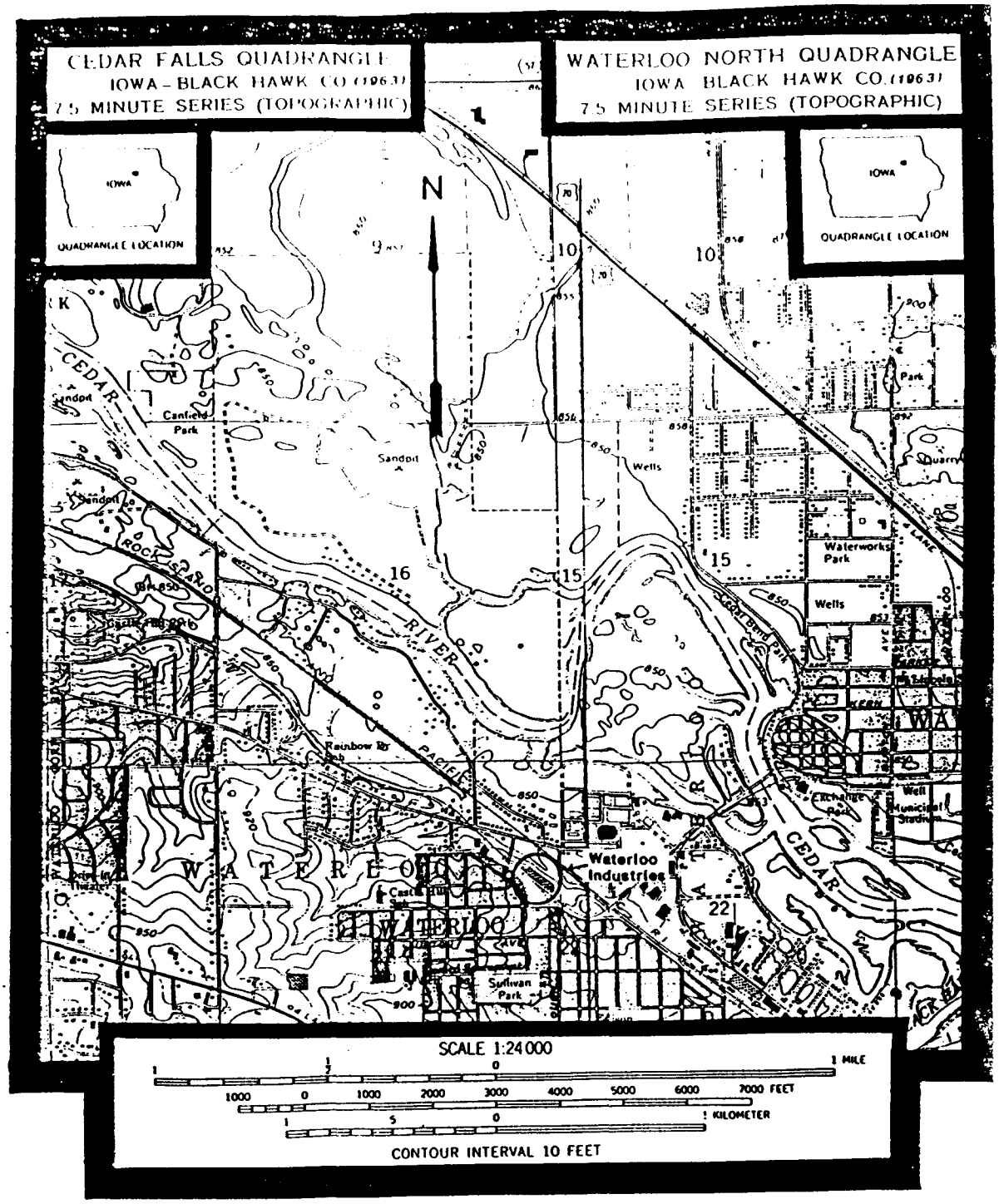

FIGURE 1. SITE LOCATION MAP
WATERLOO INDUSTRIES, WATERLOO, IOWA

Site Location Map for Waterloo Industries, Waterloo, Iowa.
Source: 1989 EPA RCRA CEI Report.
Revised by SAIC, February 29, 1996.

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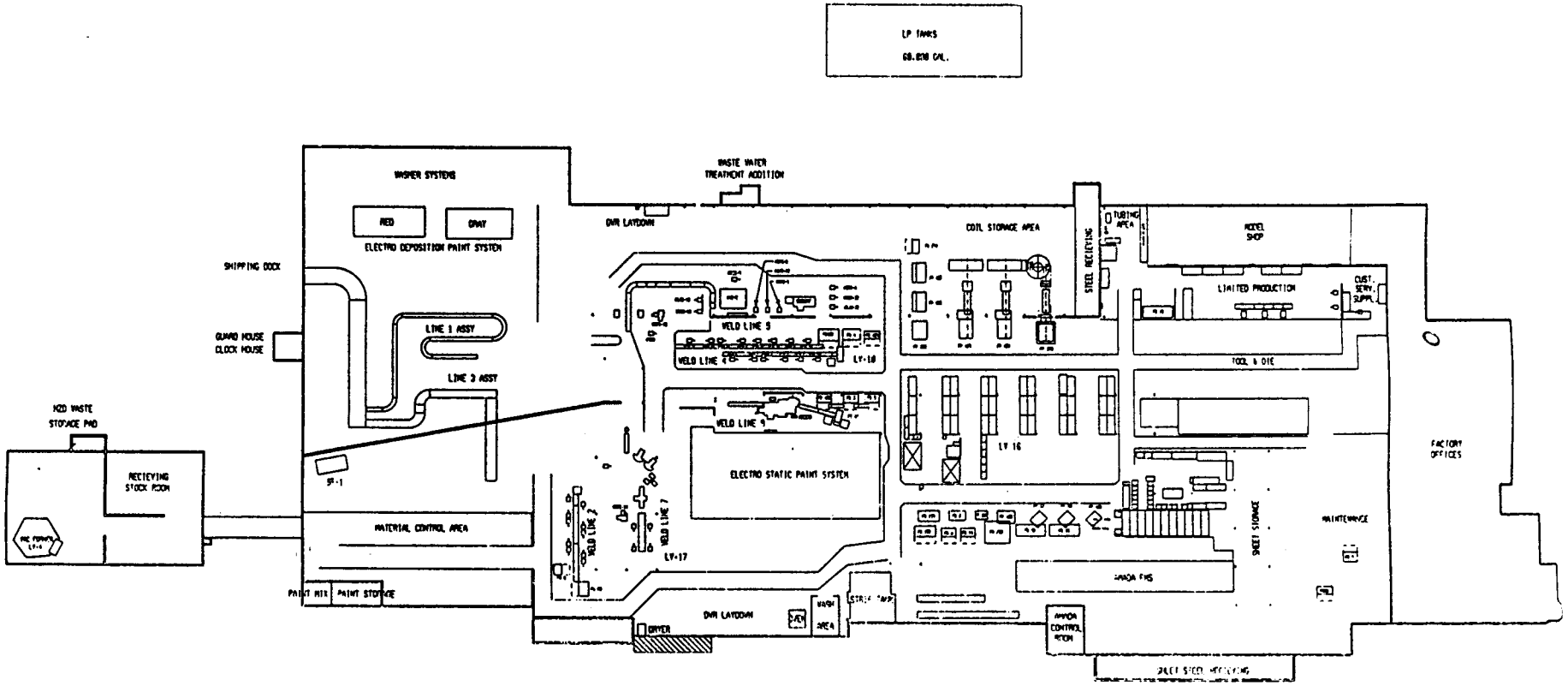

North

FIGURE 2. FACILITY LAYOUT MAP

Site: Waterloo Industries, Waterloo, Iowa.

Source: Compliance Evaluation Inspection Report, Waterloo Industries, May 15, 1992, modified by SAIC, September 11, 1996.

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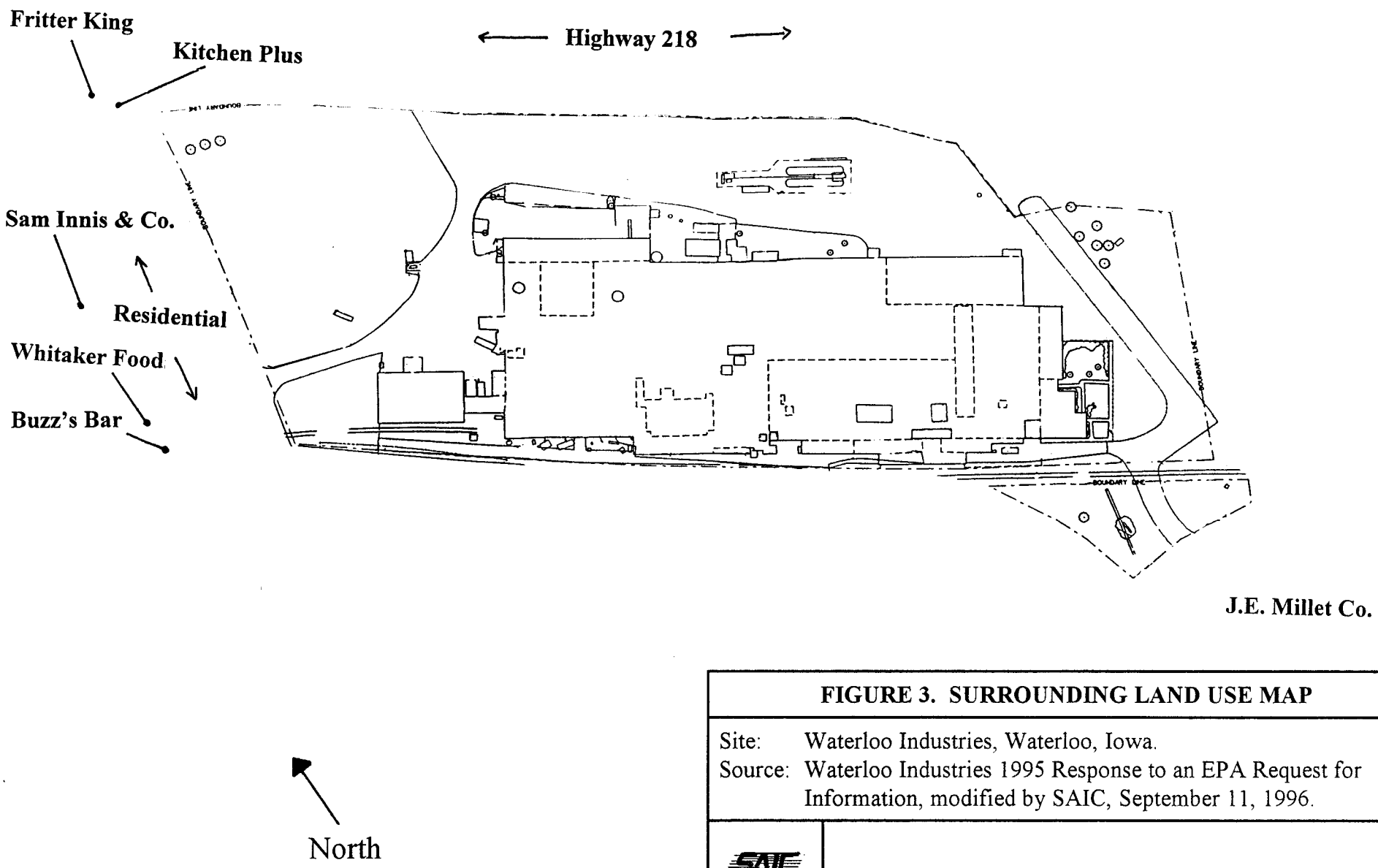

FIGURE 3. SURROUNDING LAND USE MAP

Site: Waterloo Industries, Waterloo, Iowa.
Source: Waterloo Industries 1995 Response to an EPA Request for Information, modified by SAIC, September 11, 1996.

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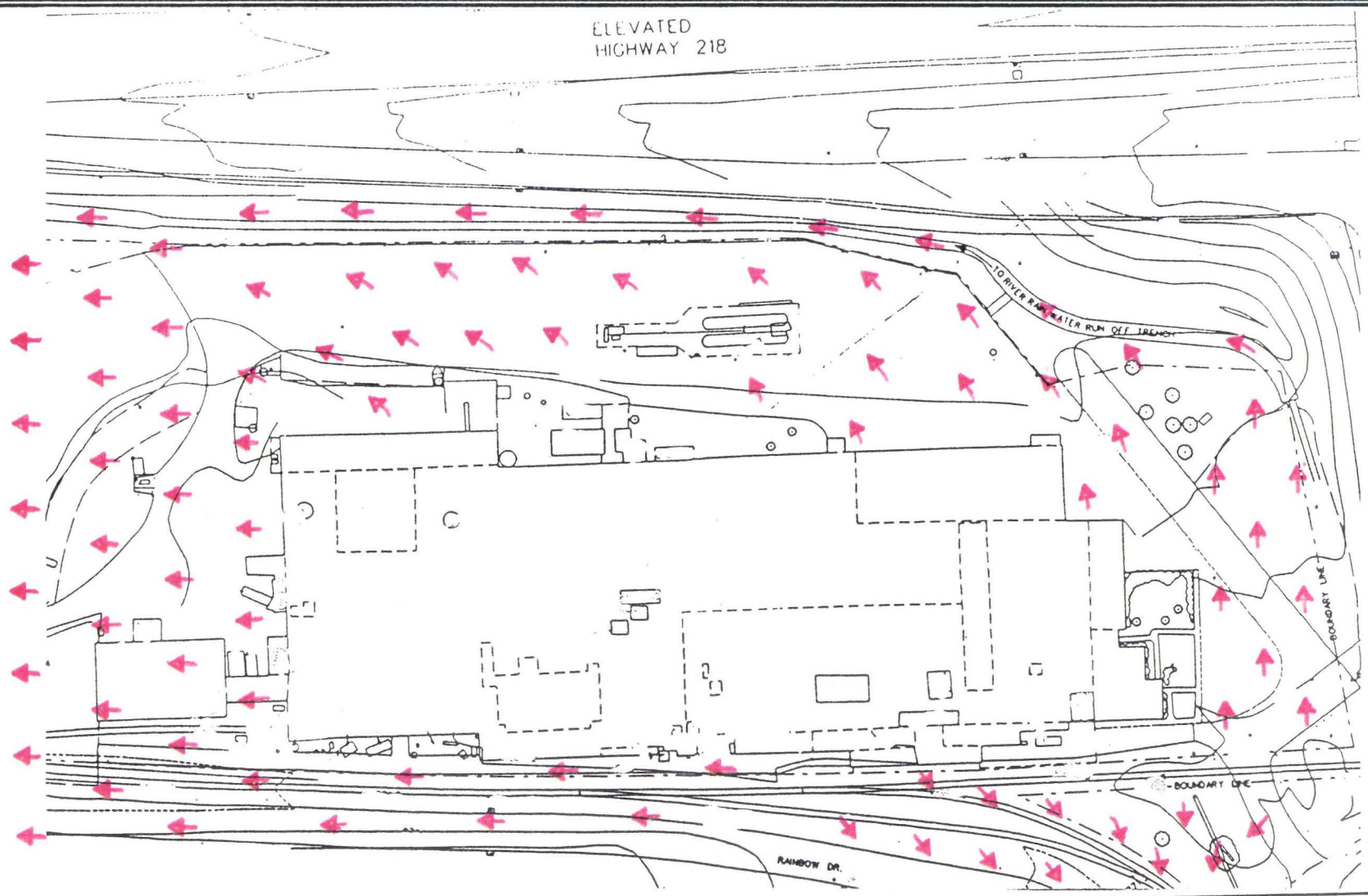

N

Surface Water Drainage Direction

FIGURE 4.
SURFACE WATER DRAINAGE MAP

Site: Waterloo Industries, Waterloo, Iowa.
Source: Waterloo Industries 1995 Response to an EPA Request for Information, Revised by SAIC, September 11, 1996.

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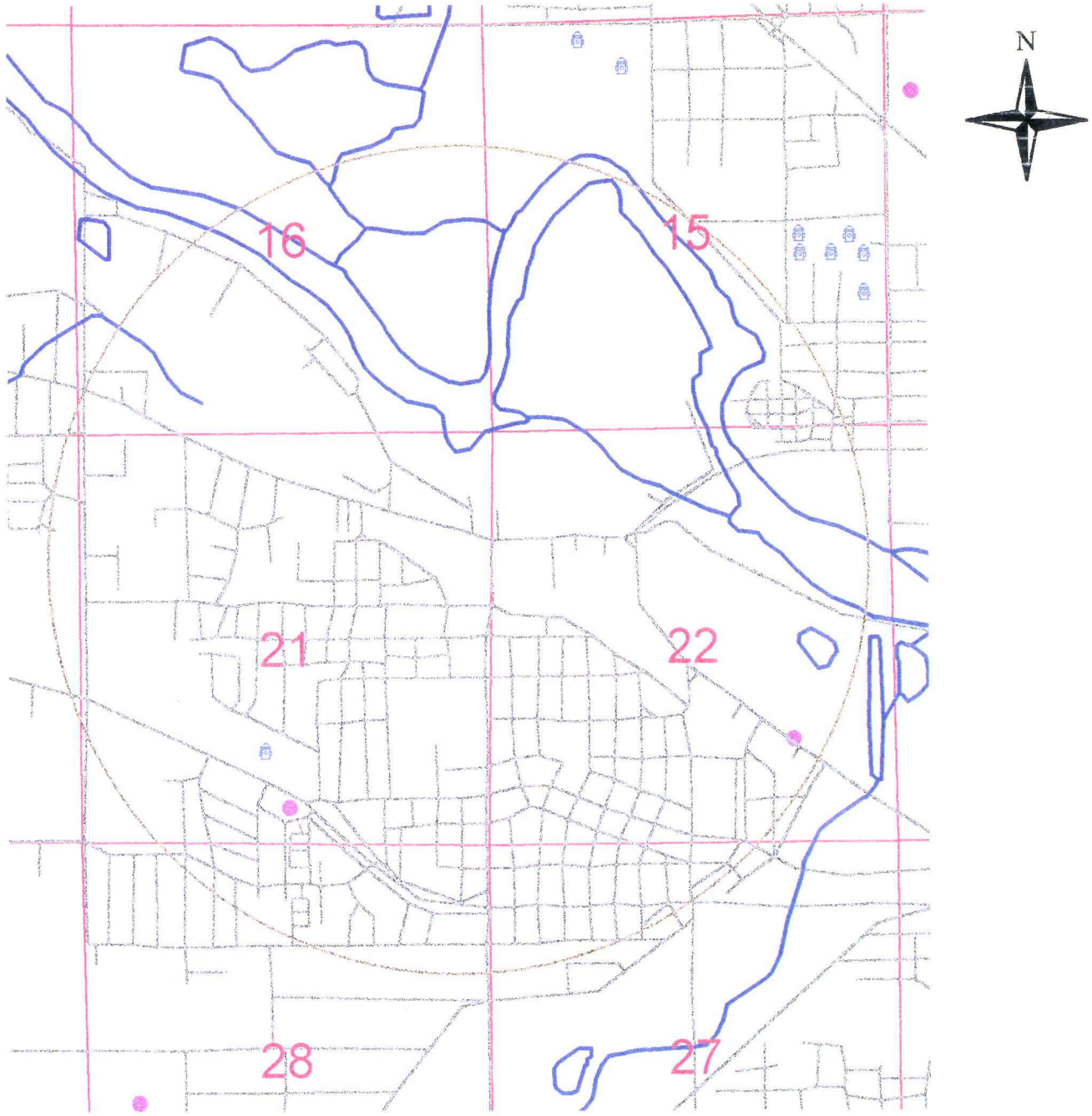
A portion of Waterloo, Iowa



- Rivers in Black Hawk Co. (07)
- Roads in Black Hawk Co. (07)
- Agricultural drainage wells
- Water withdrawal permits (>25,000 gpd)
- Public water supplies: wells and intakes
- Abandoned wells (registered 7/89 - 6/91)
- Abandoned wells (registered 1987 - 6/89)
- Private well permits
- GSB sampling points in GSB repository
- Section lines in Black Hawk Co. (07)

0.25 0 0.25 0.5 Miles

FIGURE 5. GROUNDWATER WELLS WITHIN A ONE MILE RADIUS OF WATERLOO INDUSTRIES

Site: Waterloo Industries Incorporated
Source: Iowa Department of Natural Resources Geological Survey Bureau, 1996.

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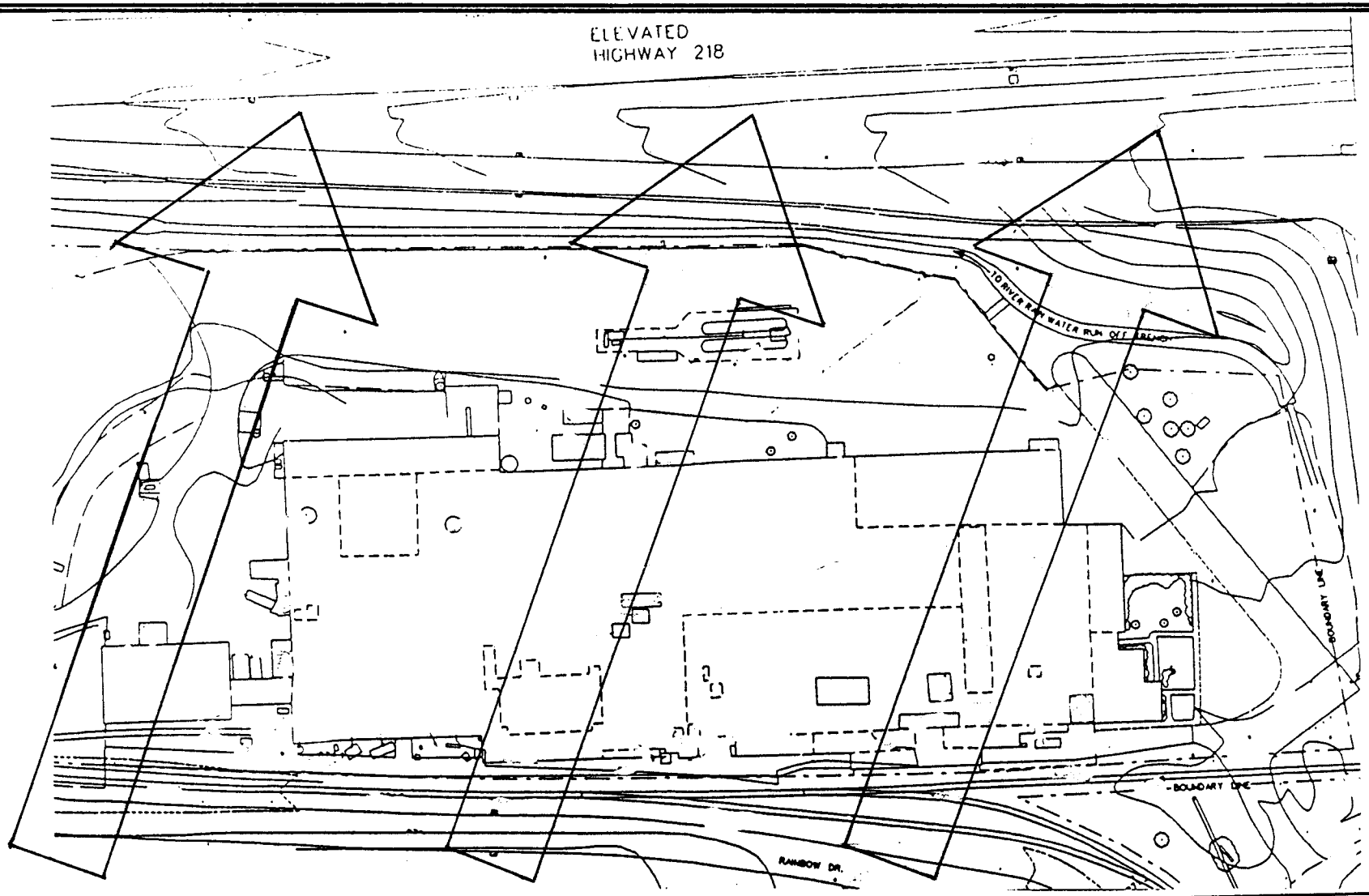

N

Groundwater Flow Direction

FIGURE 6.
GROUNDWATER FLOW MAP

Site: Waterloo Industries, Waterloo, Iowa.
Source: Waterloo Industries 1995 Response to an EPA Request for Information, Revised by SAIC, September 11, 1996.

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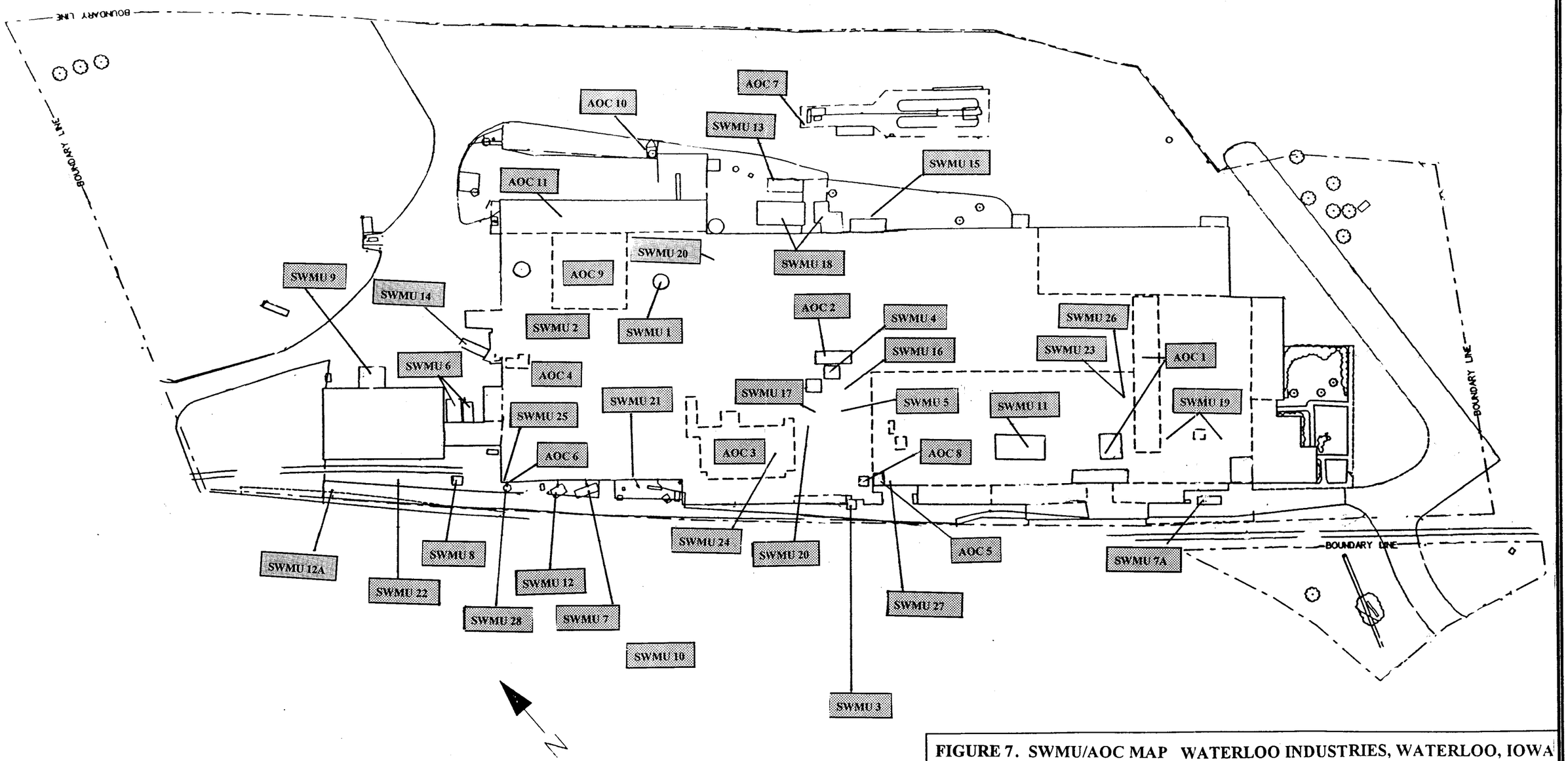


FIGURE 7. SWMU/AOC MAP WATERLOO INDUSTRIES, WATERLOO, IOWA

Site: Waterloo Industries, Waterloo, Iowa.
Source: Waterloo Industries 1995 Response to an EPA Request for Information.

SAIC

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

TABLE

TABLE 1

List of Threatened, Endangered and Special Concern Species

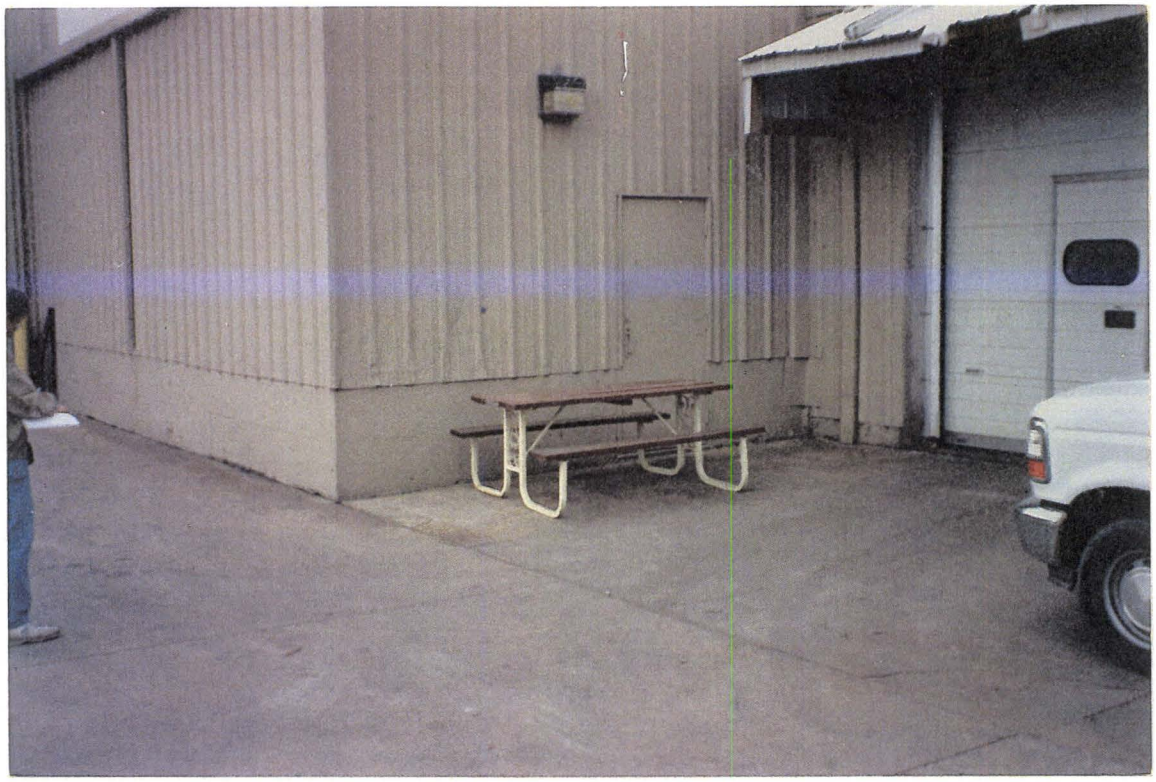
Type	Species Scientific Name	Species Common Name	Species Classification
Animal	*Ambystoma laterale*	Blue-Spotted Salamander	Endangered
Animal	*Buteo lineatus*	Red-Shouldered Hawk	Endangered
Animal	*Clemmys insculpta*	Wood Turtle	Endangered
Animal	*Spilogale putoruis*	Eastern Spotted Skunk	Threatened
Plant	*Astragalus distortus*	Bent Milk-Vetch	Special Concern
Plant	*Besseya bullii*	Kitten Tails	Threatened
Plant	*Crepis runcinata*	Naked-Stem Hawksbeard	Special Concern
Plant	*Dalea villosa*	Silky Prairie Clover	Endangered
Plant	*Lesquerella ludoviciana*	Silver Bladderpod	Special Concern
Plant	*Napaea dioica*	Glade Mallow	Special Concern
Plant	*Phlox bifida*	Cleft Phlox	Special Concern
Plant	*Platanthera praeclara*	Western Prairie Fringed Orchid	Threatened

Source: Letter from L. Wilson, IDNR, to Jeffery Robichaud, SAIC, dated April 10, 1996.[39]

APPENDIX A

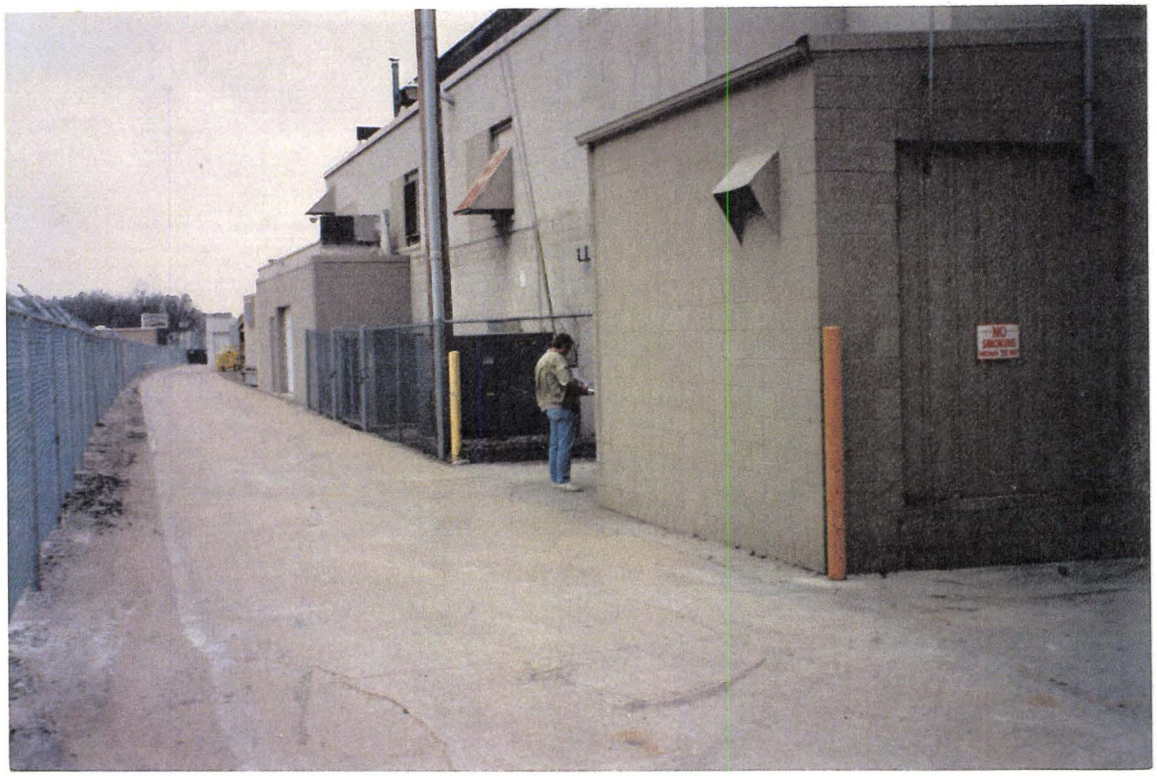
VISUAL SITE INSPECTION PHOTOGRAPHS

ROLL 1 PHOTO 1



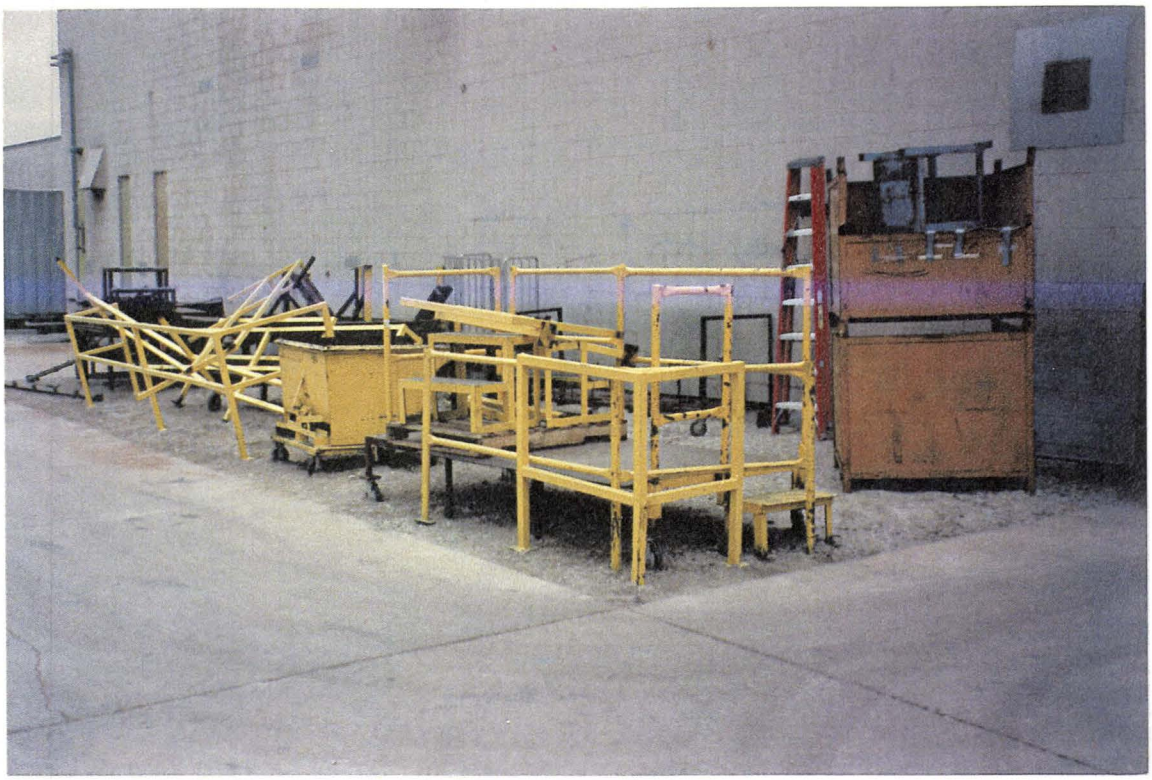
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0852 **Direction:** West-Northwest
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of SWMU 7, former scrap metal dumpster (former location is near right side of photo, near corner of building).

ROLL 1 PHOTO 2



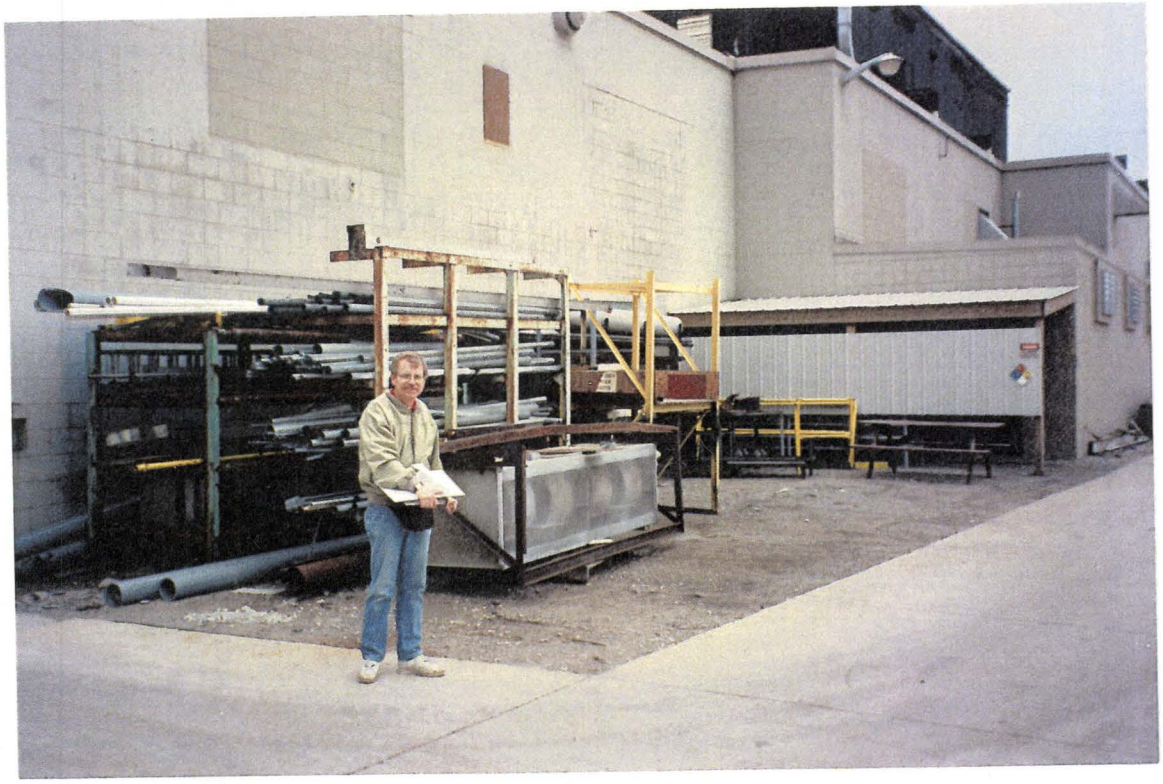
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0900 **Direction:** West-Northwest
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of SWMU 3, used oil storage tank (between building and electrical transformer).

ROLL 1 PHOTO 3



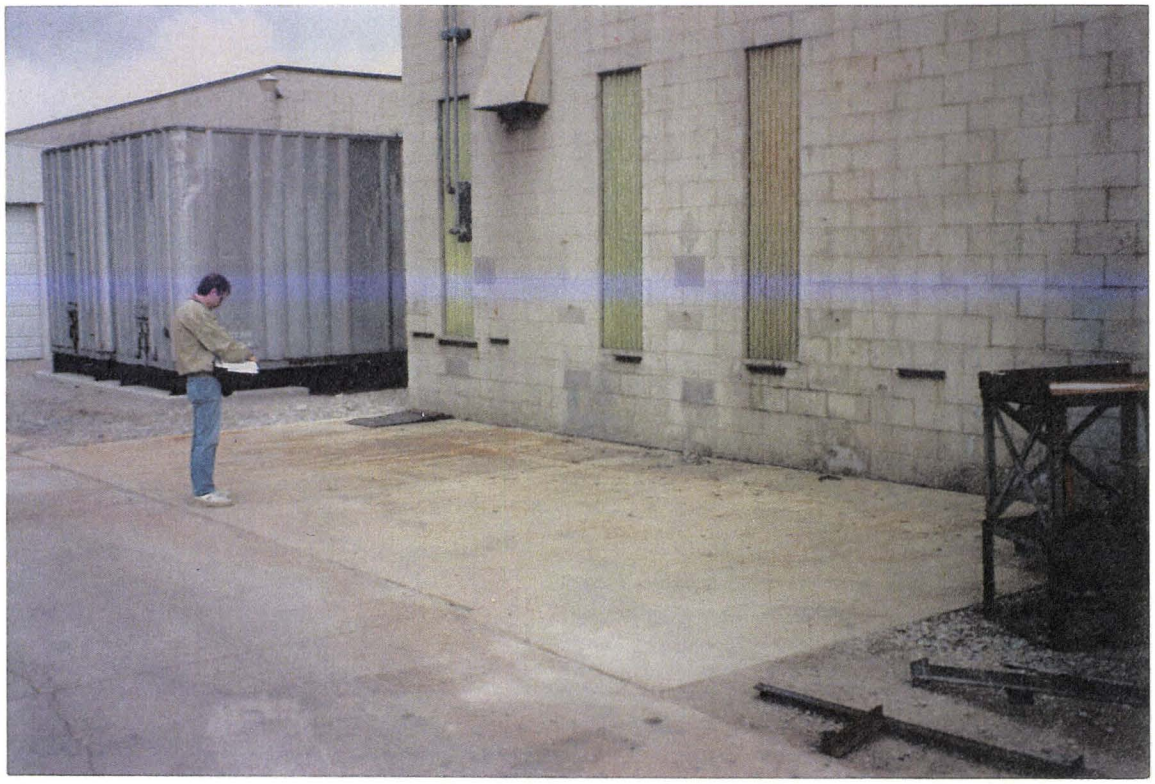
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0905 **Direction:** Northwest
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of dry paint filter dumpster storage area (SWMU 12) and former location of the Maintenance Scrap Steel Dumpster (SWMU 7).

ROLL 1 PHOTO 4



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0917 **Direction:** Northeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of empty drum storage area (SWMU 10).

ROLL 1 PHOTO 5



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0925 **Direction:** Northwest
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of five underground solvent storage tanks (AOC 6) and possible location of SWMU 28.

ROLL 1 PHOTO 6

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0929 **Direction:** West
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of SWMU 8. It is now used as a covered storage shed for equipment.

ROLL 1 PHOTO 7

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0934 **Direction:** North
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Location of crushed empty drum dumpster near northwest corner of SWMU 8.

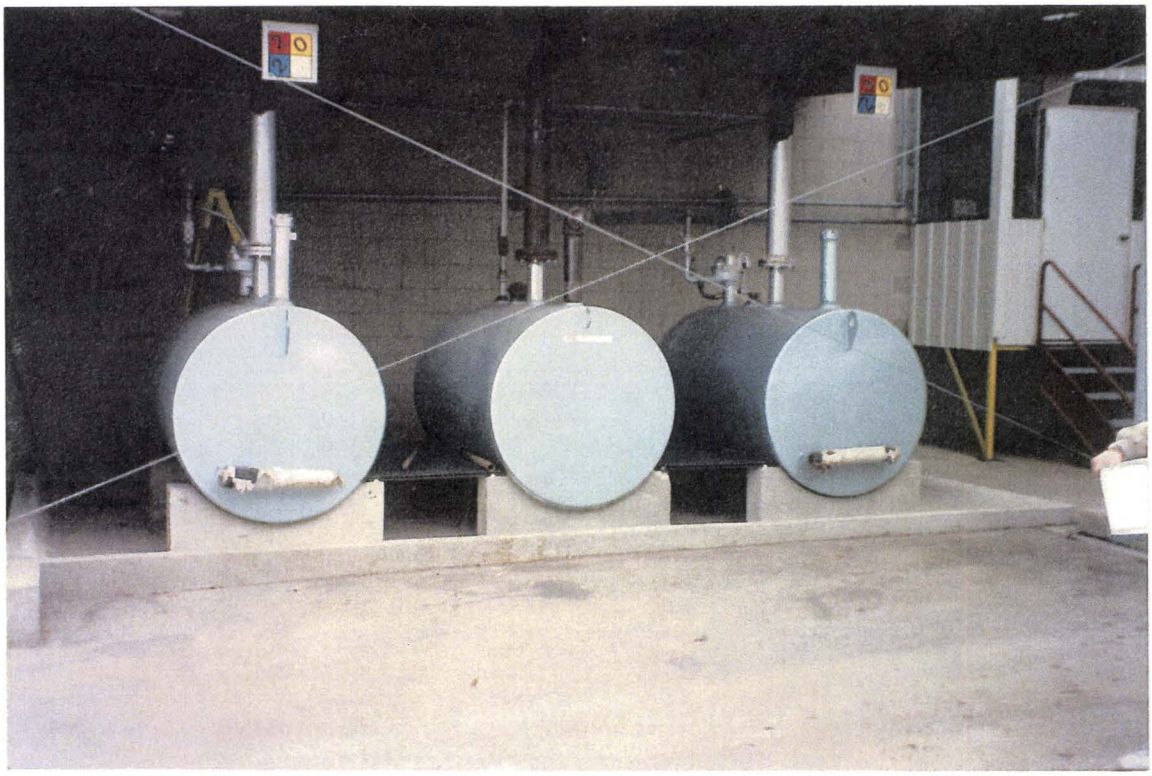
ROLL 1 PHOTO 8

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0935 **Direction:** West
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: New location (NW corner of main building) for dry used paint filter dumpster (SWMU 12A).

ROLL 1 PHOTO 9

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0945 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Scrap metal dumpster (SWMU 6). Note the absorbent material on ground underneath dumpster.

ROLL 1 PHOTO 10

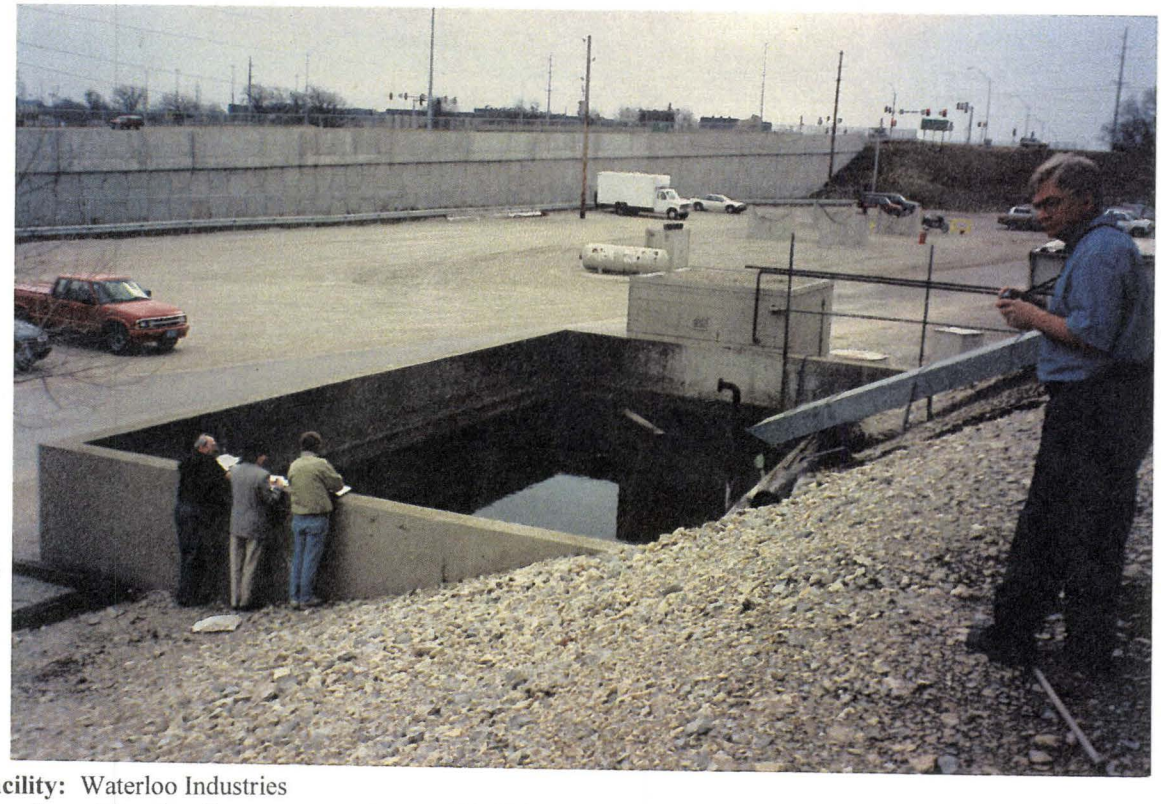


Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0947 **Direction:** East-Southeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Above ground solvent tanks, located on the northwest side of main building (AOC 4).

ROLL 1 PHOTO 11

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 0951 **Direction:** North-Northeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Trash compactor (SWMU 14) located on the west side of the main building. Note the absorbent material on ground near the compactor.

ROLL 1 PHOTO 12



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1001 **Direction:** East
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm 100 ASA
Subject: Former location of above ground fuel oil tank AOC. A hydrocarbon sheen was visible floating on top of the water.

ROLL 1 PHOTO 13

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1012 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Location of former underground pretreatment tanks (SWMU 15) on grassy area, left side of photo.

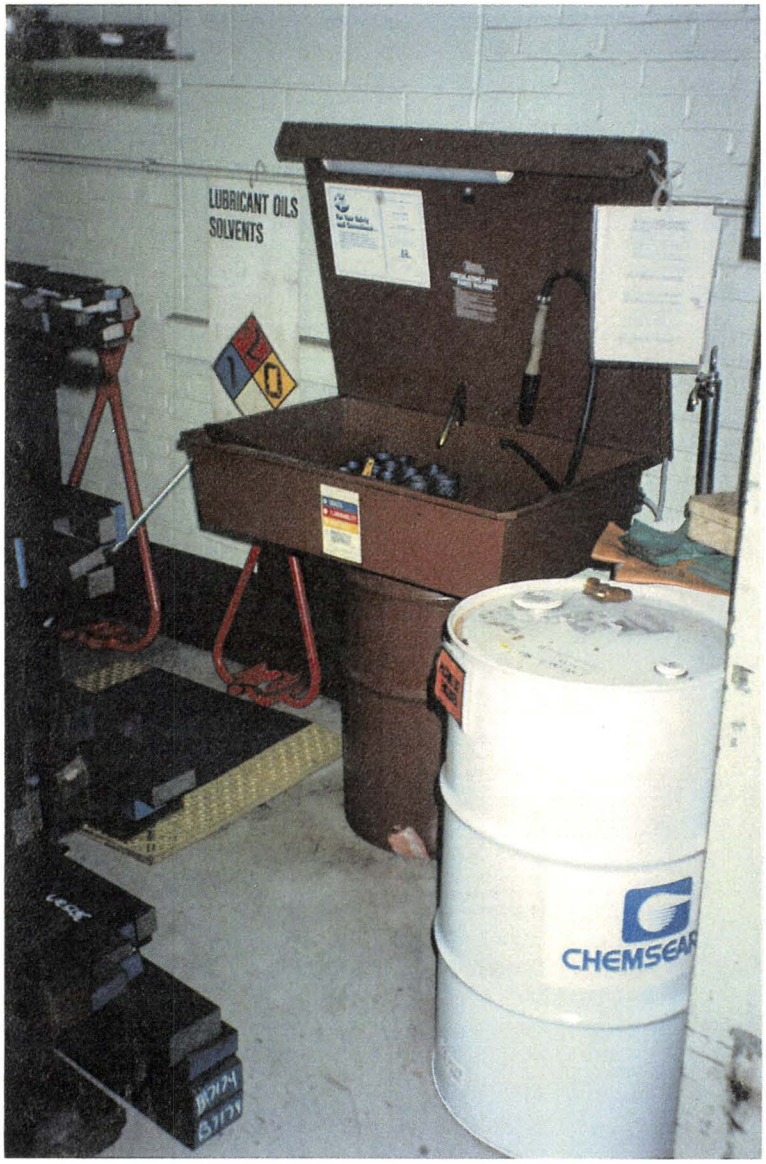
ROLL 1 PHOTO 14

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1016 **Direction:** West
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Location of two partially treated waste water bypasses (AOC 7), near and around transformer box at right side of photo.

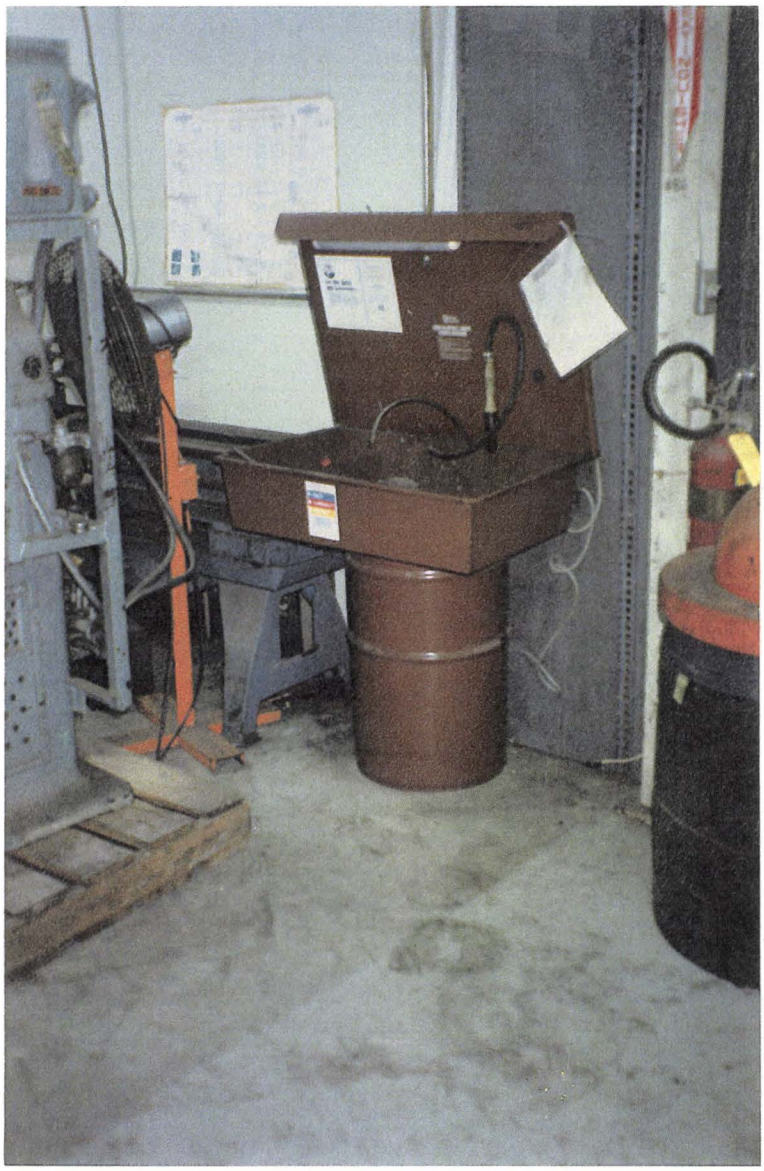
ROLL 1 PHOTO 15

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1040 **Direction:** West
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Evaporator tank (metal tank in foreground with white tarp covering tank (SWMU 13).

ROLL 1 PHOTO 16
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1040
Direction: Northwest
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Parts washer (16-gallon) located in Maintenance Department.



ROLL 1 PHOTO 17
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1042
Direction: Southeast
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Second 16-gallon parts washer located in Maintenance Department.



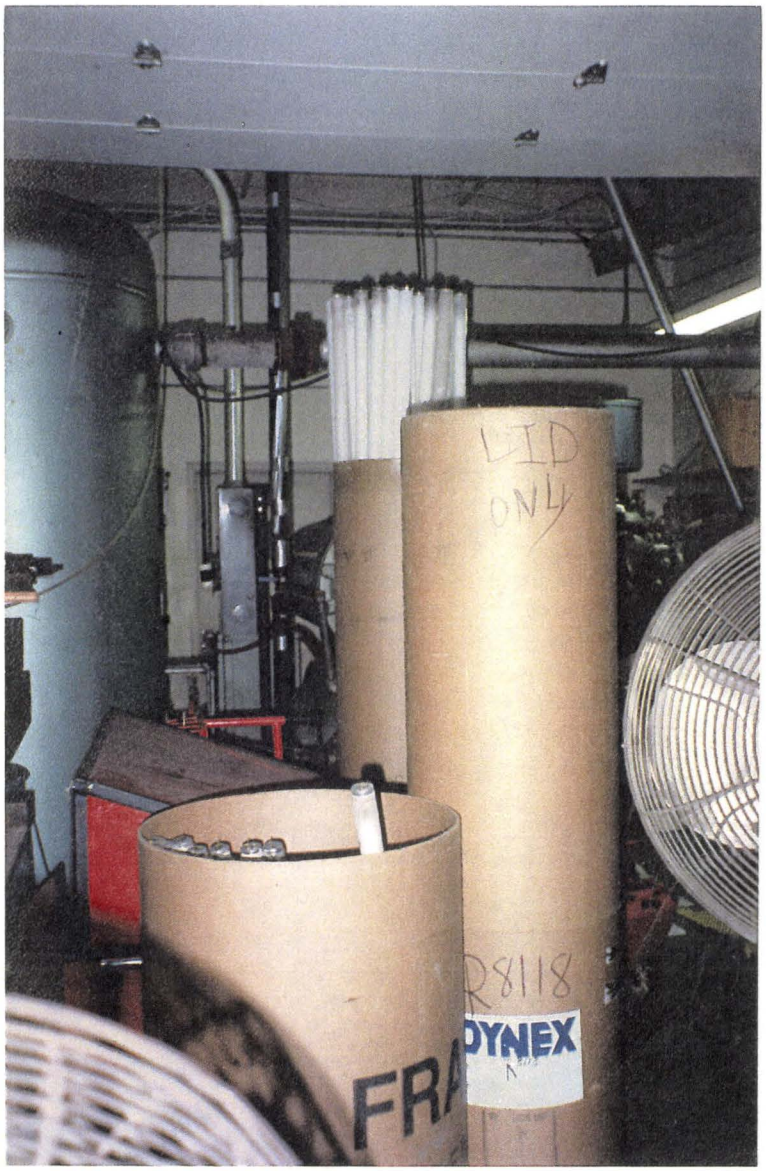
ROLL 1 PHOTO 18
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1044
Direction: North-Northwest
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Parts washer (16-gallon) located in the tool room.

ROLL 1 PHOTO 19

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1045 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type**: 100 ASA
Subject: Former location of AOC 1, near southeast corner of the main building.

ROLL 1 PHOTO 20
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1055
Direction: South
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Former location of AOC 1, east side of main building.

ROLL 1 PHOTO 21
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1100
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Three 55-gallon drums that collect used oil from compressors (SWMU 26).

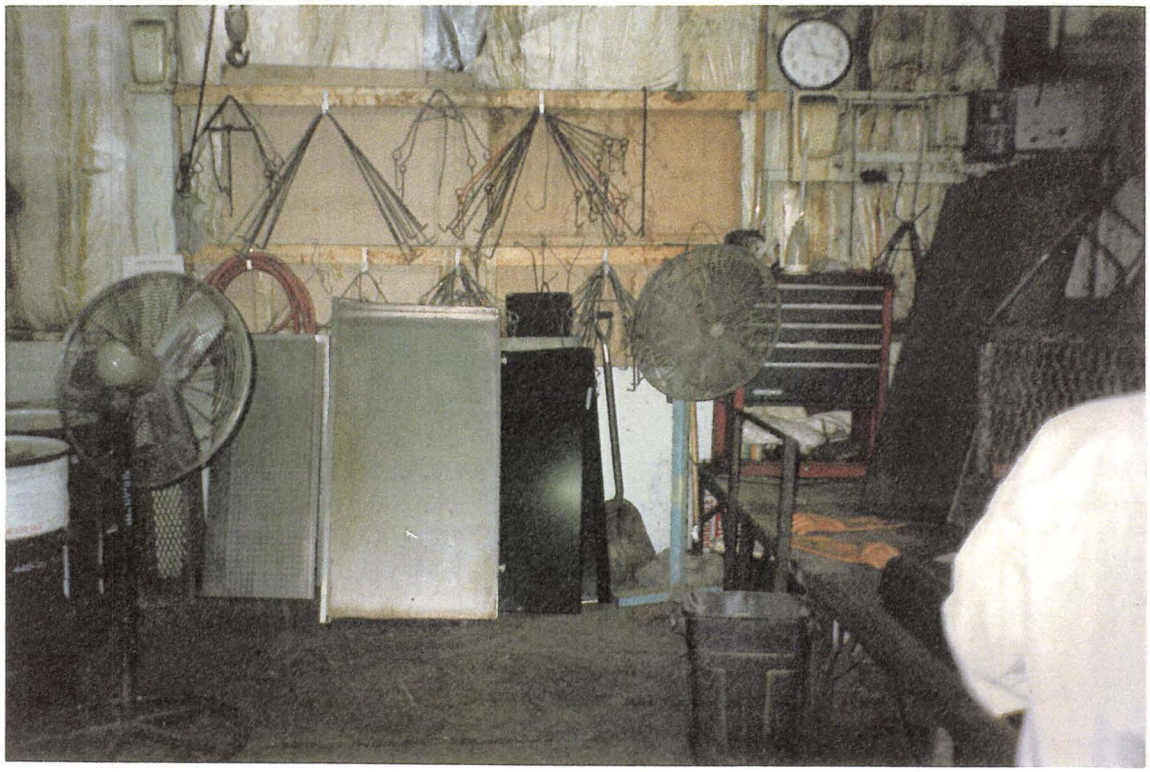


ROLL 1 PHOTO 22
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1105
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Burned out fluorescent light bulb storage area located in compressor room (SWMU 23).

ROLL 1 PHOTO 23

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1109 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of SWMU 11 (former asbestos installation and scrap collection area), located near east center of main building.

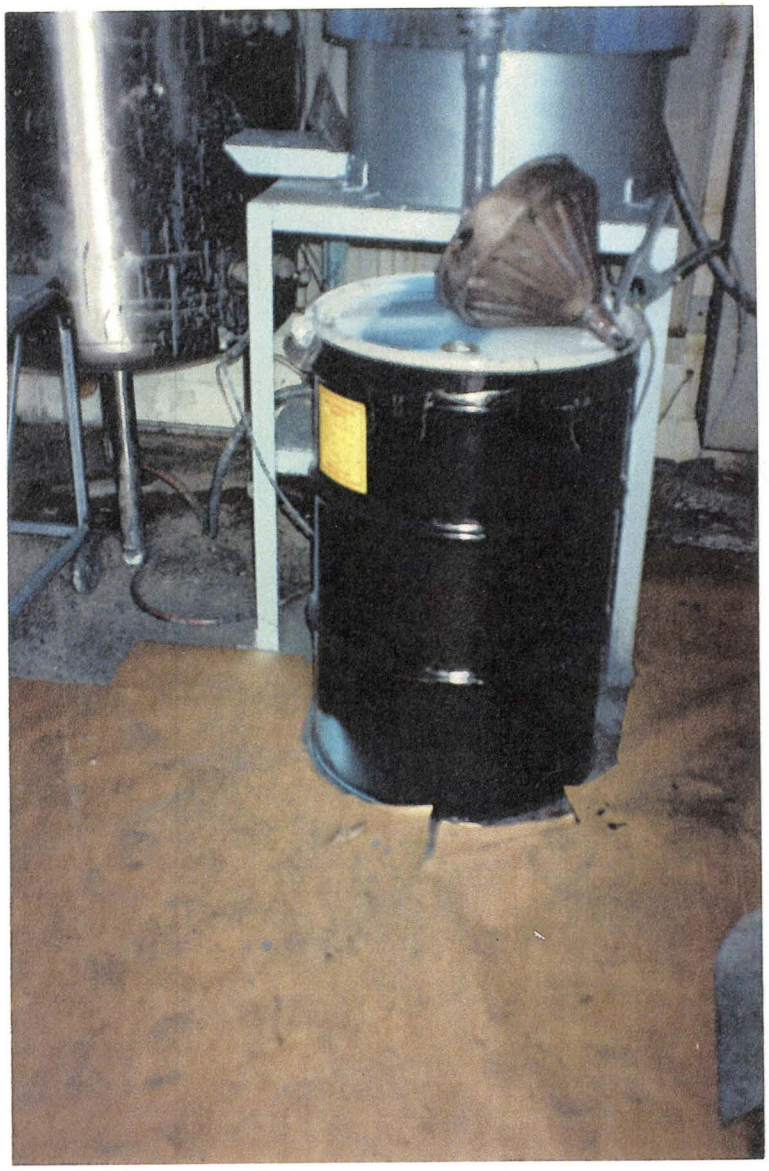
ROLL 1 PHOTO 24



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1118 **Direction:** West
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: The stripper and rust prevention tanks (far right side of photo) and drum for stripped paint (far left side of the photo behind the fan).

ROLL 1 PHOTO 25

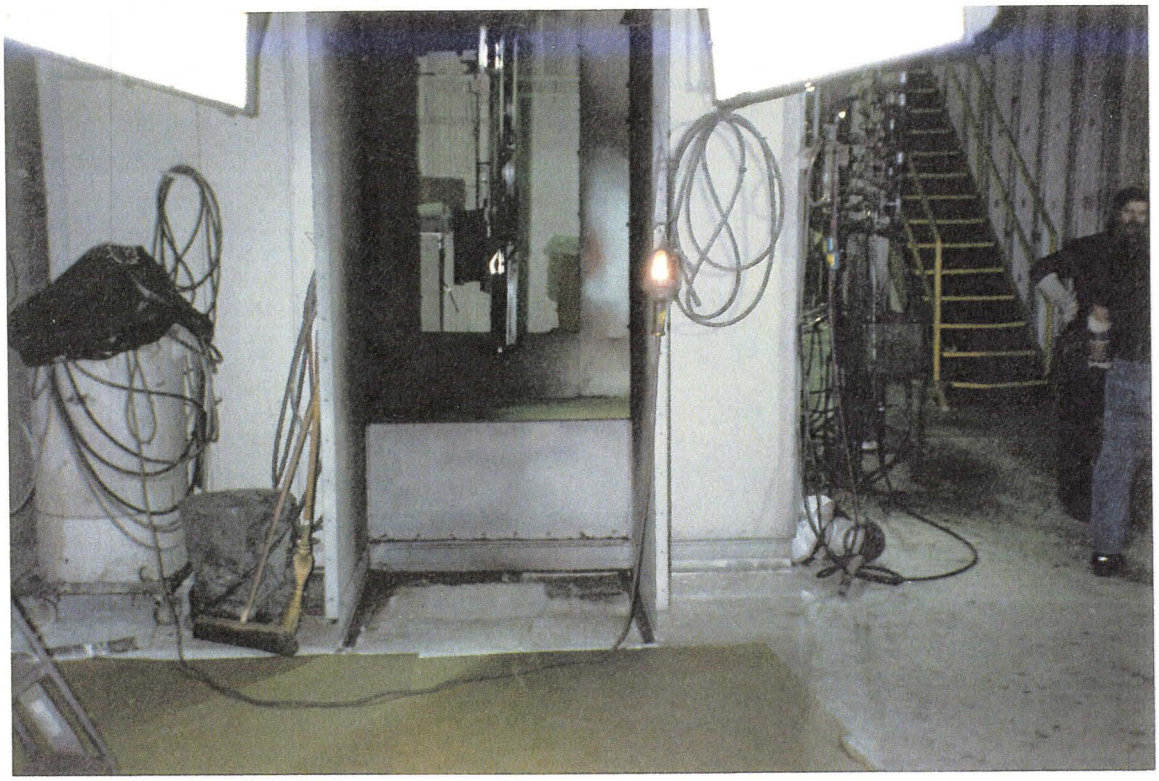
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1118 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type**: 100 ASA
Subject: Drum underneath "washer sludge" sign posted on wall is used to accumulate sludge and paint removed from stripper tank (SWMU 29).



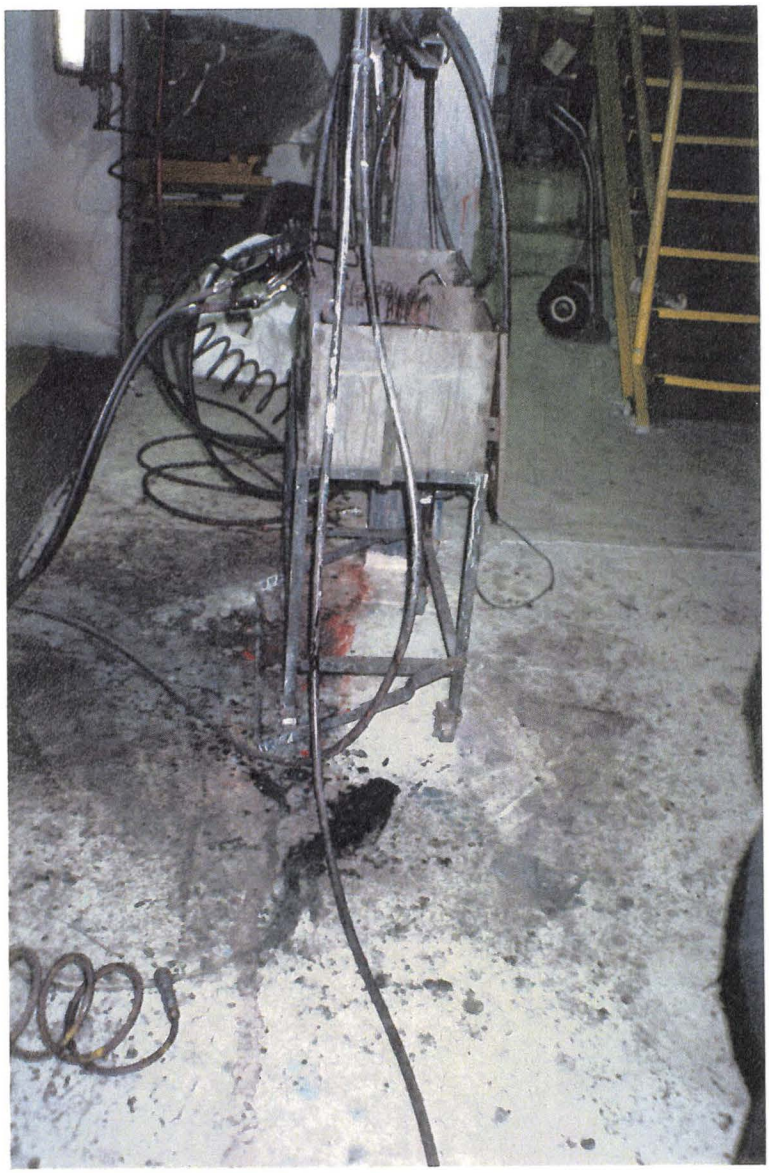
ROLL 2 PHOTO 1
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1126
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Waste paint/solvent distillation unit (background) and 55 gallon drum for spent bottoms (SWMU 5).

ROLL 2 PHOTO 2
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1130
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Concrete pad in center of photo was former location for the waste water reduction holding tank (SWMU 4). In the background is AOC 2 (one of 5 spray paint booths).

ROLL 2 PHOTO 3

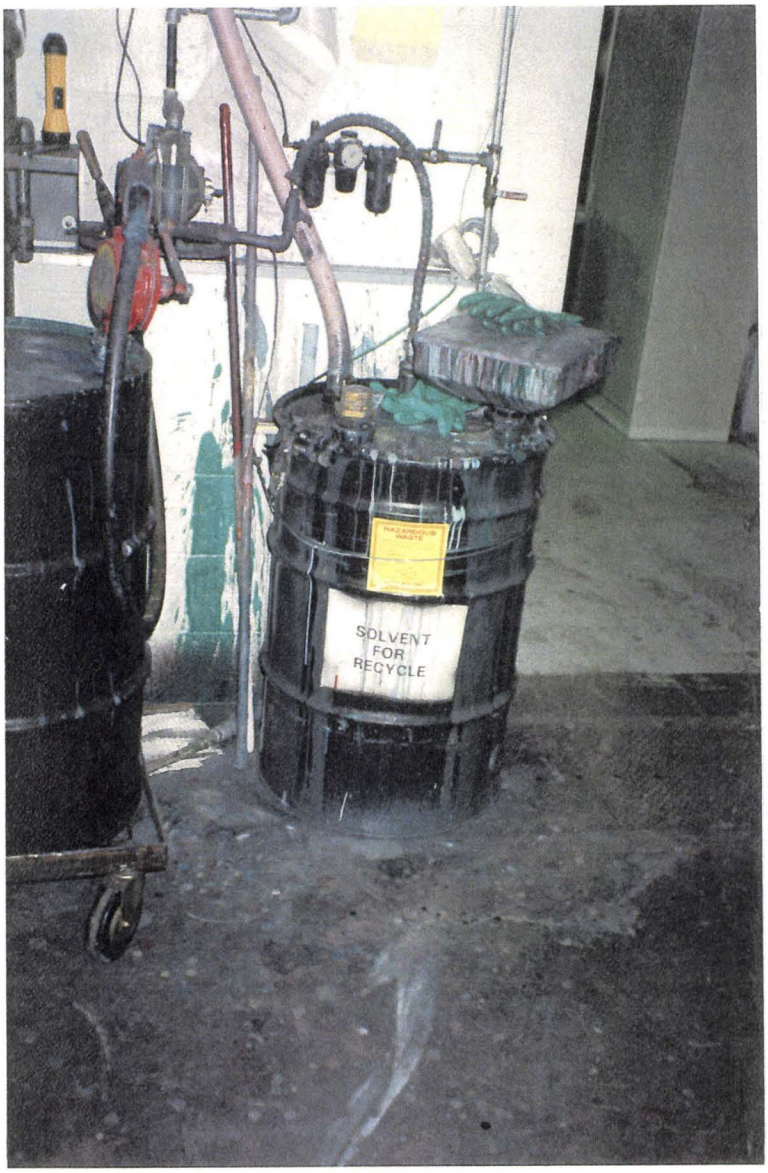


Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1135 **Direction:** East
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Second spray paint paint booth (part of AOC 2) located south of SWMU 4. A gun cleaning station is seen just left of the yellow stairs at far right.



ROLL 2 PHOTO 4
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1138
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Paint gun cleaning station for one of the spray paint lines (AOC 2). Note the paint and solvent spills on floor around gun cleaning station.

ROLL 2 PHOTO 5
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1142
Direction: North
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Gun cleaner located in one spray paint booth (AOC 2). Note the paint and solvent accumulation on the floor.

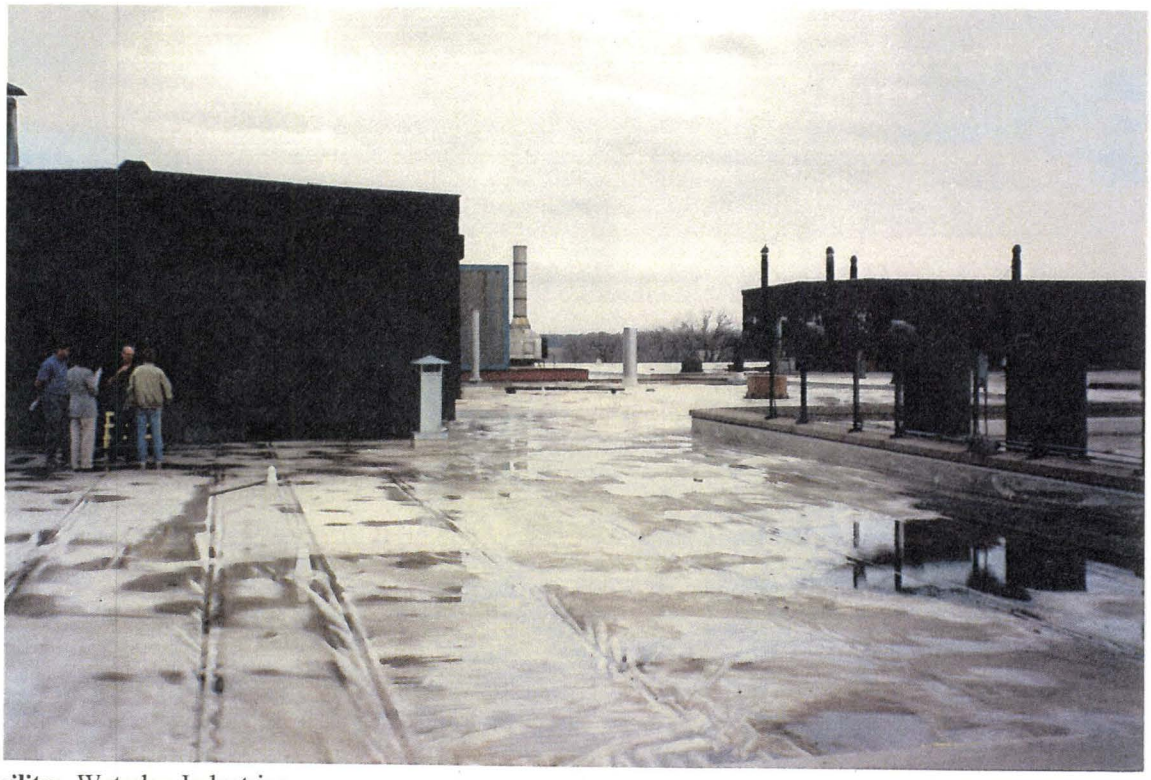


ROLL 2 PHOTO 6
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1145
Direction: East
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Solvent recycling feed drum located in paint mix room (SWMU 24). Note the paint and solvent on floor around drum and on wall.

ROLL 2 PHOTO 7

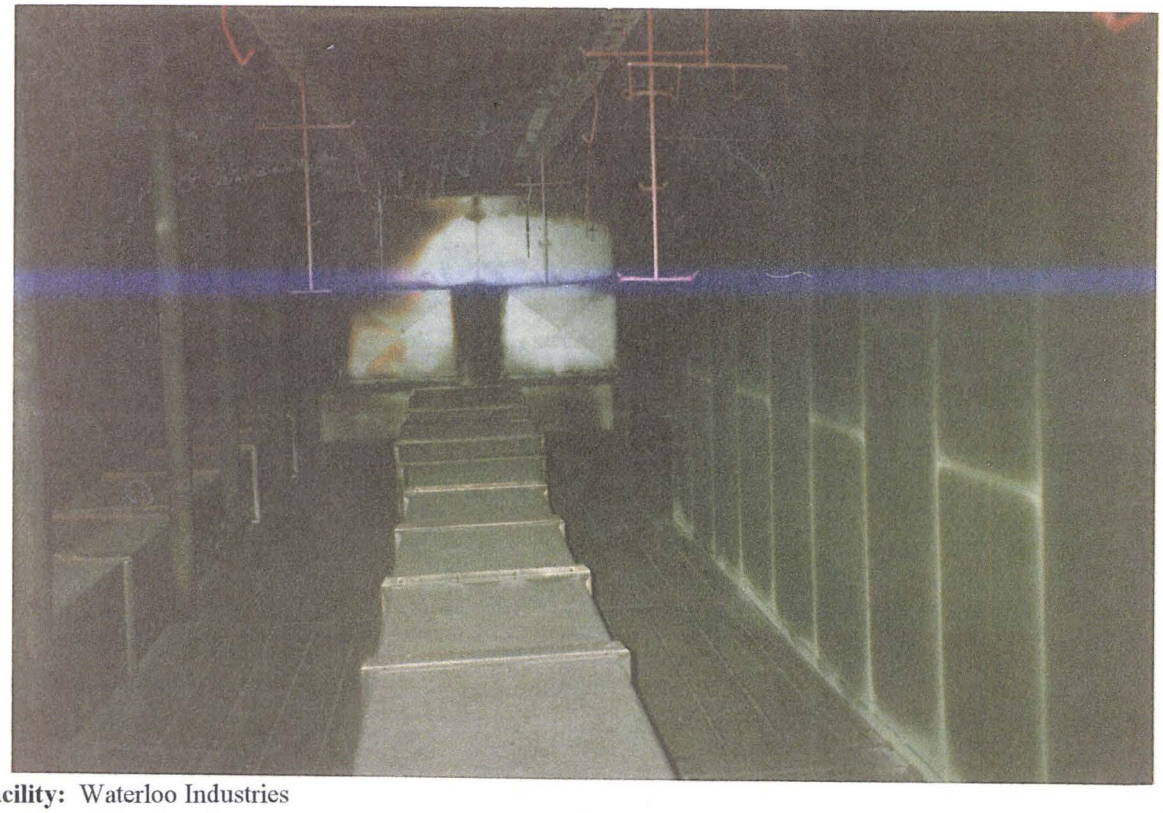
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1147 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Heat cleaning oven (AOC 8). Blue colored unit at left side of photo.

ROLL 2 PHOTO 8



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1154 **Direction:** Northwest
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Electrodeposition bake oven (AOC 9) for right background (dark colored structure) and spray line dry off oven (AOC 3, dark colored structure at left side of photo).

ROLL 2 PHOTO 9

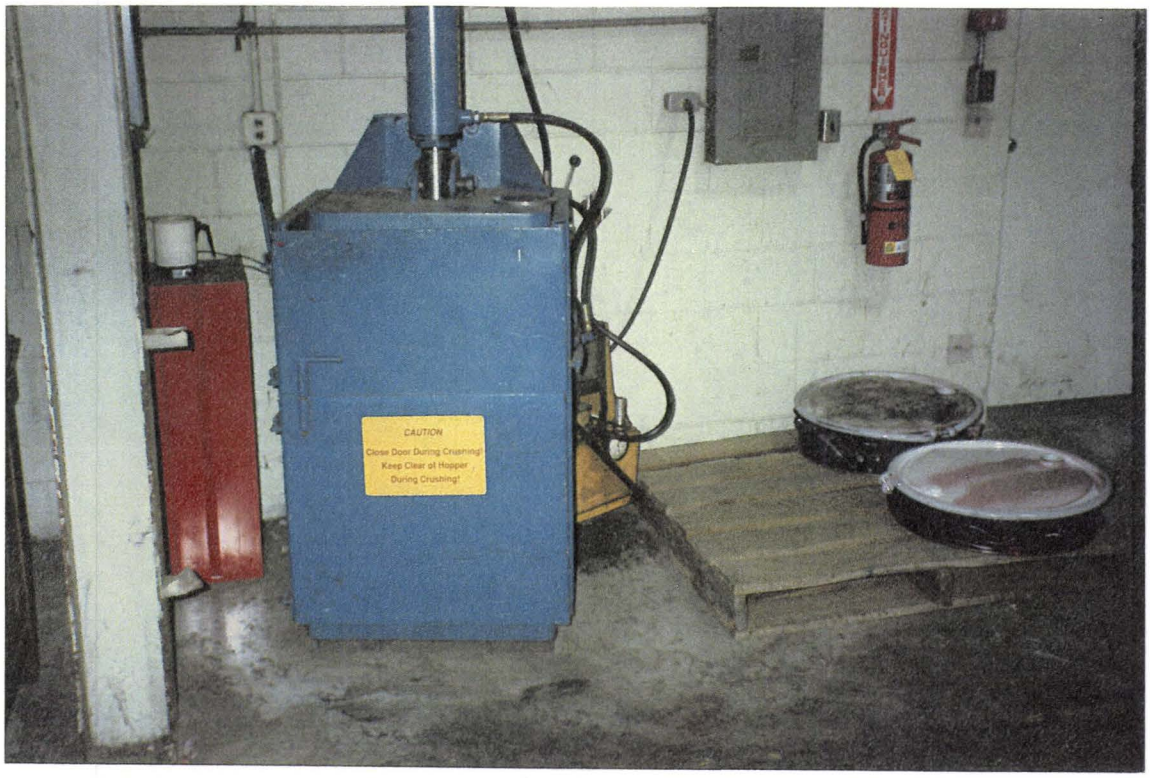


Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1158 **Direction:** North
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Interior portion of the electrodeposition bake oven (AOC 9).

ROLL 2 PHOTO 10

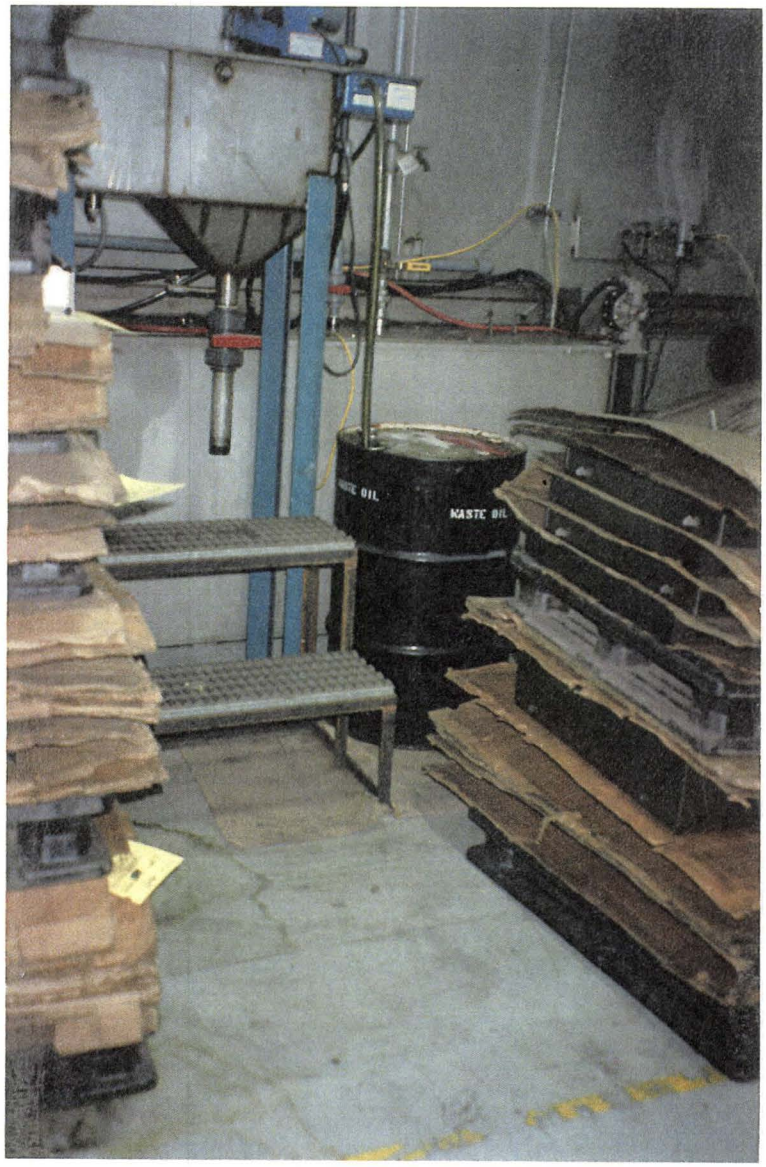
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1200 **Direction:** Northeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Dark colored material on the roof of the building outside the electrodeposition bake oven. Material had appearance of dried paint, reportedly from the stack from the electrodeposition bake oven. Also note roof drainage at the lower right side of photo.

ROLL 2 PHOTO 11



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1205 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Drum crusher (SWMU 21) located near the southwest corner of the main building.

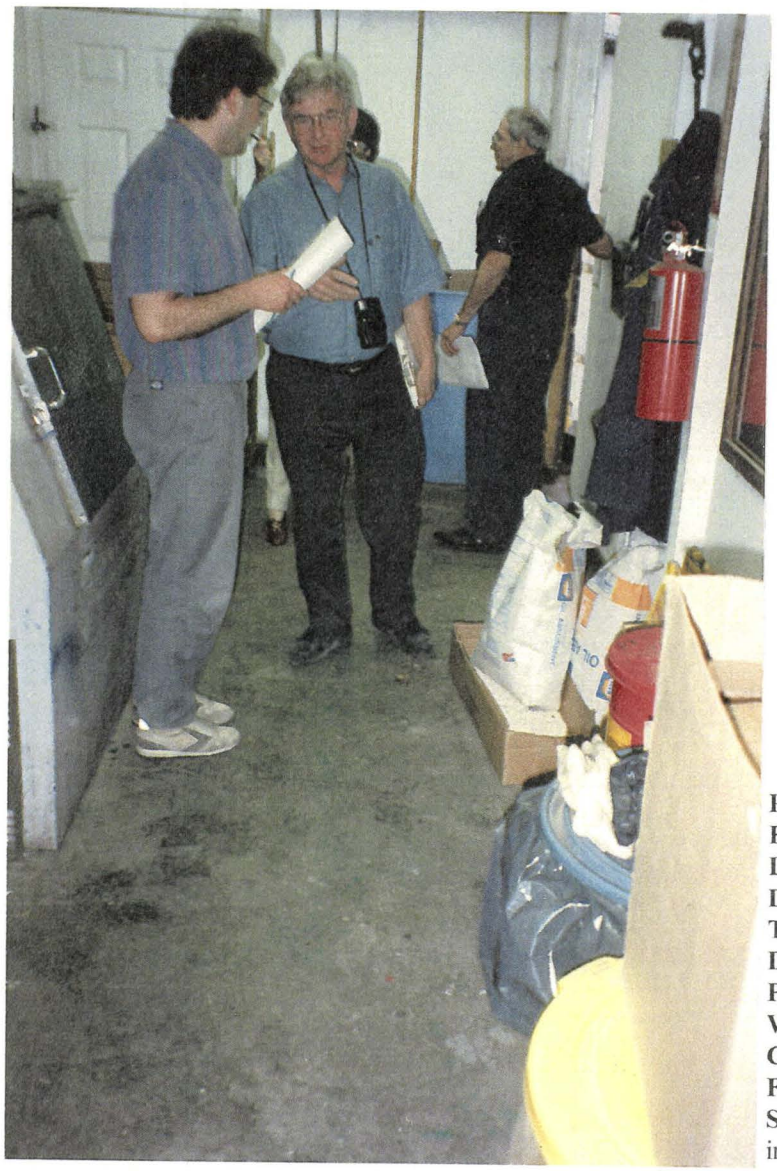
ROLL 2 PHOTO 12
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1207
Direction: South
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Satellite accumulation drum (SWMU 25) located in the paint mix room. Note the paint on wall behind drum.



ROLL 2 PHOTO 13
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1450
Direction: West-Northwest
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Used oil accumulation drum for one oil skimmer (SWMU 20).

ROLL 2 PHOTO 14

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1457 **Direction:** North
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type**: 100 ASA
Subject: Less-than-90-day hazardous waste storage area (SWMU 9).



ROLL 2 PHOTO 15
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1502
Direction: South
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Former location of the trash incinerator (SWMU 2).

ROLL 2 PHOTO 16

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1507 **Direction:** East-Southeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former location of scrap steel dumpster (SWMU 6).

ROLL 2 PHOTO 17

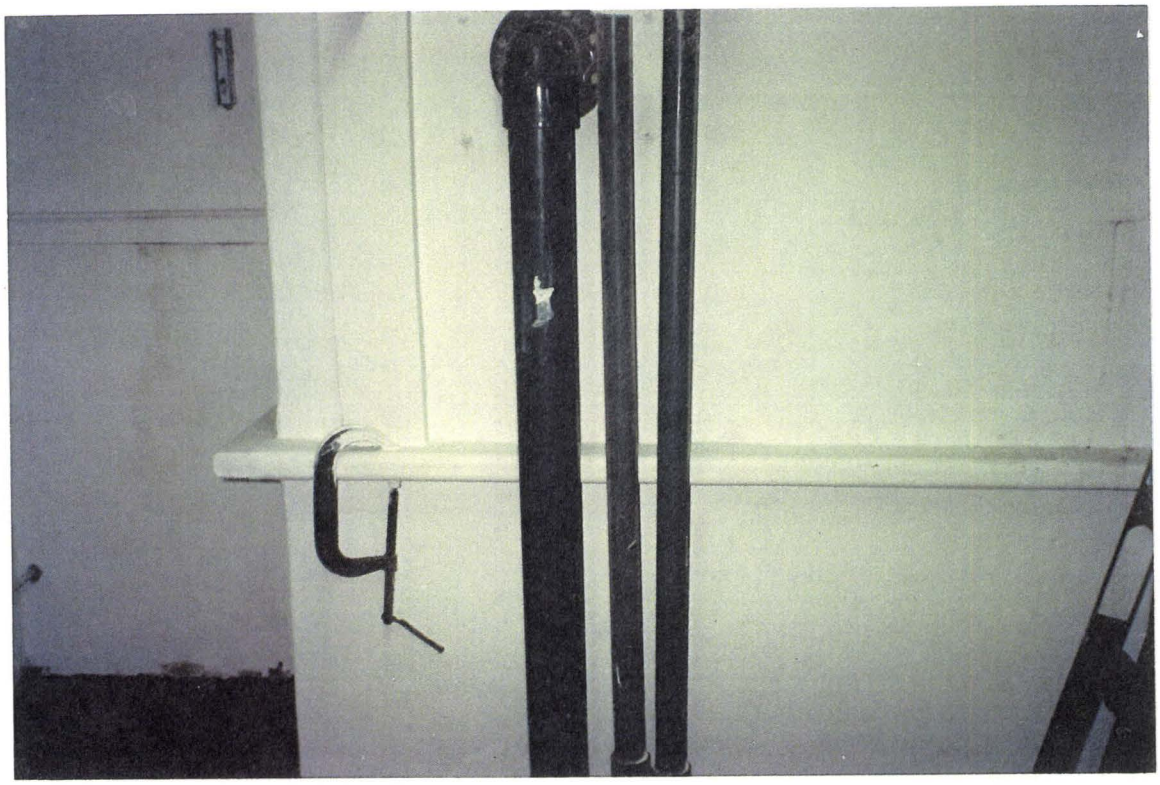
Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1510 **Direction:** East-Southeast
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Former waste lagoon (SWMU 1) located under floor at near the northwest corner of the main building.

ROLL 2 PHOTO 18
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1512
Direction: East-Southeast
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Used oil accumulation drum for second oil skimmer (SWMU 20). Oil skimmer is shown to the right of the accumulation drum.

ROLL 2 PHOTO 19
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1520
Direction: West
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Dark colored material staining floor on north side of the alkaline washer. Alkaline washer unit at far left side of photo.

ROLL 2 PHOTO 20
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1520
Direction: North
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Dark colored material on floor north of Alkaline Washer. Note the metal wall is deteriorating.

ROLL 2 PHOTO 21



Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1530 **Direction:** North
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: The pH Tank (one of the wastewater pre-treatment tanks, SWMU 18).

ROLL 2 PHOTO 22
Facility: Waterloo Industries
Location: Waterloo, Iowa
Date: 4/18/96
Time: 1530
Direction: Northwest
Photographer: Jeffery Robichaud
Witnesses: Jim Aycock
Camera Type: Fuji 35mm
Film Type: 100 ASA
Subject: Wastewater pretreatment system (SWMU 18).

ROLL 2 PHOTO 23

Facility: Waterloo Industries
Location: Waterloo, Iowa **Date:** 4/18/96 **Time:** 1118 **Direction:** South
Photographer: Jeffery Robichaud **Witnesses:** James Aycock
Camera Type: Fuji 35mm **Film Type:** 100 ASA
Subject: Parts washer that uses an aqueous solution located in the Laser department (AOC 11).

APPENDIX B

VSI FIELD NOTES

4/18/96

Cloudy 53°F 10 mph South wind

Participants

Jim Alcock - SAIC
Jeff Robichaud - SAIC
Don Bahnke - U.S. EPA

Arrived at Facility at 0800

Introduction

Party EVANS - Stinson mag of Fizzell
✓ Jerry STOLL
✓ Barney Skiles
Grant
Richard Welsh

Presented credentials
CBI - Discussed

Party said they need to get done today

Brief site history discussion

Site tour

unit 7A on map
relocated in 1992

Photo 1 NNW

Cracks in concrete NO visible staining
Some Rust stains

unit ~~10~~ 10 ~~4~~ former empty drum storage area

Paint chips in gravel
rust stains on concrete
≈ 10 x 50

AOC-6 (unit 24) Solvent USTs

former drum (paint sludge) area
NO paint stains rust stains
Cracks in concrete

unit 8
now covered by metal Bldg
Bldg constructed ≈ 3 years ago

Empty drums Crushed
ON gravel NO stains

Dry Paint filter ~~*~~ date moved - Sometime ~~that~~ ~~of~~ this week
4-15-96

Unit Paint filter dumpster

Unit 14 Trash dumpster

liquid oil stains on ground water, oil, cooling oil.
pop.

outside North Side
former UST fuel oil

Parts washer ~~UA~~ CA
one in maintenance 16-gal

floor clean No visible release
power systems

one in Tool Room

one in Maintenance

3 55-gal drums of used oil
on carts no visible releases
partly wants to know why they're SWMUs

AOC 1 Former paint Booths
NO visible releases now
Part of Tool Room

Second AOC 1
No visible releases crack in floor
floor sealed with sealant

Oil compressor drip buckets
5- 55-gal drums used to collect
oil from compressors Oil drained
from 55-gal Drums into 5-gal bucket
Carried to Waste oil drums

Unit 11 form Asbestos storage
No visible releases No cracks

AOC 5 Former location for rust
Preventer

No visible release

* one 55-gal drum of rinse tank sludge
Lab sample 298658
walls stained brown probably from
alkaline solution condensation

Unit No 3 former Above ground oil storage Tank

Still Bottoms Ace drum AOC 5

1 - 55 - gal drum * Get MSDS for Paints

PRI Model SC

Progressive Recovery Inc.

Small Release from Hose on floor ~~near~~ ~~crack~~ ~~pt~~

hose from pump NO cracks

Visible Staining on floor

Swmu ~~AOC~~ 4 former location

two floordrains

No cracks in floor, NO visible release

Two five gal Pails in paint booth

one used to clean guns (in process) open unlabeled.

one used to collect paint from paint lines open unlabeled.

2nd Paint Booth

one pail (paint) ½ full

One Paint Booth has Plastic & Paint on floor

Satellite accum Area Paint Room
One 55-gal drum labeled - closed

ADC 3 Hook oven

Bake all ovens

Residue on roof from system

Drum crusher no visible release
probably not a SWMU
Drums flashed crushed
no visible release to floor

lunch 1215 - 1230
~~There~~ is ~~go~~
Question session 1230 - 2:45
resume site tour

Drum of Paint Sludge in contain waste

Oil Skimmer one - 55 gal Drum
labeled no evidence of releases
waste oil

Hazardous waste storage

8 - 55 gal drums - all labeled / ~~[illegible]~~ Closed
↗ Cracks in SW corner along edge Three sides

West side 4 - Still Bottoms - Toluene / Butyl Carbonate

east side 2 - Still Bottoms
2 waste Paint related material

former Incinerator Pad ~~AOA~~ SWMU 2 Removed
cracks in floor

Unit 6A on map General location
Building constructed - 5-6" thick
concrete

former ~~[illegible]~~ location of Lagoon

Concrete floor 5-6" thick 15-20 feet
of Sand then lagoon

2nd oil Skimmer 1 - 55 gal drum of Waste oil - Labeled Waste oil on top of drum used oil on side - no visible release to Concrete floor

Alkaline Washer North side of plant shows evidence of release

Barney/Parthy stated ~~condensation~~ ~~go~~ condensation is reason for water spots on floor - Rusted metal dark material in edges of water near roof

WWTP plant

4th Parts washer

Size/capacity of fiberglass tank in WWTP

Exit Briefing

No questions

CBI/Receipt for Documents Signed

left site at 1605

Drive Around facility

4/18/96 7:56 - ARRIVED @ FACILITY WAITING FOR DON BANKE

8:05 - STARTED MEETING IN INTRODUCTIONS.

* → ~~R~~ NEED MORE INFO ON PLANT OPERATIONS?

NEED TO CHECK WITH JIM ON WHETHER OR NOT PLANTS OP'S ARE IN RESPONSE. →

8:35 BEGIN SITE VISIT. →

8:40 TRACKS TO N GULLY W/ SEWER OUTLET ROAD

SLOPES NORTH DRAINAGE ~~NORTH SOUTH~~

6' FENCE BARB WIRE

ROOF DRAINAGE OFF OUT GUTTER OFF PROPERTY

INLET.

8:46 7A OFF OF MAP MAINT SCRAP STEEL DUMPSTER

#6 ROLL NO LONGER ACTIVE RELOCATED

1 → 2 YEARS AGO 1992? 1/2 YARD HOPPER

BARNEY BLACK SHIRT

25 YARDS CURRENT

RELOCATE TO AOC → MOST LIKELY.

LOCATED AT CORNER AT RIGHT OF BLDNG.

8:52 ROLL (1) W/NW

MIGRATION TO SOUTH

9:00 (2) PRESUMED LOCATION DRUMS FROM

92 CEI WNW

9:05 (3) FORMER EMPTY DRUM STORAGE

AREA 10 WNW DIMENSIONS?

SOME STAINING RUST? → VISIBLE LENGTH OF THE FRONT AREA

WRONG AREA NEXT ONE?

ENTIRE AREA THATS NOT PACKT

MIGRATION SW

FORMERLY ASPHALT GOT BROKEN UP PILED

GRAVEL ON TOP

BARNEY SAID RECYCLED LAWYER REPRIMANDED

[signature]

(2)

9:10 Quite bit Staining along fenceline & the edges of Gravel

9:15 What the previous one was supposed to be Across the a strip from prior appears to be some rust staining again along the edges Now Used to store pipes many of which are rusted This Ere has broken asphalt but cracked. 917 picture ~~E~~ NE (4)

9:17 7 <Theres> Are broken chunks of asphalt already took picture Now Storing Metal parts Some yellow Staing which did not appear rusty Some Magenta to Red Stains Most likely paint? Red tool boxes? Came From waste paint Solvent?
~~Est~~ Extends to ≈ ~~#~~ 1 inch into Soil

9:25 Area 24 Tanks Underground tanks WNW Lawyer very driven [redacted] in to getting determination on SWMU or ~~S~~ AOC (5) made at this time

9:29 Former Hazardous Waste Storage Area (6) WNW Now Used for Backhoe Building was not there before

remnants wood post in ground at SW corner building where former

Railroad Spur to North of Building w/ low lying area of dirt and stones/gravel

932 Dumpster Crushed drums appears product just to west of the

934 (7) Building @ Right is where the former location haz waste

[signature]

935 Dumpster for Waste -> Non Hazardous -> Only Paint Filters SWA on filters? Facing W @ Westernmost edge of the facility Not usually there moved within the last week (8)
Drainage down into Employee Parking lot to North
North side of building has downspouts
940 $6 dumpster Scrap Steel dumpster 3-10 days emptied 30 cu feet. Other one was on other side of facility Smaller (9) Tramp Oil might have been on Have absorbent underneath the dumpster. Tramp Oil Clean Up. No loading dock there SSW Picture taken @ 9:45
945 Above ground solvent Storage tanks.
3 tanks appeared to be Sump in the NE Corner of the area berm around 6 to 8 inches
947 ESE (10)
946/7 14 next on there's dumpster appears to have been release of something Trash Compactor Oil? because of Sorbent may be used to grease the mechanism. SSE you can see the area where the incinerator was @ Rt pad w/ stairs. leading to. (11) @ 951
Swept oil sorbent material up before we came in box next to steps. and newly placed stuff there. Had used an active bag. of sorbent about 24 inches of box was full Waste? Where is oil coming from
Drain in No Parking lot
Tank in lot
955 Used to be Above Grown fuel oil Sheen Visible on Water in Some Spots
[signature]

(4)

1001 NNE (12) Pipe (a) top of bermed area is leaking
Pipe Supposed to be Coming from non contact cooling
water from the welding unit Garden hose leading
into the eastside more of a sheen and hydrocarbony
Smell Wire running pump. several pipes still even from the
old part when oil dont know if ever cleaned
. Two Saddles (empty in NE Corner of
employee lot big 10,000 gal tanks?
Drainage ditch along. N side of employee lot
1012 Number 16 former Pretreatment Underground
tanks located on the grassy knoll area where
South (13)
1016 West (14) Presumed location of bypasses
for treatment system located in the parking
lot Cleaned 1-2 years - Sludge Cake -?
determination WSW
No piping just dropped on top
How much goes in?
10:22 Taking break So people can go to the bathroom.
10:30 Discussing SWMU's AOC's that were
missed. during the outside the building tour.
->* * Go through and find questions that have
before leave & go over them w/ Jim.
All parts Washers Same Size
depth
10:40. No Stang No Cracks Chem Search
Parts Washer
Maintenance North (15)
10:42 Parts Washer 2 No Cracks No Staining (16)
~~1044~~ SSG
1044 Parts Washer #3 Some Stang (17) NNW

10:45 Former Location of Paint Booth Unit 20.
(18) South
10:47 Used Oil location at Southeast corner of manufacturing building ≈ 10-15 feet from the location in
(19) 3 drums on Rollers Moveable Carts
10:55 Spray Painting Booths to the AOC1
South (20)
11:00 ~~Bolts 24~~ Used Oil Drip Pail Area East (21)
11:05 Fluoresent Bulbs East (22) 2 Rolls of
Drums tall one ≈ tall shorter one 1/3 - 1/2 tall
4" bulbs taller 8"
→ * Red 30 gallon Steel buckets w/ tops yellow
tags that say empty once a day what
are they
11:09 11 Asbestos Scrap SE (23)
11:14 AOC5 Stripper Tank Rust Prevention Tank
holding South Some Stains on Walls. (24)
11:16 Washer Sludge Drums (25) East
Any Analysis done on the sludge from
the Stripper Solution tank
11:21 Haz Waste Accumulation Drums
F005 Paint Related Material Solvent Distillation
Unit
AOC5 Roll 2 East (1) 1126 Photo Taken
1130 AOC2 SWMU4 Water drains from System
into Sump of Wastewater
East (2) @ 11:35 Notice Drain and
Inlet in ground

(2)

Cost (3) @ 11:36 Paint Lines

11:38 Satellite Accumulation where the guns are cleaned
Cast (4) Appeared to be 10 gallon pails
11:42 Same as above different and looking ~~West~~
(5) NNW
11:45 Accumulation drum for Solvent (6) East
there is a grate (hollow) w/ holes under
it under neath the drum
Sewer or Camp/Catch basin or What?
11:47 location of former Incinerator ACC (7)
SE.

11:54 Locations of two Ovens On the roof of (8)
the building Line 3 left Side Line 1 Right
11:56 Inside of the Oven Line 1 East East North (9)
12:00 T (10) NNE Material in front of oven but
really anywhere else.
Red Stain Not Visible Anywhere
else on the roof
1205 Drum Crushing South (11)
1207 South - 25 (12) FOOS listed on Container
No Visible Cracks Door to North is Raised
Exit Door Raised One door to West.
1215 Lunch discussing data gaps.
Need to make call back to the office.
1230 Called the office and spoke w/ Fred & Scott
re. this ~~...~~ wa and other staff
1250 Returned everyone still talking

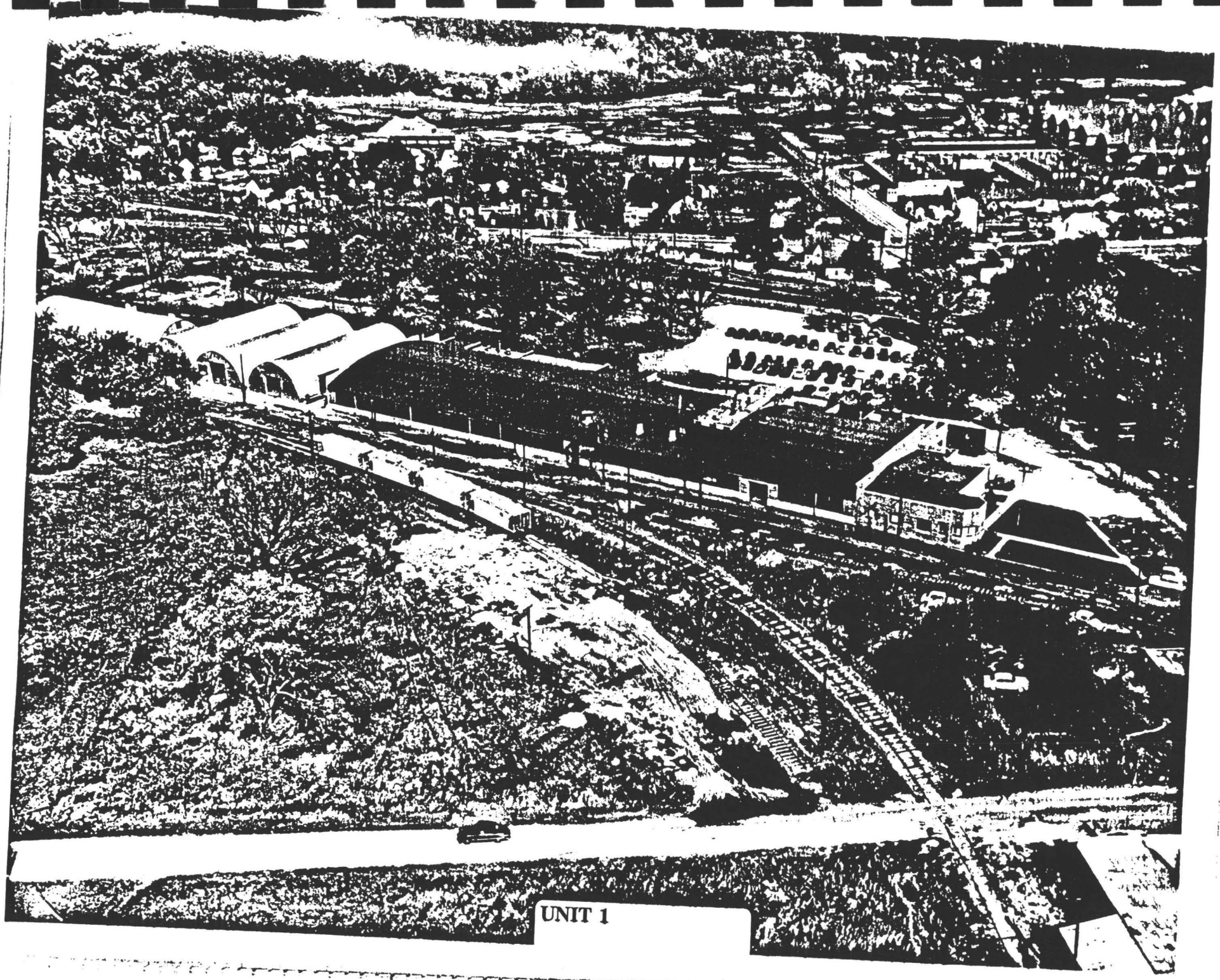
1:10 Still talking data gaps
1:21 Still talking gaps.
1:30 Still talking (attempting to Downgrade SWMU's & AOC's) Why wasting time doing this. Submit ?'s and lets get on with the VSI.
2:00 Still talking about data gaps.
2:07 Still talking about data gaps
2:25 Still Talking data gaps
2:35 Still Talking data gaps
2:45 Returning to the VSI of the facility
2:50 Skimmers WNW (13)
2:57 Hazy Waste ~~Accum~~ Storage (14) North
≈5' above grade outside No Releases seen a pile of sand just outside the building stairwaves either side Rise in grade at edge inside ≈4"
3:02 Former Location of the Incinerator → (15) Facing ~~North~~ South
3:07 Former Location of the Scrap Steel. (16) East
East (8) ~~Eas~~ West end Runoff appears to go NW Prior to building being here
3:10. Former Location of lagoon - ESE
Prior to building being here (17)
3:12 Next Oil Skimmer Barrel. ~~East~~ (18) East SE
No Cracks apparent
3:20 Very Slick Substance all over floor <Sampling
E (19) of the Stuff here> Red Stained in Some spots.
(20) N Can See gap at the area in the wall
3:50 (21) N Once of the Tank for PM in house
(22) Hose (Garden) from pond sends water into W/mos inside 3 tank system West
[signature]

(8)

3:33 4th Parts Washer (23) South
3:40 Back in w/ the closing meeting.

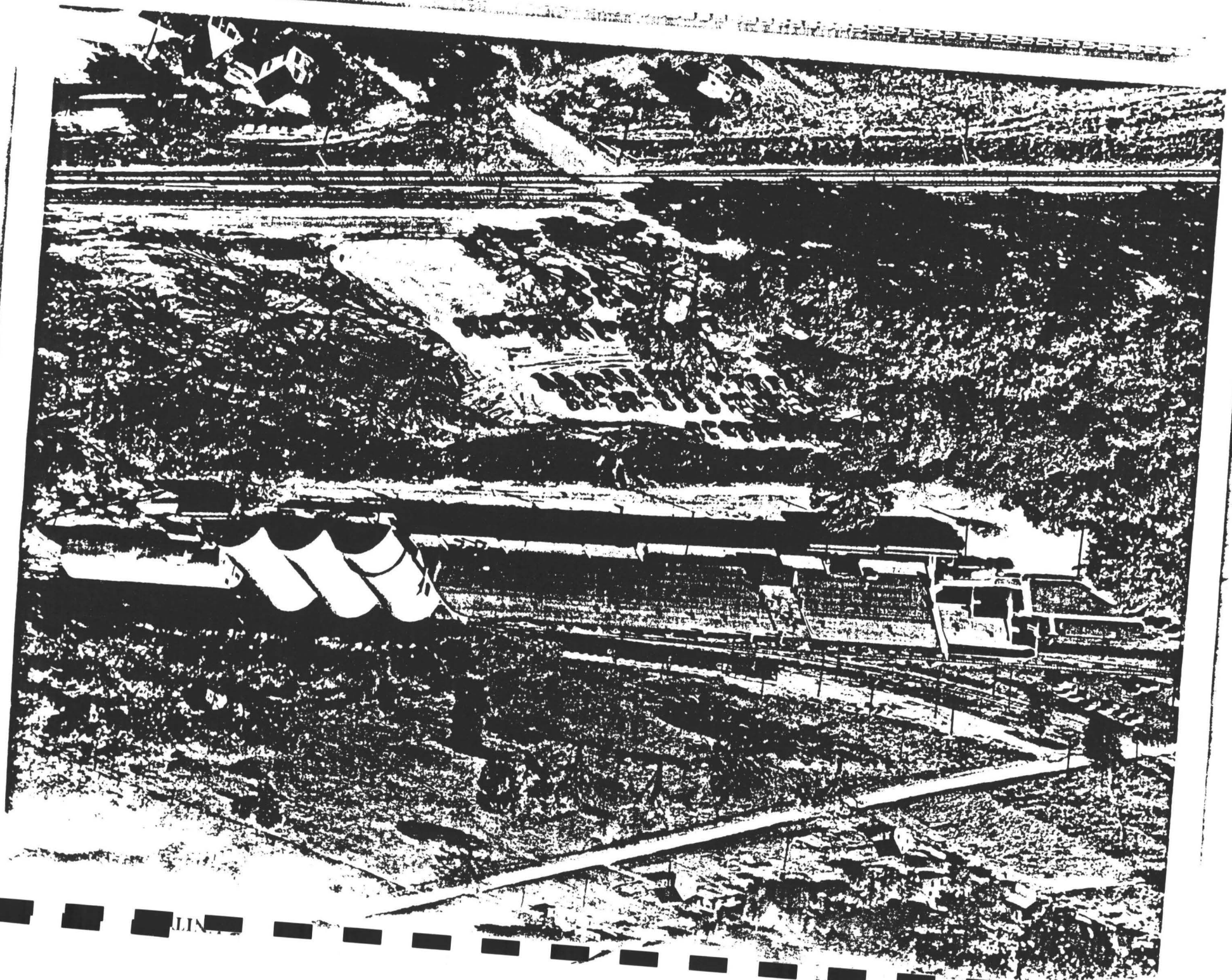
APPENDIX C

AERIAL PHOTOGRAPHS



UNIT 1

C-LINE #62027
CLEAR TOPPER



APPENDIX D

IGSB SPECIFIC WELL INFORMATION

Iowa Department of Natural Resources
Geological Survey Bureau

Municipal Water-Supply Inventory

MUNICIPALITY: WATERLOO PWSID: 790074
COUNTY: BLACKHAWK REGION: 1

CONTACT: REED CRAFT PHONE: (319) 232-6280 POPULATION: 66,467
ADDRESS: YEAR: 01/01/90

WATERLOO, IA 50704-0000

WATER SOURCE: Groundwater
AVERAGE USE: 14,500,000 gpd 01/24/91 - 03/31/92 STORAGE CAPACITY: gallons
MAXIMUM USE: 28,500,000 gpd / /

COMMENTS:

1992 WATERLOO DERIVES ITS WATER FROM WELLS #7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
1992 TREATMENT: LIQUID CHLORINATION; FLUORIDATION
1991 WATERLOO DERIVES ITS WATER FROM WELLS #7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
1991 TREATMENT: CHLORINATION (12% SODIUM HYPOCHLORITE SOLUTION); FLUORIDATION
1988 WATERLOO DERIVES ITS WATER FROM WELLS #7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22
1988 TREATMENT: CHLORINE, FLUORIDE

EDIT DATE: 07/13/92

Municipal Water-Supply Inventory

DATA FOR: WATERLOO #18 PWSID\SEQ#: 790074- 11
WNUMBER: 13835 USGS ID:

GENERAL INFORMATION

LOCATION: T 89N R13W Sec 21 SWSENESE COUNTY: BLACKHAWK TOPOGRAPHIC MAP: WATERLOO N
ELEVATION: 926 feet SITE TYPE: Drilled hole TOTAL DEPTH: 208 feet BEDROCK DEPTH: 0 feet
DRILLER: [103] THORPE WELL COMPANY DRILL DATE: 01/01/62 DRILLING METHOD: Rotary
WELL TYPE: Municipal WELL DEPTH: 205 feet AQUIFER: STATUS: Primary
LOG TYPE: LOG QUALITY: SAMPLE TYPE: Chips BEDROCK DEPTH: 0 feet STRIP LOG BY: RCN
LOG TYPE2: LOG QUALITY2: BASIN: 7080205 STRIP LOG DATE: 01/02/62
COMMENTS: SUPPLY PERCENT: %

THIS WELL IS LOCATED IN THE NORTH TOWER AREA
150'-205' OF 19" SCREEN
DEPTH ALSO REPORTED 208', 190', 200', 215', 209'
DATE ALSO REPORTED 1961, 9-63

EDIT DATE: 02/04/87

WELL CONSTRUCTION DATA FOR WATERLOO #18

HOLE SCHEDULE: WELL CONSTRUCTION DATE: 03/01/62

CASING SCHEDULE:
(1) Diameter:30.00 inches Type: Depth top: feet Depth bottom: 115.0 feet Amount: feet
(2) Diameter:24.00 inches Type: Depth top: feet Depth bottom: 155.0 feet Amount: feet

GROUT SCHEDULE:

SCREEN OR PERFORATED CASING SCHEDULE:

GRAVEL-PACKED: Gravel-packed top: feet Gravel-packed bottom: feet

PUMP SCHEDULE:
Pump type: TURB Diameter: inches Depth to intake: feet Rated capacity: gpm

COMMENTS:

HYDROGEOLOGIC INFORMATION FOR WATERLOO #18

MAIN WATER:
Main water top: 0 feet Main water bottom: 0 feet Pump rating: 0 gpm Pump yield: 2083 gpm

DATE PUMPED: 01/01/62 TIME PUMPED:
STATIC WATER LEVEL: 86.0 feet PUMPING WATER LEVEL: 89.0 feet YIELD: 600.0 gpm DURATION:
AQUIFER PUMPED: PUMP TEST: False PUMP METHOD: MEASUREMENT:
COMMENTS:

DRILLER's LOG FOR WATERLOO #18

WATER QUALITY DATA FOR WATERLOO #18

DATA FOR WELL NO. 13835

GENERAL INFORMATION

WNUMBER: **13835** LOCATION: T. 89 N., R. 13 W., Sec. 27 NW LOC. ACC.: (loc. acc. unkn.)
QUADRANGLE NAME: HUDSON COUNTY: BLACKHAWK STATE: IOWA
SURFACE ELEVATION: 926 ft. TOTAL DEPTH: 208 ft. BEDROCK DEPTH: 0 ft.
OWNER: WATERLOO, CITY OF DRILLER: THORPE WELL CO.
OTHER IDENTIFIER: none
WELL TYPE: municipal DRILLING METHOD: rotary SAMPLE TYPE: cuttings AQUIFER: unkn
LOG TYPE: unkn ADD'L LOG TYPE:

HYDROGEOLOGIC INFORMATION

No hydrologic information is available for well no. 13835

WELL CONSTRUCTION INFORMATION

No construction information is available for well no. 13835

GEOLOGIC INFORMATION

SYSTEM	SERIES	GROUP	FORMATION	MEMBER (SUBMEM.)	DEPTH TOP	ELEV. TOP	THICK -NESS	LITHOLOGY (SUMMARY)
QUAT	Pleistocen				0	926	113	Till
DEVO	Middle	L. Cedar V	Little Cedar	Rapid	113	813	25	Dolo, Cl, Chrt
				Solon	138	788	37	Ls, Chrt
		Wapsipinic	Pinicon Ridge	Davenport	175	751	17	Ls, Ss
				Spring Grove	192	734	13	Dolo, Ls
				Kenwood	205	721	3	Chrt, Ls, Ss

A graphic log showing lithology and stratigraphy is available for well no.13835

DATA FOR WELL NO. 33213

GENERAL INFORMATION

WNUMBER: 33213 LOCATION: T. 89 N., R. 13 W., Sec. 22 SE LOC. ACC.: (calc. +/- 1870')
QUADRANGLE NAME: WATERLOO N COUNTY: BLACKHAWK STATE: IOWA
SURFACE ELEVATION: 850 ft. TOTAL DEPTH: 165 ft. BEDROCK DEPTH: 73 ft.
OWNER: JOHN DEERE WATERLOO WORKS DRILLER: LAYNE WESTERN CO., IA.
OTHER IDENTIFIER: #6
WELL TYPE: commercial DRILLING METHOD: rotary SAMPLE TYPE: unkn AQUIFER: bedrock
LOG TYPE: driller log ADD'L LOG TYPE:

HYDROGEOLOGIC INFORMATION

MAIN WATER TOP: 0 ft. MAIN WATER BOTTOM: 0 ft. AQUIFER: bedrock
DATE: 04/24/92 STATIC WATER LEVEL: 23.0 ft. PUMPED WATER LEVEL: 37.0 ft. YIELD: 2439.0 gpm

*** Hyrogeologic data from pumping test. Contact GSB for additional information. ***

WELL CONSTRUCTION INFORMATION

Well Construction Date: 04/24/92

CASING STRINGS:

(1) Diameter: 26.00 in. Type: STEEL Depth Top: 0.00 ft. Depth Bottom: 73.00 Amt: 73.00 ft.
(2) Diameter: 20.00 in. Type: STEEL Depth Top: -1.00 ft. Depth Bottom: 78.00 Amt: 79.00 ft.

GROUT:

(1) Grout Type: CEMENT Grout Top: 18 ft. Grout Bottom: 78 ft.

GEOLOGIC INFORMATION

No digital geologic information is available for well no. 33213

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name IOWA D.O.T. Last Name IOWA D.O.T.

Address 2501 N. LOOP DRIVE City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 24.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor ID# Date Signed / /

Record 6009 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name IOWA D.O.T. Last Name IOWA D.O.T.

Address 2501 N. LOOP DRIVE City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

6 MONITORING WELLS

Record 6009 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name CRAIG Last Name SHIREY

Address 435 MIDLOTHIAN BLVD City WATERLOO State IA

Phone (319)234-2091 Zip 50701-

áá

WELL INFORMATION

NW 1/4 of NW1/4 of SW 1/4 of Section 22 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 10/05/92 Well Depth 25.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? Y

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

áá

COUNTY AGENT

First Name JOE FODOR Last Name JOE FODOR

CONTRACTOR/DRILLER

Contractor ID# Date Signed / /

Record 6032 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name LAVERNE Last Name LEHMAN

Address 1611 E 4TH ST. City WATERLOO State IA

Phone (319)235-6163 Zip 50703-

WELL INFORMATION

NE 1/4 of NW1/4 of NW 1/4 of Section 21 Twp 89N Rge 13

County

7 BLACK HAWK Date Plugged 11/02/92 Well Depth 20.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name TROY A. Last Name SL???(ILLEGIBLE)

CONTRACTOR/DRILLER

Contractor ID# Date Signed / /

Record 9894 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name LAVERNE Last Name LEHMAN

Address 1611 E 4TH ST. City WATERLOO State IA

Phone (319)235-6163 Zip 50703-

NOTES

TWO WELLS ACCOUNTED FOR ON THIS FORM

Record 9894 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name LAVERNE Last Name LEHMAN

Address 1161 E. 4TH ST. City WATERLOO State IA

Phone (319)235-6163 Zip 50703-

áá

WELL INFORMATION

NE 1/4 of NW1/4 of NW 1/4 of Section 21 Twp 89N Rge 13

County

7 BLACK HAWK Date Plugged 11/02/92 Well Depth 20.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

áá

COUNTY AGENT

First Name TROY A. Last Name SL??(ILLEGIBLE)

CONTRACTOR/DRILLER

Contractor ID# Date Signed / /

Record 9897 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 24.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15706 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND
THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-1

Record 15706 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 24.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')?

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15707 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-2

Record 15707 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 12.5

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15708 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-3

Record 15708 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 12.5

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')?

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15709 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-4

Record 15709 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 12.5

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15710 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-5

Record 15710 'ESC' to Return from Memo View

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

WELL INFORMATION

NE 1/4 of SE1/4 of NE 1/4 of Section 21 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 08/15/91 Well Depth 12.5

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? N

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name GALE A. Last Name MCINTOSH

CONTRACTOR/DRILLER

Contractor MCINTOSH, GALE ID# 00099-01 Date Signed 09/06/91

Record 15711 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name TODD WHIPPLE Last Name IOWA D.O.T.

Address 2501 N. LOOP DR.SUITE 200 City AMES State IA

Phone (515)296-7750 Zip 50010-

NOTES

FORM INDICATES SIX MONITORING WELLS, THEY ARE ENTERED AS THIS AND THE NEXT FIVE RECORDS. THIS RECORD ACCOUNTS FOR MW-6

Record 15711 'ESC' to Return from Memo View

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 WELL PLUGGING GRANTS TO COUNTIES DATABASE                         rev. 1/2/96
OWNER/AGENT/LESSEE

First Name CRAIG                       Last Name SHIREY
   Address 435 MIDLOTHIAN BLVD.             City WATERLOO              State IA
                                           Phone (319)234-2091  Zip 50701-
áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááá
WELL INFORMATION
                         NW 1/4 of NW1/4 of SW 1/4 of Section 22 Twp  89N Rge 13W
County
 7 BLACK HAWK              Date Plugged 10/05/92          Well Depth   25.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')?  Y

Type? (A. >18"  B. <18"  C. Sandpoint  D. Not Reported  E. Unknown  F. Other)  B
áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááá
COUNTY AGENT

First Name JOE                           Last Name FODOR

CONTRACTOR/DRILLER

Contractor   FODOR, JOE                    ID# 00218-01    Date Signed 10/08/92

 Record 15732             F2 for Notes                          'ESC' to Return
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 WELL PLUGGING GRANTS TO COUNTIES DATABASE                         rev. 1/2/96
OWNER/AGENT/LESSEE

First Name CRAIG                       Last Name SHIREY
   Address 435 MIDLOTHIAN BLVD.             City WATERLOO              State IA
                                           Phone (319)234-2091  Zip 50701-
áááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááááá
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     ¤FORM INDICATED TWO WELLS.  THEY ARE ENTERED AS TWO RECORDS, THIS     ¤
     ¤AND THE NEXT.  THIS ACCOUNTS FOR #1                                  ¤
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    Record 15732                              'ESC' to Return from Memo View
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WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name CRAIG Last Name SHIREY

Address 435 MIDLOTHIAN BLVD. City WATERLOO State IA

Phone (319)234-2091 Zip 50701-

WELL INFORMATION

NW 1/4 of NW1/4 of SW 1/4 of Section 22 Twp 89N Rge 13W

County

7 BLACK HAWK Date Plugged 10/05/92 Well Depth 25.0

Within 200' of another well or 660' of a point pollution source ('Y' or 'N')? Y

Type? (A. >18" B. <18" C. Sandpoint D. Not Reported E. Unknown F. Other) B

COUNTY AGENT

First Name JOE Last Name FODOR

CONTRACTOR/DRILLER

Contractor FODOR, JOE ID# 00218-01 Date Signed 10/08/92

Record 15734 F2 for Notes 'ESC' to Return

WELL PLUGGING GRANTS TO COUNTIES DATABASE rev. 1/2/96

OWNER/AGENT/LESSEE

First Name CRAIG Last Name SHIREY

Address 435 MIDLOTHIAN BLVD. City WATERLOO State IA

Phone (319)234-2091 Zip 50701-

NOTES

FORM INDICATED TWO WELLS. THEY ARE ENTERED AS TWO RECORDS, THIS AND THE NEXT. THIS ACCOUNTS FOR #2

Record 15734 'ESC' to Return from Memo View

APPENDIX E

INDUSTRIAL WASTEWATER DISCHARGE PERMIT/1980 MONITORING REPORTS/WASTEWATER TREATMENT SYSTEM PROCEDURES

CITY OF WATERLOO, IOWA

WATER POLLUTION CONTROL

CITY HALL • 715 MULBERRY STREET 50703

Treatment (319) 291-4553 • Sewer (319) 291-4446

BRUCE D. BOTTORFF, Superintendent
ART SHANNON, Assistant Sewer Division
LEONARD W. ZMOLEK, Assistant Treatment Division

PERMIT NO. 73087-1

INDUSTRIAL WASTEWATER DISCHARGE PERMIT

In compliance with the provisions of Section 455B Iowa Code and Section 34 Utilities, Article III Waterloo City Code,

Waterloo Industries SIC 2599
300 Ansborough Ave. 3444
P.O. Box 2095
Waterloo, IA 50701

is hereby authorized to discharge industrial wastewater from the above identified facility into the City of Waterloo sewage system in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall become effective on the date of signature and shall expire July 31, 1992.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date, an application shall be filed for reissuance of this permit in accordance with the requirements of Section 34, Utilities Article III Waterloo City Code.

Waterloo Water Pollution Control
by Bruce D. Bottorff, Superintendent

Bruce D Bottorff

PART 1 - APPLICABLE EFFLUENT LIMITATIONS

SECTION 1 - Compatible Pollutant Standards

A. All wastewater discharged to the WWPC shall not exceed the following:

Parameter	Limitation	
	Average	Daily Max.
Flow (MGD)	.150	.250
BOD5 Mg/L/lbs/day	300/375	300/625
TSS Mg/L/lbs/day	340/425	340/708
Oil/Grease	100 Mg/L	100/Mg/L
pH	Min 6.0-Max 9	

B. The limitations listed in Paragraph A. apply to the total discharge from the permittee.

C. Any monthly average discharge which exceeds 300 Mg/L BOD5, or 340 Mg/L TSS, will require the permittee to assume the requirements of Waterloo Code Section 34-43(5)... Surcharges...

D. The permittee may not discharge any wastewaters containing more than 100 Mg/L of oil and grease of mineral oil origin.

E. In addition, the permittee shall comply with all other applicable regulations and standards contained in Waterloo Code Section 34.

PART I - APPLICABLE EFFLUENT LIMITATIONS (Contd.)

SECTION 2 - EPA Categorical Pretreatment Standards Specific Applicable Effluent Limitations

Based upon the standards listed in 40 CFR, Part 433.15 PSES Metal Finishing Limits.

A. Industrial Discharge

Beginning upon issuance of this modified permit all wastewaters discharged from the collection system called "Treatment Tank" shall not exceed the following effluent limitations:

	PSES Metal Finishing Limits	
CONTAMINANT	DAILY MAX	MONTHLY AVERAGE
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO (2)	2.13	----

NOTES - (1) Total toxic organics is equal to the sum of all concentrations over 0.01 Mg/L for the compounds listed in 40 CFR Part 413.02.

PART II - MONITORING AND REPORTING REQUIREMENTS

SECTION 1 - Monitoring Requirements

Beginning upon receipt of this permit, and thereafter, the permittee shall monitor its wastewater subject to regulation under Part I of this permit to ascertain compliance with the applicable limitations with the following frequency:

Wastewater Parameter	Sample Period	Sample Type	Sample Location
Flow	2/Wk	24 Hr Tot	a, b
BOD5	2/Wk	24 Hr Flow Pro Comp	a
TSS	2/Wk	24 Hr Flow Pro Comp	a
O&G	2/Wk	Grab	a
Cadmium (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Chromium (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Copper (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Lead (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Nickel (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Silver (T)	1/6 Mo	24 Hr Flow Pro Comp	a, b
Zinc (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Cyanide (T)	1/Mo	1/6 Mo	a, b
TTO	1/6 Mo	Grab	a, b
pH	2/Wk	Grab	a, b

Notes - Sample Location "a" is monitoring point of combined waste streams just prior to discharge to WWPC. Sample Location "b" is discharge point of the Treatment Tank just prior to discharge into the permittee's combined waste stream.

PART II - MONITORING AND REPORTING REQUIREMENTS (Contd.)

SECTION 1 - Monitoring Requirements (Contd.)
Notes - (Contd.)

(1) One sample per month at designated sample location.

Laboratory analysis of samples collected shall be performed in accordance with "Standard Methods for the Examination of Water and Wastewater", latest edition, or other such methods as approved by the WWPC.

SECTION 2 - Reporting Requirements

Monitoring results obtained on a daily/weekly basis, or monthly basis will be reported to WWPC by no later than the 10th of the following month.

In accordance with 40CFR 403.12(e) the permittee must submit a biannual periodic compliance report due in January and July for the preceding six months summarizing the monitoring results.

This report shall state whether the standards are being met on a consistent basis, and if not, what additional operation and maintenance and/or pretreatment is necessary to bring the permittee into compliance with applicable standards. In addition, the biannual report will include proof of compliance with Total Toxic Organics (TTO) requirements either by self-monitoring, or a letter of certification that specifies the toxic organic compounds used, the method of disposal used (other than to the sewer system) and procedures for assuring that toxic organics do not routinely spill, or leak into wastewater discharged.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be submitted to WWPC.

Monitoring reports shall be signed and sworn to by a principal executive officer, or his designee.

Due to the fact that the limitations contained in Part 1, Section 3,

PART II - MONITORING AND REPORTING REQUIREMENTS (Contd.)

SECTION 2 - Reporting Requirements (Contd.)

of this permit are based upon the composite makeup of the discharge, the permittee must notify WWPC of any changes to this wastewater discharge, such as addition, or deletion of waste streams contributory to any outfalls, or significant changes in the relative flows of the component waste streams.

All reports required by this permit shall be submitted to:

Supt. Water Pollution Control
City of Waterloo
715 Mulberry St.
Waterloo, IA 50703

PART III - PRETREATMENT AND MONITORING FACILITIES

A. In order to comply with the effluent limitations identified in Part I the permittee shall provide necessary wastewater pretreatment as required Article III, Division 5, Section 34-51-a, Water City Code.

Event	By No Later Than
1. Achieve compliance with discharge limits.	Sept. 1, 1987
2. Install flow monitoring and flow proportioned composite sampling equipment on treatment tank discharge.	Oct. 15, 1987
3. Install flow monitoring and flow proportioned composite sampling on combined waste discharge.	Dec. 1, 1987

Not later than 14 days following receipt of this permit, the permittee shall submit to WWPC a progress report including, at a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with the increment of progress, the reasons for delay, and the steps being taken to return the project to the schedule.

PART IV - GENERAL CONDITIONS

In addition to compliance with Parts I, II, and III, this permit is issued conditional upon compliance with the following general conditions. Violations of any of the permit conditions below, either alone or in conjunction with a violation of Parts I, II, or II, shall be adequate basis for the revocation of this permit.

1. Right of Entry

The city shall inspect the facilities of any user to ascertain whether the purpose of this article is being met and all requirements are being complied with. Persons or occupants of premises where waste water is created or discharged shall allow the city or its representative ready access at all times to all parts of the premises for the purposes of inspection, random sampling, records examination and copying, or in the performance of any of their duties. The city shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the city will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. The city has the right to randomly sample industry without notification of the sample taking.

2. Records Retention

a) The permittee shall retain and preserve for no less than three (3) years, any records, books, documents, memorandums, reports, correspon-

PART IV - GENERAL CONDITIONS (Contd.)

2. Records Retention (Contd.)

dence, and any and all summaries thereof, relating to monitory sampling and chemical analysis made by or in behalf of the permittee in connection with its discharge.

b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the permittee until all enforcement activities have concluded and all periods of limitations with respect to any and all appeals have expired.

3. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

4. Confidential Information

Except for data determined to be confidential under Sec. 34-52, all reports required by the permit shall be available for public inspection at the Superintendent of Waterloo Water Pollution Control Office.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a) The exact place, date, and time of sampling;

b) The dates the analyses were preformed;

c) The person(s) who performed the sample collections and sample analyses.

d) The analytical techniques, or methods used; and

PART IV - GENERAL CONDITIONS (Contd.)

5. Recording of Results (Contd.)

e) The results of all required analyses.

6. Falsifying Information

Knowingly making any false statement on any report or other document required by the permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of Iowa as well as being subjected to civil penalties and relief.

7. Modification, or Revision of Permit

a) The terms and conditions of this permit may be subject to modification by WWPC at any time as limitations or requirements as identified in the Waterloo City Code Article III are modified, or other just cause exists.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of special order.

c) Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance, if necessary.

8. Dilution

No permittee shall increase the use of potable or process water, or in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

9. Accidental Discharges

a) Each user shall provide protection from accidental discharge of prohibited materials or other substances regulated by this article. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner's or user's own cost and expense.

PART IV - GENERAL CONDITIONS (Contd.)

9. Accidental Discharges (Contd.)

Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the city for review, and shall be approved by the city before construction of the facility.

b) Within five (5) days following an accidental discharge, the user shall submit to the superintendent a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW, fish kills or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties or other liability which may be imposed by this article or other applicable law.

c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall ensure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

10. Notice of Intent

Any permittee planning to alter or change any activity at the permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of industrial wastewater discharge into the Waterloo sewage system must file a written nature of intent. This does not include changes in volume or content resulting from shifts in existing production levels at the user's facility. A significant increase or decrease shall be defined as a 10

PART IV - GENERAL CONDITIONS (Contd.)

10. Notice of Intent (Contd.)

percent increase or decrease in the volume of industrial wastewater currently being discharged. An alteration shall be defined as any change in chemicals utilized within a process which will significantly alter the characteristics of the industrial discharge.

11. Proper Disposal of Pretreatment Sludges

The disposal of sludges generated within wastewater pretreatment systems shall be done in accordance with Section 405 of the Clear Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

12. Operating Upsets

Any permittee that experiences an upset in operations that places the permittee in a temporary state of noncompliance with the provisions of either this permit or Waterloo City Code Article III, shall inform WWPC thereof within 24 hours of first awareness of the commencement of the upsets in accordance with Section 34-39, Waterloo City Code.

13. Limitation or Permit Transfer

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without the prior written approval of WWPC. Sale of a user shall obligate the purchaser to seek prior written approval of WWPC for continued discharge to the City's sewage system.

14. Signatory Requirements

All reports required by this permit shall be signed by a principal executive officer of the permittee, or his designee.

PART IV - GENERAL CONDITIONS (Contd.)

15. Reporting Address

All reports required by this permit shall be submitted to the City at the following address: Supt. Water Pollution Control
715 Mulberry St.
Waterloo, IA 50703

16. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property to the continued use or issuance of this permit or any amendments or reassurance thereof, or create any exclusive privileges of whatsoever kind unless specifically listed in this permit.

JRC

CITY OF WATERLOO, IOWA

City Hall 715 Mulberry Street 50705 319-291-4553

~~XXXXXXXXXXXXXXXXXXXXXXXX~~
Water Pollution Control Plant
Bruce D. Bottorff, Supt.

16 February 1976

Waterloo Industries
P.O. Box 209
Waterloo, Iowa 50704

Attention: Mr. Wallace J. Sulentic

Re: Limitations and Monitoring Requirements
Wastewater

Gentlemen:

Enclosed is a copy of the operation permit for the Waterloo Water Pollution Control Plant required by the State of Iowa Department of Environmental Quality.

Specific monitoring of your facilities is required according to the guidelines spelled out in this permit.

We would like to know the name of the person in your organization who we could contact to discuss the best way possible to meet these requirements.

Thank you for your cooperation on this matter. An early reply would be appreciated.

Sincerely,

Bruce D. Bottorff

Bruce D. Bottorff, Superintendent
WATER POLLUTION CONTROL PLANT
CITY OF WATERLOO
P.O. Box 2398
Waterloo, Iowa 50705

BDB:mk
Enclosures

UNIT 16

State of Iowa
DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY MANAGEMENT DIVISION

OPERATION PERMIT FOR DISCHARGES INTO WATERS OF THE STATE

Iowa Operation Permit No. 5-07-90-0-01

Date of Issuance February 2, 1976

Date of Expiration March 1, 1980

Pursuant to the authority of Chapter 455B, Code of Iowa, 1975, and Rule 19.3 (455B) of the Rules of the Iowa Department of Environmental Quality (January, 1974, Supplement I.D.R.), the Executive Director of the Department of Environmental Quality does hereby issue this permit for the operation of the disposal system and the discharge of sewage, industrial waste or other waste into waters of the State for the facility described below:

Name and Mailing Address of Applicant:

City of Waterloo
715 Mulberry Street
Waterloo, Iowa 50705

Identity and Location of Facility:
Waterloo Water Pollution Control Plant
Facility-No. 07-90-0-01
3500 Easton Ave.
Section 31, T89N, R13W, Blackhawk County, Iowa

Receiving Watercourse:

Cedar River tributary to Iowa River tributary to Mississippi River

The permittee is hereby authorized to operate the disposal system and to discharge the pollutants specified herein into State waters in accordance with the effluent limitations, monitoring requirements and other stipulations set forth in the following general and special conditions:

GENERAL AND SPECIAL CONDITIONS

1. This permit shall expire at midnight on March 1, 1980. The permittee shall file for renewal of this permit at least 120 days prior to its expiration. Continued operation of said disposal system or discharge from said facility after expiration of this permit is prohibited.

2. Outfall description(s):

Outfall Serial Number	Description
001	Outfall from trickling filter treatment plant

3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(a) During the period beginning on the date of issuance and lasting through March 1, 1980, the permittee is authorized to discharge from outfall serial number 001.

Such discharge shall be limited and monitored by the permittee as specified:

Wastewater Parameter	Effluent Limitations: kg/day (lbs/day) Daily Avg	kg/day (lbs/day) Max	Other Units (Specify) Daily Avg	Other Units (Specify) Max	Monitoring Requirements: Measurement Frequency	Sample Type	Sample Location*
Flow m^3/day (MGD)	-	-	77024(20.35)	136449(36.05)	Daily	-	1,7
BOD (5-day)	3864(8500)	6820(15000)	50 mg/l	75 mg/l	7/week	24-hr. Composite	1,2
Suspended Solids	3864(8500)	6820(15000)	50 mg/l	75 mg/l	7/week	24-hr. Composite	1,2
Ammonia Nitrogen (as N)	-	-	-	-	7/week	24-hr. Composite	1,2
Fecal Coliform	-	-	-	-	1/ 3 months	Grab	2
Settleable Solids	-	-	-	-	7/week	Grab	1,2,4,5
pH	From 6.5 to 9.0				7/week	Grab	1,2,3
Dissolved Oxygen	-	-	-	-	7/week	Grab	2
Temperature	-	-	-	-	7/week	Grab	1,4,5,6
Residual Chlorine	-	-	-	-	7/week	Grab	2
EQAP**	-	-	-	-	Monthly	Grab	2
Alkalinity	-	-	-	-	7/week	Grab	3
Volatile Acids	-	-	-	-	7/week	Grab	3
Volatile Solids	-	-	-	-	7/week	Grab	3,8
Total Solids	-	-	-	-	7/week	Grab	3
% Solids	-	-	-	-	7/week	Grab	8
Total Volume	-	-	-	-	7/week	Grab	8

Disinfection shall be practiced from April 1 through October 31.

There shall be no discharge of floating or settleable substances in other than trace amounts.

*Samples collected as specified in the monitoring requirements shall be taken at the following location(s):

Prior to disinfection:

1 - raw wastewater influent to the treatment facility
2 - final effluent from the treatment facility
3 - sludge digesters
4 - final effluent from industrial portion of plant
5 - primary clarifier effluents
6 - trickling filter effluents
7 - trickling filter recirculation
8 - sludge wastes

**Sample submitted for the Effluent Quality Analysis Program (EQAP) conducted in accordance with Chapter 18 of the Rules of the Iowa Department of Environmental Quality (1975 Iowa Administrative Code).

3. LIMITATIONS AND MONITORING REQUIREMENTS FOR SIGNIFICANT INDUSTRIAL/COMMERCIAL CONTRIBUTORS

(b) During the effective period of this permit, the permittee is authorized to accept for treatment such sewage, industrial waste, or other waste as may be contributed by the significant industrial/commercial facilities identified below. The permittee shall report to the Executive Director, in writing, at least 180 days in advance of any new facility expansions, production increases, or process modifications or the connection of any new contributor which may result in new, different or increased discharges of sewage, industrial waste or other waste.

"Significant Industrial/Commercial Contributor" is defined as any facility for which at least one of the following applies:

(a) the facility contributes at least 50,000 gallons of wastewater per day at maximum discharge,
(b) the facility contributes at least 5% of the organic or hydraulic loading of the treatment facility,
(c) the facility contributes toxic materials which may adversely affect the treatment process, or
(d) the facility contributes any waste which may have an adverse or deleterious impact on the treatment facility.

The permittee shall limit and monitor said sewage, industrial waste or other waste for each facility as specified:

Industrial/Commercial Contributor	Wastewater Parameter	Wastewater Limitations		Monitoring Requirements	
		Daily Avg	Max	Measurement Frequency	Sample Type
Chamberlain Mfg. Co.	Flow	-	-	Monthly	Daily Average
	pH	-	-	1/week	Grab
John Deere & Co. Engine Plant	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	16-hr. Composite
	Suspended Solids	-	-	1/month	16-hr. Composite
	Total Dissolved Solids	-	-	1/month	16-hr. Composite
	pH	-	-	1/month	Grab
John Deere & Co. Foundary	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	24-hr. Composite
	Suspended Solids	-	-	1/month	24-hr. Composite
	pH	-	-	1/month	Grab

3. LIMITATIONS AND MONITORING REQUIREMENTS FOR SIGNIFICANT INDUSTRIAL/COMMERCIAL CONTRIBUTORS

(c) The permittee shall limit and monitor said sewage, industrial waste, or other waste for each facility as specified:

Industrial/Commercial Contributor	Wastewater Parameter	Wastewater Limitations		Monitoring Requirements	
		Daily Avg	Max	Measurement Frequency	Sample Type
John Deere & Co. Tractor Plant	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	24-hr. Composite
	Suspended Solids	-	-	1/month	24-hr. Composite
	pH	-	-	1/month	Grab
The Rath Packing Co.	Flow	-	-	Daily	24-hr. Total
	BOD (5-day)	-	-	5/week	16-hr. Composite
	Suspended Solids	-	-	5/week	16-hr. Composite
	pH	-	-	5/week	Grab
	Oil and Grease	-	-	5/week	Grab
	Chloride	-	-	5/week	16-hr. Composite
	Total Dissolved Solids	-	-	5/week	16-hr. Composite
	Kjeldahl Nitrogen (as N)	-	-	5/week	16-hr. Composite
Waterloo Industries	Flow	-	-	1/week	24-hr. Composite
	pH	-	-	2/month	Grab
	Suspended Solids	-	-	2/month	24-hr. Composite
	Zinc	-	-	2/month	24-hr. Composite
	Chromium (Hexavalent)	-	-	2/month	24-hr. Composite
	Total Chromium	-	-	2/month	24-hr. Composite
Carnation Co.	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	16-hr. Composite
	Suspended Solids	-	-	1/month	16-hr. Composite
	pH	-	-	1/month	16-hr. Composite

4. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations, monitoring requirements and other stipulations in accordance with the following implementation schedule:

When used below, "required facilities" means those facilities provided by the permittee which will achieve compliance with the following limitations:

Wastewater Parameter	Daily Avg	Max
Biochemical Oxygen Demand (5-day)*	10 mg/l	15 mg/l
Suspended Solids*	20 mg/l	30 mg/l
Ammonia Nitrogen (as N)	2 mg/l	5 mg/l
Fecal Coliform Organisms	Disinfection Facilities Required	

*A minimum reduction of 85% is also required.

(a) by December 1, 1976, the permittee shall submit to the Iowa Department of Environmental Quality (DEQ) a complete facilities plan for the construction of the required facilities.

(b) by September 1, 1977, the permittee shall submit to the Iowa DEQ final plans and specifications for the construction of the required facilities.

(c) by March 1, 1978, the permittee shall award a contract or contracts for the construction of the required facilities.

(d) by March 1, 1980, the permittee shall complete construction of the required facilities, and by said date, shall submit to the Iowa DEQ certification by a registered professional engineer that the construction thereof has been completed in accordance with the application, plans, specifications and permit therefor.

(e) the permittee shall submit to the Iowa DEQ 180-day progress reports stating the progress being made toward completion of the required facilities. The first such report shall be submitted on or before May 10, 1976.

5. Pursuant to the provisions of Chapter 455B.3, Code of Iowa, 1975, the permittee shall allow the Executive Director or his designees to enter upon the permittee's premises at any reasonable time to conduct an investigation of all treatment or control facilities or systems provided or used by the permittee to achieve compliance with the terms and conditions of this permit.

6. Pursuant to Condition Number 3,the permittee shall conduct all required monitoring in accordance with the following provisions:

(a) Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored wastewater. All effluent samples shall be collected at the point of discharge prior to the combination of the specified discharge with any other effluent.

(b) The permittee shall record the results of all required analyses and measurements and shall submit said records to the Department on forms provided by the Department on a monthly basis; said records of operation being due by the 10th day of the month following the reporting period.

(c) The analytical and sampling methods used shall conform to the following reference methods or equivalents approved by the Department:

(1) Standard Methods for the Examination of Water and Wastewaters, 13th Edition, 1971, American Public Health Association, New York, New York 10019

(2) Manual of Methods for Chemical Analysis of Water and Wastes, 1974, Environmental Protection Agency, Office of Technology Transfer, Methods Development and Quality Assurance Research Laboratory, NERC, Cincinnati, Ohio 45268

(3) A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis, 1970, American Society for Testing and Materials, Philadelphia, PA 19103

(d) The permittee shall maintain records of all information resulting from any monitoring activities required pursuant to this permit. Such records shall include:

(1) the date, exact place, and time of sampling;
(2) the dates the analyses were performed;
(3) the identity of the analyst or analytical laboratory;
(4) the analytical techniques/methods used; and
(5) the results of each analysis.

(e) The permittee shall retain for a minimum of three (3) years any records of monitoring activities and results, including all original strip chart recordings and calibration and maintenance records for continuous monitoring instrumentation. This period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Director.

(f) If the permittee monitors any parameter at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the records of operation submitted to the Department.

6. (g) The following definitions shall apply:

(1) The "Daily Average" discharge means the sum of the total daily discharges by weight, volume or concentration during the reporting period divided by the total number of days during the reporting period when the facility was in operation. With respect to the monitoring requirements, the "Daily Average" discharge shall be determined by the summation of all the measured daily discharges by weight, volume or concentration divided by the number of days during the reporting period when the measurements were made.

(2) The "Maximum" discharge means the total discharge by weight, volume or concentration which cannot be exceeded during any 24-hour period.

(3) A "Grab Sample" is a representative portion of the sewage, industrial waste, other waste, surface water or groundwater collected at a specific time with no regard to flow rate.

(4) A "Composite Sample" consists of a number of grab samples collected at regular time intervals over a given time period and combined in proportion to the flow rate at the time of sample collection.

(h) The permittee shall submit samples for the Effluent Quality Analysis Program (EQAP) conducted by the Department in accordance with Chapter 18 of the Rules of the Department (1973 I.D.R.). The Department shall notify the permittee of the method and procedure for sample collection.

7. The permittee shall employ, contract with, or otherwise maintain an operation and maintenance staff adequately trained and knowledgeable in the operation of any treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

8. The discharge of any sewage, industrial waste, or other waste more frequently than or at a level in excess of that authorized herein shall constitute a violation of this permit. The permittee shall report to the Executive Director, in writing, at least 180 days in advance of any facility expansions, production increases, or process modifications which may result in new, different or increased discharges of sewage, industrial waste or other waste.

9. Any diversion from or bypass of facilities is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Executive Director of each such diversion or bypass pursuant to the provisions of Rule 17.6 (455B) of the Rules of the Department (1973 I.D.R.)

10. If, for any reason, the permittee does not comply with or will be unable to comply with any conditions specified in this permit, the permittee shall provide the Executive Director with the following information, in writing, within five (5) days of becoming aware of such noncompliance:

(a) A description and cause of noncompliance; and

(b) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncompliance.

11. The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

12. Solids, sludges, filter backwash, or other materials removed in the course of treatment or control of wastewaters shall be disposed of in compliance with the provisions of Chapter 455B, Code of Iowa, 1975, and any rules promulgated pursuant thereto.

13. If title to the facility, disposal system or part thereof for which this permit has been issued is transferred, the permittee shall notify the new owner in writing of this permit and the new owner shall be subject to all terms and conditions of this permit. Whenever title to a facility, disposal system or part thereof is transferred, the Executive Director shall be notified of such transfer within thirty (30) days.

14. This permit does not authorize or approve the construction, modification or addition to any disposal system or facility. No alterations or additions to any disposal system shall be made without the written consent of the Department pursuant to Rule 19.2 (455B) of the Rules of the Department (January, 1974, Supplement I.D.R.).

15. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

16. No legal or financial responsibility arising from the operation or maintenance of any disposal system or part thereof installed by the permittee to achieve compliance with the conditions of this permit shall attach to the State of Iowa or the Department of Environmental Quality.

17. The issuance of this permit in no way relieves the permittee of the responsibility for complying with all local, state, and federal laws, ordinances, regulations or other requirements applying to the operation of this facility.

For the Department of Environmental Quality:

Larry E. Crano, Executive Director

By Joseph E. Obr

Joseph E. Obr, P.E., Director
Water Quality Management Division

CITY OF WATERLOO, IOWA
City Hall 715 Mulberry Street 50705 (319) 291-4553

WATER POLLUTION CONTROL PLANT
Bruce D. Bottorff, Superintendent

June 27, 1978

PRETREATMENT STANDARD

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	mg/l	
CN,A.....	0.20	0.08
CN,T.....	.64	.24
Cr,VI....	.25	.09
Cu.....	4.6	2.0
Ni.....	3.6	1.8
Cr,total.	4.2	1.6
Zn.....	3.4	1.5
Pb.....	.8	.4
Cd.....	1.0	.5
Total metals	7.5	3.9

Pretreatment standards for the other substances listed on the incompatable wastes list have not been developed as of yet.

It is probable that limitations will be set on these substances in the future.

INCOMPATIBLE WASTES IN CONTRIBUTION

Inorganic Substances
- Acidity, Alkalinity, pH
- Ammonia
- ✓ Alkali and Alkaline Earth Metals
- Arsenic
- Borate (and other boron species)
- Cadmium
- ✓ Chromium
- Copper
- Cyanide
- ✓ Iron
- ✓ Lead
- Manganese
- Mercury
- Nickel
- Silver
- Sulfate
- Sulfide
- ✓ Zinc
- ✓ Phosphorus

Organic Substances
- Alcohols
- Phenols
- Chlorinated Hydrocarbons
- Chloroform
- Carbon Tetrachloride
- Methylene Chloride
- Chlorobenzenes
- Miscellaneous Chlorinated Hydrocarbons
- Organic Nitrogen Compounds
- ✓ Surfactants

Miscellaneous Organic Chemicals
- Benzidine
- T-butyl Borane
- Formaldehyde
- Benzene
- ✓ Toluene
- ✓ Xylene
- ✓ Oil and Grease

WATERLOO INDUSTRIES INC.

August 16, 1978

Mr. Bruce Bottorff, Superintendent
Waterloo Water Pollution Control Plant
3500 Easton Avenue
Waterloo, Iowa 50702

Dear Mr. Bottorff:

An emergency situation made it necessary for Waterloo Industries Inc. to pump partially pre-treated industrial waste water to the Waterloo Sanitary sewer on the weekend of August 6th. Our treatment tank overflowed onto our parking lot. In order to stop the overflow before it entered the storm drains to the river, it was felt expedient to pump the tank contents to the sanitary sewer where it would receive treatment at the pollution control plant.

The treatment tank had already been filled to "treatment" level by normally scheduled dumps from metal surface preparation process tanks when red water borne deposition paint overflowed due to a faulty level control. This overflow of approximately 800 gallons was contained safely in the treatment tank, but filled it to near the top.

The presence of the paint required additional treatment and reaction time so the batch was not pumped out on schedule. An outside cleaning crew came in as usual to clean the waterfall paint booths and, not knowing there would be any problem, opened the drains on the booths. Approximately 6,000 gallons entered the treatment tank causing it to overflow. The pumps to the sanitary sewer were turned on to prevent the overflow form reaching the storm sewer drains. The effluent was a brilliant red.

An estimated 6000-7000 gallons were pumped to stem the overflow and reduce the tank to treatment level. The tank was re-treated and allowed to flocculate about an hour before it was pumped out. The color was reduced some, but still strong. Undoubtably the residual red pigment in the lines from the first pumping also contributed to a strong red color remaining in the flow. Red is extremely reflective and even minute quantities are readily discernable in otherwise clear water. In total we pumped an estimated 24,000 gallons of red effluent during a six hour period.

UNIT 16

300 ANSBOROUGH AVE. • P.O. BOX 209 • WATERLOO, IOWA 50704 • AREA 319-235-7131
DISTRIBUTION CENTERS — POCAHONTAS, ARK. — SEDALIA, MO. — WEST HAVEN, CONN. — LOS ANGELES, CA. — PORTLAND, OR.
MANUFACTURING PLANTS IN IOWA, CALIFORNIA, ARKANSAS & MISSOURI

MANUFACTURERS OF FABRICATED STEEL HAND BOXES, CHESTS, ROLLER CABINETS, MEDICAL CARTS

We can only estimate what substances were in the effluent. But on the basis of the known sources and concentrations and considering no effective treatment, although some flocculation had taken place, we submit the following list of toxic or hazardous substances which could have been in the effluent:

Parameter	Estimated Lbs.
Lead	23.8
Aromatic Hydrocarbon	38.8
Red organic pigment	340.5
2 Butoxyethanol	155.2
Triethanolamine	38.8
CR +6	0.8
CR total	1.7
CD	.001
MN	0.5
Cu	0.5
Zn	0.8
P	1.2
pH	8
H2SO4 (32°) (15 gal)	160
Na (OH)2 (50%) (40 gal.)	334
Toluene	?
Naptha	?
Xylene	?
Celosolve	?
TSS	?

To prevent future occurences we are (1) installing either an additional float control on each paint tank with sound warning devices, or a sound warning device to signal at any indication of level increase over 1" above normal (2) Requiring all outside cleaning crews to obtain clearance through the security people (guards) before dumping any process tanks, and (3) considering ways to increase the capacity of our treatment plant in order to avoid situations such as we have just experienced.

We regret discharging such untreated industrial waste water to your control plant. Every effort and safeguard will be made to prevent a re-occurrence.

Sincerely,

Milt

Milt Hartley
Sr. Environmental Engineer

MH/mmw

cc: Jim Chandler

CPB-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

Nov 26 to Dec 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	Pre-Treated Daily Flow Ft.^{3}	Flow 1/week Units FT^3	Flow Total for Month Units FT^3	BOD 2/week Units mg/l	Suspended Solids 2/week Units mg/l	pH 2/week Units ph	Zinc 2/week Units mg/l	Chromium (Hexavalent) 2/week Units mg/l	Total Chromium 2/week Units mg/l	Toluene 2/week Units mg/l	Temp Units °F	Units
DEC.	1	2350					6				5	70	
	2	3130											
	3	520											
	4	—											
	5	—	6000										
S	6												
SN	7												
	8	2560					7				4	68	
	9	3040											
	10	1300											
	11	1110											
	12	1560	9570										
S	13												
SN	14												
	15	4530					7				3	70	
	16	2860											
	17	900											
	18	1110											
	19	990	10390										
S	20												
SN	21												
	22	3540					8				4	80	
	23	2000											
	24	710											
NOV	25	1040											
W	26	2170											
TH	27	—											
F	28	500	2670										
S	29												
SN	30												
	31	—											
	Total		28630	302883*									
	Average		1301	13767									
	Maximum		4530										
	Minimum		-0-	-0-									

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X Senior Environmental Eng.
Title

*Includes 75 Office Employees@30 gpd for 22 Days= 49500 Gallons

CPB-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

Oct 26 to Nov 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	Pre-Treated Daily Flow Ft.³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units mg/1	Suspended Solids 2/week Units mg/1	pH 2/week Units ph	Zinc 2/week Units mg/1	Chromium (Hexavalent) 2/week Units mg/1	Total Chromium 2/week Units mg/1	Toluene 2/week Units mg/1	Temp Units °F	Units
Nov S	1												
SU	2												
	3	3840					8				3	76	
	4	1090											
Grab	5	3930			2258	252		.05	.08	.09			
Composite	6	1230			363	24		.06	.05	.10			
	7	1390	11480										
S	8												
SU	9												
Grab	10	2470			969	73	8	.05	.02	.03	2	80	
	11	1090											
	12	2040											
	13	2560											
	14	1400	9560										
S	15												
SU	16												
	17	2560					8				3	78	
Composite	18	1300			375	33		.03	.04	.05			
	19	1720											
	20	1180											
	21	1130	7890										
S	22												
SU	23												
Grab	24	3460	3460		3325	45	8	.10	.03	.05	4	75	
Composite Oct S	25			no	Lab error results	19		.15	.01	.02			
SU	26												
Grab	27	1310			1751	22	8	.06	.30	.40	4	70	
Composite	28	1770			297	32		.06	.02	.03			
	29	2600											
	30	3480											
	31	1210	10370										
	Total	42760	30646*				40				16	379	
	Average	1944	13937				8				3	76	
	Maximum	3930	21133				8				4	80	
	Minimum	-0-	-0-				8				2	75	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X Senior Environmental Eng.
Title

*Includes 75 Office Employees@30 gpd for 22 Days= 49500 Gallons

Grab	BOD	S/S	Zinc	Chromium Hexavalent	Total Chromium
Total	8303	392	.26	.43	.57
Average	2075	98	.07	.11	.14
Maxiumum	3325	252	.10	.30	.40
Minimum	969	22	.05	.02	.03
Composite					
Total	1035	108	.30	.12	.20
Average	345	27	.08	.03	.05
Maximum	375	33	.15	.05	.10
Minimum	297	19	.03	.01	.02

CPD-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

SEP 25 TO OCT 25 — Month

1980 — Year

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	Pre-Treated Daily Flow Ft.³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units mg/l	Suspended Solids 2/week Units mg/l	pH 2/week Units ph	Zinc 2/week Units mg/l	Chromium (Hexavalent) 2/week Units mg/l	Total Chromium 2/week Units mg/l	Toluene 2/week Units mg/l	Temp Units °F	Units
OCT W	1	1160											
TH	2	1120											
F	3	970	9300										
S	4												
SU	5												
Composite Grab	6	2400			134 / 1567	26 / 1520	7	.09 / .07	.08 / .17	.09 / .17	3	76	
	7	3100											
	8	2120											
	9	710											
	10	1180	9510										
S	11												
SU	12												
Composite Grab	13	4180			487 / 815	35 / 200	7	.06 / .07	.07 / .14	.10 / .19	4	60	
	14	2490											
	15	1360											
	16	1110											
	17	550	9690										
S	18												
SU	19												
Grab	20	2380			1460	192	7	.12	.08	.12	5	62	
Composite	21	1310			468	19		.06	.07	.15			
	22	2900											
	23	1330											
	24	590	8510										
SEP	25	1410											
	26	2290	3700										
S	27												
SU	28												
Composite Grab	29	5190			413 / 757	156 / 102	7	.07 / .13	.09 / .10	.19 / .11	5	80	
	30	860	6050										
	31												
	Total		46760	27[illegible]243							17	278	
	Average		1559	9275							4	70	
	Maximum		5190	12647							5	80	
	Minimum		-0-	-0-							3	60	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Mert Hastings
Signature

X Senior Environmental Engr
Title

*Includes 75 Office Employees@30 gpd for 22 Days= 49,500 Gallons

Composite	BOD	S/S	Zinc	Chromium Hexavalent	Total Chromium
Total	1502	236	.29	.31	.53
Average	375	59	.07	.08	.13
Maximum	487	156	.09	.09	.19
Minimum	134	26	.06	.07	.13
Grab					
Total	4599	2014	.39	.49	.59
Average	1150	504	.10	.13	.15
Maximum	1567	1520	.13	.18	..19
Minimum	757	102	.07	.10	.11

EXHIBIT "B"

CPB-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

SEPTEMBER 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

WASTEWATER PARAMETERS ANALYZED

	DATE	PRE-TREATED ~~DAY OF WEEK~~ DAILY FLOW, FT³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
SEP M	1												
Composite T	2	2830			692	97	6	0.05	0.09	0.11	5	80	
W	3	2720											
TH	4	550											
F	5	1260	8360										
S	6												
SN	7												
Grab M	8	4590			1548	19	7	0.08	0.07	0.08	3	80	
T	9	1250											
W	10	1220											
TH	11	2740											
Composite F	12	1430	11230		345	11		0.09	0.10	0.15			
S	13												
SN	14												
Grab Composite M	15	2790			1364 288	57 15	7	0.05 0.07	0.05 0.01	0.06 0.07	4	80	
T	16	1580											
W	17	1260											
TH	18	1310											
F	19	1350	8290										
S	20												
SN	21												
Grab Composite M	22	2560			1783 277	43 28	7	0.01 0.08	0.04 0.04	0.05 0.05	3	80	
T	23	2980											
W	24	1200											
AUG M	25	4780											
T	26	800											
Composite W	27	470			276	21		0.08	0.07	0.08			
TH	28	1560											
F	29	1650	9260										
S	30												
SN	31												
	Total		37140	315729			27				15	320	
	Average		1198	10184			7				4	80	
	Maximum		4780	16296			7				5		
	Minimum		-0-	-0-			6				3		

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X SENIOR ENVIRONMENTAL ENGINEER
Title

[illegible] @ 3000 FOR 22 DAYS = 49500 [illegible]

COMPOSITE	BOD	S/S	ZINC	CHROMIUM HEXAVALENT	TOTAL CHROMIUM
Total	1878	172	.37	.31	.46
Average	376	34	.07	.06	.09
Maximum	692	97	.09	.10	.15
Minimum	276	11	.05	.01	.05
GRAB					
Total	4695	119	.14	.16	.19
Average	1565	40	.05	.05	.06
Maximum	1783	57	.08	.07	.08
Minimum	1364	19	.01	.04	.05

CPB-69721 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

July 25 to Aug 25 — Month

1980 — Year

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

		DATE	PRE-TREATED ~~PAY OF WEEK~~ DAILY FLOW, FT³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
Grab	F	1	5497	7360		2280	26		.12	.07	.08			
	S	2												
	SN	3												
	M	4	2720					6				2	82	
	T	5	2110											
Composite	W	6	1290			1150	25		.06	.08	.08			
	TH	7	-0-											
	F	8	10	6130										
	S	9												
	SN	10												
	M	11	2510			2233	107	7	.07	.06	.13	4	76	
	T	12	2640											
	W	13	950											
	TH	14	1070											
	F	15	770	7940										
	S	16												
	SN	17												
Grab	M	18	3380			1232	216	7	.07	.69	.75	4	80	
	T	19	1720											
Composite	W	20	990			468	10		.08	.07	.18			
	TH	21	360											
	F	22	2130	8580										
	S	23												
	SN	24												
Grab	M	25	4780	4780		297	258	7	.08	.07	.08	3	70	
July	S	26												
	SN	27												
Grab	M	28	1250			3425	28	7	1.02	.03	.05	4	72	
	T	29	1610											
	W	30	-0-											
	TH	31	263	1873										
		Total		29303	259,576			34				17	380	
		Average		945	8373			7				3	76	
		Maximum		5497	34086			7				4	82	
		Minimum		-0-	-0-			6				2	70	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X Senior Environmental Engine
Title

[illegible] 75 [illegible] @ 30 and for 21 days = 47250 [illegible]

GRAB SAMPLES

	BOD	Suspended Solids	Zinc	Chromium Hexavant	Total Chromium
Total	9467	635	1.36	.92	1.09
Average	1893	127	.27	.18	.22
Maximum	3425	258	1.02	.69	.75
Minimum	297	26	.07	.03	.05

COMPOSITE

Total	1618	35	.14	.15	.26
Average	809	18	.07	.08	.13
Maximum	1150	25	.08	.08	.18
Minimum	468	10	.06	.07	.08

CPD-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

June 25 – July 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	PRE-TREATED ~~DAY OF WEEK~~ DAILY FLOW, FT³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
		WASTEWATER PARAMETERS ANALYZED											
July T	1	—											
W	2	1000											
TH	3	0—											
F	4	-0-	1000										
S	5												
SN	6												
M	7	-0-					6				4	73	
T	8	-0-											
W	9	-0-											
TH	10	290											
F	11	1860	2150										
SN	12												
	13												
Grab (Parking Lot Pumping House)	14	1450			48 4675	65 372	7	.03 .06	.031 .041	.042 .042	3	74	
	15	1620											
W	16	370											
TH	17	1210											
F	18	1060	5710										
S	19												
SN	20												
Grab M	21	1160			6990	14	6	1.32	.005	.023	3	80	
T	22	640											
W	23	1530											
TH	24	860											
F	25	-0-	4190										
June TH	26	5590											
F	27	20	5610										
S	28												
SN	29												
M	30	-0-					6				3	70	
	31												
Total			18660	114,522*									
Average			622	3817									
Maximum			5590	8150									
Minimum			-0-	-0-									

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X [signature]
Signature

X Senior Environmental Engineer
Title

X Includes 76 office employees @ 300 pd for 18 days = 41,040 gallons

WAST WATER TREATMENT
at
Waterloo Industies, Waterloo, Iowa

Systems and Chemistry Designed, and Installation Supervised by

Robert H. Corning of

Corning Laboratories Inc. of
Cedar Falls, Iowa

Treatment Procedure Compiled by
Victor Maloy, Project Engineer at Waterloo Industries Inc.
April 20, 1970

The waste water at this plant is divided into four catagories:

1) Cooling and rinse water that requires no chemical treatment and is admitted directly to the municipal storm sewer.

2) Chromic acid, chemically reduced to chromus acid and held temporarily in the reduction tank.

3) Water from various paint booths, cleaning and coating anks, alkaline and acid in nature, is chemically treated to floculate and settle the solids.

4) Sanitary waste water admitted directly to the municipal sanitary sewer.

Catagories 2 & 3 are admitted to a settling tank where they are chemically treated and the floculated solids are allowed to settle.

After settling the "clear water" is pumped into the municipal sanitary sewer and the coagulated solids are periodically pumped out and hauled away.

The following waste water treatment procedure describes the tanks, aeration, chemical treatment and pumping.

Revised 2-8-72

CLEANING, COATING AND WASTE WATER TREATMENT TANKS IDENTIFICATION

Line #1	Tank No.	Capacity
Paint Tank	11	(7910 gal.)
Line #2		
Cleaner Tank	21	(1400 gal.)
Hot Water Rinse	22	(1400 gal.)
Bonderite	23	(900 gal.)
Cold Water Rinse	24	(600 gal.)
Chromic Acid (Parcolene)	25	(400 gal.)
Rinse (Stripped) Tank	26	(300 gal.)
Stripper Tank	27	(300 gal.)
Paint Tank (Hand Spray)	28	(925 gal.)
Paint Tank (Electro-static)	29	(925 gal.)
Bonderite Holding Tank	H-1	(900 gal.)
Line #3		
Cleaner & Metal Preparation	31	(3600 gal.)
Warm Water Rinse	32	(1800 gal.)
Chromic Acid (Parcolene)	33	(1700 gal.)
Paint Tank (Hand spray)	34	(1833 gal.)
Paint Tank (Electro-static)	35	(1833 gal.)
CHEMICAL TREATMENT TANKS		
Chromic Acid Reduction	R-1	(2500 gal.)
Settling Tank 1 & 2	S-12	(27,737 gal.)
Clear Water Tank	C.W. 1	(550 gal.)

WASTWATER TREATMENT

pH paper referred to in the following instructions is a chemical treated paper that when immersed in a liquid will change color to show whether the solution is acid, neutral or alkaline. The color numbers range from 1 to 14 with 7 being neutral, 1 to 6 acid, 8 to 14 alkaline.

These instructions describe the chemical treatment for the following tanks.

Tank No. 11 - Paint booth, Line No. 1, alkaline pH, 7910 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.00 P.P.M. NOTE -- For Toluene test use the "Unico" gas detection instrucment alone with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the gas detection tube package.

After the waste water has met the toluene requirements it may be drained to the settling tank No. S-12

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour thru the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the a above manhole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE

When draining more than one tank, i.e. No. 11 & 21, use only ____ gallon of No. 701 and the total of the two tanks of No. 704.

NOTE

After draining to the settling tank, check the acidity or ackalinity with pH paper, if pH ranges less than 6 or more than 9 the waste water must be neutralized. (see section on titration.)

Tank No. 21 - Cleaner, Line No. 2, alkaline pH, 1400 gallons.

1. Before draining to the settling tank No. S-12, slowly add _____ gallons sulphuric acid (H_2SO_4, 66° Baume) while the cleaner is circulated for approximately ten minutes after all the acid has been admitted to the tank to neutralize the alkalinity of the cleaner.

After the neutralized cleaner has been drained to the settling tank.

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank No. S-12, pour thru the above man hole ____ gallons of No. 704 chemical and flush to

the settling tank with plenty of tap water from the hose.

4. Allow ____ hour after the above chemical treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE

When draining and chemical treating more than one tank, i.e. # 21 & 34 & 35 use only one gallon of No. 701 and the total of the three tanks for No. 704.

Tank No. 22. Hot water rinse, line No. 2, 1400 gallons. No chemical treatment is required. Drain directly to the storm sewer.

Tank No. 23 - Zinc Phosphate, Line No. 2, 900 gallons.

The liquid from this tank is never discarded. Pump to empty tank No. H-1. The sludge or residue after cleaning is flushed to the settling tank No. 12 with tap water. The liquid in tank No. H-1 is then returned to tank No. 23 and brought up to volume and strength per "Parco" process Spec. 328

Tank No. 24 - Coldwater rinse, Line No. 2, 600 gallons, neutral pH.

No chemical treatment is required for this tank, merely drain to the storm sewer.

Tank No. 25 - Chromic acid, Line No. 2, 400 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of ____ pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changed to a blue-green color. If not a blue-green add ____ pound of sodium bisulfite, recirculate, When the liquid has reached the right color, pump to the reduction holding tank No. R-1 (see drawing No. 1) and held there until tank No. 33 is treated and pumped to the reduction tank No. R-1.

Tank No. 26 - Cold water rinse, Line No. 2, neutral pH.

No chemical treatment required. The rinse water is discharged to the storm sewer.

Tank No. 27 - Stripper, Line No. 2, Alkaline, 300 gallons.

See "Parker" process specification No. 345. When this tank becomes too contaminated with sludge to provide proper stripping, drain, flush and haul away.

NOTE This contaminated material is not to be drained into the storm or sanitary sewer.

Tank No. 28 - Paint Booth, Line No. 2, Alkaline pH, 925 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation) approximately six hours or until the toluene gas content of the water reads between 0.00 and 10.0 P.P.M.
NOTE-For toluene gas test use the "Unico" gas detection instrument along with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the detection tube package.

After the waste water has met the toluene gas requirement it may be drained to the settling tank No. S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1)

3. After the No. 701 has drained to the settling tank, pour through the above man hole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. No. 28, 29 & 21, use only ____ gallon of No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH indicates less than six or more than nine, the water must be neutralized. (see section on titration)

<u>Tank No. 29</u> - Paint Booth, Line No. 2, Alkaline pH, 925 gallons

Follow the same procedure as for tank no. 28.

<u>Tank No. 31</u> - Iron Phosphate, Line No. 3, Mildly Acid pH, 3600 gallons.

Drain to tank No. S-12.

2. Mix ____ gallon No..701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chrome acid reduction tank No. R-1.

3. After the No. 701 has drained to the settling tank pour ____ gallons of No. 704 through the above man hole and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above chemical treatment before starting the pump. (see pumphouse procedure and drawing No. 2)

NOTE - When draining more than one tank, i.e. No. 31, R-1, & 11, use only ____ gallon of the No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH ranges less than six (acid) or more than nine (alkaline) the waste water must be neutralized. (see section on titration)

Tank No. 32 - Warm water rinse, Line No. 3, Neutral pH, 1800 gallons

No chemical treatment required, drain to the storm sewer.

Tank No. 33 - Chromic acid, Line No. 3, 1700 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of 20 pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changes to a blue-green color. If not a blue-green, add ____ pound of sodium bisulfite and recirculate. When the liquid has reached the right color, pump to the reduction tank No. R-1 (see drawing No. 1)

Tank No. R-1, Chromous Acid, 2500 gallons, Acidic pH

This tank can contain the pumping from tank No. 33 (1700 gallons) and two pumpings from tank No. 25 (800 gallons)

NOTE - The liquid in this tank is acidic and should be drained to the settling tank No. S-12 along with two or more of the alkali tanks. Check the pH of the settling tank to see if titration and neutralization is required (see section on titration)

Note - Should it become necessary to drain this tank along (2500 gallons) treat as follows:

1; Mix ____ gallon of No. 701 chemical with ten or fifteen gallons of tap water and pour through the man hole located in the floor near the tank No. R-1. (see drawing No. 1)

2. After the No. 701 has drained to the settling tank, pour ____ gallons of No. 704 chemical through the above man hole and flush to the settling tank with plenty of tap water from the hose. (see drawing No. 1)

3. Allow ____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

Tank No. 34 - Paint Booth, Line No. 3, Alkaline pH, 1833 gallons

1. Aerate, recirculate the tank water with the exhaust fans in operation (approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.0 P.P.M.

When the water has met the toluene gas requirements it may be drained to the settling tank No S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1. (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the man hole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. 34, 31 & 21 use only ____ gallon of No. 701 and the total of the three tanks of No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. Should the pH range below six or more than nine the waste water must be neutralized (see section on titration)

Tank No. 35 - Paint booth, Line No. 3, Alkaline pH, 1833 gallons.

Follow the same procedure as for tank No. 34.

WASTE WATER TREATMENT SUPPLEMENT

1. When draining tanks No. R-1 (Chromous Acid) and tank No. 31, Iron Phosphate (mildly acid) or tanks Nos. 11, 21, 28, 29, 34, 35 (alkaline) it is suggested that two or more alkaline tanks be drained to the settling tank along with the chromous acid from tank No. R-1. The two materials will tend to neutralize each other. (check with pH paper and titrate if necessary)

2. EMERGENCY SUBSTITUTE FOR No. 704 CHEMICAL.

Twenty five pounds Alum (Potasium Aluminum Sulphate) per 1000 gallons of wastewater.

A - Mix 100 pounds of Alum with approximately 40 to 45 gallons of tap water and agitate till alum is disolved then pour through the man hole.

Example: Treating 10,700 gallons of waste water would require
25# x 10.7 = 267.5 pounds of alum.

3. When using Sulphuric Acid always wear rubber or plastic gloves, safety glasses and rubber apron. Pour the acid into the water slowly to avoid sudden heat build up. NEVER pour water into the acid. Violent spattering will be the result.

4. Vendor of chemicals
Sodium Bisulfite --- Overton Chemical Co.
Sulphuric Acid (66° Baume) Overton Chemical Co.
Alum --- Overton Chemical Co.
No. 701 (Polymer) } Hawkins Chemical Co., St. Paul
No. 704 (Aluminum Chloride, 32° Baume) }
Soda Ash -- Overton Chemical Co., Sumner, Iowa
pH paper -- "pHydrion" AB pH 1-11, Curtin Scientific Co., Minneapolis, Minn.
Toluene gas detector tubes --Curtin Scientific Co., Minneapolis, Minn.

5. Engineering Consultant -- Corning Laboratories, Cedar Falls, Ia.

PUMP HOUSE PROCEDURE

When the treated waste water has been in the settling tank, S-12 for _____ hours it will be ready to pump into the sanitary sewer.

1. Enter the fluidmeter reading in the record book. (Meter is located on the floor at south end of the clear water tank, C.W.-1)

   The control panel (located on the south wall of the pump house) supports the "Hach" turbidimeter and timer case with power switch and fusebox.

"Hach" Turbidimeter and Timer

2. With the left knob at top of meter, set the left red pointer at zero.
3. With the right knob at top of meter, set the right red pointer at 1.5.
4. See that the toggle switch is at the "off" position.
5. Flip power switch on the timer case to "on" position, the pump will start operating.
6. Close the small fluid valve, located at the top of the outlet pipe at top of the clear water tank, C.W.-1 and flip the toggle switch to stand by.
7. With the zero adjust knob, adjust the black pointer for a zero reading.
8. Open door of turbidimeter, clean electric eye and light source if dirty, and adjust the forementioned fluid valve to produce a smooth flowing water curtain. Then close door.
9. When the black pointer of the meter settles to range between zero and 1.5 then flip the toggle switch to the "on" position.

The turbidimeter and timer are now fully activated and the pump will continue to purge the settling tank, S-12 until the black pointer ganges beyond 1.5. The pump will stop for the time indicated on the timer, this allows the material in the settling tank to clear, then the pump will recycle.

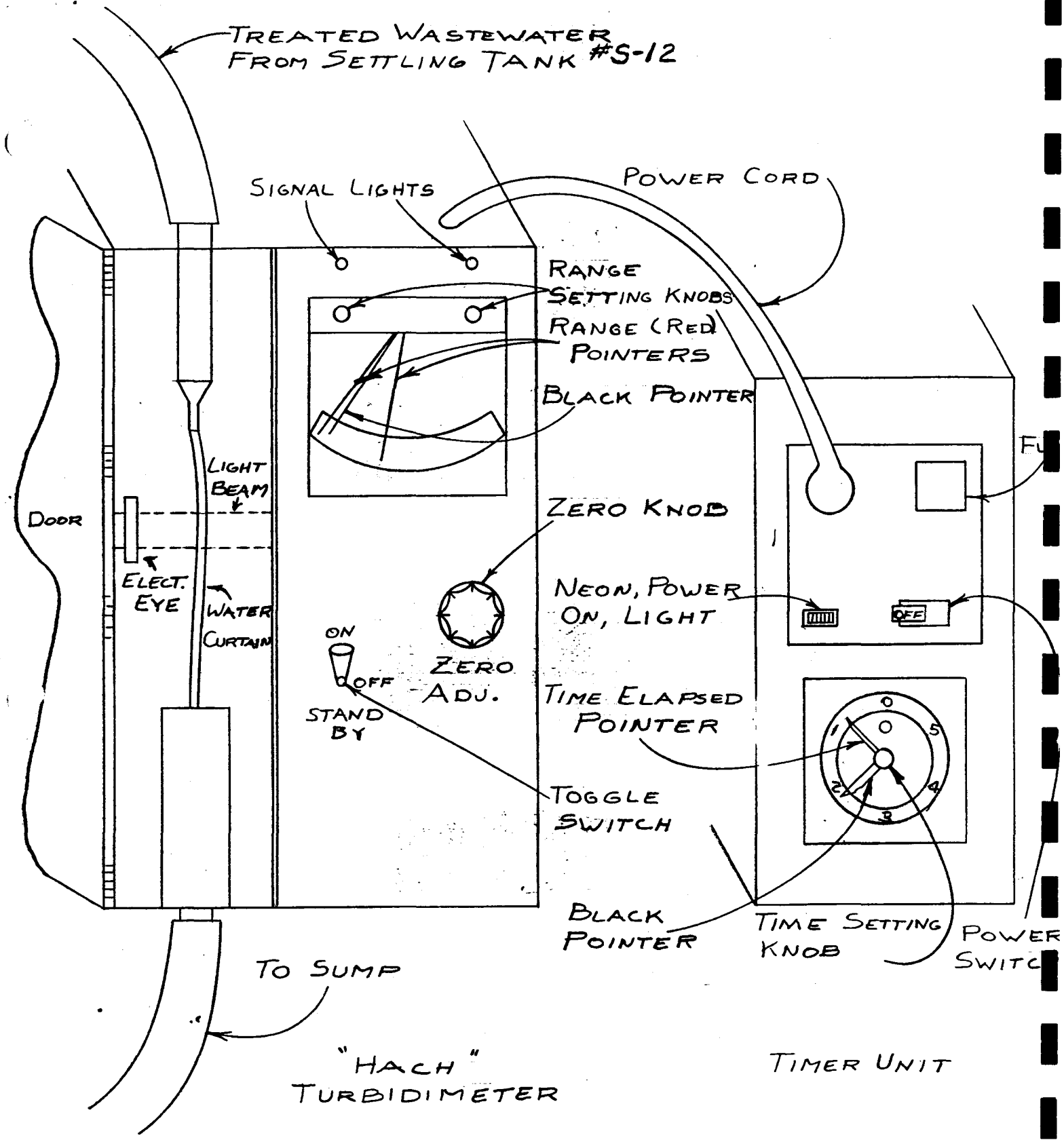
The settling tank should be purged before any new untreated waste water is admitted to the tank. (Check with gage stick)

NOTE — Before any new waste water is admitted to the settling tank <u>the toggle switch of the turbidimeter and the power switch on the timer case must be in the "off" position</u>.

A time cycle of _____ hours as set on the timer gives a good settling period before the pump recycles.

Do not change time period without authorization.

The settling tank, S-12 will, in time, become difficult to purge below 36". Then the remaining material should be pumped out and hauled away.



PUMP HOUSE CONTROLS

DRAWING Nº 2

APPENDIX F

STILL BOTTOMS ANALYTICAL DATA FROM RINECO

Rineco -- Technical Services Group -- Incoming Analytical

Manifest #	743198	Line	a	Generator:	Waterloo Industries	Date:	04/11/95

RCI number	131436
Lab Sample Code	D2
BTU / Pound	15353
Halogen	0.1
pH	7
Color	blk
Specific Gravity	NA
technician	dw kc

H2O solubility	N
H2O compatibility	P
Fuel compatibility	P
Cyanide	P
Sulfide	P
Oxidizers	P
Peroxide	P
technician	dw

PCB	ND
Cl-Pesticides	ND
technician	jt
Additional Comments or Observations	

DCP Composite Comments	
Digestion Method	CEM

Ag	<5	Be	<0.2	Hg	1.5	As	11.5	Cd	<15	Pb	<100	Ba	72.9	Cr	<150
Sb	<50	Se	<200	Tl	25	Al	249	Co	26.8	Mg	238.8	Ni	<50	Zn	11110

Acceptance	Fuel

Profile #: 9404-2839

still bottoms & oil paint

4

UNIT 9

APPENDIX G

WASTE PAINT, PAINT FILTER ANALYTICAL DATA, AND SOLID WASTE AUTHORIZATIONS

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

September 26, 1994

Jerry Stoll
Waterloo Industries
300 Ansborough Ave.
Waterloo, IA 50704

RE: Variance from Special Waste Authorization Rules

Dear Mr. Stoll:

We have received your request for a Special Waste Authorization for paint filters. Pursuant to the authority of Iowa Code section 455B.303, you are hereby granted a variance for one year from the date of this letter, from current department rules 567, Iowa Administrative Code 102.15(2) and 100.3(2), which rquire a special waste authorization.

The Department intends to adopt new rules on this subject within this period of time, which will alter the current special waste authorization issuance procedures.

This variance does not authorize the disposal of waste classified as hazardous waste by RCRA. In addition, the waste cannot contain free liquids and must be able to pass the paint filter test, Method 9095, as found in USEPA publication SW-846, Third Edition, Test Methods for Evaluation of Solid Waste. Finally, this variance does not require a landfill operator to accept your waste; you are subject to any authority and restrictions imposed by local officials.

Sincerely,

Joseph E. Obr S.N.R.
Chief
Land Quality Bureau

cc: F.O. 1

Bill Heithoff
Black Hawk County Sanitary Landfill
1509 East Washburn Road
Waterloo, IA 50703

Gary Wilcox
Black Hawk County Solid Waste
Management Commission
P.O. Box 208
Waterloo, IA 50704

UNIT 12

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

To: Gary Wilcox
Black Hawk County Solid Waste Management Commission
County Courthouse
P.O. Box 208
Waterloo, Iowa 50704

Authorization No. 070108209/

SPECIAL WASTE AUTHORIZATION

Disposal Site: Black Hawk County Sanitary Landfill (7-SDP-1-75P)

The following and attached instructions 21.1 apply ONLY to the specific waste described and to the volume and time period specified. This is not an overall approval to accept other toxic or hazardous wastes or industrial sludges. DNR must authorize the disposal of such additional wastes from the same generator or similar wastes from a different generator. Failure to obtain this approval is a violation of Solid Waste Disposal Rule 102.14. These instruction in no way obligate the above-named disposal site to accept the described waste. The disposal site has the final decisions whether to accept the waste, and does so at its own risk. This form shall be kept in the office of the sanitary landfill for review by DNR personnel. Each disposal shall be recorded on the reverse of this form and reported in accordance with the reporting requirements contained in the landfill's permit.

By delivery of this waste, the waste generator certifies that the intended disposal of the described waste is in compliance with all RCRA hazardous waste regulations.

Waste and Volume:	Approximately 75 lbs of paint filters twice per week. The filters must be baked for at least 25 minutes to flash off the volatiles.
Generator:	Waterloo Industries, 300 Ansborough Ave, Waterloo, Iowa 50704, Jerry Stoll 319/ 235-1731
Disposal Period:	Until August 13, 1994
Landfill Operator:	Bill Heithoff 319/296-2524

If you have any questions regarding this authorization, please contact Gayle Strong at 515/281-3426.

Authorized by: Morris Preston Date: 8/16/91
Supervisor, Solid Waste Section

cc: Field Office - 1
Bill Heithoff, Landfill Operator
Gayle Farrell/Records
Jerry Stoll, Waterloo Industries

Hook Oven

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

September 27, 1991

Mr. Jerry Stoll
Project Engineer
Waterloo Industries, Inc.
P.O. Box 2095
Waterloo, IA 50704

Dear Mr. Stoll:

This letter is in response to a permit application to install or alter equipment or control equipment. Subrule 567--22.1(1) of the Iowa Administrative Code requires that each person planning to install, reconstruct, construct or alter equipment capable of emitting air contaminants must obtain a permit from this department before starting construction.

The proposal was to install a heat cleaning oven. It has been determined from the information submitted that the described system has the potential to be operated in compliance with the applicable air quality regulations. A permit, to be identified by administrative number 91-A-220 has therefore been written for the source. A copy of the permit is enclosed.

Sincerely,

Michael Hayward

Michael Hayward, P.E.
Air Quality Section

Enclosure

cc: Field Office 1

UNIT 15

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-220
Plant No. 07-01-018
Project No. 91-769

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries, Inc.	Jerry Stoll

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50701

4 EQUIPMENT LOCATION ADDRESS: 300 Ansborough Ave.

PROCESS OR SOURCE INFORMATION

5 TYPE	[X] New [ ] Modification	6 CAPACITY (Pounds/Hour)	(Tons/Year)
Heat cleaning oven		60	

7 MAKE & MODEL: Ace Inc. Model RKG-260

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Afterburner	99%	300

11 MAKE & MODEL: Integral to Model RKG - 260

12 CONSTRUCTION SCHEDULE		13 EMISSIONS (specify units)	
Start Date	Completion Date	Before Control	After Control
8-30-91	9-10-91		Particulate 0.023 LBS/HR

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	7-23-91	Ind. Engr.	319-235-7131

DNR USE ONLY

This equipment has been evaluated for conformance with rule(s) 567--23.4(12) of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Michael Hayward

Date Sept 27, 1991

form 6 (Sep 87) 542-3190

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

To: Gary Wilcox
Black Hawk County Solid Waste Management Commission
County Courthouse
P.O. Box 208
Waterloo, Iowa 50704

Authorization No. 070108209/

SPECIAL WASTE AUTHORIZATION

Disposal Site: Black Hawk County Sanitary Landfill (7-SDP-1-75P)

The following and attached instructions 21.1 apply ONLY to the specific waste described and to the volume and time period specified. This is not an overall approval to accept other toxic or hazardous wastes or industrial sludges. DNR must authorize the disposal of such additional wastes from the same generator or similar wastes from a different generator. Failure to obtain this approval is a violation of Solid Waste Disposal Rule 102.14. These instruction in no way obligate the above-named disposal site to accept the described waste. The disposal site has the final decisions whether to accept the waste, and does so at its own risk. This form shall be kept in the office of the sanitary landfill for review by DNR personnel. Each disposal shall be recorded on the reverse of this form and reported in accordance with the reporting requirements contained in the landfill's permit.

By delivery of this waste, the waste generator certifies that the intended disposal of the described waste is in compliance with all RCRA hazardous waste regulations.

Waste and Volume:	Approximately 75 lbs of paint filters twice per week. The filters must be baked for at least 25 minutes to flash off the volatiles.
Generator:	Waterloo Industries, 300 Ansborough Ave, Waterloo, Iowa 50704, Jerry Stoll 319/ 235-1731
Disposal Period:	Until August 13, 1994
Landfill Operator:	Bill Heithoff 319/296-2524

If you have any questions regarding this authorization, please contact Gayle Strong at 515/281-3426.

Authorized by: Morris Preston Date: 8/16/91
Supervisor, Solid Waste Section

cc: Field Office - 1
Bill Heithoff, Landfill Operator
Gayle Farrell/Records
Jerry Stoll, Waterloo Industries

UNIT 15

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515-281-5145/ TDD 515 242-5967 / FAX 515-281-8895

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

June 24, 1994

Mr. Jerry Stoll
Waterloo Industries, Inc.
300 Ansborough Ave., P.O. Box 2095
Waterloo, IA 50704

RE: Variance from Special Waste Authorization Rules

oven ashes

Dear Mr. Stoll:

We have received your request for an extension of your Special Waste Authorization #0701021792. Pursuant to the authority of Iowa Code section 455B.303, you are hereby granted a variance for one year from the date of this letter, from current department rules 567, Iowa Administrative Code 102.15(2) and 100.3(2), which require a special waste authorization.

The Department intends to adopt new rules on this subject within this period of time, which will alter the current special waste authorization issuance procedures.

This variance does not authorize the disposal of waste classified as hazardous waste by RCRA. In addition, the waste cannot contain free liquids and must be able to pass the paint filter test, Method 9095, as found in USEPA publication SW-846, Third Edition, Test Methods for Evaluation of Solid Waste. Finally, this variance does not require a landfill operator to accept your waste; you are subject to any authority and restrictions imposed by local officials.

Sincerely,

Joe Obr
S.A.R.

Joseph E. Obr
Chief
Land Quality Bureau

cc: F.O. 1

Bill Heithoff
Black Hawk County Sanitary Landfill
1509 East Washburn Road
Waterloo, IA 50703

Gary Wilcox
Black Hawk County Solid Waste
Management Commission
P.O. Box 208
Waterloo, IA 50704

234-6115

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

May 27, 1993

Mr. Jerry Stoll
Waterloo Industries, Inc.
300 Ansborough Ave., P.O. Box 2095
Waterloo, IA 50704

hook / filter ash

RE: Variance from Special Waste Authorization Rules

Dear Mr. Stoll:

We have received your request for extension of your Special Waste Authorization #0701021792. Pursuant to the authority of Iowa Code section 455B.303, you are hereby granted a variance for one year from the date of this letter, from current Department rules 567 Iowa Administrative Code 102.15(2) and 100.3(2), which require a special waste authorization. The Department intends to adopt new rules on this subject within this period of time, which will alter the current special waste authorization issuance procedures.

This variance does not authorize the disposal of waste classified as hazardous waste by RCRA. In addition, the waste cannot contain free liquids and must be able to pass the paint filter test, Method 9095, as found in USEPA publication SW-864, Third Edition, Test Methods for Evaluation of Solid Waste. Finally, this variance does not require a landfill operator to accept your waste; you are subject to any authority and restrictions imposed by local officials.

Sincerely,

Joe Obr
S.R.R.

Joseph E. Obr
Chief
Land Quality Bureau

cc: F. O. 1

Bill Heithoff
Black Hawk County Sanitary Landfill
1509 East Washburn Road
Waterloo, IA 50703

Gary Wilcox
Black Hawk County Solid Waste
Management Commission
P. O. Box 208
Waterloo, IA 50704

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

To: Gary Wilcox
Black Hawk County Solid Waste Mgmt. Comm.
County Courthouse
P O. Box 208
Waterloo, IA 50704

Authorization No. 0701021792

SPECIAL WASTE AUTHORIZATION

Disposal Site: Black Hawk County Sanitary Landfill (7-SDP-1-75P)

The following and attached instructions 21.1 apply ONLY to the specific waste described and to the volume and time period specified. This is not an overall approval to accept other toxic or hazardous wastes or industrial sludges. DNR must authorize the disposal of such additional wastes from the same generator or similar wastes from a different generator. Failure to obtain this approval is a violation of Solid Waste Disposal Rule 102.14. These instruction in no way obligate the above-named disposal site to accept the described waste. The disposal site has the final decisions whether to accept the waste, and does so at its own risk. This form shall be kept in the office of the sanitary landfill for review by DNR personnel. Each disposal shall be recorded on the reverse of this form and reported in accordance with the reporting requirements contained in the landfill's permit.

By delivery of this waste, the waste generator certifies that the intended disposal of the described waste is in compliance with all RCRA hazardous waste regulations.

Waste and Volume:	Approximately 10 lbs. of stockpiled incinerator ash and 50 lbs. of incinerator ash 4 times per year thereafter.
Generator:	Waterloo Industries, 300 Ansborough Avenue, Waterloo, IA 50704 Jerry Stoll 319/235-7131
Disposal Period:	Until July 31, 1993 (The SWA is good for 3 years from the date signed, if an extention of time is required contact the department.)
Landfill Operator:	Bill Heithoff 319/296-2524

If you have any questions regarding this authorization, please contact Jim Thayer at 515/281-3426.

Authorized by: Larry Hoge Date: 2/17/92
Supervisor, Solid Waste Section

cc: Field Office - 1
Bill Heitoff, Landfill Operator
Jim Thayer/Records
Jerry Stoll, Waterloo Industries

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stohl
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

08/21/1991

Sample No.: 140332
Job Number: 91.0900
Page 1

Sample Description: Sample #4 Filter Ash

Date Taken: 08/04/1991

Date Received: 08/07/1991

Parameter	Results	Units	Matrix Spike % Recovery
Solids, Total	99.45	%	
Paint Filter	Pass.		
*Ignitability (Flash Point)			
TCLP - Arsenic	<0.050	mg/L	96
TCLP - Barium	<5.0	mg/L	85
TCLP - Cadmium	<0.50	mg/L	75
TCLP - Chromium	<1.0	mg/L	70
TCLP - Lead	250.	mg/L	99
TCLP - Mercury	<0.0500	mg/L	97
TCLP - Selenium	<0.050	mg/L	97
TCLP - Silver	<0.50	mg/L	99
TCLP - pH	6.5	units	
TCLP - Final pH	5.1	units	
Extractable pH	6.0	units	
Hydrocarbon Solvent	0.13	%	

*Solid: Does not burn.

Matrix spike correction factors have been applied to results greater than reporting limits. Reporting limits are indicated by a less than (<) symbol.

Cheryl L. Wilson
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

10/18/1991

Sample No.: 147157
Job Number: 91.3045
Page 1

Sample Description: Sample #5 Hook Ash

Date Taken:

Date Received: 10/03/1991

Parameter	Results	Units	Matrix Spike % Recovery
TCLP - Arsenic	<0.050	mg/L	100
TCLP - Barium	<5.0	mg/L	91
TCLP - Cadmium	<0.50	mg/L	97
TCLP - Chromium	<1.0	mg/L	98
TCLP - Lead	230.	mg/L	104
TCLP - Mercury	<0.0500	mg/L	85
TCLP - Selenium	<0.050	mg/L	78
TCLP - Silver	<0.50	mg/L	110
TCLP - pH	6.6	units	
TCLP - Final pH	5.2	units	
Extractable pH	NA	units	

Matrix spike correction factors have been applied to results greater than reporting limits. Reporting limits are indicated by a less than (<) symbol.

Cheryl L. Wilson
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

02/06/1992

Sample No.: 157858
Job Number: 92.0527
Page 1

Sample Description: Dry Filter/Hook Ash #9

Date Taken:

Date Received: 01/23/1992

Parameter	Results	Units	Matrix Spike % Recovery
TCLP - Arsenic	<0.050	mg/L	78
TCLP - Barium	<5.0	mg/L	100
TCLP - Cadmium	<0.20	mg/L	103
TCLP - Chromium	<1.0	mg/L	90
TCLP - Lead	<1.0	mg/L	100
TCLP - Mercury	<0.0500	mg/L	112
TCLP - Selenium	<0.050	mg/L	94
TCLP - Silver	<0.50	mg/L	110
TCLP - pH	6.6	units	
TCLP - Final pH	5.0	units	
Extractable pH	7.2	units	

Matrix spike correction factors have been applied to results greater than reporting limits. Reporting limits are indicated by a less than (<) symbol.

Cheryl L. Wilson
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

11/25/1991

Sample No.: 151328
Job Number: 91.4341
Page 1

Sample Description: Sample #8 Filter/Hook Ash

Date Taken: 07/18/1991

Date Received: 11/08/1991

Parameter	Results	Units	Matrix Spike % Recovery
TCLP - Arsenic	<0.050	mg/L	108
TCLP - Barium	<5.0	mg/L	97
TCLP - Cadmium	<0.50	mg/L	98
TCLP - Chromium	<1.0	mg/L	79
TCLP - Lead	29.	mg/L	59
TCLP - Mercury	<0.0500	mg/L	120
TCLP - Selenium	<0.050	mg/L	114
TCLP - Silver	<0.50	mg/L	82
TCLP - pH	8.4	units	
TCLP - Final pH	6.0	units	
Extractable pH	8.5	units	

Matrix spike correction factors have been applied to results greater than reporting limits. Reporting limits are indicated by a less than (<) symbol.

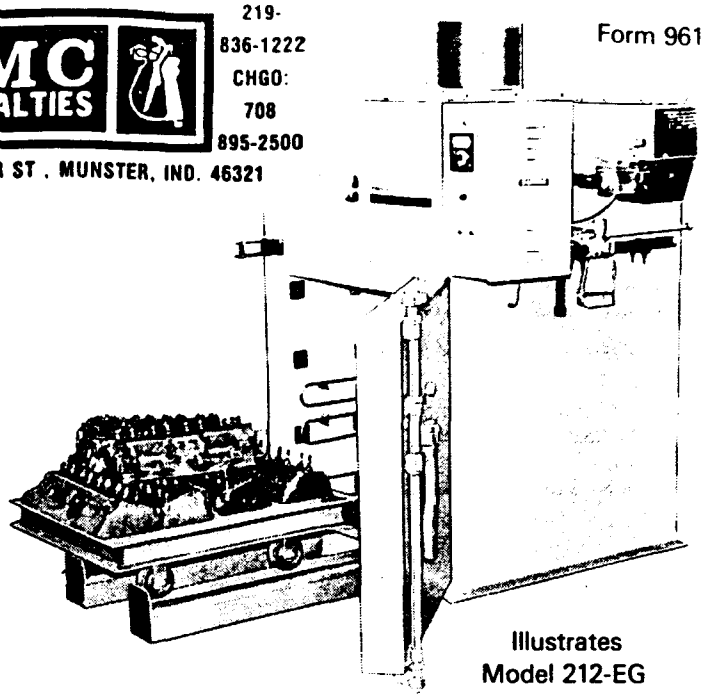
Cheryl L. Wilson
Project Manager

Phone
219-
836-1222
CHGO:
708
895-2500
400 FISHER ST. MUNSTER, IND. 46321

Form 961

ace

HEAT CLEANING OVEN



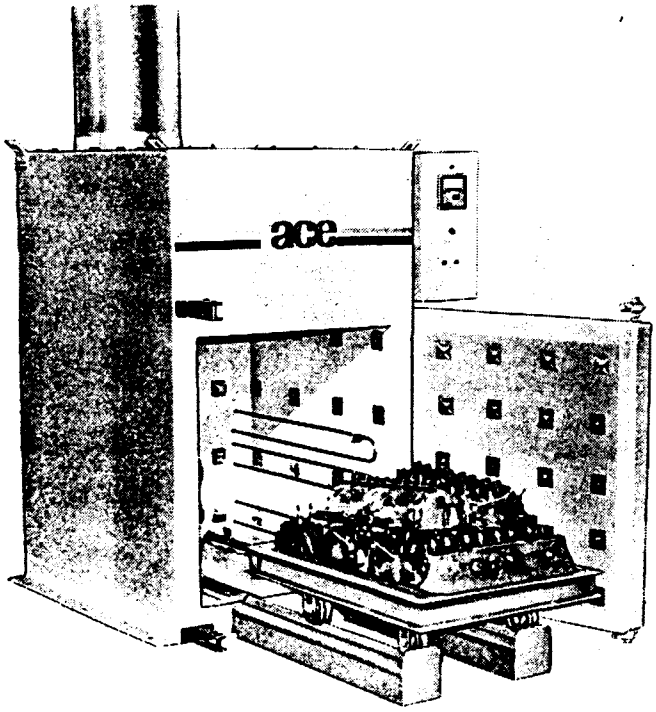
Illustrates
Model 212-EG

OVEN DESIGN

ACE heat cleaning ovens are designed to remove grease, oil, carbon, paint and other combustible materials. Heat clean engine blocks, heads, camshafts, water pumps, crankshafts, rods - virtually any metal parts. They will also debond brake shoes and clutch plates. The load is heated by electric infrared radiant energy to 650° - 750°F. (340° - 400°C.), in an oxygen deficient atmosphere, where the combustible hydrocarbons decompose. Parts leave the oven completely dry and ready for shot blasting.

GUARD AGAINST HOT SPOT DISTORTION

The Ace oven is your guarantee against hot spot distortion, because our main chamber has "U" shaped electric heating elements on the right wall and the left wall. These elements extend from the front to the rear wall of the chamber, emitting uniformly controlled infrared radiant heat, which is evenly distributed throughout the chamber. This method totally eliminates the concentration of intense heat or flame entering the chamber, which could overheat, warp or melt an aluminum part. Melting point of aluminum is 1,200°F.



Illustrates Model 212-EG

AFTERBURNER GAS HEATING SYSTEM

The afterburner always ignites first. After its flame is proven, the electric main chamber heating elements are energized. The burner is equipped with a blower and spark ignition system. An electronic safety control system shuts it down in the event of flame failure. Afterburner remains on high fire for the complete time cycle.

MAIN CHAMBER ELECTRIC HEATING SYSTEM

The electric heating elements are not energized until the afterburner flame is proven by the electronic interlocking controls.

MAIN CHAMBER CONTROLS

Main chamber temperature is controlled by a thermocouple located in the main chamber. This thermocouple operates an indicating temperature controller. The electric heating elements are turned on and off to maintain the setpoint temperature. A backup contactor turns off the heating elements in the event of an over-temperature condition.

EXCESS TEMPERATURE CONTROL

An excess temperature controller with a "Manual Reset" button is installed for the main chamber. This controller is a direct acting thermal expansion switch, which automatically turns off the main chamber heaters if the ambient temperature rises above the setpoint. It is installed as a separate backup to protect the heating elements, oven and load from excess temperature, caused by a control or relay failure.

CONVENIENT AUTOMATIC CONTROLS

This oven has all the controls you will need! Temperature is accurately controlled at setpoint throughout the cycle. Time and temperature are automatically controlled without operator attendance, and are automatically shut off at end of the time cycle.

SPECIFICATIONS

MODEL-EG SERIES ELECTRIC/GAS OVENS

MODEL -EG	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NORMAL USAGE GAS CFH	ELEC. KW/HR	MAX. AMP. VOLTAGE 240	480	AMP. SERV. VOLTAGE 240	480	SHIP WEIGHT
212	24	36	33	24	48	48	60	2,000	14	120	15	50	25	100	100	1,600
218	24	54	33	24	48	66	60	2,000	15	120	20	65	33	100	100	1,800
220	24	24	44	36	65	52	69	2,000	16	120	15	50	25	100	100	1,600
230	36	36	44	36	65	68	70	3,200	30	350	20	65	33	100	100	2,000
363	36	84	44	36	65	116	70	4,500	35	350	28	80	40	100	100	3,000
240	41	44	56	48	67	76	82	3,200	40	350	23	75	38	100	100	2,300
3144	48	108	56	48	67	140	82	4,800	40	350	35	90	45	125	100	3,500
245	60	60	71	60	88	96	100	8,000	50	350	30	110	55	125	100	3,000
260	72	72	83	72	100	112	116	8,000	60	350	41	165	83	200	100	4,000
270	84	84	96	84	137	126	131	8,000	70	350	53	240	120	250	175	6,000
280	96	96	110	96	149	138	146	8,000	80	350	75	330	165	350	200	7,000

SHORT TIME CYCLES

No combustion air or blower is required for the main chamber; thus, combustibles are rapidly oxidized. The afterburner has adequate capacity to handle the maximum flow rate from the main chamber. Our bottom line is less fuel cost and fast turn around per load, resulting in more loads per day.

HEAT CLEAN WITHOUT AIR POLLUTION

Our afterburner and exhaust stack are completely lined with a high temperature insulation for efficient service and long life. The exhaust stack assures adequate natural draft. The afterburner chamber is designed to provide excess air for complete combustion of the effluent. Discharges to atmosphere are harmless by-products of combustion, conforming to tough EPA air emission standards.

ELIMINATE CHEMICAL PROCESSING

This controlled process eliminates the problems associated with chemical cleaning, such as: High cost of chemicals and solvents, expensive sludge disposal, health risks related to toxic materials, and manual labor.

CONSTRUCTION

This oven is fabricated from 11 gauge steel and coated with a high temperature, rust resistant paint. The most modern state-of-the-art insulation, rated for 2,300°F., lines the oven and self-supporting exhaust stack, to offer you maximum energy efficiency. The thick door is securely sealed by husky cam type latching mechanisms located on the top and bottom of the door. For reasons of safety, the latch is designed to accept a lock, as the door should not be opened during the heating cycle. Natural draft is created by the supplied exhaust stack; therefore, an exhaust blower is not required.

ADVANTAGES

1. Ideal for rapidly, economically and safely heat cleaning aluminum and steel parts without damage, because there is NO HOT SPOT in the main chamber.
2. Controlled uniform temperature protects all metals, especially those critical aluminum parts, from warping or annealing damage.
3. The unit gives you full depth infrared radiant heat cleaning, so oil ports and cooling passages in heads and blocks can be blown clean. Rust in the cooling system turns to dust.
4. Average time cycles of ½ to 1½ hours at normal temperatures of 650° to 750°F.
5. Low operating cost per cycle, because it is energy efficient.
6. A small, compact unit designed to occupy limited floor space.
7. A hinged pressure relief hatch with enclosure installed on top of oven for safety protection of your personnel and equipment.
8. Easy to load the single platform cart, which rolls completely out of the oven. Supplied with inside tracks and portable outside tracks.
9. Units are assembled, wired, piped and factory tested.
10. Supplied with 10 Ft. of insulated exhaust stack.

Since 1919

ace

ARMATURE COIL EQUIPMENT, INC.

4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2696
(216) 267-6366

Printed in U.S.A. 10/1/86

APPENDIX H

CITY OF WATERLOO DISCHARGE PERMIT AND MONITORING REPORTS

CITY OF WATERLOO, IOWA

WATER POLLUTION/FLOOD CONTROL

3505 Easton Ave. 50702 • (319) 291-4553 • FAX (319)291-4523

GARY W. SIMMONS
Superintendent

INDUSTRIAL SEWER USER PERMIT
RENEWAL NOTIFICATION

Mr. Barney Skiles
Plant Engr.
Waterloo Industries
300 Ansborough Avenue
P.O. Box 2095
Waterloo, IA 50704-2095

Dear Barney:

RE: RENEWAL OF INDUSTRIAL SEWER USER PERMIT NO. 000002 TO WATERLOO INDUSTRIES BY THE WATER POLLUTION/FLOOD CONTROL DEPARTMENT, CITY OF WATERLOO, IOWA.

Your application for renewal of your Sewer User Permit has been reviewed and processed in accordance with Sec. 34-47(e), Waterloo Code. Attach this notification to your Permit.

Please note the enclosed modified pages and replace those numerically corresponding pages in your Permit No. 000002.

This renewal of Permit shall become effective on August 1, 1994 and, shall expire at midnight on July 31, 1996.

If the Permittee wishes to continue to discharge after the expiration of this renewal period, an application must be filed for renewal in accordance with the requirements of Sec. 34-47(e), Waterloo Code, a minimum of 90 days prior to the expiration.

By: Gary W. Simmons — Superintendent

John D. Shea — Wastewater Facilities Supervisor

Issued this 29th day of July, 1994.

Attachment

(S:IndPerR.ltr)

INDUSTRIAL
SEWER USERS PERMIT

NO. 000002

WATERLOO INDUSTRIES, INC.

UNIT 21

Part I - Effluent Limitations

A. For the duration of this permit period, the permittee is authorized to discharge process wastewater to the (P.O.T.W.) from the outfalls listed below.

OUTFALL		DESCRIPTION
(001)	-	Pretreatment effluent discharge subject to 40 CFR 433.15, categorial metal finishing regulations, prior to mixing with any other flows. See Part II, B, -- "Monitoring Stations" -- schematic.
(002)	-	Total wastewater effluent discharge from facility to POTW sanitary sewer system. See Part II, B, -- "Monitoring Stations" -- schematic.

B. For the duration of this permit period, the following discharges, listed by outfall, shall not exceed the following effluent limitations.

OUTFALL (001) - EFFLUENT LIMITATIONS

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Zinc (T)	2.61	1.48
Silver (T)	0.43	____
Cyanide (T)	1.20	____
TTO (1)	2.13	____

OUTFALL (002) - EFFLUENT LIMITATIONS

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Flow	0.075 (MGD)	0.050 (MGD)
BOD_5 (2)	300	300
TSS (2)	350	350
O & G (3)	100	100
pH	(5.0 Min. - 9.0 Max.)	____
$CBOD_5$ (4)	____	____
NH_3 - N (4)	____	____

*Notes (1) TTO is (Total Toxic Organics). It is the sum of all detectable concentrations over 0.01 mg/L for the compounds listed in 40CFR, 413.02.
(2) These parameters are assigned limitations based upon surcharge thresholds and exceedances thereof do not constitute a violation of this permit.
(3) Limitation is for oil & grease of mineral oil origin.
(4) These parameters are to be "tracked" only, No limits assigned at this time.

Part II - Monitoring and Reporting Requirements

A. Monitoring Requirements

For the duration of this Permit period, the Permittee shall monitor its discharges of wastewaters subject to regulation under Part I of this Permit to ascertain compliance status with the applicable limitations according to the following guidelines:

OUTFALL (001)* - PRETREATMENT EFFLUENT

Parameter	Sample Frequency	Sample Type	Sample Location
Flow	Continuous	Metered	Monitoring Station #001
Cadmium	2/wk	Grab	"
Chromium	"	"	"
Copper	"	"	"
Lead	"	"	"
Nickel	"	"	"
Zinc	"	"	"
Silver	1/6 Mos.	"	"
Cyanide	"	"	"
TTO	"	"	"

OUTFALL (002) - FINAL FACILITY EFFLUENT

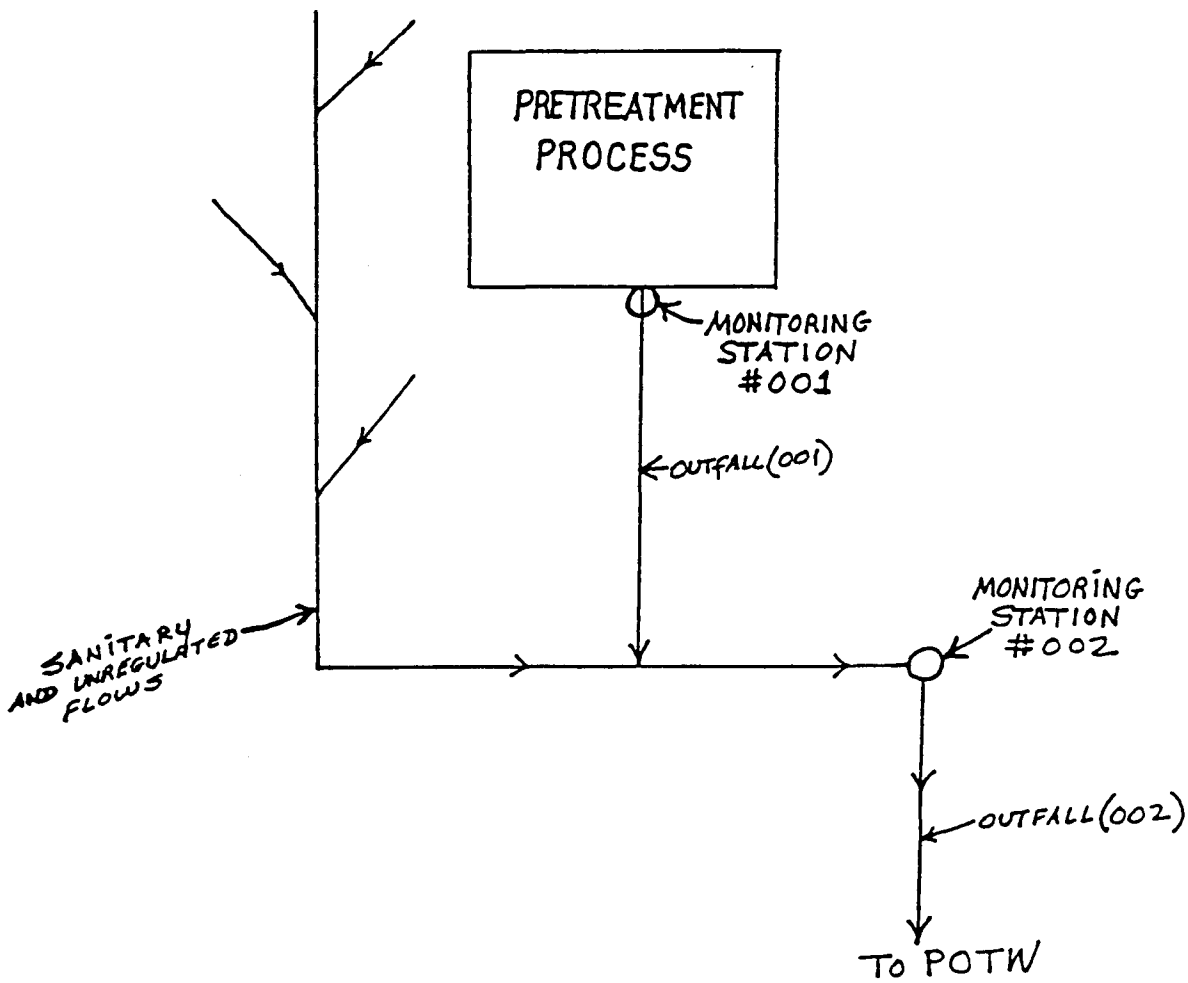
Parameter	Sample Frequency	Sample Type	Sample Location
Flow	Continuous	Metered	Monitoring Sta. #002
BOD_5	1/Wk.	24-Hrs. Flow Pro Comp.	"
TSS	1/Wk.	"	"
O & G	1/Wk.	Grab	"
pH	1/Wk.	"	"
$CBOD_5$	1/Wk.	24-Hr. Flow Pro Comp.	"
NH_3-N	1/Wk.	"	"

* See Part III - Special Conditions & Attachments A & B.

PART II - Monitoring and Reporting Requirements (Contd.)

Laboratory analyses of samples collected shall be performed in accordance with "Standard Methods for the Examination of Water and Wastewater," latest edition, or, as approved by the Superintendent of WP/FC.

B. Schematic - "Monitoring Stations"



PART II - Monitoring and Reporting Requirements (Cont'd)

C. Reporting Requirements

All monitoring results obtained shall be reported to WP/FC by the 10th day of the following month.

In accordance with 40 CFR 403.12 (e), the Permittee shall submit a biannual periodic compliance report due in January and July for the respective preceding 6 month period summarizing the monitoring results.

This report shall state whether the effluent limits have been met on a consistent basis, and, if not, what additional process modification and/or pretreatment is necessary to bring the Permittee into compliance. In addition, the biannual report will include proof of compliance with Total Toxic Organics (TTO) requirements either by self-monitoring, or, a letter of certification that specifies the toxic organic compounds used, the methods of disposal thereof (other than to the POTW) and procedures for assuring that these toxic organics to not routinely spill or leak into wastewater discharged.

If the Permittee monitors any pollutant regulated by this permit, more frequently than required, the results of such monitoring shall be submitted to WP/FC.

Monitoring reports shall be signed and sworn to by a principal executive officer, or, his designee.

The Permittee shall notify WP/FC of any changes to these wastewater discharges, such as, addition, or deletion of waste streams contributory to any outfalls, or, significant changes in the relative flows of the component waste streams.

All reports required by this permit shall be submitted to:

Gary W. Simmons
Supt. WP/FC
3505 Easton Ave.
Waterloo, IA 50702

PART III - Special Conditions

The continuation of permission to "grab" sample your pretreatment cell effluent shall cease by 07-31-95. After that date forward you will be required to demonstrate the capability to flow proportion composite sample from your pretreatment cell effluent. According to Sec. 34-54 (4), Waterloo Code, failure to comply the aforementioned compliance schedule could result in suspension or revocation of your permit to discharge.

Until such time as flow proportional composite sampling of your (001) pretreatment effluent has been provided you are permitted to continue "grab" sampling as long as that methodology reasonably represents the pollutant constituency of the wastestream.

PART IV - General Conditions

In addition to compliance with Parts I, II, and III, this permit is issued conditional upon compliance with the following general conditions. Violations of any of the permit conditions below, either alone or in conjunction with a violation of Parts I, II, or III, shall be adequate basis for the revocation of this permit.

1. Right of Entry

The city shall inspect the facilities of any user to ascertain whether the purpose of this article is being met and all requirements are being complied with. Persons or occupants of premises where waste water is created or discharged shall allow the city or its representative ready access at all times to all parts of the premises for the purposes of inspection, random sampling, records examination and copying, or in the performance of any of their duties. The city shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the city will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. The city has the right to randomly sample industry without notification of the sample taking.

PART IV - GENERAL CONDITIONS (Contd.)

2. Records Retention

a) The permittee shall retain and preserve for no less than three (3) years, any records, books, documents, memorandums, reports, correspondence, and any all summaries thereof, relating to monitory sampling and chemical analysis made by or in behalf of the permittee in connection with its discharge.

b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the permittee until all enforcement activities have concluded and all periods of limitations with respect to any and all appeals have expired.

3. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

4. Confidential Information

Except for data determined to be confidential under Sec. 34-52, all reports required by the permit shall be available for public inspection at the Superintendent of Waterloo Water Pollution Flood Control Office.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permittee shall record the following information:

a. The exact place, date, and time of sampling;
b. The dates the analyses were performed;
c. The person (s) who performed the sample collections and sample analyses.
d. The analytical techniques, or methods used; and
e. The results of all required analyses.

6. Knowingly making any false statement on any report or other document required by the permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of Iowa as well as being subjected to civil penalties and relief.

PART IV - GENERAL CONDITIONS (Contd.)

7. Modification, or Revision of Permit

a) The terms and conditions of this permit may be subject to modification by WP/FC at any time as limitations or requirements as identified in the Waterloo City Code Article III are modified, or other just cause exists.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of special order.

c) Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance, if necessary.

8. Dilution

No permittee shall increase the use of potable or process water to attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

9. Accidental Discharges

a) Each user shall provide protection from accidental discharge of prohibited materials or other substances regulated by this article. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner's or user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the city for review, and shall be approved by the city before construction of the facility.

b) Within five (5) days following an accidental discharge, the user shall submit to the superintendent a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW, fish kills or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties or other liability which may be imposed by this article or other applicable law.

c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall ensure that all employees who may cause or suffer such a dangerous discharge to occur are advised or the emergency notification procedure, and that immediate notification is required.

PART IV - GENERAL CONDITIONS (Contd.)

10. Notice of Intent

Any permittee planning to alter or change any activity at the permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of industrial wastewater discharge into the Waterloo sewage system must file a written nature of intent. This does not include changes in volume or content resulting from shifts in existing production levels at the user's facility. A significant increase or decrease shall be defined as a 10 percent increase or decrease in the volume of industrial wastewater currently being discharged. An alteration shall be defined as any change in chemicals utilized within a process which will significantly alter the characteristics of the industrial discharge.

11. Proper Disposal of Pretreatment Sludges

The disposal of sludges generated within wastewater pretreatment systems shall be done in accordance with Section 405 of the Clear Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

12. Operating Upsets

Any permittee that experiences an upset in operations that places the permittee in a temporary state of noncompliance with the provisions of either this permit or Waterloo City Code Article III, shall inform WP/FC thereof within 24 hours of first awareness of the commencement of the upsets in accordance with Section 34-39, Waterloo City Code.

13. Limitation or Permit Transfer

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without the prior written approval of WP/FC. Sale of a user shall obligate the purchaser to seek prior written approval of WP/FC for continued discharge to the City's sewage system.

14. Signatory Requirements

All reports required by this permit shall be signed by a principal executive officer of the permittee, or his designee.

PART IV - GENERAL CONDITIONS (Contd.)

15. Reporting Address

All reports required by this permit shall be submitted to the City at the following address:

Supt. Water Pollution/Flood Control
3505 Easton Avenue
Waterloo, IA 50702

16. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property to the continued use or issuance of this permit or any amendments or reassurance thereof, or create any exclusive privileges of whatsoever kind unless specifically listed in this permit.

NATIONAL ENVIRONMENTAL TESTING, INC.

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Barney Skiles
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

05/02/1995

Date Received: 04/26/1995
Job Number: 95.03734

	Result	Units	Date Taken	Date Analyzed	Analyst	Analysis Method
294778 #001-Composite						
ICP Metals - E 200.7			04/26/1995			
Cadmium, ICP	<0.020	mg/L	04/26/1995	05/01/1995	llw	E-200.7
Chromium, ICP	<0.020	mg/L	04/26/1995	05/01/1995	llw	E-200.7
Copper, ICP	0.028	mg/L	04/26/1995	05/01/1995	llw	E-200.7
Lead, ICP	<0.10	mg/L	04/26/1995	05/01/1995	llw	E-200.7
Nickel, ICP	<0.050	mg/L	04/26/1995	05/01/1995	llw	E-200.7
Zinc, ICP	0.153	mg/L	04/26/1995	05/01/1995	llw	E-200.7
294779 #002-Composite						
BOD - Five Day	120	mg/L	04/26/1995	05/01/1995	lmc	E-405.1
CBOD - Five Day	100	mg/L	04/26/1995	05/01/1995	lmc	SM-5210 B
Nitrogen, Ammonia (Dist)	0.82	mg/L	04/26/1995	04/27/1995	cjh	E-350.3
pH	7.6	units	04/26/1995	04/26/1995	llw	E-150.1
Solids, Suspended	150	mg/L	04/26/1995	04/28/1995	bcg	E-160.2

Units: mg/L = ppm
ug/g = mg/kg
mg/kg = ppm

Cheryl L. Wilson
Operations Manager

INDUSTRIAL
SEWER USERS PERMIT

NO. 000002

WATERLOO INDUSTRIES, INC.

UNIT 21

CITY OF WATERLOO, IOWA

WATER POLLUTION/FLOOD CONTROL

3505 Easton Ave. 50702 • (319) 291-4553 • FAX (319)291-4523

GARY W. SIMMONS
Superintendent

Certified Mail
Return Receipt Requested

INDUSTRIAL SEWER USER PERMIT
TRANSMITTAL LETTER

Mr. Barney Skiles
Plant Engr.
Waterloo Industries
300 Ansborough Ave.
P.O. Box 2095
Waterloo, Ia 50704-2095

Dear Barney:

RE: ISSUANCE OF INDUSTRIAL SEWER USER PERMIT TO Waterloo Industries BY THE WATER POLLUTION/ FLOOD CONTROL DEPT., DIVISION OF PUBLIC WORKS, CITY OF WATERLOO, IA, PERMIT NO. 000002

Your application for an industrial sewer user pretreatment permit has been reviewed and processed in accordance with Sec. 34-47 Waterloo Code.

The enclosed Permit No. 000002 covers the wastewater discharged from the facility located at 300 Ansborough Ave. Waterloo, Iowa into the City of Waterloo sewer system. All discharges from this facility and actions and reports relating thereto shall be in accordance with the terms and conditions of this permit.

If you wish to appeal or challenge any conditions imposed in this permit, a written request shall be submitted to the Superintendent of Water Pollution/Flood Control Dept. for approval. No modifications are permitted without written authorization by the Superintendent of the Water Pollution/Flood Control Dept., and a designated reasonable time allowed for suitable implementation thereof, according to Sec. 34-47(e) Waterloo Code.

By: Gary W. Simmons
Gary W. Simmons, Supt., WP/FC

Issued this 22nd day of July, 1992.

Attachment (IndPerwi.ltr)

CITY OF WATERLOO, IOWA
INDUSTRIAL SEWER USER PERMIT

In accordance with the provisions of Section 34 - Utilities, Article III, Sewers, Waterloo Code....

Waterloo Industries
300 Ansborough Ave.
P.O. Box 2095
Waterloo, Ia 50704-2095

is hereby authorized to discharge wastewater from the above identified facility through the outfalls identified herein to the Publicly Owned Treatment Works of the City of Waterloo (POTW) in accordance with the conditions set forth in this permit. Compliance with this permit does not relieve the permittee of standards or requirements under local, State, and Federal laws, including any such regulations, standards, requirements, or laws that may become effective during the term of this permit.

Noncompliance with any term or condition of this permit shall constitute a violation of the City of Waterloo sewer use ordinance.

This permit shall be come effective on (08-01-92) and shall expire at midnight on (07-31-94).

If the permittee wishes to continue to discharge after the expiration date of this permit, an application must be filed for a renewal in accordance with the requirements of Sect. 34-47(e), Waterloo Code, a minimum of 90 days prior to the expiration date.

By: Gary W Simmons and John J Shea
Superintendent Wastewater Facilities Supr.

Issued this 22nd day of July, 1992.

Part I - Effluent Limitations

A. For the duration of this permit period, the permittee is authorized to discharge process wastewater to the (P.O.T.W.) from the outfalls listed below.

OUTFALL		DESCRIPTION
(001)	-	Pretreatment effluent discharge subject to 40 CFR 433.15, categorial metal finishing regulations, prior to mixing with any other flows. See Part II, B, -- "Monitoring Stations" -- schematic.
(002)	-	Total wastewater effluent discharge from facility to POTW sanitary sewer system. See Part II, B, -- "Monitoring Stations" -- schematic.

B. For the duration of this permit period, the following discharges, listed by outfall, shall not exceed the following effluent limitations.

OUTFALL (001) - EFFLUENT LIMITATIONS

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Zinc (T)	2.61	1.48
Silver (T)	0.43	____
Cyanide (T)	1.20	____
TTO (1)	2.13	____

OUTFALL (002) - EFFLUENT LIMITATIONS

Parameter	Daily Maximum (mg/L)	Monthly Average (mg/L)
Flow	0.075 (MGD)	0.050 (MGD)
BOD_5 (2)	300	300
TSS (2)	350	350
O & G (3)	100	100
pH	(6.0 Min. - 9.0 Max.)	____
$CBOD_5$ (4)	____	____
NH_3 - N (4)	____	____

*Notes (1) TTO is (Total Toxic Organics). It is the sum of all detectable concentrations over 0.01 mg/L for the compounds listed in 40CFR, 413.02.
(2) These parameters are assigned limitations based upon surcharge thresholds and exceedances thereof do not constitute a violation of this permit.
(3) Limitation is for oil & grease of mineral oil origin.
(4) These parameters are to be "tracked" only, No limits assigned at this time.

Part II - Monitoring and Reporting Requirements

A. Monitoring Requirements

For the duration of this Permit period, the Permittee shall monitor its discharges of wastewaters subject to regulation under Part I of this Permit to ascertain compliance status with the applicable limitations according to the following guidelines:

OUTFALL (001)* - PRETREATMENT EFFLUENT

Parameter	Sample Frequency	Sample Type	Sample Location
Flow	Continuous	Metered	Monitoring Station #001
Cadmium	2/wk	Grab	"
Chromium	"	"	"
Copper	"	"	"
Lead	"	"	"
Nickel	"	"	"
Zinc	"	"	"
Silver	1/6 Mos.	"	"
Cyanide	"	"	"
TTO	"	"	"

OUTFALL (002) - FINAL FACILITY EFFLUENT

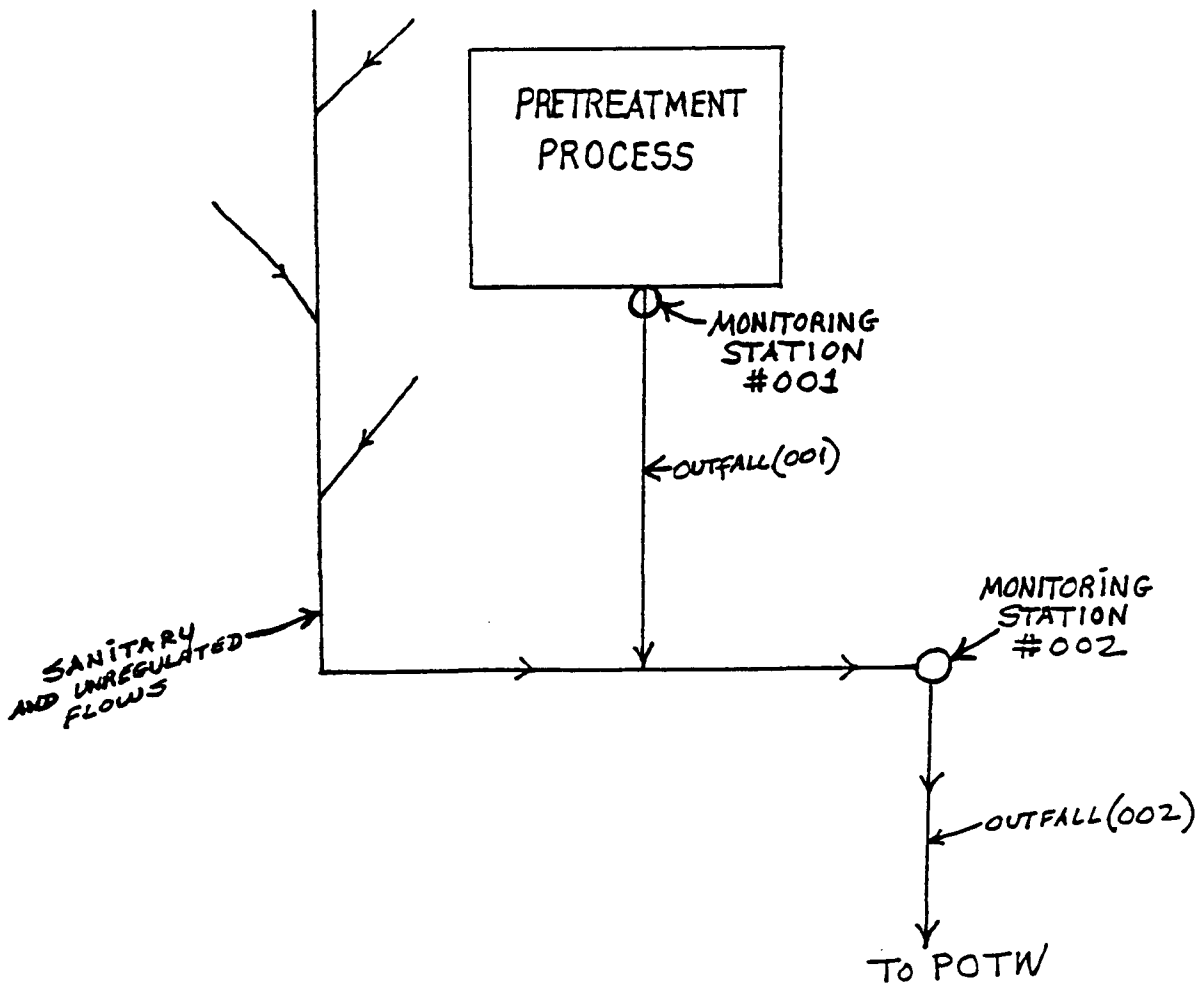
Parameter	Sample Frequency	Sample Type	Sample Location
Flow	Continuous	Metered	Monitoring Sta. #002
BOD_5	1/Wk.	24-Hrs. Flow Pro Comp.	"
TSS	1/Wk.	"	"
O & G	1/Wk.	Grab	"
pH	1/Wk.	"	"
$CBOD_5$	1/Wk.	24-Hr. Flow Pro Comp.	"
NH_3-N	1/Wk.	"	"

* See Part III - Special Conditions & Attachments A & B.

PART II - Monitoring and Reporting Requirements (Contd.)

Laboratory analyses of samples collected shall be performed in accordance with "Standard Methods for the Examination of Water and Wastewater," latest edition, or, as approved by the Superintendent of WP/FC.

B. Schematic - "Monitoring Stations"



PART II - Monitoring and Reporting Requirements (Cont'd)

C. Reporting Requirements

All monitoring results obtained shall be reported to WP/FC by the 10th day of the following month.

In accordance with 40 CFR 403.12 (e), the Permittee shall submit a biannual periodic compliance report due in January and July for the respective preceding 6 month period summarizing the monitoring results.

This report shall state whether the effluent limits have been met on a consistent basis, and, if not, what additional process modification and/or pretreatment is necessary to bring the Permittee into compliance. In addition, the biannual report will include proof of compliance with Total Toxic Organics (TTO) requirements either by self-monitoring, or, a letter of certification that specifies the toxic organic compounds used, the methods of disposal thereof (other than to the POTW) and procedures for assuring that these toxic organics to not routinely spill or leak into wastewater discharged.

If the Permittee monitors any pollutant regulated by this permit, more frequently than required, the results of such monitoring shall be submitted to WP/FC.

Monitoring reports shall be signed and sworn to by a principal executive officer, or, his designee.

The Permittee shall notify WP/FC of any changes to these wastewater discharges, such as, addition, or deletion of waste streams contributory to any outfalls, or, significant changes in the relative flows of the component waste streams.

All reports required by this permit shall be submitted to:

Gary W. Simmons
Supt. WP/FC
3505 Easton Ave.
Waterloo, IA 50702

PART III - Special Conditions

A new pretreatment cell with effluent flow measruement device and monitioring station is projected to be completed by October 1992.

Permitee is permitted to grab sample pretreatment effluent as pumped from cell. If grab sampling indicates poor representation for metals monitoring, compositing by time, pump cycle, or, by flow proportioning shall be so advised. The concentration based pollutant limits shall be observed and the 002 flow limits shall apply.

PART IV - General Conditions

In addition to compliance with Parts I, II, and III, this permit is issued conditional upon compliance with the following general conditions. Violations of any of the permit conditions below, either alone or in conjunction with a violation of Parts I, II, or III, shall be adequate basis for the revocation of this permit.

1. Right of Entry

The city shall inspect the facilities of any user to ascertain whether the purpose of this article is being met and all requirements are being complied with. Persons or occupants of premises where waste water is created or discharged shall allow the city or its representative ready access at all times to all parts of the premises for the purposes of inspection, random sampling, records examination and copying, or in the performance of any of their duties. The city shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the city will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. The city has the right to randomly sample industry without notification of the sample taking.

PART IV - GENERAL CONDITIONS (Contd.)

2. Records Retention

a) The permittee shall retain and preserve for no less than three (3) years, any records, books, documents, memorandums, reports, correspondence, and any all summaries thereof, relating to monitory sampling and chemical analysis made by or in behalf of the permittee in connection with its discharge.

b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the permittee until all enforcement activities have concluded and all periods of limitations with respect to any and all appeals have expired.

3. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

4. Confidential Information

Except for data determined to be confidential under Sec. 34-52, all reports required by the permit shall be available for public inspection at the Superintendent of Waterloo Water Pollution Flood Control Office.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permittee shall record the following information:

a. The exact place, date, and time of sampling;
b. The dates the analyses were performed;
c. The person (s) who performed the sample collections and sample analyses.
d. The analytical techniques, or methods used; and
e. The results of all required analyses.

6. Knowingly making any false statement on any report or other document required by the permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of Iowa as well as being subjected to civil penalties and relief.

PART IV - GENERAL CONDITIONS (Contd.)

7. Modification, or Revision of Permit

a) The terms and conditions of this permit may be subject to modification by WP/FC at any time as limitations or requirements as identified in the Waterloo City Code Article III are modified, or other just cause exists.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of special order.

c) Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance, if necessary.

8. Dilution

No permittee shall increase the use of potable or process water to attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

9. Accidental Discharges

a) Each user shall provide protection from accidental discharge of prohibited materials or other substances regulated by this article. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner's or user's own cost and expense. Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the city for review, and shall be approved by the city before construction of the facility.

b) Within five (5) days following an accidental discharge, the user shall submit to the superintendent a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW, fish kills or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties or other liability which may be imposed by this article or other applicable law.

c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall ensure that all employees who may cause or suffer such a dangerous discharge to occur are advised or the emergency notification procedure, and that immediate notification is required.

PART IV - GENERAL CONDITIONS (Contd.)

10. Notice of Intent

Any permittee planning to alter or change any activity at the permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of industrial wastewater discharge into the Waterloo sewage system must file a written nature of intent. This does not include changes in volume or content resulting from shifts in existing production levels at the user's facility. A significant increase or decrease shall be defined as a 10 percent increase or decrease in the volume of industrial wastewater currently being discharged. An alteration shall be defined as any change in chemicals utilized within a process which will significantly alter the characteristics of the industrial discharge.

11. Proper Disposal of Pretreatment Sludges

The disposal of sludges generated within wastewater pretreatment systems shall be done in accordance with Section 405 of the Clear Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

12. Operating Upsets

Any permittee that experiences an upset in operations that places the permittee in a temporary state of noncompliance with the provisions of either this permit or Waterloo City Code Article III, shall inform WP/FC thereof within 24 hours of first awareness of the commencement of the upsets in accordance with Section 34-39, Waterloo City Code.

13. Limitation or Permit Transfer

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without the prior written approval of WP/FC. Sale of a user shall obligate the purchaser to seek prior written approval of WP/FC for continued discharge to the City's sewage system.

14. Signatory Requirements

All reports required by this permit shall be signed by a principal executive officer of the permittee, or his designee.

PART IV - GENERAL CONDITIONS (Contd.)

15. Reporting Address

All reports required by this permit shall be submitted to the City at the following address:

Supt. Water Pollution/Flood Control
3505 Easton Avenue
Waterloo, IA 50702

16. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property to the continued use or issuance of this permit or any amendments or reassurance thereof, or create any exclusive privileges of whatsoever kind unless specifically listed in this permit.

ıg and Reporting Requirements (Cont'd)

All monitoring results obtained shall be reported to WP/FC by the 10th day of the following month.

In accordance with 40 CFR 403.12 (e), the Permittee shall submit a biannual periodic compliance report due in January and July for the respective preceding 6 month period summarizing the monitoring results.

This report shall state whether the effluent limits have been met on a consistent basis, and, if not, what additional process modification and/or pretreatment is necessary to bring the Permittee into compliance. In addition, the biannual report will include proof of compliance with Total Toxic Organics (TTO) requirements either by self-monitoring, or, a letter of certification that specifies the toxic organic compounds used, the methods of disposal thereof (other than to the POTW) and procedures for assuring that these toxic organics to not routinely spill or leak into wastewater discharged.

If the Permittee monitors any pollutant regulated by this permit, more frequently than required, the results of such monitoring shall be submitted to WP/FC.

Monitoring reports shall be signed and sworn to by a principal executive officer, or, his designee.

The Permittee shall notify WP/FC of any changes to these wastewater discharges, such as, addition, or deletion of waste streams contributory to any outfalls, or, significant changes in the relative flows of the component waste streams.

All reports required by this permit shall be submitted to:

Gary W. Simmons
Supt. WP/FC
3505 Easton Ave.
Waterloo, IA 50702

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

CERTIFIED MAIL

January 9, 1992

Waterloo Industries
300 Ansborough Avenue
P.O. Box 2095
Waterloo, IA 50704

ATTENTION: Barney Skiles

SUBJECT: Permit Amendment
NPDES Permit Number 07-90-1-06

Gentlemen:

We are herewith forwarding a final amendment to the permit referenced above which was issued August 19, 1991.

Your NPDES permit is being amended due to change in the wastewater process. Since overflow from washer rinse tanks have been diverted to treatment tanks and no process waste will mix with the non-contact cooling water, this NPDES permit amendment will delete the effluent limitations and monitoring requirements for all parameters covered under the federal guidelines.

We suggest that copies of the final amendment be distributed to all persons who had received a copy of the permit and that the original of the amendment be attached to the original permit in your files.

If you have any questions or comments regarding this amendment, please contact this office.

Sincerely,

WAYNE FARRAND, SUPERVISOR
WASTEWATER PERMIT SECTION

bkp/WWPM009P01.01

Enclosure

UNIT 21

Post for Thirty Days Following Publication of this Notice

Public Notice Number:

IOWA DEPARTMENT OF NATURAL RESOURCES
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Notice/Fact Sheet

The Iowa Department of Natural Resources is proposing to amend an NPDES (National Pollutant Discharge Elimination System) permit #07-90-1-06 for the discharges described below?

IDENTIFICATION OF DISCHARGER

Name of Owner: Waterloo Industries
Address of Owner: 300 Ansborough Avenue
Waterloo, IA 50704

Discharge Location: Sec. 21, T89N, R13W, Black Hawk County

Discharge to: Cedar River which is classified Class B (ww).

Class "B(WW)" waters are significant resource warm waters in which temperature, flow and other habitat characteristics are suitable for the maintenance of a wide variety of reproducing populations of warm-water fish and associated aquatic communities, including sensitive species.

Description of Amendment: The proposed permit amendment will delete entirely the effluent limitations and monitoring requirements for total suspended solids, oil and grease, cadmium, chromium, copper, cyanide, lead, nickel, silver, zinc and total toxic organics since overflow from washer rinse tanks have been diverted to treatment tanks and no process waste will mix with the non-contact cooling water.

Basis for Limitations in Permit Amendment: Best Engineering Judgement

Anyone wishing to comment on or object to the proposed issuance of this permit amendment must do so in writing, within thirty days of the date of publication of this notice, to the Iowa Department of Natural Resources, 900 East Grand Avenue, Henry A. Wallace Building, Des Moines, Iowa 50319. All comments received will be considered in the final determination. If the response indicates significant interest, a public hearing may be held after due notice. If no objections are received within the thirty day period, the Department will issue a final determination. Anyone desiring a public hearing should cite their specific reasons and a proposed list of topics to cover. Copies of this public notice, the proposed permit amendment and other information are on file and available for public inspections from 8:00 a.m. to 4:30 p.m. Monday through Friday at the Department of Natural Resources. Copies of this information may be requested by calling 515/281-4216.

(bkp/WWPQ016P03.02)

Facility Name: WATERLOO INDUSTRIES

Permit Number: 0790106

Outfall Number	Description
001	DISCHARGE CONSISTS OF NON-CONTACT COOLING WATER FROM COMPRESSORS AND SPOT WELDERS.

Facility Name: WATERLOO INDUSTRIES

Permit Number: 0790106

Effluent Limitations

OUTFALL NO.: 001 DISCHARGE CONSISTS OF NON-CONTACT COOLING WATER FROM COMPRESSORS AND SPOT WELDERS.

You are prohibited from discharging pollutants except in compliance with the following effluent limitations:

			EFFLUENT LIMITATIONS							
			Concentration				Mass			
Wastewater Parameter	Season	Type	7 Day Average	30 Day Average	Daily Maximum	Units	7 Day Average	30 Day Average	Daily Maximum	Units
FLOW	YEARLY	FINAL		.1000	.1100	MGD				
PH (MINIMUM - MAXIMUM)	YEARLY	FINAL	6.0000		9.0000	STD UNITS				
TEMPERATURE	YEARLY	FINAL			85.0000	FARENHEIT				

NOTE: If seasonal limits apply, summer is from April 1 through October 31, and winter is from November 1 through March 31.

Monitoring and Reporting Requirements

(a) Samples and measurements taken shall be representative of the volume and nature of the monitored wastewater.

(b) Analytical and sampling methods as specified in 40 CFR Part 136 or Table VII of Chapter 63 of the rules, or other methods approved in writing by the department, shall be utilized.

(c) Chapter 63 of the rules provides you with further explanation of your monitoring requirements.

(d) You are required to report all data including calculated results needed to determine compliance with the limitations contained in this permit. This includes daily maximums and minimums, 30-day averages and 7-day averages for all parameters that have concentration (mg/l) and mass (lbs/day) limits. Also, flow data shall be reported in million gallons per day (MGD).

(e) Results of all monitoring shall be recorded on forms provided by the department, and submitted to the department by the fifteenth day following the close of the reporting period. Your reporting period is on a quarterly basis, ending on the last day of each quarter.

Outfall Number	Wastewater Parameter	Sample Frequency	Sample Type	Monitoring Location
001	FLOW	1/MONTH	24 HR TOTAL	FINAL EFFLUENT
001	PH (MINIMUM - MAXIMUM)	1/MONTH	GRAB	FINAL EFFLUENT
001	TEMPERATURE	1/MONTH	GRAB	FINAL EFFLUENT

PERMIT PROCEDURES

Public Notice Procedures and Certification

Enclosed are three copies of the public notice prepared by the Department stating our proposal to issue an NPDES permit for your facility. In addition to the distribution of this public notice already made by this Department, you have to do the following as required by the Iowa Administrative Code.

1. Post the public notice in the post office and/or public places of the city.
2. Post the public notice near the entrance of the facility for at least 30 days.
3. Publish the public notice in a local newspaper for one day at your own expense.

You must publish and post the notice no later than 15 days from the specified notice date.

The public notice that you publish must contain all of the information shown on the attached page entitled "Iowa Department of Natural Resources National Pollutant Discharge Elimination System Public Notice."

Please complete the certificate below and return it with a clipping of the publication to this Department. The clipping should identify the date the notice appeared in print and the name of the publication.

CERTIFICATE	
This is to certify that the public notification has been circulated in accordance with the above instructions. A copy of the published notice is attached.	
APPLICANT'S SIGNATURE	TYPED OR PRINTED NAME
TITLE	DATE PUBLISHED: DATE POSTED:

WATERLOO INDUSTRIES INC.®

December 2, 1991

Gary Simmons, Supt.
Water Pollution/Flood Control
3505 Easton Ave.
Waterloo, IA 50702

Dear Mr. Simmons:

Waterloo Industries has changed water discharge to be in compliance with EPA regulation. All washer rinse overflows on both lines now go to treatment tanks, then to sanitary sewer.

I have also sent a up-dated flow chart. The flow chart reflex as things are at present.

Sincerely,

Barney Skiles

BS:kmh

300 ANSBOROUGH AVE. • P.O. BOX 2095 • WATERLOO, IOWA 50704 U.S.A. • Tel. 319-235-7131
CORP FAX: 319-232-3924 • PLANT FAX: 319-235-6408

WATERLOO INDUSTRIES INC.®

November 22 ,1991

Larry Wilson
Iowa Dept. of Natural Resources
Wallace State Office Building
Des Moines, IA 50319

Dear Mr. Wilson:

We would like to amend our NPDES permit, number 0790106. We will have no process water from washer rinse tanks going to the storm sewer. It has been diverted to our treatment tank and then to sanitary sewer.

I hope this will reduce the amount of tests required.

Sincerely,

Barney Skiles
Plant Engineer

300 ANSBOROUGH AVE. · P.O. BOX 2095 · WATERLOO, IOWA 50704 U.S.A. · Tel 319-235-7131
CORP FAX: 319-232-3921 · PLANT FAX: 319-235-6408

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

JUL 02 1991

WATERLOO INDUSTRIES
300 ANSBOROUGH AVE.
WATERLOO, IA 50704

Re: Permit Renewal for NPDES permit number 0790106

Please find enclosed a copy of the proposed NPDES permit for your wastewater treatment facility for your review. Please follow the public notice and certification instructions given on the enclosed permit procedures page. Please return the enclosed certification form, along with the proof of publication attached, to this office within ten (10) days of receipt of this letter.

Should you have questions concerning the proposed permit or the permit procedures page, please call Mohammed Shams at 515/281-4216.

Thank You.

cc: Field Office 1
US Environmental Protection Agency, Region VII

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515 281 5145 / TDD 515 242 5967 / FAX 515 281 8895

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
JAN 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - COMBINED WASTE STREAMS

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED											
		FLOW UNITS MGD	BOD_5 UNITS Mg/L	TSS UNITS Mg/L	OIL GREASE UNITS Mg/L	PH UNITS SU	CBOD UNITS Mg/L	Nitrogen Amnonia UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1													
2													
3		0											
4		0.02			28	7.4							
5		0.05	1900	170		7.8	1800	18					
6		0.03											
7	SAT												
8	SUN												
9		0.03											
10		0.04											
11		0.04	1300	610	63	7.6	1200	3.6					
12		0.06											
13		0.04											
[illegible]	SAT												
[illegible]	SUN												
16		0.18											
17		0.06											
18		0.03											
19		0.02	2800	820	25	7.4	2600	9.7					
20		0.02											
21	SAT												
22	SUN												
23		0.04			22	6.7							
24		0.04	550	640		7.6	370	10					
25		0.03											
26		0.03											
27		0.03											
28	SAT												
29	SUN												
30		0.03											
31		0.03											
TOTAL		0.85	6550	2240	138	44.5	5970	41.30					
AVERAGE		0.02	1638	560	35	7.4	1493	10.3					
MAXIMUM		0.18	2800	820	63	7.8	2600	18					
MINIMUM		0.02	550	170	22	6.7	370	3.6					

UNIT 21

SIGNATURE [signature]

TITLE Plt Eng.

WAWM FORM 35-3 (Jul 1, 83)

(Replaces DSQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
JAN 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - Grab, Treatment Tank

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED											
		FLOW UNITS MGD	Cadium UNITS Mg/L	Chromium Total UNITS Mg/L	Copper UNITS Mg/L	Lead UNITS Mg/L	Nickle UNITS Mg/L	Zink UNITS Mg/L	Cyanide UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1													
2													
3		0.01											
4		0.03	<0.02	<0.02	0.03	<0.10	<0.05	0.06					
5		0.07	<0.02	<0.02	0.04	<0.10	<0.05	0.03					
6		0.09											
7	SAT												
8	SUN												
9		0.05											
10		0.06	<0.02	<0.02	<0.02	<0.10	<0.05	0.14					
11		0.05	<0.02	<0.02	0.03	<0.10	<0.05	0.07					
12		0.04											
13		0.03											
	SAT												
15	SUN												
16		0.12											
17		0.08											
18		0.07	<0.02	<0.02	<0.02	<0.10	<0.05	0.14					
19		0.03	<0.02	<0.02	<0.02	<0.10	<0.05	0.15					
20		0.03											
21	SAT												
22	SUN												
23		0.06	<0.02	<0.02	0.03	<0.10	<0.05	0.19					
24		0.05											
25		0.06											
26		0.05											
27		0.06											
28	SAT												
29	SUN												
30		0.05											
31		0.03											
TOTAL		1.12	0.14	0.14	0.19	0.70	0.35	0.78					
AVERAGE		0.03	0.02	0.02	0.02	0.10	0.05	0.11					
MAXIMUM		0.12	0.02	0.02	0.04	0.10	0.05	0.19					
MINIMUM		0.01	0.02	0.02	0.02	0.10	0.05	0.03					

SIGNATURE [signature]

TITLE Plt. Eng.

WAWM FORM 35-3 (Jul 1, 83)
(Replaces DEQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT: Feb. 1995

FACILITY NAME: WATERLOO WATER POLLUTION CONTROL

FACILITY NO.: 0 1 7 1 9 1 0 1 0 1 0 1 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR: WATERLOO INDUSTRIES - COMBINED WASTE STREAMS

DAY	DAY OF WEEK	FLOW UNITS MGD	BOD5 UNITS Mg/L	TSS UNITS Mg/L	OIL & GREASE UNITS Mg/L	PH UNITS SU	CBOD UNITS Mg/L	Nitrogen Amonia UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1		0.05			17	6.9							
2		0.05	2200	540		7.9	1800	3					
3		0.06											
4	SAT												
5	SUN												
6		0.06											
7		0.04			28	6.4							
8		0.02											
9		0.03	2400	100		7.3	2000	3					
10		0.02											
11	SAT												
12	SUN												
13		0.09											
14		0.04											
15		0.03			23	6.4							
16		0.02	350	130		7.9	310	9.5					
17		0.03											
18	SAT												
19	SUN												
20		0.07											
21		0.03											
22		0.04											
23		0.05			23	5.8							
24		0.08	1400	230		7.6	1300	9.4					
25	SAT												
26	SUN												
27		0.06											
28		0.04											
29	—												
30	—												
31	—												
TOTAL		0.91	6350	1000	91	56.2	5410	24.9					
AVERAGE		0.03	1588	250	22.8	7.05	1353	6.2					
MAXIMUM		0.09	2400	540	28	7.9	2000	9.5					
MINIMUM		0.02	350	100	17	5.8	310	3					

SIGNATURE: B. Miller

TITLE: Plant Supt.

WAWM FORM 35-3 (Jul 1, 83)
(Replaces IWQD Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
Feb. 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - Grab, Treatment Tank

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED											
		FLOW UNITS MGD	Cadium UNITS Mg/L	Chromium Total UNITS Mg/L	Copper UNITS Mg/L	Lead UNITS Mg/L	Nickle UNITS Mg/L	Zink UNITS Mg/L	Cyanide UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1		0.03	<0.02	<0.02	0.04	<0.10	<0.05	0.17					
2		0.03	<0.02	<0.02	<0.02	<0.10	<0.05	<0.02					
3		0.05											
4	SAT												
5	SUN												
6		0.06											
7		0.04	<0.02	<0.02	0.03	<0.10	<0.05	0.59					
8		0.02											
9		0.02	<0.02	<0.02	<0.02	<0.10	<0.05	0.18					
10		0.02											
11	SAT												
12	SUN												
13		0.07											
		0.03											
15		0.05	<0.02	<0.02	1.7	<0.10	<0.05	0.30					
16		0.03	<0.02	<0.02	0.03	<0.10	<0.05	0.21					
17		0.04											
18	SAT												
19	SUN												
20		0.03											
21		0.04											
22		0.05											
23		0.03	<0.02	<0.02	0.07	<0.10	<0.05	0.15					
24		0.04	<0.02	<0.02	0.05	<0.10	<0.05	0.17					
25	SAT												
26	SUN												
27		0.04											
28		0.03											
29	—												
30	—												
31	—												
TOTAL		0.69	0.16	0.16	1.26	0.80	0.40	3.05					
AVERAGE		0.02	0.02	0.02	0.15	0.10	0.05	0.38					
MAXIMUM		0.07	0.02	0.02	1.7	0.10	0.05	0.59					
MINIMUM		0.03	0.02	0.02	0.02	0.10	0.05	0.02					

SIGNATURE [signature]

TITLE [signature]

WAWM FORM 35-3 (Jul 1, 83)
(Replaces DEQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT: March 1995

FACILITY NAME: WATERLOO WATER POLLUTION CONTROL

FACILITY NO.: 0 1 7 1 9 1 0 1 0 1 0 1 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR: WATERLOO INDUSTRIES - COMBINED WASTE STREAMS

DAY	DAY OF WEEK	FLOW UNITS MGD	BOD5 UNITS Mg/L	TSS UNITS Mg/L	OIL & GREASE UNITS Mg/L	PH UNITS SU	CBOD UNITS Mg/L	Nitrogen Ammonia UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
		WASTEWATER PARAMETERS ANALYZED											
1		0.05			21	7.1							
2		0.04	980	390		6.7	820	1.7					
3		0.07											
4	SAT												
5	SUN												
6		0.06											
7		0.08											
8		0.06											
9		0.07			16	6.6							
10		0.08	460	64		7.6	300	0.66					
11	SAT												
12	SUN												
13		0.06											
4		0.07											
15		0.08			7.5	7.5							
16		0.09	790	250		8.0	760	2.6					
17		0.06											
18	SAT												
19	SUN												
20		0.05			15	6.9							
21		0.05	1500	670		7.7	1000	2.8					
22		0.06											
23		0.07											
24		0.07											
25	SAT												
26	SUN												
27		0.06											
28		0.04			20	7.0							
29		0.06	410	300		7.9	200	0.65					
30		0.06											
31		0.09											
TOTAL		1.48	3,160	1674	79.5	73	3080	8.41					
AVERAGE		0.04	632	335	15.9	7.3	616	1.68					
MAXIMUM		0.09	1500	670	21	8.0	1000	2.8					
MINIMUM		0.04	410	64	7.5	6.6	200	0.65					

SIGNATURE: [illegible]

TITLE: Plt. Eng.

WAWM Form 35-3 (Jul 1, 83)
(Replaces DSQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
March 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - Grab, Treatment Tank

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED											
		FLOW UNITS MGD	Cadium UNITS Mg/L	Chromium Total UNITS Mg/L	Copper UNITS Mg/L	Lead UNITS Mg/L	Nickle UNITS Mg/L	Zink UNITS Mg/L	Cyanide UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1		0.04	<0.02	<0.02	<0.02	<0.10	<0.05	0.13					
2		0.03	<0.02	<0.02	<0.02	<0.10	<0.05	<0.02					
3		0.04											
4	SAT												
5	SUN												
6		0.04											
7		0.03											
8		0.04											
9		0.05	<0.02	<0.02	<0.02	<0.10	<0.05	0.13					
10		0.02	<0.02	<0.02	<0.02	<0.10	<0.05	0.18					
11	SAT												
12	SUN												
13		0.05											
		0.06											
15		0.04	<0.02	<0.02	<0.02	<0.10	<0.05	<0.02					
16		0.04	<0.02	<0.02	<0.02	<0.10	<0.05	<0.02					
17		0.04											
18	SAT												
19	SUN												
20		0.03	<0.02	<0.02	<0.02	<0.10	<0.05	<0.16					
21		0.03	<0.02	<0.02	<0.02	<0.10	<0.05	0.02					
22		0.05											
23		0.04											
24		0.03											
25	SAT												
26	SUN												
27		0.03											
28		0.02	<0.02	<0.02	<0.03	<0.10	<0.05	0.03					
29		0.05	<0.02	<0.02	0.03	<0.10	<0.05	0.16					
30		0.02											
31		0.03											
TOTAL		0.76	0.20	0.20	0.22	1.00	0.50	0.87					
AVERAGE		0.02	0.02	0.02	0.02	0.10	0.05	0.08					
MAXIMUM		0.06	0.02	0.02	0.03	0.10	0.05	0.18					
MINIMUM		0.02	0.02	0.02	0.02	0.10	0.05	0.02					

SIGNATURE: B. Skiles

TITLE: Plt Eng.

WAWM FORM 35-3 (Jul 1, 83)
(Replaces DEQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
Apr. 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - COMBINED WASTE STREAMS

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED											
		FLOW UNITS MGD	BOD_5 UNITS Mg/L	TSS UNITS Mg/L	OIL & GREASE UNITS Mg/L	PH UNITS SU	CBOD UNITS Mg/L	Nitrogen Amnonia UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1	SAT												
2	SUN												
3		0.09											
4		0.09											
5		0.06			10	7.4							
6		0.10	270	95		7.9	220	0.81					
7		0.09											
8	SAT												
9	SUN												
10		0.05											
11		0.05	1300	160	26	7.6	1200	1.4					
12		0.07											
13		0.07											
4													
15	SAT												
16	SUN												
17		0.09											
18		0.05			16	7.4							
19		0.05	460	87		7.9	360	0.80					
20		0.05											
21		0.05											
22	SAT												
23	SUN												
24		0.07											
25		0.08			29	7.7							
26		0.10	120	150		7.6	100	0.82					
27		0.10											
28		0.06											
29	SAT												
30	SUN												
31													
TOTAL		1.37	2150	492	81	53.5	1880	3.83					
AVERAGE		0.04	538	123	20.25	7.64	470	0.95					
MAXIMUM		0.10	1300	150	29	7.9	1200	1.4					
MINIMUM		0.05	120	87	10	7.4	100	0.80					

SIGNATURE B. Skiles

TITLE Plt Eng.

WAWM FORM 35-3 (Jul 1, 83)

(Replaces DEQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF WATER, AIR AND WASTE MANAGEMENT

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

MONTH & YEAR OF REPORT	FACILITY NAME	FACILITY NO.
Apr. 1995	WATERLOO WATER POLLUTION CONTROL	0 7 9 0 0 0 1

IDENTITY OF INDUSTRIAL/COMMERCIAL CONTRIBUTOR

WATERLOO INDUSTRIES - Grab, Treatment Tank

DAY	DAY OF WEEK	WASTEWATER PARAMETERS ANALYZED: FLOW UNITS MGD	Cadium UNITS Mg/L	Chromium Total UNITS Mg/L	Copper UNITS Mg/L	Lead UNITS Mg/L	Nickle UNITS Mg/L	Zink UNITS Mg/L	Cyanide UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	UNITS Mg/L	Mg/
1	SAT												
2	SUN												
3		0.03											
4		0.03											
5		0.04											
6		0.03	<0.02	<0.02	0.06	<0.10	<0.05	0.20					
7		0.03	<0.02	<0.02	0.02	<0.10	<0.05	0.16					
8	SAT												
9	SUN												
10		0.03											
11		0.04	<0.02	<0.02	0.05	<0.10	<0.05	0.19					
12		0.04	<0.02	<0.02	0.04	<0.10	<0.05	0.15					
13		0.05											
15	SAT												
16	SUN												
17		0.03											
18		0.05											
19		0.04	<0.02	<0.02	0.06	<0.10	<0.05	0.15					
20		0.04	<0.02	<0.02	0.04	<0.10	<0.05	0.15					
21		0.03											
22	SAT												
23	SUN												
24		0.03											
25		0.05											
26		0.03	<0.02	<0.02	0.03	<0.10	<0.05	0.15					
27		0.03	<0.02	<0.02	0.03	<0.10	<0.05	0.13					
28		0.03											
29	SAT												
30	SUN												
31	—												
TOTAL		0.68	0.16	0.16	0.33	0.80	0.40	1.28					
AVERAGE		0.02	0.02	0.02	0.04	0.10	0.05	0.16					
MAXIMUM		0.05	0.02	0.02	0.06	0.10	0.05	0.20					
MINIMUM		0.03	0.02	0.02	0.02	0.10	0.05	0.13					

SIGNATURE: [signature]

TITLE: Plt Eng

WAWM FORM 35-3 (Jul 1, 83)
(Replaces DEQ Form WQMD [illegible] may be used)

IOWA DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION, AIR QUALITY COMPLIANCE INSPECTION

Company Name: Waterloo Industries INC. Facility: 07-01-018

ID # 6	Source Description & Location 7	INSTALLATION DATE 8	PERMIT NUMBER 9	Applicable Regulations 10	Cntl Code 11	Maximum Capacity or Operating Limits 12	Actual Operating Condition (Process Input Rate) 20	CNTL EQP 21	OP SCHED 22	RECORDING 23	OPACITY 24	COMPLY STATUS 25	COMMENTS 26	INSPECTOR INITIAL 27	DATE 28
1	Booth 1 Electrostatic Turbo Bells, Devilbiss Bells, Aero Bell	7/91	91-A-183S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
2	Booth 2 Electrostatic Bells + 1 robot gun Devilbiss Aero Bells (3)	7/91	91-A-184S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
3	Booth 3 Electrosatic Gun on Robot Devilbiss Gun	7/91	91-A-185S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
4	Booth 4 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	1 gun operating 2.3 gallon/Dy	√	8 Hr/dy	√	0	4		RJM	4/21/95
5	Booth 5 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	2 gun operating 4.7 gallon/Dy	√	8 Hr/dy	√	0	4		RJM	4/21/95
33	Line # 1 Dry Off Oven 2 Bake Ovens	1967		23.3(2) a+d	N		Dip Tank Lines		8 Hr/dy		0	4		RJM	4/21/95
12	Alkaline Cleaner Parts Degreaser Line # 1	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RJM	4/21/95
13	Deionized Water Rinse Sealer Line #1 #33	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RJM	4/21/95
32	Line # 3 Bake Oven Line	1967 1976		22.3(1)	N		Natural Gas 317°F		8 Hr/dy		0	4		RJM	4/21/95
6	Heat Cleaning Oven	9/91	91-A-220	23.4(12)	A	60 Lb/hr	Not Operating								4/21/94
7	Dry Off Oven Line #3	7/93	93-A-311	22.3(1)	N		Natural Gas 406°F		8 Hr/dy		0	4		RJM	4/21/95
8	Parts Washer Line #3	7/93	exempt	23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RJM	4/21/95

Compliance Status

0 - Unknown
1 - Not in Compliance
2 - In Compliance - Test
4 - In Compliance - Insp.
5 - On ERP Schedule
6 - Not on ERP Schedule
9 - In Compliance (Closed)

Control Equipment Code

BF - Bag Filter
EP - Electrostatic Precip.
CY - Cyclone
A - Afterburner
MC - Multiclone
CR - Cone Roof
FR - Fixed Roof
IFR - Internal Floating Roof
SC - Scrubber
VS - Venturi Scrubber
PBS - Packed Bed Scrubber
PCS - Packed Column Scrubber
WW - Waterwall
DF - Dry Filter
O - Other
N - No Control

542-3025 (rev 10/94)

UNIT 17

CITY OF WATERLOO, IOWA

WATER POLLUTION CONTROL

CITY HALL • 715 MULBERRY STREET 50703

Treatment (319) 291-4553 • Sewer (319) 291-4446

BRUCE D. BOTTORFF, Superintendent
ART SHANNON, Assistant Sewer Division
LEONARD W. ZMOLEK, Assistant Treatment Division

PERMIT NO. 73087-1

INDUSTRIAL WASTEWATER DISCHARGE PERMIT

In compliance with the provisions of Section 455B Iowa Code and Section 34 Utilities, Article III Waterloo City Code,

Waterloo Industries SIC 2599
300 Ansborough Ave. 3444
P.O. Box 2095
Waterloo, IA 50701

is hereby authorized to discharge industrial wastewater from the above identified facility into the City of Waterloo sewage system in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall become effective on the date of signature and shall expire July 31, 1992.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date, an application shall be filed for reissuance of this permit in accordance with the requirements of Section 34, Utilities Article III Waterloo City Code.

Waterloo Water Pollution Control
by Bruce D. Bottorff, Superintendent

Bruce D Bottorff

PART 1 - APPLICABLE EFFLUENT LIMITATIONS

SECTION 1 - Compatible Pollutant Standards

A. All wastewater discharged to the WWPC shall not exceed the following:

Parameter	Limitation Average	Daily Max.
Flow (MGD)	.150	.250
BOD5 Mg/L/lbs/day	300/375	300/625
TSS Mg/L/lbs/day	340/425	340/708
Oil/Grease	100 Mg/L	100/Mg/L
pH	Min 6.0-Max 9	

B. The limitations listed in Paragraph A. apply to the total discharge from the permittee.

C. Any monthly average discharge which exceeds 300 Mg/L BOD5, or 340 Mg/L TSS, will require the permittee to assume the requirements of Waterloo Code Section 34-43(5)... Surcharges...

D. The permittee may not discharge any wastewaters containing more than 100 Mg/L of oil and grease of mineral oil origin.

E. In addition, the permittee shall comply with all other applicable regulations and standards contained in Waterloo Code Section 34.

PART I - APPLICABLE EFFLUENT LIMITATIONS (Contd.)

SECTION 2 - EPA Categorical Pretreatment Standards Specific Applicable Effluent Limitations

Based upon the standards listed in 40 CFR, Part 433.15 PSES Metal Finishing Limits.

A. Industrial Discharge

Beginning upon issuance of this modified permit all wastewaters discharged from the collection system called "Treatment Tank" shall not exceed the following effluent limitations:

	PSES Metal Finishing Limits	
CONTAMINANT	DAILY MAX	MONTHLY AVERAGE
Cadmium (T)	0.69	0.26
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO (2)	2.13	----

NOTES - (1) Total toxic organics is equal to the sum of all concentrations over 0.01 Mg/L for the compounds listed in 40 CFR Part 413.02.

PART II - MONITORING AND REPORTING REQUIREMENTS

SECTION 1 - Monitoring Requirements

Beginning upon receipt of this permit, and thereafter, the permittee shall monitor its wastewater subject to regulation under Part I of this permit to ascertain compliance with the applicable limitations with the following frequency:

Wastewater Parameter	Sample Period	Sample Type	Sample Location
Flow	2/Wk	24 Hr Tot	a, b
BOD5	2/Wk	24 Hr Flow Pro Comp	a
TSS	2/Wk	24 Hr Flow Pro Comp	a
O&G	2/Wk	Grab	a
Cadmium (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Chromium (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Copper (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Lead (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Nickel (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Silver (T)	1/6 Mo	24 Hr Flow Pro Comp	a, b
Zinc (T)	2/Wk	24 Hr Flow Pro Comp	a(1), b
Cyanide (T)	1/Mo	1/6 Mo	a, b
TTO	1/6 Mo	Grab	a, b
pH	2/Wk	Grab	a, b

Notes - Sample Location "a" is monitoring point of combined waste streams just prior to discharge to WWPC. Sample Location "b" is discharge point of the Treatment Tank just prior to discharge into the permittee's combined waste stream.

PART II - MONITORING AND REPORTING REQUIREMENTS (Contd.)

SECTION 1 - Monitoring Requirements (Contd.)
Notes - (Contd.)

(1) One sample per month at designated sample location.

Laboratory analysis of samples collected shall be performed in accordance with "Standard Methods for the Examination of Water and Wastewater", latest edition, or other such methods as approved by the WWPC.

SECTION 2 - Reporting Requirements

Monitoring results obtained on a daily/weekly basis, or monthly basis will be reported to WWPC by no later than the 10th of the following month.

In accordance with 40CFR 403.12(e) the permittee must submit a biannual periodic compliance report due in January and July for the preceding six months summarizing the monitoring results.

This report shall state whether the standards are being met on a consistent basis, and if not, what additional operation and maintenance and/or pretreatment is necessary to bring the permittee into compliance with applicable standards. In addition, the biannual report will include proof of compliance with Total Toxic Organics (TTO) requirements either by self-monitoring, or a letter of certification that specifies the toxic organic compounds used, the method of disposal used (other than to the sewer system) and procedures for assuring that toxic organics do not routinely spill, or leak into wastewater discharged.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be submitted to WWPC.

Monitoring reports shall be signed and sworn to by a principal executive officer, or his designee.

Due to the fact that the limitations contained in Part 1, Section 3,

PART II - MONITORING AND REPORTING REQUIREMENTS (Contd.)

SECTION 2 - Reporting Requirements (Contd.)

of this permit are based upon the composite makeup of the discharge, the permittee must notify WWPC of any changes to this wastewater discharge, such as addition, or deletion of waste streams contributory to any outfalls, or significant changes in the relative flows of the component waste streams.

All reports required by this permit shall be submitted to:

Supt. Water Pollution Control
City of Waterloo
715 Mulberry St.
Waterloo, IA 50703

PART III - PRETREATMENT AND MONITORING FACILITIES

A. In order to comply with the effluent limitations identified in Part I the permittee shall provide necessary wastewater pretreatment as required Article III, Division 5, Section 34-51-a, Water City Code.

Event	By No Later Than
1. Achieve compliance with discharge limits.	Sept. 1, 1987
2. Install flow monitoring and flow proportioned composite sampling equipment on treatment tank discharge.	Oct. 15, 1987
3. Install flow monitoring and flow proportioned composite sampling on combined waste discharge.	Dec. 1, 1987

Not later than 14 days following receipt of this permit, the permittee shall submit to WWPC a progress report including, at a minimum, whether or not it complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with the increment of progress, the reasons for delay, and the steps being taken to return the project to the schedule.

PART IV - GENERAL CONDITIONS

In addition to compliance with Parts I, II, and III, this permit is issued conditional upon compliance with the following general conditions. Violations of any of the permit conditions below, either alone or in conjunction with a violation of Parts I, II, or II, shall be adequate basis for the revocation of this permit.

1. Right of Entry

The city shall inspect the facilities of any user to ascertain whether the purpose of this article is being met and all requirements are being complied with. Persons or occupants of premises where waste water is created or discharged shall allow the city or its representative ready access at all times to all parts of the premises for the purposes of inspection, random sampling, records examination and copying, or in the performance of any of their duties. The city shall have the right to set up on the user's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into its premises, the user shall make necessary arrangements with its security guards so that upon presentation of suitable identification, personnel from the city will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. The city has the right to randomly sample industry without notification of the sample taking.

2. Records Retention

a) The permittee shall retain and preserve for no less than three (3) years, any records, books, documents, memorandums, reports, correspon-

PART IV - GENERAL CONDITIONS (Contd.)

2. Records Retention (Contd.)

dence, and any and all summaries thereof, relating to monitory sampling and chemical analysis made by or in behalf of the permittee in connection with its discharge.

b) All records that pertain to matters that are the subject of special orders or any other enforcement or litigation activities brought by the permittee until all enforcement activities have concluded and all periods of limitations with respect to any and all appeals have expired.

3. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

4. Confidential Information

Except for data determined to be confidential under Sec. 34-52, all reports required by the permit shall be available for public inspection at the Superintendent of Waterloo Water Pollution Control Office.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a) The exact place, date, and time of sampling;

b) The dates the analyses were preformed;

c) The person(s) who performed the sample collections and sample analyses.

d) The analytical techniques, or methods used; and

PART IV - GENERAL CONDITIONS (Contd.)

5. Recording of Results (Contd.)

e) The results of all required analyses.

6. Falsifying Information

Knowingly making any false statement on any report or other document required by the permit or knowingly rendering any monitoring device or method inaccurate, may result in punishment under the criminal laws of Iowa as well as being subjected to civil penalties and relief.

7. Modification, or Revision of Permit

a) The terms and conditions of this permit may be subject to modification by WWPC at any time as limitations or requirements as identified in the Waterloo City Code Article III are modified, or other just cause exists.

b) This permit may also be modified to incorporate special conditions resulting from the issuance of special order.

c) Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance, if necessary.

8. Dilution

No permittee shall increase the use of potable or process water, or in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

9. Accidental Discharges

a) Each user shall provide protection from accidental discharge of prohibited materials or other substances regulated by this article. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner's or user's own cost and expense.

PART IV - GENERAL CONDITIONS (Contd.)

9. Accidental Discharges (Contd.)

Detailed plans showing facilities and operating procedures to provide this protection shall be submitted to the city for review, and shall be approved by the city before construction of the facility.

b) Within five (5) days following an accidental discharge, the user shall submit to the superintendent a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage or other liability which may be incurred as a result of damage to the POTW, fish kills or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties or other liability which may be imposed by this article or other applicable law.

c) A notice shall be permanently posted on the user's bulletin board or other prominent place advising employees whom to call in the event of a dangerous discharge. Employers shall ensure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

10. Notice of Intent

Any permittee planning to alter or change any activity at the permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of industrial wastewater discharge into the Waterloo sewage system must file a written nature of intent. This does not include changes in volume or content resulting from shifts in existing production levels at the user's facility. A significant increase or decrease shall be defined as a 10

PART IV - GENERAL CONDITIONS (Contd.)

10. Notice of Intent (Contd.)

percent increase or decrease in the volume of industrial wastewater currently being discharged. An alteration shall be defined as any change in chemicals utilized within a process which will significantly alter the characteristics of the industrial discharge.

11. Proper Disposal of Pretreatment Sludges

The disposal of sludges generated within wastewater pretreatment systems shall be done in accordance with Section 405 of the Clear Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.

12. Operating Upsets

Any permittee that experiences an upset in operations that places the permittee in a temporary state of noncompliance with the provisions of either this permit or Waterloo City Code Article III, shall inform WWPC thereof within 24 hours of first awareness of the commencement of the upsets in accordance with Section 34-39, Waterloo City Code.

13. Limitation or Permit Transfer

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without the prior written approval of WWPC. Sale of a user shall obligate the purchaser to seek prior written approval of WWPC for continued discharge to the City's sewage system.

14. Signatory Requirements

All reports required by this permit shall be signed by a principal executive officer of the permittee, or his designee.

PART IV - GENERAL CONDITIONS (Contd.)

15. Reporting Address

All reports required by this permit shall be submitted to the City at the following address: Supt. Water Pollution Control
715 Mulberry St.
Waterloo, IA 50703

16. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property to the continued use or issuance of this permit or any amendments or reassurance thereof, or create any exclusive privileges of whatsoever kind unless specifically listed in this permit.

JRC

CITY OF WATERLOO, IOWA

City Hall 715 Mulberry Street 50705 319-291-4553

~~XXXXXXXXXXXXXXXXXXXXXXXX~~
Water Pollution Control Plant
Bruce D. Bottorff, Supt.

16 February 1976

Waterloo Industries
P.O. Box 209
Waterloo, Iowa 50704

Attention: Mr. Wallace J. Sulentic

Re: Limitations and Monitoring Requirements
Wastewater

Gentlemen:

Enclosed is a copy of the operation permit for the Waterloo Water Pollution Control Plant required by the State of Iowa Department of Environmental Quality.

Specific monitoring of your facilities is required according to the guidelines spelled out in this permit.

We would like to know the name of the person in your organization who we could contact to discuss the best way possible to meet these requirements.

Thank you for your cooperation on this matter. An early reply would be appreciated.

Sincerely,

Bruce D. Bottorff

Bruce D. Bottorff, Superintendent
WATER POLLUTION CONTROL PLANT
CITY OF WATERLOO
P.O. Box 2398
Waterloo, Iowa 50705

BDB:mk
Enclosures

UNIT 16

State of Iowa
DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY MANAGEMENT DIVISION

OPERATION PERMIT FOR DISCHARGES INTO WATERS OF THE STATE

Iowa Operation Permit No. 5-07-90-0-01

Date of Issuance February 2, 1976

Date of Expiration March 1, 1980

Pursuant to the authority of Chapter 455B, Code of Iowa, 1975, and Rule 19.3 (455B) of the Rules of the Iowa Department of Environmental Quality (January, 1974, Supplement I.D.R.), the Executive Director of the Department of Environmental Quality does hereby issue this permit for the operation of the disposal system and the discharge of sewage, industrial waste or other waste into waters of the State for the facility described below:

Name and Mailing Address of Applicant:

City of Waterloo
715 Mulberry Street
Waterloo, Iowa 50703

Identity and Location of Facility:
Waterloo Water Pollution Control Plant
Facility-No. 07-90-0-01
3500 Easton Ave.
Section 31, T89N, R13W, Blackhawk County, Iowa

Receiving Watercourse:

Cedar River tributary to Iowa River tributary to Mississippi River

The permittee is hereby authorized to operate the disposal system and to discharge the pollutants specified herein into State waters in accordance with the effluent limitations, monitoring requirements and other stipulations set forth in the following general and special conditions:

GENERAL AND SPECIAL CONDITIONS

1. This permit shall expire at midnight on March 1, 1980. The permittee shall file for renewal of this permit at least 120 days prior to its expiration. Continued operation of said disposal system or discharge from said facility after expiration of this permit is prohibited.

2. Outfall description(s):

Outfall Serial Number	Description
001	Outfall from trickling filter treatment plant

3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(a) During the period beginning on the date of issuance and lasting through March 1, 1980, the permittee is authorized to discharge from outfall serial number 001.

Such discharge shall be limited and monitored by the permittee as specified:

Wastewater Parameter	Effluent Limitations kg/day (lbs/day) Daily Avg	Max	Other Units (Specify) Daily Avg	Max	Monitoring Requirements Measurement Frequency	Sample Type	Sample Location*
Flow m^3/day (MGD)	-	-	77024(20.35)	136449(36.05)	Daily	-	1,7
BOD (5-day)	3364(8500)	5820(15000)	50 mg/l	75 mg/l	7/week	24-hr. composite	1,2
Suspended Solids	3364(8500)	5820(15000)	50 mg/l	75 mg/l	7/week	24-hr. composite	1,2
Ammonia Nitrogen (as N)	-	-	-	-	7/week	24-hr. composite	1,2
Fecal Coliform	-	-	-	-	1/3 months	Grab	2
Settleable Solids	-	-	-	-	7/week	Grab	1,2,4,5
pH	From 6.5 to 9.0				7/week	Grab	1,2,5
Dissolved Oxygen	-	-	-	-	7/week	Grab	2
Temperature	-	-	-	-	7/week	Grab	1,4,5,6
Residual Chlorine	-	-	-	-	7/week	Grab	2
LQAP**	-	-	-	-	monthly	Grab	2
Alkalinity	-	-	-	-	7/week	Grab	5
Volatile Acids	-	-	-	-	7/week	Grab	5
Volatile Solids	-	-	-	-	7/week	Grab	5,8
Total Solids	-	-	-	-	7/week	Grab	5
% Solids	-	-	-	-	7/week	Grab	8
Total Volume	-	-	-	-	7/week	Grab	8

Disinfection shall be practiced from April 1 through October 31.

There shall be no discharge of floating or settleable substances in other than trace amounts.

*Samples collected as specified in the monitoring requirements shall be taken at the following location(s): prior to disinfection:

1 - raw wastewater influent to the treatment facility
2 - final effluent from the treatment facility
3 - sludge digesters
4 - final effluent from industrial portion of plant
5 - primary clarifier effluents
6 - trickling filter effluents
7 - trickling filter recirculation
8 - sludge waste

**Sample submitted for the Effluent Quality Analysis Program (LQAP) conducted in accordance with Chapter 16 of the Rules of the Iowa Department of Environmental Quality (1975 Iowa Administrative Code).

3. LIMITATIONS AND MONITORING REQUIREMENTS FOR SIGNIFICANT INDUSTRIAL/COMMERCIAL CONTRIBUTORS

(b) During the effective period of this permit, the permittee is authorized to accept for treatment such sewage, industrial waste, or other waste as may be contributed by the significant industrial/commercial facilities identified below. The permittee shall report to the Executive Director, in writing, at least 180 days in advance of any new facility expansions, production increases, or process modifications or the connection of any new contributor which may result in new, different or increased discharges of sewage, industrial waste or other waste.

"Significant Industrial/Commercial Contributor" is defined as any facility for which at least one of the following applies:

(a) the facility contributes at least 50,000 gallons of wastewater per day at maximum discharge,
(b) the facility contributes at least 5% of the organic or hydraulic loading of the treatment facility,
(c) the facility contributes toxic materials which may adversely affect the treatment process, or
(d) the facility contributes any waste which may have an adverse or deleterious impact on the treatment facility.

The permittee shall limit and monitor said sewage, industrial waste or other waste for each facility as specified:

Industrial/Commercial Contributor	Wastewater Parameter	Wastewater Limitations		Monitoring Requirements	
		Daily Avg	Max	Measurement Frequency	Sample Type
Chamberlain Mfg. Co.	Flow	-	-	Monthly	Daily Average
	pH	-	-	1/week	Grab
John Deere & Co. Engine Plant	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	16-hr. Composite
	Suspended Solids	-	-	1/month	16-hr. Composite
	Total Dissolved Solids	-	-	1/month	16-hr. Composite
	pH	-	-	1/month	Grab
John Deere & Co. Foundary	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	24-hr. Composite
	Suspended Solids	-	-	1/month	24-hr. Composite
	pH	-	-	1/month	Grab

3. LIMITATIONS AND MONITORING REQUIREMENTS FOR SIGNIFICANT INDUSTRIAL/COMMERCIAL CONTRIBUTORS

(c) The permittee shall limit and monitor said sewage, industrial waste, or other waste for each facility as specified:

Industrial/Commercial Contributor	Wastewater Parameter	Wastewater Limitations		Monitoring Requirements	
		Daily Avg	Max	Measurement Frequency	Sample Type
John Deere & Co. Tractor Plant	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	24-hr. Composite
	Suspended Solids	-	-	1/month	24-hr. Composite
	pH	-	-	1/month	Grab
The Rath Packing Co.	Flow	-	-	Daily	24-hr. Total
	BOD (5-day)	-	-	5/week	16-hr. Composite
	Suspended Solids	-	-	5/week	16-hr. Composite
	pH	-	-	5/week	Grab
	Oil and Grease	-	-	5/week	Grab
	Chloride	-	-	5/week	16-hr. Composite
	Total Dissolved Solids	-	-	5/week	16-hr. Composite
	Kjeldahl Nitrogen (as N)	-	-	5/week	16-hr. Composite
Waterloo Industries	Flow	-	-	1/week	24-hr. Composite
	pH	-	-	2/month	Grab
	Suspended Solids	-	-	2/month	24-hr. Composite
	Zinc	-	-	2/month	24-hr. Composite
	Chromium (hexavalent)	-	-	2/month	24-hr. Composite
	Total Chromium	-	-	2/month	24-hr. Composite
Carnation Co.	Flow	-	-	1/week	24-hr. Total
	BOD (5-day)	-	-	1/month	16-hr. Composite
	Suspended Solids	-	-	1/month	16-hr. Composite
	pH	-	-	1/month	16-hr. Composite

4. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations, monitoring requirements and other stipulations in accordance with the following implementation schedule:

When used below, "required facilities" means those facilities provided by the permittee which will achieve compliance with the following limitations:

Wastewater Parameter	Daily Avg	Max
Biochemical Oxygen Demand (5-day)*	10 mg/l	15 mg/l
Suspended Solids*	20 mg/l	30 mg/l
Ammonia Nitrogen (as N)	2 mg/l	5 mg/l
Fecal Coliform Organisms	Disinfection Facilities Required	

*A minimum reduction of 85% is also required.

(a) by December 1, 1976, the permittee shall submit to the Iowa Department of Environmental Quality (DEQ) a complete facilities plan for the construction of the required facilities.

(b) by September 1, 1977, the permittee shall submit to the Iowa DEQ final plans and specifications for the construction of the required facilities.

(c) by March 1, 1978, the permittee shall award a contract or contracts for the construction of the required facilities.

(d) by March 1, 1980, the permittee shall complete construction of the required facilities, and by said date, shall submit to the Iowa DEQ certification by a registered professional engineer that the construction thereof has been completed in accordance with the application, plans, specifications and permit therefor.

(e) the permittee shall submit to the Iowa DEQ 180-day progress reports stating the progress being made toward completion of the required facilities. The first such report shall be submitted on or before May 10, 1976.

5. Pursuant to the provisions of Chapter 455B.3, Code of Iowa, 1975, the permittee shall allow the Executive Director or his designees to enter upon the permittee's premises at any reasonable time to conduct an investigation of all treatment or control facilities or systems provided or used by the permittee to achieve compliance with the terms and conditions of this permit.

6. Pursuant to Condition Number 3, the permittee shall conduct all required monitoring in accordance with the following provisions:

(a) Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored wastewater. All effluent samples shall be collected at the point of discharge prior to the combination of the specified discharge with any other effluent.

(b) The permittee shall record the results of all required analyses and measurements and shall submit said records to the Department on forms provided by the Department on a monthly basis; said records of operation being due by the 10th day of the month following the reporting period.

(c) The analytical and sampling methods used shall conform to the following reference methods or equivalents approved by the Department:

(1) Standard Methods for the Examination of Water and Wastewaters, 13th Edition, 1971, American Public Health Association, New York, New York 10019

(2) Manual of Methods for Chemical Analysis of Water and Wastes, 1974, Environmental Protection Agency, Office of Technology Transfer, Methods Development and Quality Assurance Research Laboratory, NERC, Cincinnati, Ohio 45268

(3) A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis, 1970, American Society for Testing and Materials, Philadelphia, PA 19103

(d) The permittee shall maintain records of all information resulting from any monitoring activities required pursuant to this permit. Such records shall include:

(1) the date, exact place, and time of sampling;
(2) the dates the analyses were performed;
(3) the identity of the analyst or analytical laboratory;
(4) the analytical techniques/methods used; and
(5) the results of each analysis.

(e) The permittee shall retain for a minimum of three (3) years any records of monitoring activities and results, including all original strip chart recordings and calibration and maintenance records for continuous monitoring instrumentation. This period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Director.

(f) If the permittee monitors any parameter at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the records of operation submitted to the Department.

6. (g) The following definitions shall apply:

(1) The "Daily Average" discharge means the sum of the total daily discharges by weight, volume or concentration during the reporting period divided by the total number of days during the reporting period when the facility was in operation. With respect to the monitoring requirements, the "Daily Average" discharge shall be determined by the summation of all the measured daily discharges by weight, volume or concentration divided by the number of days during the reporting period when the measurements were made.

(2) The "Maximum" discharge means the total discharge by weight, volume or concentration which cannot be exceeded during any 24-hour period.

(3) A "Grab Sample" is a representative portion of the sewage, industrial waste, other waste, surface water or groundwater collected at a specific time with no regard to flow rate.

(4) A "Composite Sample" consists of a number of grab samples collected at regular time intervals over a given time period and combined in proportion to the flow rate at the time of sample collection.

(h) The permittee shall submit samples for the Effluent Quality Analysis Program (EQAP) conducted by the Department in accordance with Chapter 18 of the Rules of the Department (1973 I.D.R.). The Department shall notify the permittee of the method and procedure for sample collection.

7. The permittee shall employ, contract with, or otherwise maintain an operation and maintenance staff adequately trained and knowledgeable in the operation of any treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

8. The discharge of any sewage, industrial waste, or other waste more frequently than or at a level in excess of that authorized herein shall constitute a violation of this permit. The permittee shall report to the Executive Director, in writing, at least 180 days in advance of any facility expansions, production increases, or process modifications which may result in new, different or increased discharges of sewage, industrial waste or other waste.

9. Any diversion from or bypass of facilities is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Executive Director of each such diversion or bypass pursuant to the provisions of Rule 17.6 (455B) of the Rules of the Department (1973 I.D.R.)

10. If, for any reason, the permittee does not comply with or will be unable to comply with any conditions specified in this permit, the permittee shall provide the Executive Director with the following information, in writing, within five (5) days of becoming aware of such noncompliance:

(a) A description and cause of noncompliance; and

(b) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncompliance.

11. The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

12. Solids, sludges, filter backwash, or other materials removed in the course of treatment or control of wastewaters shall be disposed of in compliance with the provisions of Chapter 455B, Code of Iowa, 1975, and any rules promulgated pursuant thereto.

13. If title to the facility, disposal system or part thereof for which this permit has been issued is transferred, the permittee shall notify the new owner in writing of this permit and the new owner shall be subject to all terms and conditions of this permit. Whenever title to a facility, disposal system or part thereof is transferred, the Executive Director shall be notified of such transfer within thirty (30) days.

14. This permit does not authorize or approve the construction, modification or addition to any disposal system or facility. No alterations or additions to any disposal system shall be made without the written consent of the Department pursuant to Rule 19.2 (455B) of the Rules of the Department (January, 1974, Supplement I.D.R.).

15. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

16. No legal or financial responsibility arising from the operation or maintenance of any disposal system or part thereof installed by the permittee to achieve compliance with the conditions of this permit shall attach to the State of Iowa or the Department of Environmental Quality.

17. The issuance of this permit in no way relieves the permittee of the responsibility for complying with all local, state, and federal laws, ordinances, regulations or other requirements applying to the operation of this facility.

For the Department of Environmental Quality:

Larry E. Crano, Executive Director

By Joseph E. Obr

Joseph E. Obr, P.E., Director
Water Quality Management Division

CITY OF WATERLOO, IOWA
City Hall 715 Mulberry Street 50705 (319) 291-4[illegible]

WATER POLLUTION CONTROL PLANT
Bruce D. Bottorff, Superintendent

June 27, 1978

PRETREATMENT STANDARD

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed
	mg/l	
CN,A.....	0.20	0.08
CN,T.....	.64	.24
Cr,VI....	.25	.09
Cu.....	4.6	2.0
Ni.....	3.6	1.8
Cr,total.	4.2	1.6
Zn.....	3.4	1.5
Pb.....	.8	.4
Cd.....	1.0	.5
Total metals	7.5	3.9

Pretreatment standards for the other substances listed on the incompatable wastes list have not been developed as of yet.

It is probable that limitations will be set on these substances in the future.

INCOMPATIBLE WASTES IN CONTRIBUTION

Inorganic Substances
- Acidity, Alkalinity, pH
- Ammonia
- ✓ Alkali and Alkaline Earth Metals
- Arsenic
- Borate (and other boron species)
- Cadmium
- ✓ Chromium
- Copper
- Cyanide
- ✓ Iron
- ✓ Lead
- Manganese
- Mercury
- Nickel
- Silver
- Sulfate
- Sulfide
- ✓ Zinc
- ✓ Phosphorus

Organic Substances
- Alcohols
- Phenols
- Chlorinated Hydrocarbons
- Chloroform
- Carbon Tetrachloride
- Methylene Chloride
- Chlorobenzenes
- Miscellaneous Chlorinated Hydrocarbons
- Organic Nitrogen Compounds
- ✓ Surfactants

Miscellaneous Organic Chemicals
- Benzidine
- T-butyl Borane
- Formaldehyde
- Benzene
- ✓ Toluene
- ✓ Xylene
- ✓ Oil and Grease

WATERLOO INDUSTRIES INC.

August 16, 1978

Mr. Bruce Bottorff, Superintendent
Waterloo Water Pollution Control Plant
3500 Easton Avenue
Waterloo, Iowa 50702

Dear Mr. Bottorff:

An emergency situation made it necessary for Waterloo Industries Inc. to pump partially pre-treated industrial waste water to the Waterloo Sanitary sewer on the weekend of August 6th. Our treatment tank overflowed onto our parking lot. In order to stop the overflow before it entered the storm drains to the river, it was felt expedient to pump the tank contents to the sanitary sewer where it would receive treatment at the pollution control plant.

The treatment tank had already been filled to "treatment" level by normally scheduled dumps from metal surface preparation process tanks when red water borne deposition paint overflowed due to a faulty level control. This overflow of approximately 800 gallons was contained safely in the treatment tank, but filled it to near the top.

The presence of the paint required additional treatment and reaction time so the batch was not pumped out on schedule. An outside cleaning crew came in as usual to clean the waterfall paint booths and, not knowing there would be any problem, opened the drains on the booths. Approximately 6,000 gallons entered the treatment tank causing it to overflow. The pumps to the sanitary sewer were turned on to prevent the overflow form reaching the storm sewer drains. The effluent was a brilliant red.

An estimated 6000-7000 gallons were pumped to stem the overflow and reduce the tank to treatment level. The tank was re-treated and allowed to flocculate about an hour before it was pumped out. The color was reduced some, but still strong. Undoubtably the residual red pigment in the lines from the first pumping also contributed to a strong red color remaining in the flow. Red is extremely reflective and even minute quantities are readily discernable in otherwise clear water. In total we pumped an estimated 24,000 gallons of red effluent during a six hour period.

UNIT 16

300 ANSBOROUGH AVE. • P.O. BOX 209 • WATERLOO, IOWA 50704 • AREA 319-235-7131
DISTRIBUTION CENTERS — POCAHONTAS, ARK. — SEDALIA, MO. — WEST HAVEN, CONN. — LOS ANGELES, CA. — PORTLAND, OR
MANUFACTURING PLANTS IN IOWA, CALIFORNIA, ARKANSAS & MISSOURI

MANUFACTURERS OF FABRICATED STEEL HAND BOXES, CHESTS, ROLLER CABINETS, MEDICAL CARTS

We can only estimate what substances were in the effluent. But on the basis of the known sources and concentrations and considering no effective treatment, although some flocculation had taken place, we submit the following list of toxic or hazardous substances which could have been in the effluent:

Parameter	Estimated Lbs.
Lead	23.8
Aromatic Hydrocarbon	38.8
Red organic pigment	340.5
2 Butoxyethanol	155.2
Triethanolamine	38.8
CR +6	0.8
CR total	1.7
CD	.001
MN	0.5
Cu	0.5
Zn	0.8
P	1.2
pH	8
H2SO4 (32°) (15 gal)	160
Na (OH)2 (50%) (40 gal.)	334
Toluene	?
Naptha	?
Xylene	?
Celosolve	?
TSS	?

To prevent future occurences we are (1) installing either an additional float control on each paint tank with sound warning devices, or a sound warning device to signal at any indication of level increase over 1" above normal (2) Requiring all outside cleaning crews to obtain clearance through the security people (guards) before dumping any process tanks, and (3) considering ways to increase the capacity of our treatment plant in order to avoid situations such as we have just experienced.

We regret discharging such untreated industrial waste water to your control plant. Every effort and safeguard will be made to prevent a re-occurrence.

Sincerely,

Milt

Milt Hartley
Sr. Environmental Engineer

MH/mmw

cc: Jim Chandler

CPB-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

Nov 26 to Dec 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	Pre-Treated Daily Flow Ft.^{3}	Flow 1/week Units FT^3	Flow Total for Month Units FT^3	BOD 2/week Units mg/l	Suspended Solids 2/week Units mg/l	pH 2/week Units ph	Zinc 2/week Units mg/l	Chromium (Hexavalent) 2/week Units mg/l	Total Chromium 2/week Units mg/l	Toluene 2/week Units mg/l	Temp Units °F	Units
DEC.	1	2350					6				5	70	
	2	3130											
	3	520											
	4	—											
	5	—	6000										
S	6												
SW	7												
	8	2560					7				4	68	
	9	3040											
	10	1300											
	11	1110											
	12	1560	9570										
S	13												
SW	14												
	15	4530					7				3	70	
	16	2860											
	17	900											
	18	1110											
	19	990	10390										
S	20												
SW	21												
	22	3540					8				4	80	
	23	2000											
	24	710											
NOV	25	1040											
W	26	270											
TH	27	—											
F	28	500	2670										
S	29												
SW	30												
	31	—											
	Total	28630	30,883*										
	Average	1301	13767										
	Maximum	4530											
	Minimum	-0-	-0-										

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Matt Hartley
Signature

X Senior Environmental Eng.
Title

*Includes 75 Office Employees@30 gpd for 22 Days= 49500 Gallons

CPB-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

Oct 26 to Nov 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

WASTEWATER PARAMETERS ANALYZED

	DATE	Pre-Treated Daily Flow Ft.³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units mg/1	Suspended Solids 2/week Units mg/1	pH 2/week Units ph	Zinc 2/week Units mg/1	Chromium (Hexavalent) 2/week Units mg/1	Total Chromium 2/week Units mg/1	Toluene 2/week Units mg/1	Temp Units °F	Units
Nov S	1												
SN	2												
	3	3840					8				3	76	
	4	1090											
Grab	5	3930			2258	252		.05	.08	.09			
Composite	6	1230			363	24		.06	.05	.10			
	7	1390	11480										
S	8												
SN	9												
Grab	10	2470			969	73	8	.05	.02	.03	2	80	
	11	1090											
	12	2040											
	13	2560											
	14	1400	9560										
S	15												
SN	16												
	17	2560					8				3	78	
Composite	18	1300			375	33		.03	.04	.05			
	19	1720											
	20	1180											
	21	1130	7890										
S	22												
SN	23												
Grab	24	3460	3460		3325	45	8	.10	.03	.05	4	75	
Composite S	25				Lab error no results	19		.15	.01	.02			
SN	26												
Grab	27	1310			1751	22	8	.06	.30	.40	4	70	
Composite	28	1770			297	32		.06	.02	.03			
	29	2600											
	30	3480											
	31	1210	10370										
	Total		42760	30646*			40				16	379	
	Average		1944	13937			8				3	76	
	Maximum		3930	21133			8				4	80	
	Minimum		-0-	-0-			8				2	75	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X Senior Environmental Eng.
Title

*Includes 76 Office Employees@30 and for 22 Days= 495 Gallons

Grab	BOD	S/S	Zinc	Chromium Hexavalent	Total Chromium
Total	8303	392	.26	.43	.57
Average	2075	98	.07	.11	.14
Maxiumum	3325	252	.10	.30	.40
Minimum	969	22	.05	.02	.03
Composite					
Total	1035	108	.30	.12	.20
Average	345	27	.08	.03	.05
Maximum	375	33	.15	.05	.10
Minimum	297	19	.03	.01	.02

CPD-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

SEP 25 TO OCT 25 — Month

1980 — Year

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	Pre-Treated Daily Flow Ft.^{3}	Flow 1/week Units FT^3	Flow Total for Month Units FT^3	BOD 2/week Units mg/l	Suspended Solids 2/week Units mg/l	pH 2/week Units ph	Zinc 2/week Units mg/l	Chromium (Hexavalent) 2/week Units mg/l	Total Chromium 2/week Units mg/l	Toluene 2/week Units mg/l	Temp Units °F	Units
OCT W	1	1160											
TH	2	1120											
F	3	970	9300										
S	4												
SN	5												
Composite Grab	6	2400			134 1567	26 1520	7	.09 .07	.08 .17	.09 .17	3	76	
	7	3100											
	8	2120											
	9	710											
	10	1180	9510										
S	11												
SN	12												
Composite Grab	13	4180			487 815	35 200	7	.06 .07	.07 .14	.10 .19	4	60	
	14	2490											
	15	1360											
	16	1110											
	17	550	9690										
S	18												
SN	19												
Grab	20	2380			1460	192	7	.12	.08	.12	5	62	
Composite	21	1310			468	19		.06	.07	.15			
	22	2900											
	23	1330											
	24	590	8510										
SEP	25	1440											
	26	2290	3700										
S	27												
SN	28												
Composite Grab	29	5190			413 757	156 102	7	.07 .13	.09 .10	.19 .11	5	80	
	30	860	6050										
	31												
	Total		46760	27824							17	278	
	Average		1559	9275							4	70	
	Maximum		5190	12647							5	80	
	Minimum		-0-	-0-							3	60	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Mert Hastings
Signature

X Senior Environmental Engr
Title

Composite	BOD	S/S	Zinc	Chromium Hexavalent	Total Chromium
Total	1502	236	.29	.31	.53
Average	375	59	.07	.08	.13
Maximum	487	156	.09	.09	.19
Minimum	134	26	.06	.07	.13
Grab					
Total	4599	2014	.39	.49	.59
Average	1150	504	.10	.13	.15
Maximum	1567	1520	.13	.18	..19
Minimum	757	102	.07	.10	.11

EXHIBIT B

CPB 69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

SEPTEMBER 25 — Month

1980 — Year

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

WASTEWATER PARAMETERS ANALYZED

	DATE	PRE-TREATED ~~DAY OF WEEK~~ DAILY FLOW, FT³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
SEP M	1												
Composite T	2	2830			692	97	6	0.05	0.09	0.11	5	80	
W	3	2720											
TH	4	550											
F	5	1260	8360										
S	6												
SN	7												
Grab M	8	4590			1548	19	7	0.08	0.07	0.08	3	80	
T	9	1250											
W	10	1220											
TH	11	2740											
Composite F	12	1430	11230		345	11		0.09	0.10	0.15			
S	13												
SN	14												
Grab Composite M	15	2790			1364 288	57 15	7	0.05 0.07	0.05 0.01	0.06 0.07	4	80	
T	16	1580											
W	17	1260											
TH	18	1310											
F	19	1350	8290										
S	20												
SN	21												
Grab Composite M	22	2560			1783 277	43 28	7	0.01 0.08	0.04 0.04	0.05 0.05	3	80	
T	23	2980											
W	24	1200											
AUG M	25	4780											
T	26	800											
Composite W	27	470			276	21		0.08	0.07	0.08			
TH	28	1560											
F	29	1650	9260										
S	30												
SN	31												
	Total		37140	315724			27				15	320	
	Average		1198	10184			7				4	80	
	Maximum		4780	16296			7				5		
	Minimum		-0-	-0-			6				3		

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X Milt Hartley
Signature

X SENIOR ENVIRONMENTAL ENGINEER
Title

COMPOSITE	BOD	S/S	ZINC	CHROMIUM HEXAVALENT	TOTAL CHROMIUM
Total	1878	172	.37	.31	.46
Average	376	34	.07	.06	.09
Maximum	692	97	.09	.10	.15
Minimum	276	11	.05	.01	.05
GRAB					
Total	4695	119	.14	.16	.19
Average	1565	40	.05	.05	.06
Maximum	1783	57	.08	.07	.08
Minimum	1364	19	.01	.04	.05

CPB-69721 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

July 25 to Aug 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

		DATE	WASTEWATER PARAMETERS ANALYZED: PRE-TREATED ~~PAY OF WEEK~~ DAILY FLOWS, FT³	Flow 1/week Units FT³	Flow Total for Month Units FT³	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
Grab	F	1	5497	7360		2280	26		.12	.07	.08			
	S	2												
	SN	3												
	M	4	2720					6				2	82	
	T	5	2110											
Composite	W	6	1290			1150	25		.06	.08	.08			
	TH	7	-0-											
	F	8	10	6130										
	S	9												
	SN	10												
	M	11	2510			2233	107	7	.07	.06	.13	4	76	
	T	12	2640											
	W	13	950											
	TH	14	1070											
	F	15	770	7940										
	S	16												
	SN	17												
Grab	M	18	3380			1232	216	7	.07	.69	.75	4	80	
	T	19	1720											
Composite	W	20	990			468	10		.08	.07	.18			
	TH	21	360											
	F	22	2130	8580										
	S	23												
	SN	24												
Grab	M	25	4780	4780		297	258	7	.08	.07	.08	3	70	
July	S	26												
	SN	27												
Grab	M	28	1250			3425	28	7	1.02	.03	.05	4	72	
	T	29	1610											
	W	30	-0-											
	TH	31	263	1873										
		Total		29303	259,576			34				17	380	
		Average		945	8373			7				3	76	
		Maximum		5497	34086			7				4	82	
		Minimum		-0-	-0-			6				2	70	

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQMD III

X [signature]
Signature

X Senior Environmental Engin
Title

GRAB SAMPLES

	BOD	Suspended Solids	Zinc	Chromium Hexavant	Total Chromium
Total	9467	635	1.36	.92	1.09
Average	1893	127	.27	.18	.22
Maximum	3425	258	1.02	.69	.75
Minimum	297	26	.07	.03	.05

COMPOSITE

Total	1618	35	.14	.15	.26
Average	809	18	.07	.08	.13
Maximum	1150	25	.08	.08	.18
Minimum	468	10	.06	.07	.08

CPD-69724 3/75

OPERATION PERMIT SYSTEM

INDUSTRIAL/COMMERCIAL CONTRIBUTOR MONITORING REPORT

June 25 – July 25 (Month) 1980 (Year)

Facility Name and No. Waterloo 0 7 9 0 0 0 1

Identity of Industrial/Commercial Contributor Waterloo Industries Inc.

	DATE	PRE-TREATED ~~NO. OF WEEK~~ DAILY FLOW, FT^3	Flow 1/week Units FT^3	Flow Total for Month Units FT^3	BOD 2/week Units	Suspended Solids 2/week Units	pH 2/week Units pH	Zinc 2/week Units	Chromium (Hexavalent) 2/week Units	Total Chromium 2/week Units	Toluene 2/week Units mg/l	TEMP Units °F	Units
July T	1	—											
W	2	1000											
TH	3	0 —											
F	4	— 0 —	1000										
S	5												
SN	6												
M	7	← 0 —					6				4	73	
T	8	— 0 —											
W	9	— 0 —											
TH	10	290											
F	11	1860	2150										
SA	12												
S	13												
Grab (Parking Pumping House)	14	1450			48 / 4675	65 / 372	7	.03 / .06	.031 / .041	.042 / .042	3	74	
	15	1620											
W	16	370											
TH	17	1210											
F	18	1060	5710										
S	19												
SN	20												
Grab M	21	1160			6990	14	6	1.32	.005	.023	3	80	
T	22	640											
W	23	1530											
TH	24	860											
F	25	— 0 —	4190										
June TH	26	5590											
F	27	20	5610										
S	28												
SN	29												
M	30	— 0 —					6				3	70	
	31												
Total			19460	114,512									
Average			622	3817									
Maximum			5690	8450									
Minimum			— 0 —	— 0 —									

State of Iowa
Department of Environmental Quality
Water Quality Management Division
Form WQM III

Signature

Senior Environmental Engineer
Title

WAST WATER TREATMENT
at
Waterloo Industies, Waterloo, Iowa

Systems and Chemistry Designed, and Installation Supervised by

Robert H. Corning of

Corning Laboratories Inc. of
Cedar Falls, Iowa

Treatment Procedure Compiled by
Victor Maloy, Project Engineer at Waterloo Industries Inc.
April 20, 1970

The waste water at this plant is divided into four catagories:

1) Cooling and rinse water that requires no chemical treatment and is admitted directly to the municipal storm sewer.

2) Chromic acid, chemically reduced to chromus acid and held temporarily in the reduction tank.

3) Water from various paint booths, cleaning and coating anks, alkaline and acid in nature, is chemically treated to floculate and settle the solids.

4) Sanitary waste water admitted directly to the municipal sanitary sewer.

Catagories 2 & 3 are admitted to a settling tank where they are chemically treated and the flocculated solids are allowed to settle.

After settling the "clear water" is pumped into the municipal sanitary sewer and the coagulated solids are periodically pumped out and hauled away.

The following waste water treatment procedure describes the tanks, aeration, chemical treatment and pumping.

Revised 2-8-72

CLEANING, COATING AND WASTE WATER TREATMENT TANKS IDENTIFICATION

Line #1	Tank No.	Capacity
Paint Tank	11	(7910 gal.)
Line #2		
Cleaner Tank	21	(1400 gal.)
Hot Water Rinse	22	(1400 gal.)
Bonderite	23	(900 gal.)
Cold Water Rinse	24	(600 gal.)
Chromic Acid (Parcolene)	25	(400 gal.)
Rinse (Stripped) Tank	26	(300 gal.)
Stripper Tank	27	(300 gal.)
Paint Tank (Hand Spray)	28	(925 gal.)
Paint Tank (Electro-static)	29	(925 gal.)
Bonderite Holding Tank	H-1	(900 gal.)
Line #3		
Cleaner & Metal Preparation	31	(3600 gal.)
Warm Water Rinse	32	(1800 gal.)
Chromic Acid (Parcolene)	33	(1700 gal.)
Paint Tank (Hand spray)	34	(1833 gal.)
Paint Tank (Electro-static)	35	(1833 gal.)
CHEMICAL TREATMENT TANKS		
Chromic Acid Reduction	R-1	(2500 gal.)
Settling Tank 1 & 2	S-12	(27,737 gal.)
Clear Water Tank	C.W. 1	(550 gal.)

WASTWATER TREATMENT

pH paper referred to in the following instructions is a chemical treated paper that when immersed in a liquid will change color to show whether the solution is acid, neutral or alkaline. The color numbers range from 1 to 14 with 7 being neutral, 1 to 6 acid, 8 to 14 alkaline.

These instructions describe the chemical treatment for the following tanks.

Tank No. 11 - Paint booth, Line No. 1, alkaline pH, 7910 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.00 P.P.M. NOTE -- For Toluene test use the "Unico" gas detection instrucment alone with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the gas detection tube package.

After the waste water has met the toluene requirements it may be drained to the settling tank No. S-12

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour thru the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the a above manhole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE

When draining more than one tank, i.e. No. 11 & 21, use only ____ gallon of No. 701 and the total of the two tanks of No. 704.

NOTE

After draining to the settling tank, check the acidity or ackalinity with pH paper, if pH ranges less than 6 or more than 9 the waste water must be neutralized. (see section on titration.)

Tank No. 21 - Cleaner, Line No. 2, alkaline pH, 1400 gallons.

1. Before draining to the settling tank No. S-12, slowly add _____ gallons sulphuric acid (H_2SO_4, 66° Baume) while the cleaner is circulated for approximately ten minutes after all the acid has been admitted to the tank to neutralize the alkalinity of the cleaner.

After the neutralized cleaner has been drained to the settling tank.

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank No. S-12, pour thru the above man hole ____ gallons of No. 704 chemical and flush to

the settling tank with plenty of tap water from the hose.

4. Allow ____ hour after the above chemical treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE

When draining and chemical treating more than one tank, i.e. # 21 & 34 & 35 use only one gallon of No. 701 and the total of the three tanks for No. 704.

Tank No. 22. Hot water rinse, line No. 2, 1400 gallons. No chemical treatment is required. Drain directly to the storm sewer.

Tank No. 23 - Zinc Phosphate, Line No. 2, 900 gallons.

The liquid from this tank is never discarded. Pump to empty tank No. H-1. The sludge or residue after cleaning is flushed to the settling tank No. 12 with tap water. The liquid in tank No. H-1 is then returned to tank No. 23 and brought up to volume and strength per "Parco" process Spec. 328

Tank No. 24 - Coldwater rinse, Line No. 2, 600 gallons, neutral pH.

No chemical treatment is required for this tank, merely drain to the storm sewer.

Tank No. 25 - Chromic acid, Line No. 2, 400 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of ____ pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changed to a blue-green color. If not a blue-green add ____ pound of sodium bisulfite, recirculate, When the liquid has reached the right color, pump to the reduction holding tank No. R-1 (see drawing No. 1) and held there until tank No. 33 is treated and pumped to the reduction tank No. R-1.

Tank No. 26 - Cold water rinse, Line No. 2, neutral pH.

No chemical treatment required. The rinse water is discharged to the storm sewer.

Tank No. 27 - Stripper, Line No. 2, Alkaline, 300 gallons.

See "Parker" process specification No. 345. When this tank becomes too contaminated with sludge to provide proper stripping, drain, flush and haul away.

NOTE This contaminated material is not to be drained into the storm or sanitary sewer.

Tank No. 28 - Paint Booth, Line No. 2, Alkaline pH, 925 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation) approximately six hours or until the toluene gas content of the water reads between 0.00 and 10.0 P.P.M.
NOTE-For toluene gas test use the "Unico" gas detection instrument along with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the detection tube package.

After the waste water has met the toluene gas requirement it may be drained to the settling tank No. S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1)

3. After the No. 701 has drained to the settling tank, pour through the above man hole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. No. 28, 29 & 21, use only ____ gallon of No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH indicates less than six or more than nine, the water must be neutralized. (see section on titration)

Tank No. 29 - Paint Booth, Line No. 2, Alkaline pH, 925 gallons

Follow the same procedure as for tank no. 28.

Tank No. 31 - Iron Phosphate, Line No. 3, Mildly Acid pH, 3600 gallons.

Drain to tank No. S-12.

2. Mix ____ gallon No..701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chrome acid reduction tank No. R-1.

3. After the No. 701 has drained to the settling tank pour ____ gallons of No. 704 through the above man hole and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above chemical treatment before starting the pump. (see pumphouse procedure and drawing No. 2)

NOTE - When draining more than one tank, i.e. No. 31, R-1, & 11, use only ____ gallon of the No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH ranges less than six (acid) or more than nine (alkaline) the waste water must be neutralized. (see section on titration)

Tank No. 32 - Warm water rinse, Line No. 3, Neutral pH, 1800 gallons

No chemical treatment required, drain to the storm sewer.

Tank No. 33 - Chromic acid, Line No. 3, 1700 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of 20 pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changes to a blue-green color. If not a blue-green, add ____ pound of sodium bisulfite and recirculate. When the liquid has reached the right color, pump to the reduction tank No. R-1 (see drawing No. 1)

Tank No. R-1, Chromous Acid, 2500 gallons, Acidic pH

This tank can contain the pumping from tank No. 33 (1700 gallons) and two pumpings from tank No. 25 (800 gallons)

NOTE - The liquid in this tank is acidic and should be drained to the settling tank No. S-12 along with two or more of the alkali tanks. Check the pH of the settling tank to see if titration and neutralization is required (see section on titration)

Note - Should it become necessary to drain this tank along (2500 gallons) treat as follows:

1. Mix ____ gallon of No. 701 chemical with ten or fifteen gallons of tap water and pour through the man hole located in the floor near the tank No. R-1. (see drawing No. 1)

2. After the No. 701 has drained to the settling tank, pour ____ gallons of No. 704 chemical through the above man hole and flush to the settling tank with plenty of tap water from the hose. (see drawing No. 1)

3. Allow ____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

Tank No. 34 - Paint Booth, Line No. 3, Alkaline pH, 1833 gallons

1. Aerate, recirculate the tank water with the exhaust fans in operation (approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.0 P.P.M.

When the water has met the toluene gas requirements it may be drained to the settling tank No S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1. (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the man hole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. 34, 31 & 21 use only ____ gallon of No. 701 and the total of the three tanks of No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. Should the pH range below six or more than nine the waste water must be neutralized (see section on titration)

Tank No. 35 - Paint booth, Line No. 3, Alkaline pH, 1833 gallons.

Follow the same procedure as for tank No. 34.

WASTE WATER TREATMENT SUPPLEMENT

1. When draining tanks No. R-1 (Chromous Acid) and tank No. 31, Iron Phosphate (mildly acid) or tanks Nos. 11, 21, 28, 29, 34, 35 (alkaline) it is suggested that two or more alkaline tanks be drained to the settling tank along with the chromous acid from tank No. R-1. The two materials will tend to neutralize each other. (check with pH paper and titrate if necessary)

2. EMERGENCY SUBSTITUTE FOR No. 704 CHEMICAL.

Twenty five pounds Alum (Potasium Aluminum Sulphate) per 1000 gallons of wastewater.

A - Mix 100 pounds of Alum with approximately 40 to 45 gallons of tap water and agitate till alum is disolved then pour through the man hole.

Example: Treating 10,700 gallons of waste water would require 25# x 10.7 = 267.5 pounds of alum.

3. When using Sulphuric Acid always wear rubber or plastic gloves, safety glasses and rubber apron. Pour the acid into the water slowly to avoid sudden heat build up. NEVER pour water into the acid. Violent spattering will be the result.

4. Vendor of chemicals
   Sodium Bisulfite --- Overton Chemical Co.
   Sulphuric Acid (66° Baume) Overton Chemical Co.
   Alum --- Overton Chemical Co.
   No. 701 (Polymer) } Hawkins Chemical Co., St. Paul
   No. 704 (Aluminum Chloride, 32° Baume) }
   Soda Ash -- Overton Chemical Co., Sumner, Iowa
   pH paper -- "pHydrion" AB pH 1-11, Curtin Scientific Co., Minneapolis, Minn.
   Toluene gas detector tubes --Curtin Scientific Co., Minneapolis, Minn.

5. Engineering Consultant -- Corning Laboratories, Cedar Falls, Ia.

APPENDIX I

AIR EMISSIONS PERMITS (PERMIT NUMBERS: 91-1-183S, 184S, 185S, 186S, AND 187S)

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

December 20, 1991

Mr. Jerry Stoll
Project Engineer
Waterloo Industries
P.O. Box 2095
Waterloo, IA 50704

Dear Mr. Stoll:

This is in response to your December 6, 1991, letter requesting modifications to permits 91-A-183, 91-A-184, 91-A-185, 91-A-186 and 91-A-187. These permits are for five paint booths. Some of the special conditions in these permits limit hexavalent chromium emissions. These limitations were placed in the permit to limit emissions of an air toxic pollutant, hexavalent chromium.

Since the issuance of those permits, the Department has stopped placing such limitations on air toxic pollutants. It is the Department's intent to address these pollutants in the future in a manner consistent with the federal Clean Air Act of 1990.

This letter constitutes supplemental permits for those paint booths.

PERMIT 91-A-183S

Eliminate the emission limitation for hexavalent chromium. Delete special conditions 1 through 7.

PERMIT 91-A-184S

Eliminate the emission limitation for hexavalent chromium. Delete special conditions 1 through 7.

PERMT 91-A-185S

Eliminate the emission limitation for hexavalent chromium. Delete special conditions 1 through 7.

PERMIT 91-A-186S

Eliminate the emission limitation for hexavalent chromium. Delete special conditions 1 through 6. (Special conditions 7 and 8 stand.)

Rineco -- Technical Services Group -- Incoming Analytical

Manifest #	743198	Line	a	Generator:	Waterloo Industries	Date:	04/11/95

RCI number	131436
Lab Sample Code	D2
BTU / Pound	15353
Halogen	0.1
pH	7
Color	blk
Specific Gravity	NA
technician	dw kc

H2O solubility	N
H2O compatibility	P
Fuel compatibility	P
Cyanide	P
Sulfide	P
Oxidizers	P
Peroxide	P
technician	dw

PCB	ND
Cl-Pesticides	ND
technician	jt
Additional Comments or Observations	

DCP Composite Comments		Digestion Method	CEM

Ag	<5	Be	<0.2	Hg	1.5	As	11.5	Cd	<15	Pb	<100	Ba	72.9	Cr	<150
Sb	<50	Se	<200	Tl	25	Al	249	Co	26.8	Mg	238.8	Ni	<50	Zn	11110

Acceptance	Fuel

Profile #: 9404-2839

still bottoms / oil point

UNIT 5

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-187
Plant No. 07-01-018
Project No. 91-120

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries Inc.	Jerry Stoll/Barney Skiles

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50704

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave., Waterloo, IA 50701

PROCESS OR SOURCE INFORMATION

5 TYPE	[X] New [ ] Modification	6 CAPACITY (Pounds/Hour)	(Tons/Year)
Air paint guns		VOC 9.86	VOC 9.38

7 MAKE & MODEL
Binks model 18

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Dry filter media booth	95%	14,900

11 MAKE & MODEL
Binks booth (10') Model CPFF-10-10-T-LH

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) Before Control	After Control
6/24/91	7/20/91	3.62 lbs./hr.	.18 lbs./hr.

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	319-235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	5/24/91	Industrial Engineer	319-235-7131

DNR USE ONLY

TSP 0.01 grain/std cubic ft
Hexavalent Chrome 0.0548 lb/yr

This equipment has been evaluated for conformance with rule(s) 23.4(13) & 455B.133(4) Code of I. of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

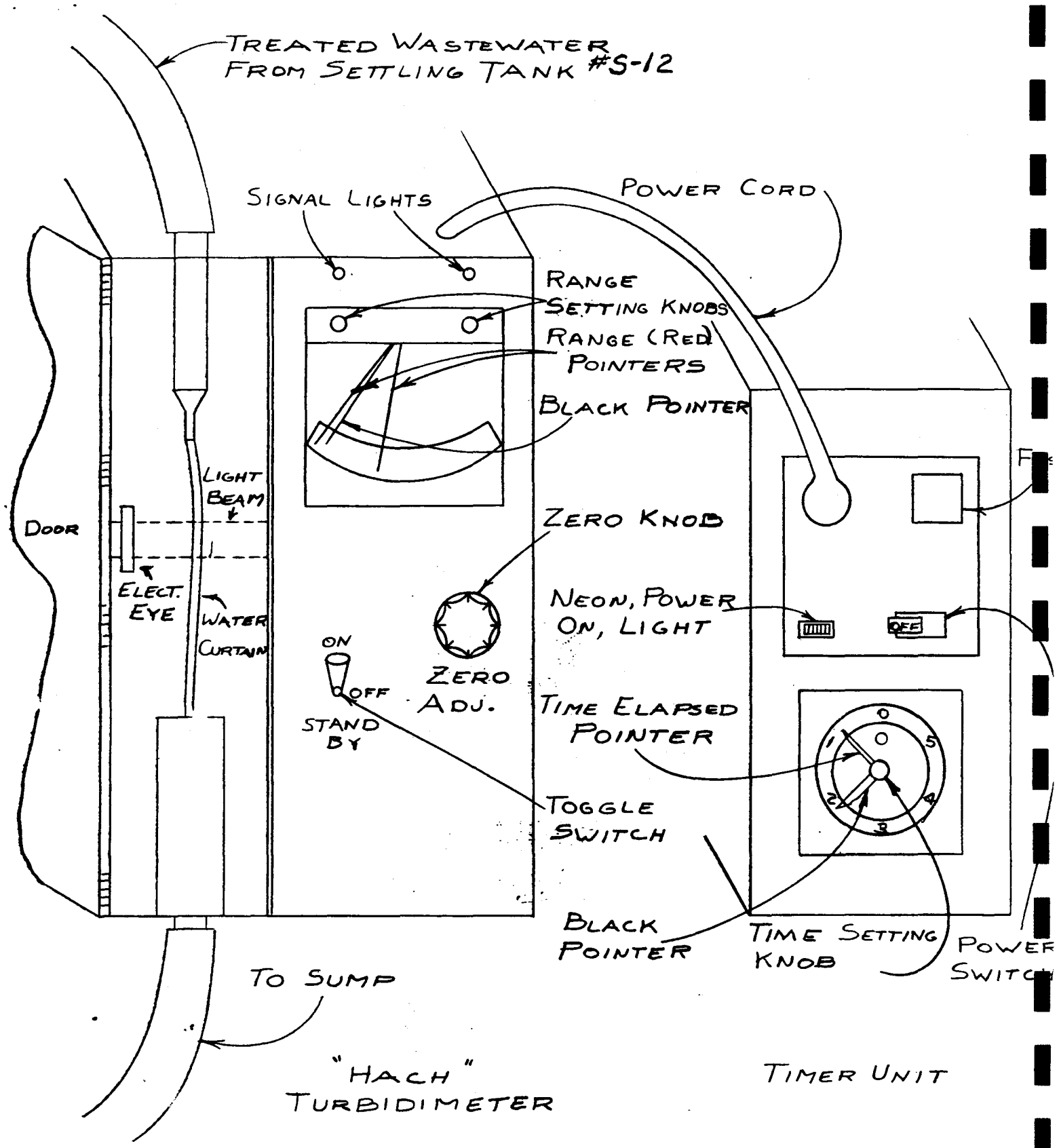
ENVIRONMENTAL PROTECTION DIVISION

Christine Spackman

Date 8/6/91

DNR form 6 (Sep 87)

542-3190



PUMP HOUSE CONTROLS

DRAWING No 2

Booth 4

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-186
Plant No. 07-01-018
Project No. 91-120

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries Inc.	Jerry Stoll/Barney Skiles

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50703

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave., Waterloo, IA 50701

PROCESS OR SOURCE INFORMATION

5 TYPE	[X] New [ ] Modification	6 CAPACITY (Pounds/Hour)	6 CAPACITY (Tons/Year)
Air paint guns		VOC 9.86	VOC 9.38

7 MAKE & MODEL
Binks model 18

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Dry filter media booth	95%	14,900

11 MAKE & MODEL
Binks booth (10') Model CPFF-10-10-T-LH

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) Before Control	After Control
6/24/91	7/20/91	3.62 lbs./hr.	.18 lbs./hr.

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	319-235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	5/24/91	Industrial Engineer	319-235-7131

DNR USE ONLY TSP 0.01 grain/std cubic ft
Hexavalent Chrome 0.0548 lb/yr

This equipment has been evaluated for conformance with rule(s) 23.4(13) & 455B.133(4) Code of IA of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Christine Spackman Date 8/6/91

DNR form 6 (Sep 87) 542-3190

4. Allow _____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. 34, 31 & 21 use only ____ gallon of No. 701 and the total of the three tanks of No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. Should the pH range below six or more than nine the waste water must be neutralized (see section on titration)

Tank No. 35 - Paint booth, Line No. 3, Alkaline pH, 1833 gallons.

Follow the same procedure as for tank No. 34.

WASTE WATER TREATMENT SUPPLEMENT

1. When draining tanks No. R-1 (Chromous Acid) and tank No. 31, Iron Phosphate (mildly acid) or tanks Nos. 11, 21, 28, 29, 34, 35 (alkaline) it is suggested that two or more alkaline tanks be drained to the settling tank along with the chromous acid from tank No. R-1. The two materials will tend to neutralize each other. (check with pH paper and titrate if necessary)

2. EMERGENCY SUBSTITUTE FOR No. 704 CHEMICAL.

Twenty five pounds Alum (Potasium Aluminum Sulphate) per 1000 gallons of wastewater.

A - Mix 100 pounds of Alum with approximately 40 to 45 gallons of tap water and agitate till alum is disolved then pour through the man hole.

Example: Treating 10,700 gallons of waste water would require
25# x 10.7 = 267.5 pounds of alum.

3. When using Sulphuric Acid always wear rubber or plastic gloves, safety glasses and rubber apron. Pour the acid into the water slowly to avoid sudden heat build up. NEVER pour water into the acid. Violent spattering will be the result.

4. Vendor of chemicals
Sodium Bisulfite --- Overton Chemical Co.
Sulphuric Acid (66° Baume) Overton Chemical Co.
Alum --- Overton Chemical Co.
No. 701 (Polymer) } Hawkins Chemical Co., St. Paul
No. 704 (Aluminum Chloride, 32° Baume) }
Soda Ash -- Overton Chemical Co., Sumner, Iowa
pH paper -- "pHydrion" AB pH 1-11, Curtin Scientific Co., Minneapolis, Minn.
Toluene gas detector tubes --Curtin Scientific Co., Minneapolis, Minn.

5. Engineering Consultant -- Corning Laboratories, Cedar Falls, Ia.

Booth 3

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-185
Plant No. 07-01-018
Project No. 91-120

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries Inc.	Jerry Stoll/Barney Skiles

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50704

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave., Waterloo, IA 50701

PROCESS OR SOURCE INFORMATION

5 TYPE	[ ] New [X] Modification	6 CAPACITY VOC (Pounds/Hour)	(Tons/Year)
Electrostatic gun mounted to robot		9.22	8.78
7 MAKE & MODEL: Devilbiss gun (RME591) on TR4500 robot			

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Convert to dry filter		

11 MAKE & MODEL
Binks booth (12') using Columbus Ind. filters

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) TSP Before Control	After Control
6/24/91	7/20/91	1.41 lbs./hr.	.75 lbs./hr.

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	319-235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	5/24/91	Industrial Engineer	319-235-7131

DNR USE ONLY

This equipment has been evaluated for conformance with rule(s) 23.4(13) & 455B.133(4) Code of Iowa of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

TSP 0.01 grain/std cubic ft
Hexavalent Chrome 0.0213 lb/yr

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Christine Spackman

Date 8/6/91

DNR form 6 (Sep 87)

542-3190

After the waste water has met the toluene gas requirement it may be drained to the settling tank No. S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1)

3. After the No. 701 has drained to the settling tank, pour through the above man hole ____ gallons of No. 704 chemical and flush to the settling tank with pleaty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE - When draining more than one tank i.e. No. 28, 29 & 21, use only ____ gallon of No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH indicates less than six or more than nine, the water must be neutralized. (see section on titration)

<u>Tank No. 29</u> - Paint Booth, Line No. 2, Alkaline pH, 925 gallons

Follow the same procedure as for tank no. 28.

<u>Tank No. 31</u> - Iron Phosphate, Line No. 3, Mildly Acid pH, 3600 gallons.

1. Drain to tank No. S-12.

2. Mix ____ gallon No..701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chrome acid reduction tank No. R-1.

3. After the No. 701 has drained to the settling tank pour ____ gallons of No. 704 through the above man hole and flush to the settling tank with pleaty of tap water from the hose.

4. Allow _____ hour after the above chemical treatment before starting the pump. (see pumphouse procedure and drawing No. 2)

NOTE - When draining more than one tank, i.e. No. 31, R-1, & 11, use only ____ gallon of the No. 701 and the total of the three tanks for No. 704.

NOTE - After draining to the settling tank, check the acidity or alkalinity with pH paper. If pH ranges less than six (acid) or more than nine (alkaline) the waste water must be neutralized. (see section on titration)

Bo th 2

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-184
Plant No. 07-01-018
Project No. 91-120

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries Inc.	Jerry Stoll/Barney Skiles

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50704

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave., Waterloo, IA 50701

PROCESS OR SOURCE INFORMATION

5 TYPE	( ) New / (X) Modification	6 CAPACITY (Pounds/Hour)	VOC (Tons/Year)
Electrostatic bells & (1) gun on robot		18.45	17.56

7 MAKE & MODEL	Model
Devilbiss Aero bells (3) & Devilbiss ES gun	RME-591

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Convert to dry filter		36,000-

11 MAKE & MODEL
Binks booth to use Columbus Ind. filters

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) TSP Before Control	After Control
6/24/91	7/20/91	2.83 lbs./hr.	1.49 lbs./hr.

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	319-235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	5/24/91	Industrial Engineer	319-235-7131

DNR USE ONLY

TSP 0.01 grain/std cubic ft
Hexavalent Chrome 0.0426 lb/yr

This equipment has been evaluated for conformance with rule(s) 23.4(13) & 455B.133(4) code of Iowa of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Christine Spackman

Date 8/6/91

DNR form 6 (Sep 87)

642-3190

WASTWATER TREATMENT

pH paper referred to in the following instructions is a chemical treated paper that when immersed in a liquid will change color to show whether the solution is acid, neutral or alkaline. The color numbers range from 1 to 14 with 7 being neutral, 1 to 6 acid, 8 to 14 alkaline.

These instructions describe the chemical treatment for the following tanks.

Tank No. 11 - Paint booth, Line No. 1, alkaline pH, 7910 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.00 P.P.M. NOTE -- For Toluene test use the "Unico" gas detection instrument alone with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the gas detection tube package.

After the waste water has met the toluene requirements it may be drained to the settling tank No. S-12

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour thru the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the a above manhole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

4. Allow _____ hour after the above treatment before starting the pump (see pump house procedure and drawing No. 2)

NOTE

When draining more than one tank, i.e. No. 11 & 21, use only ____ gallon of No. 701 and the total of the two tanks of No. 704.

NOTE

After draining to the settling tank, check the acidity or ackalinity with pH paper, if pH ranges less than 6 or more than 9 the waste water must be neutralized. (see section on titration.)

Tank No. 21 - Cleaner, Line No. 2, alkaline pH, 1400 gallons.

1. Before draining to the settling tank No. S-12, slowly add _____ gallons sulphuric acid (H_2SO_4, 66° Baume) while the cleaner is circulated for approximately ten minutes after all the acid has been admitted to the tank to neutralize the alkalinity of the cleaner.

After the neutralized cleaner has been drained to the settling tank.

2. Mix ____ gallon of No. 701 chemical with 10 to 15 gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1 (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank No. S-12, pour thru the above man hole ____ gallons of No. 704 chemical and flush to

Booth 1

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-183
Plant No. 07-01-018
Project No. 91-120

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries Inc.	Jerry Stoll/Barney Skiles

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50704

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave., Waterloo, IA 50701

PROCESS OR SOURCE INFORMATION

5 TYPE		6 CAPACITY VOC (Pounds/Hour)	(Tons/Year)
Electrostatic turbo bells for painting	[ ] New [X] Modification	18.45	17.56
7 MAKE & MODEL: Devilbiss Bells (aero bell)			

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Convert to dry filter media	95	29,500

11 MAKE & MODEL
Binks booth to use Columbus Ind. filters

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) TSP Before Control	After Control
6/24/91	7/20/91	2.83 lbs./hr	1.49 lbs./hr.

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	319-235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	5/24/91	Industrial Engineer	319-235-7131

DNR USE ONLY TSP 0.01 grain/std cubic ft
Hexavalent Chrome 0.0426 lb/yr

This equipment has been evaluated for conformance with rule(s) 23.4(13) & 455B.133(4) Code of IA of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Christine Spackman Date 8/6/91

DNR form 6 (Sep 87) 542-3190

WAST WATER TREATMENT
at
Waterloo Industies, Waterloo, Iowa

Systems and Chemistry Designed, and Installation Supervised by

Robert H. Corning of

Corning Laboratories Inc. of
Cedar Falls, Iowa

Treatment Procedure Compiled by
Victor Maloy, Project Engineer at Waterloo Industries Inc.
April 20, 1970

The waste water at this plant is divided into four catagories:

1) Cooling and rinse water that requires no chemical treatment and is admitted directly to the municipal storm sewer.

2) Chromic acid, chemically reduced to chromus acid and held temporarily in the reduction tank.

3) Water from various paint booths, cleaning and coating tanks, alkaline and acid in nature, is chemically treated to floculate and settle the solids.

4) Sanitary waste water admitted directly to the municipal sanitary sewer.

Catagories 2 & 3 are admitted to a settling tank where they are chemically treated and the flocgulated solids are allowed to settle.

After settling the "clear water" is pumped into the municipal sanitary sewer and the coagulated solids are periodically pumped out and hauled away.

The following waste water treatment procedure describes the tanks, aeration, chemical treatment and pumping.

Revised 2-8-72

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
1922 Main Street
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

Formerly:
SERCO Laboratories

ANALYTICAL REPORT

Mr. Barney Skiles
WATERLOO INDUSTRIES
300 Ansborough
Waterloo IA 50704

11-07-88

Sample No.: 29444

Sample Description: Sludge From Treatment Tank

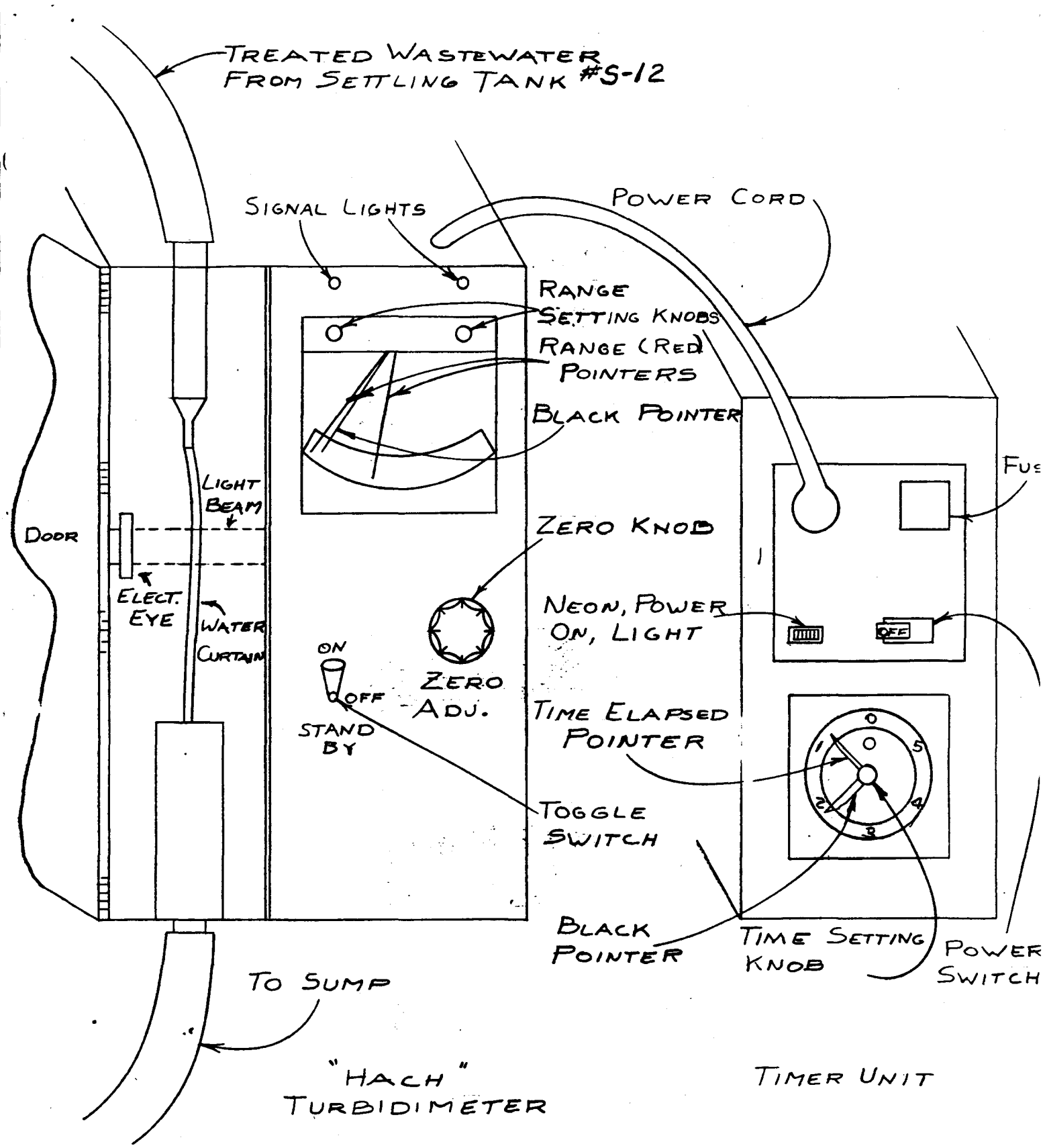
Date Taken: 10-21-88

Date Received: 10-21-88 1600

Solids, Total	55.74	%
Benzene	0.02	ug/g
Toluene	<0.02	ug/g
Xylenes, Total	0.28	ug/g
Acetone	<1.0	ug/g
Isobutyl alcohol	31.	ug/g
V,M,&P Naptha	40.	ug/g

Sample introduction performed in reference to EPA Method 5020 (head space). Analysis performed in reference to EPA Method 8020 for volatile organics using flame ionization detection.

David W. Havick
Technical Services Supervisor



PUMP HOUSE CONTROLS

DRAWING Nº 2

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Barney Skiles
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

06/25/1992

Sample No.: I72783
Job Number: 92.4587
Page 1

Sample Description: Misc. Sludge

Date Taken:

Date Received: 06/08/1992

Parameter	Results	Units	Matrix Spike % Recovery
Solids, Total	79.87	%	
Paint Filter	Pass.		
*Ignitability (Flash Point)			
TCLP - Arsenic	<0.0500	mg/L	54
TCLP - Barium	<5.0	mg/L	106
TCLP - Cadmium	<0.20	mg/L	100
TCLP - Chromium	<1.0	mg/L	93
TCLP - Lead	<1.0	mg/L	104
TCLP - Mercury	<0.0500	mg/L	93
TCLP - Selenium	<0.0500	mg/L	77
TCLP - Silver	<0.50	mg/L	111
TCLP - pH	9.6	units	
TCLP - Final pH	6.5	units	
Extractable pH	8.8	units	

*Solid: Does not burn.

Matrix spike correction factors have been applied to results greater than reporting limits. Reporting limits are indicated by a less than (<) symbol.

Cheryl L. Wilson
Project Manager

iowa department of environmental quality

reply to Katherine Royal
phone: 515/281-8915

July 25, 1979

Mr. Cordell Peterson
Landfill Service Corporation
Box GB, 104 Black Hawk Drive
Reinbeck, IA 50669

Dear Mr. Peterson:

Enclosed is your copy of the special waste authorization issued to the Black Hawk County Sanitary Landfill permitting the disposal of 16,000 gallons per six months of wastewater pretreatment sludge from the paint system of Waterloo Industries, Inc., Waterloo, Iowa. Although the Black Hawk County Sanitary Landfill already receives a significant number of industrial sludges, this volume of liquid each six months should not distress the landfill if properly managed. The staff's calculations to predict leaching indicate there should be minimal impact on the groundwater from this disposal. Note this authorization voids authorization 0717506159 and replaces it.

If this or other specially authorized wastes are received, then a monthly report summarizing the disposal activities shall be submitted. The report shall include identification of the waste and volume authorized, the waste generator, and a copy of the waste disposal record. This report shall also include a listing of daily receipts of sanitary refuse. For all liquid wastes, the landfill operator shall refer to "Table 1: Allowable Liquid Additions, Black Hawk County Sanitary Landfill" as listed in the amended permit. If an authorized waste is not received, a statement to that effect must be included in the monthly special waste reports.

Please note, the authorization has been issued for a one-year time period. You should work with Mr. Harley of Waterloo Industries and submit a request for renewal in a timely manner prior to the expiration date. If you have any questions or if the Department can be of further assistance, please contact me.

Sincerely,

AIR AND LAND QUALITY DIVISION

BZKarachiwala

B. Z. Karachiwala, P.E.
Chief, Land Quality Branch

BZK:ENE:mjk

Enclosure
cc: Mark Nash, Operator, Black Hawk County Sanitary Landfill
Milt Hartley, Waterloo Industries, Waterloo
Rita Burbridge, Black Hawk County Health Department, Waterloo
Bruce Bottorff, Black Hawk County Solid Waste Disposal Comm., Waterloo
Jerry Franke, Waterloo City Plan & Program Commission, Waterloo
Jerry Rattenborg, DEQ Regional Office No. 1, Manchester

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-220
Plant No. 07-01-018
Project No. 91-769

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries, Inc.	Jerry Stoll

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50701

4 EQUIPMENT LOCATION ADDRESS: 300 Ansborough Ave.

PROCESS OR SOURCE INFORMATION

5 TYPE	[X] New [ ] Modification	6 CAPACITY (Pounds/Hour)	(Tons/Year)
Heat cleaning oven		60	

7 MAKE & MODEL: Ace Inc. Model RKG-260

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Afterburner	99%	300

11 MAKE & MODEL: Integral to Model RKG - 260

12 CONSTRUCTION SCHEDULE		13 EMISSIONS (specify units)	
Start Date	Completion Date	Before Control	After Control
8-30-91	9-10-91		Particulate 0.023 LBS/HR

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	7-23-91	Ind. Engr.	319-235-7131

DNR USE ONLY

This equipment has been evaluated for conformance with rule(s) 567--23.4(12) of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Michael Hayward

Date Sept 27, 1991

DNR form 6 (Sep 87)

542-3190

Chemical Name	Product Manufacturer	Product Supplier	Dept. Used In	How Material Used	Hazardous Components	CAS Number	Gallons/ Pounds Used/Year	Amount Purchased	HMIS
[illegible] Enamel	Valspar	Valspar	421	Sprayed On	Xylene 21% N-Butyl Alcohol 10% Titanium Dioxide 5% Formaldehyde 1%	1330-20-7 71-36-3 13463-67-7 50-00-0		1,243 lbs	
[illegible] Enamel	Valspar	Valspar	421	Sprayed On	Xylene 25% N-Butyl Alcohol 10% Formaldehyde 1%	1330-20-7 71-36-3 50-00-0		22,276 lbs	
[illegible] Alternate Gray B	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% I-Butanol 10% Ethyl Benzene 5%	1330-20-7 108-88-3 71-36-3 100-41-4		3,045 lbs	2,3,0 & total gal. purchased
[illegible] Gray [illegible]	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% I-Butanol 10% Ethyl Benzene 5%	1330-20-7 108-88-3 71-36-3 100-41-4		—	2,3,0
[illegible] Gray Waterline	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% I-Butanol 10% Ethyl Benzene 5%	1330-20-7 108-88-3 71-36-3 100-41-4		—	2,3,0
[illegible] Gray Waterline	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% I-Butanol 10% Ethyl Benzene 5% Titanium Dioxide 20%	1330-20-7 108-88-3 71-36-3 100-41-4 13463-67-7		—	2,3,0
[illegible] Gray Spatter Base Enamel	Accurate	Accurate	421	Sprayed On	Xylene 5% Toluene 5% Titanium Dioxide 20% I-Butanol 10%	1330-20-7 108-88-3 13463-67-7 71-36-3		1,326 lbs	2,3,0

1990 Paint purchased

WATERLOO INDUSTRIES
HAZARDOUS CHEMICAL INVENTORY SHEET

DATE_____
PAGE

Chemical Name	Product Manufacturer	Product Supplier	Dept. Used In	How Material Used	Hazardous Components	CAS Number	Gallons/ Pounds Used/Year	Amount Purchased	HMIS
[illegible] Brown Wrinkle	Accurate	Accurate	421	Sprayed On	Xylene 5% Toluene 35% Titanium Dioxide 5%	1330-20-7 108-88-3 13463-67-7		8,098 lbs	2,3,0 & total gals purchased
[illegible] Brown Smooth	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% Ethyl Benzene 5% 1-Butanol 10%	1330-20-7 108-88-3 100-41-4 71-36-3		—	2,3,0
[illegible] Brown	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% 1-Butanol 10% Ethyl Benzene Titanium Dioxide 5%	1330-20-7 108-88-3 71-36-3 100-41-4 13463-67-7		—	2,3,0
[illegible] Brown	Accurate	Accurate	421	Sprayed On	Xylene 15% Toluene 5% Ethyl Benzene 5% 1-Butanol 10%	1330-20-7 108-88-3 100-41-4 71-36-3		—	2,3,0
[illegible] Dark Gray Primer	Valspar	Valspar	421	Sprayed On	Xylene 30% Ethyl Benzene 1% Isobutyl Alcohol 1% N-Butyl Alcohol 5%	1330-20-7 100-41-4 78-83-1 71-36-3		—	2,3,0
[illegible] Red	Valspar	Valspar	421	Sprayed On	Isopropyl Alcohol 10% Lead 1.6% Xylene 1% Titanium Dioxide 25%	67-63-0 7439-92-1 1330-20-7 13463-67-7		1,054 lbs	2,3,0
[illegible]-6404 Red	PPG	PPG	431	Electrodeposition Resin	Isopropyl Alcohol - 5% Glycol Ether - 15%			41,956 lbs	

see later sheet

WATERLOO IOWA PLANT

H- 8594 VENDOR NUMBER AMA0141 VENDOR The Valspar Corporation MATERIAL S.L. Gray Bake Enamel

CHASING
ORMATION

IIAL
COSITY
FORD CUP @ 77°F.
0" to 50"

GHT PER GALLON
0.31 to 10.61

AL SOLIDS %
WEIGHT
1.2 ± 1.0%

UME SOLIDS %
2.3 ± 1.0%

.06
CIL HARDNESS
IMUM HB 1.0 ± .1
ED 12' @ 310°F.**

IRAGE AT 1 MIL
77 sq. ft.
60°
0 minimum @ 1.0 mil

LINE #3
REDUCER - RATIO

HAND SPRAY

Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.

ELECTROSTATIC TURBO BELLS

Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.

Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.

CURING INFORMATION

STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
7	4.66	49.4	250°F	270°F
9	6.0	38.3	250°F	270°F
11	7.33	31.4	260°F	280°F
13	8.66	26.6	270°F	290°F
15	10.0	23.0	290°F	310°F
17	11.33	20.3	300°F	320°F
19	12.66	18.2	300°F	320°F
21	14.0	16.4	310°F	330°F
23	15.33	15.0	310°F	330°F
25	16.66	13.8	310°F	330°F
27	18.0	12.8	310°F	330°F
29	19.33	11.9	315°F	335°F
31	20.66	11.1	320°F	340°F
33	22.0	10.5	320°F	340°F
35	23.33	9.9	325°F	340°F

ARKS: OPTIMUM DRY FILM THICKNESS DESIRED

EE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

January 19, 1990 POLARITY: 0.4 to 1.0 Megohm

PUMP HOUSE PROCEDURE

When the treated waste water has been in the settling tank, S-12 for _____ hours it will be ready to pump into the sanitary sewer.

1. Enter the fluidmeter reading in the record book. (Meter is located on the floor at south end of the clear water tank, C.W.-1)

   The control panel (located on the south wall of the pump house) supports the "Hach" turbidimeter and timer case with power switch and fusebox.

"Hach" Turbidimeter and Timer

2. With the left knob at top of meter, set the left red pointer at zero.
3. With the right knob at top of meter, set the right red pointer at 1.5.
4. See that the toggle switch is at the "off" position.
5. Flip power switch on the timer case to "on" position, the pump will start operating.
6. Close the small fluid valve, located at the top of the outlet pipe at top of the clear water tank, C.W.-1 and flip the toggle switch to stand by.
7. With the zero adjust knob, adjust the black pointer for a zero reading.
8. Open door of turbidimeter, clean electric eye and light source if dirty, and adjust the forementioned fluid valve to produce a smooth flowing water curtain. Then close door.
9. When the black pointer of the meter settles to range between zero and 1.5 then flip the toggle switch to the "on" position.

The turbidimeter and timer are now fully activated and the pump will continue to purge the settling tank, S-12 until the black pointer ranges beyond 1.5. The pump will stop for the time indicated on the timer, this allows the material in the settling tank to clear, then the pump will recycle.

The settling tank should be purged before any new untreated waste water is admitted to the tank. (Check with gage stick)

NOTE — Before any new waste water is admitted to the settling tank <u>the toggle switch of the turbidimeter and the power switch on the timer case must be in the "off" position</u>.

A time cycle of _____ hours as set on the timer gives a good settling period before the pump recycles.

Do not change time period without authorization.

The settling tank, S-12 will, in time, become difficult to purge below 36". Then the remaining material should be pumped out and hauled away.

H- 8515 VENDOR NUMBER AMD0088 VENDOR The Valspar Corporation MATERIAL Beige Bake Enamel

RCHASING
FORMATION

ITIAL
SCOSITY
FORD CUP @ 77°F.
50" to 60"

IGHT PER GALLON
8.48 to 8.78

IAL SOLIDS %
WEIGHT
49.9 ± 1.0%

LUME SOLIDS %
38.6 ± 1.0%

C
.32

HCIL HARDNESS
IMUM HB 1.0 ± .1
KED 12' @ 310°F.**

VERAGE AT 1 MIL
618 sq. ft.

OSS 600

85 minimum @ 1.0 mil

LINE #3
REDUCER - RATIO

HAND SPRAY

Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.

ELECTROSTATIC TURBO BELLS

Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.

Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.

CURING INFORMATION

STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
7	4.66	49.4	250°F	270°F
9	6.0	38.3	250°F	270°F
11	7.33	31.4	260°F	280°F
13	8.66	26.6	270°F	290°F
15	10.0	23.0	290°F	310°F
17	11.33	20.3	300°F	320°F
19	12.66	18.2	300°F	320°F
21	14.0	16.4	310°F	330°F
23	15.33	15.0	310°F	330°F
25	16.66	13.8	310°F	330°F
27	18.0	12.8	310°F	330°F
29	19.33	11.9	315°F	335°F
31	20.66	11.1	320°F	340°F
33	22.0	10.5	320°F	340°F
35	23.33	9.9	325°F	340°F

MARKS: OPTIMUM DRY FILM THICKNESS DESIRED

SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

DATE: January 19, 1990 POLARITY: 0.4 to 1.0 mil

Tank No. 32 - Warm water rinse, Line No. 3, Neutral pH, 1800 gallons

No chemical treatment required, drain to the storm sewer.

Tank No. 33 - Chromic acid, Line No. 3, 1700 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of 20 pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changes to a blue-green color. If not a blue-green, add ____ pound of sodium bisulfite and recirculate. When the liquid has reached the right color, pump to the reduction tank No. R-1 (see drawing No. 1)

Tank No. R-1, Chromous Acid, 2500 gallons, Acidic pH

This tank can contain the pumping from tank No. 33 (1700 gallons) and two pumpings from tank No. 25 (800 gallons)

NOTE - The liquid in this tank is acidic and should be drained to the settling tank No. S-12 along with two or more of the alkali tanks. Check the pH of the settling tank to see if titration and neutralization is required (see section on titration)

Note - Should it become necessary to drain this tank along (2500 gallons) treat as follows:

1. Mix ____ gallon of No. 701 chemical with ten or fifteen gallons of tap water and pour through the man hole located in the floor near the tank No. R-1. (see drawing No. 1)

2. After the No. 701 has drained to the settling tank, pour ____ gallons of No. 704 chemical through the above man hole and flush to the settling tank with plenty of tap water from the hose. (see drawing No. 1)

3. Allow ____ hour after the above treatment before starting the pump. (see pump house procedure and drawing No. 2)

Tank No. 34 - Paint Booth, Line No. 3, Alkaline pH, 1833 gallons

1. Aerate, recirculate the tank water with the exhaust fans in operation (approximately six hours or until the toluene gas content of the water reads between 0.0 and 10.0 P.P.M.

When the water has met the toluene gas requirements it may be drained to the settling tank No S-12.

2. Mix ____ gallon of No. 701 chemical with ten to fifteen gallons of tap water and pour through the man hole located in the floor near the chromic acid reduction tank No. R-1. (see drawing No. 1 of these instructions)

3. After the No. 701 has drained to the settling tank, pour through the man hole ____ gallons of No. 704 chemical and flush to the settling tank with plenty of tap water from the hose.

NO. M- 8078 VENDOR NUMBER AMD0072 VENDOR The Valspar Corporation MATERIAL Light Beige Bake Enam

PURCHASING INFORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
INITIAL VISCOSITY #4 FORD CUP @ 77°F. 40" to 50"	HAND SPRAY	STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
WEIGHT PER GALLON 10.21 to 10.51	Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
TOTAL SOLIDS % BY WEIGHT 59.2 ± 1.0%		9	6.0	38.3	250°F	270°F
VOLUME SOLIDS % 40.3 ± 1.0%		11	7.33	31.4	260°F	280°F
VOC 4.23		13	8.66	26.6	270°F	290°F
PENCIL HARDNESS MINIMUM HB 1.0 ± .1 BAKED 12' @ 310°F.**		15	10.0	23.0	290°F	310°F
COVERAGE AT 1 MIL 645 sq. ft.	ELECTROSTATIC TURBO BELLS	17	11.33	20.3	300°F	320°F
GLOSS 60° 30 to 40 @ 1.0 mil	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	19	12.66	18.2	300°F	320°F
		21	14.0	16.4	310°F	330°F
		23	15.33	15.0	310°F	330°F
	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	25	16.66	13.8	310°F	330°F
		27	18.0	12.8	310°F	330°F
		29	19.33	11.9	315°F	335°F
		31	20.66	11.1	320°F	340°F
		33	22.0	10.5	320°F	340°F
		35	23.33	9.9	325°F	340°F

REMARKS: OPTIMUM DRY FILM THICKNESS DESIRED

**SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

Date: January 19, 1990 POLARITY: 0.4 to 1.0 Megohm

the settling tank with pleaty of tap water from the hose.

4. Allow ____ hour after the above chemical treatment before starting the pump. (see pump house procedure and drawing No. 2)

NOTE

When draining and chemical treating more than one tank, i.e. # 21 & 34 & 35 use only one gallon of No. 701 and the total of the three tanks for No. 704.

Tank No. 22. Hot water rinse, line No. 2, 1400 gallons. No chemical treatment is required. Drain directly to the storm sewer.

Tank No. 23 - Zinc Phosphate, Line No. 2, 900 gallons.

The liquid from this tank is never discarded. Pump to empty tank No. H-1. The sludge or residue after cleaning is flushed to the settling tank No. 12 with tap water. The liquid in tank No. H-1 is then returned to tank No. 23 and brought up to volume and strength per "Parco" process Spec. 328

Tank No. 24 - Coldwater rinse, Line No. 2, 600 gallons, neutral pH.

No chemical treatment is required for this tank, merely drain to the storm sewer.

Tank No. 25 - Chromic acid, Line No. 2, 400 gallons, Acid pH

The chromic acid is reduced to chromous acid by the addition of ____ pounds of sodium bisulfite while circulating through the tank and spray nozzles for ten to fifteen minutes or until the liquid changes to a blue-green color. If not a blue-green add ____ pound of sodium bisulfite, recirculate, When the liquid has reached the right color, pump to the reduction holding tank No. R-1 (see drawing No. 1) and held there until tank No. 33 is treated and pumped to the reduction tank No. R-1.

Tank No. 26 - Cold water rinse, Line No. 2, neutral pH.

No chemical treatment required. The rinse water is discharged to the storm sewer.

Tank No. 27 - Stripper, Line No. 2, Alkaline, 300 gallons.

See "Parker" process specification No. 345. When this tank becomes too contaminated with sludge to provide proper stripping, drain, flush and haul away.

NOTE This contaminated material is not to be drained into the storm or sanitary sewer.

Tank No. 28 - Paint Booth, Line No. 2, Alkaline pH, 925 gallons.

1. Aerate (recirculate the tank water with the exhaust fans in operation) approximately six hours or until the toluene gas content of the water reads between 0.00 and 10.0 P.P.M.
NOTE-For toluene gas test use the "Unico" gas detection instrument along with toluene gas detector tubes. Instructions for operating this instrument are with the instrument case and the detection tube package.

WATERLOO INDUSTRIES
WATERLOO, IOWA PLANT

NO. H 7621 VENDOR NUMBER AMA0149 VENDOR The Valspar Corporation MATERIAL Black Semi-Gloss Bake Enamel

PURCHASING INFORMATION	LINE #3 REDUCER - RATIO
INITIAL VISCOSITY #4 FORD CUP @ 77°F 50" to 60"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.
WEIGHT PER GALLON 7.99 to 8.29	
TOTAL SOLIDS % BY WEIGHT 45.2 ± 1.0%	
VOLUME SOLIDS % 37.0 ± 1.0%	ELECTROSTATIC TURBO BELLS Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.
VOC 4.46	
PENCIL HARDNESS MINIMUM HB 1.0 ± .1 BAKED 12' @ 310°F**	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.
COVERAGE AT 1 MIL 592 sq. ft.	
GLOSS 60° 60 to 70 @ 1.0 mil	

CURING INFORMATION

STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
7	4.66	49.4	250°F	270°F
9	6.0	38.3	250°F	270°F
11	7.33	31.4	260°F	280°F
13	8.66	26.6	270°F	290°F
15	10.0	23.0	290°F	310°F
17	11.33	20.3	300°F	320°F
19	12.66	18.2	300°F	320°F
21	14.0	16.4	310°F	330°F
23	15.33	15.0	310°F	330°F
25	16.66	13.8	310°F	330°F
27	18.0	12.8	310°F	330°F
29	19.33	11.9	315°F	335°F
31	20.66	11.1	320°F	340°F
33	22.0	10.5	320°F	340°F
35	23.33	9.9	325°F	340°F

COMMENTS: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

**SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 1, 1973

DATE: January 18, 1990 POLARITY: 0.4 to . Megs

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 100 ppm

EFFECTS OF ACUTE OVER-EXPOSURE: Slight irritation to mucous membranes. Harmful or fatal if swallowed.

EFFECTS OF SWALLOWING AND CHRONIC OVER-EXPOSURE: Harmful or fatal if swallowed.

EMERGENCY & FIRST AID PROCEDURES:
SKIN: Wash with soap and water.
BREATHING: Remove patient to fresh air.
EYES: Flush with water for at least 15 minutes.
SWALLOWING: CALL A PHYSICIAN IMMEDIATELY! Do NOT induce vomiting.

V. REACTIVITY DATA

STABILITY: Stable
CONDITIONS TO AVOID: Heat & open flame.
INCOMPATABILITY: Isolate from strong oxidizers such as permanganate.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide from burning.

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF SPILLED OR RELEASED: Remove all sources of ignition. Avoid breathing of vapors. Ventilate. Remove with inert, absorbent, non-sparking products.

WASTE DISPOSAL METHOD: Incineration according to air pollution regulations. Do not incinerate in closed containers.

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Ventilate to keep air below TLV.
VENTILATION: LOCAL EXHAUST: Preferable MECHANICAL(GENERAL): Acceptable
SPECIAL: None OTHER: None
PROTECTIVE GLOVES: Recommended (Must not dissolve in solvents)
EYE PROTECTION: Goggles required
OTHER PROTECTION: None

VIII. SPECIAL PRECAUTIONS

Do not store above 120°F. Store large amounts in structures made for OSHA Class II liquids. Avoid free fall of liquid. Ground container when pouring. Do not flame cut, braze or weld. Empty container hazardous! Continue all label precautions!

DATE: 5 / 85
11/85

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION TO INSTALL OR ALTER
EQUIPMENT OR CONTROL EQUIPMENT
Read Instructions on Reverse
Print in Ink or Type

DNR USE
Permit Number 93-A-311
Plant Number 07-01-018
Project Number 93-139

APPLICANT Telephone Number (319) 235-7131 Ext. ____

1 Waterloo Industries
Name of Firm

2 Jerry Stoll
Person to Contact

3 P.O. BOX 2095 | Waterloo | IA | 50701
Mailing Address | City | State | Zip Code

4 300 Ansborough Avenue | Waterloo | IA | 50701
Equipment Location Address

PROCESS EQUIPMENT (XXX) New ( ) Modification

5 Dry Off Oven
Type

PM_{10}=0.01 PM_{10}=0.04
6a Other =0.24 (lbs/hr) 6b Other = 1.06 (tons/year)
Max. Emissions Potential
8760 Hours/Year

7 Therma-Tron-X Company
Make and Model

POLLUTION CONTROL EQUIPMENT

8 N/A
Type

9 7/1/93 Start Date
10 7/20/93 Completion Date
Construction Schedule

11 N/A
Make and Model
PM_{10}=0.01 lb/hr

12a N/A Efficiency %
12b N/A Air Flow Rate(scfm)

13a Other = 0.24 lb/hr Actual Before Control
13b N/A Actual After Control
13c N/A Requested Permit Limit

Emissions [specify units and contaminant (PM, VOC, NO_x, SO_2, CO or Pb)]
Other = VOC, NO_x, SO_x, CO

ENGINEER SUBMITTING PLANS

14 Jerry Stoll
Name

(319) 235-7131
Telephone Number

Iowa P.E. No.

CERTIFICATION

15 Larry Kjar | 6/7/93 | Plant Manager | (319) 235-7131
Name | Date | Title | Telephone Number

Signature [signature]

I am the owner or owner's employee responsible for this installation.

FORM 6
542-3190

Printed on Recycled Paper

PUMP HOUSE PROCEDURE

When the treated waste water has been in the settling tank, S-12 for _____ hours it will be ready to pump into the sanitary sewer.

1. Enter the fluidmeter reading in the record book. (Meter is located on the floor at south end of the clear water tank, C.W.-1)

The control panel (located on the south wall of the pump house) supports the "Hach" turbidimeter and timer case with power switch and fusebox.

"Hach" Turbidimeter and Timer

2. With the left knob at top of meter, set the left red pointer at zero.
3. With the right knob at top of meter, set the right red pointer at 1.5.
4. See that the toggle switch is at the "off" position.
5. Flip power switch on the timer case to "on" position, the pump will start operating.
6. Close the small fluid valve, located at the top of the outlet pipe at top of the clear water tank, C.W.-1 and flip the toggle switch to stand by.
7. With the zero adjust knob, adjust the black pointer for a zero reading.
8. Open door of turbidimeter, clean electric eye and light source if dirty, and adjust the forementioned fluid valve to produce a smooth flowing water curtain. Then close door.
9. When the black pointer of the meter settles to range between zero and 1.5 then flip the toggle switch to the "on" position.

The turbidimeter and timer are now fully activated and the pump will continue to purge the settling tank, S-12 until the black pointer ganges beyond 1.5. The pump will stop for the time indicated on the timer, this allows the material in the settling tank to clear, then the pump will recycle.

The settling tank should be purged before any new untreated waste water is admitted to the tank. (Check with gage stick)

NOTE — Before any new waste water is admitted to the settling tank <u>the toggle switch of the turbidimeter and the power switch on the timer case must be in the "off" position</u>.

A time cycle of _____ hours as set on the timer gives a good settling period before the pump recycles.

Do not change time period without authorization.

The settling tank, S-12 will, in time, become difficult to purge below 36". Then the remaining material should be pumped out and hauled away.

IOWA DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION, AIR QUALITY COMPLIANCE INSPECTION

Company Name: Waterloo Industries INC. Facility: 07-01-018

ID # 6	Source Description & Location 7	INSTALLATION DATE 8	PERMIT NUMBER 9	Applicable Regulations 10	Cntl Code 11	Maximum Capacity or Operating Limits 12	Actual Operating Condition (Process Input Rate) 20	CNTL EQP 21	OP SCHED 22	RECORDING 23	OPACITY 24	COMPLY STATUS 25	COMMENTS 26	INSPECTOR INITIAL 27	DATE 28
1	Booth 1 Electrostatic Turbo Bells, Devilbiss Bells, Aero Bell	7/91	91-A-183S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
2	Booth 2 Electrostatic Bells + 1 robot gun Devilbiss Aero Bells (3)	7/91	91-A-184S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
3	Booth 3 Electrosatic Gun on Robot Devilbiss Gun	7/91	91-A-185S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
4	Booth 4 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	1 gun operating 2.3 gallon/Dy	√	8 Hr/dy	√	0	4		RM	4/21/95
5	Booth 5 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	2 gun operating 4.7 gallon/Dy	√	8 Hr/dy	√	0	4		RM	4/21/95
33	Line # 1 Dry Off Oven 2 Bake Ovens	1967		23.3(2) a+d	N		Dip Tank Lines		8 Hr/dy		0	4		RM	4/21/95
12	Alkaline Cleaner Parts Degreaser Line # 1	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RM	4/21/95
13	Deionized Water Rinse Sealer Line #1 #33	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RM	4/21/95
32	Line # 3 Bake Oven Line	1967 1976		22.3(1)	N		Natural Gas 317°F		8 Hr/dy		0	4		RM	4/21/95
* 6	Heat Cleaning Oven	9/91	91-A-220	23.4(12)	A	60 Lb/hr	Not Operating								4/21/94
7	Dry Off Oven Line #3	7/93	93-A-311	22.3(1)	N		Natural Gas 406°F		8 Hr/dy		0	4		RM	4/21/95
8	Parts Washer Line #3	7/93	exempt	23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RM	4/21/95

Compliance Status

0 - Unknown
1 - Not in Compliance
2 - In Compliance - Test
4 - In Compliance - Insp.
5 - On ERP Schedule
6 - Not on ERP Schedule
9 - In Compliance (Closed)

Control Equipment Code

BF - Bag Filter
EP - Electrostatic Precip. Cyclone
CY - Cyclone
A - Afterburner
MC - Multiclone
CR - Cone Roof
FX - Fixed Roof
IFR - Internal Floating Roof
SC - Scrubber
VS - Venturi Scrubber
PBS - Packed Bed Scrubber
PCS - Packed Column Scrubber
WW - Waterwall
DF - Dry Filter
O - Other
N - No Control

542-3025 (rev 10/94)

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

August 6, 1991

Mr. Jerry Stoll
Industrial Engineer
Waterloo Industries
P.O. Box 2095
Waterloo, IA 50701

Dear Mr. Stoll:

Please find attached permits which have been issued for modifications to 3 paint booths and the addition of 2 paint booths at your Waterloo facility. Please pay particular attention to the special conditions of each permit.

If you have any questions, please contact me at (515)281-8969.

Sincerely,

Christine Spackman
Environmental Specialist III
Air Quality & Solid Waste Protection Bureau

ATTACHMENT

cc: Field Office #1, Manchester

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515 281 5145 / 100 515 242 5967 / FAX 515 281 8895

CONDITION 4 - Construction Schedule

This conditional permit is void if on-site construction does not begin within one-hundred eighty (180) days after its issuance.

Please keep this letter attached to your form 6 and other permit materials and consider it a part thereof.

Sincerely,

Carl Wm. Youngquist

CARL WM. YOUNGQUIST, P.E.
AIR QUALITY SECTION

cc: Peter Hamlin, Bureau Chief
Field Office 1

Waterloo Industries
Special Conditions
Permit No. 91-A-183

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

3. Usage of the lead chromate paint is limited to 244.4 gallons/12 month rolling average period for paint booth 2.

4. Usage of the lead chromate paint is limited to 122.2 gallons/12 month rolling average period for paint booth 3.

5. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 4.

6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appropriate for demonstrating compliance with the above conditions 1 through 6 shall be kept for a rolling period of three (3) years.

IOWA DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION, AIR QUALITY COMPLIANCE INSPECTION

Company Name: Waterloo Industries INC. Facility: 07-01-018

ID # 6	Source Description & Location 7	INSTALLATION DATE 8	PERMIT NUMBER 9	Applicable Regulations 10	Cntl Code 11	Maximum Capacity or Operating Limits 12	Actual Operating Condition (Process Input Rate) 20	CNTL EQP 21	OP SCHED 22	REC OPRDNG 23	OPACITY 24	COMPLY 25	STATUS 26	COMMENTS 27	INSPECTOR INITIAL 28	DATE
1	Booth 1 Electrostatic Turbo Bells, Devilbiss Bells, Aero Bell	7/91	91-A-183S	23.4(13)	DF	Not Operating	Not Operating									4/21/95
2	Booth 2 Electrostatic Bells + 1 robot gun Devilbiss Aero Bells (3)	7/91	91-A-184S	23.4(13)	DF	Not Operating	Not Operating									4/21/95
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4	Booth 4 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	1 gun operating 2.3 gallon/Dy	√	8 Hr/dy	√	0	4		RHM		4/21/95
5	Booth 5 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	2 gun operating 4.7 gallon/Dy	√	8 Hr/dy	√	0	4		RHM		4/21/95
33	Line # 1 Dry Off Oven 2 Bake Ovens	1967		23.3(2) a+d	N		Dip Tank Lines		8 Hr/dy		0	4		RHM		4/21/95
12	Alkaline Cleaner Parts Degreaser Line # 1	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RHM		4/21/95
13	Deionized Water Rinse Sealer Line #1 #33	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RHM		4/21/95
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8	Parts Washer Line #3	7/93	exempt	23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RHM		4/21/95

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Control Equipment Code

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FX - Fixed Roof
IFR - Internal Floating Roof
SC - Scrubber
VS - Venturi Scrubber
PBS - Packed Bed Scrubber
PCS - Packed Column Scrubber
WW - Waterwall
DF - Dry Filter
O - Other
N - No Control

UNIT 18

542-3025 (rev 10/94)

Waterloo Industries
Special Conditions
Permit No. 91-A-184

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

3. Usage of the lead chromate paint is limited to 244.4 gallons/12 month rolling average period for paint booth 2.

4. Usage of the lead chromate paint is limited to 122.2 gallons/12 month rolling average period for paint booth 3.

5. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 4.

6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appropriate for demonstrating compliance with the above conditions 1 through 6 shall be kept for a rolling period of three (3) years.

Waterloo Industries
Special Conditions
Permit No. 91-A-185

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

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6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appropriate for demonstrating compliance with the above conditions through 6 shall be kept for a rolling period of three (3) years.

STATE OF
IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

August 6, 1991

Mr. Jerry Stoll
Industrial Engineer
Waterloo Industries
P.O. Box 2095
Waterloo, IA 50701

Dear Mr. Stoll:

Please find attached permits which have been issued for modifications to 3 paint booths and the addition of 2 paint booths at your Waterloo facility. Please pay particular attention to the special conditions of each permit.

If you have any questions, please contact me at (515)281-8969.

Sincerely,

Christine Spackman
Environmental Specialist III
Air Quality & Solid Waste Protection Bureau

ATTACHMENT

cc: Field Office #1, Manchester

UNIT 19

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515 281 5145 / 800 515 242 5967 / FAX 515 281 8895

Waterloo Industries
Special Conditions
Permit No. 91-A-186

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

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4. Usage of the lead chromate paint is limited to 122.2 gallons/12 month rolling average period for paint booth 3.

5. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 4.

6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Total paint and solvent usage for booth 4 is limited to 5823 gallons/12 month rolling average period.

8. Records appropriate for demonstrating compliance with the above conditions 1 through 7 shall be kept for a rolling period of three (3) years.

Waterloo Industries
Special Conditions
Permit No. 91-A-183

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

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6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appr priate for demonstrating compliance with the above conditions 1 through 6 shall be kept ' r a rolling period of three (3) years.

Waterloo Industries
Special Conditions
Permit No. 91-A-187

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

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6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Total paint and solvent usage for booth 5 is limited to 5823 gallons/12 month rolling average period.

8. Records appropriate for demonstrating compliance with the above conditions 1 through 7 shall be kept for a rolling period of three (3) years.

Waterloo Industries
Special Conditions
Permit No. 91-A-184

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6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appropriate for demonstrating compliance with the above conditions 1 through 6 shall be kept for a rolling period of three (3) years.

PERMIT 91-A-187S

Eliminate the emission limitation for hexavalent chromium. Delete special conditions 1 through 6. (Special conditions 7 and 8 stand.)

Sincerely,

Christine Spackman
Environmental Specialist III
Air Quality & Solid Waste Protection Bureau

cc: DNR Field Office #1, Manchester

Waterloo Industries
Special Conditions
Permit No. 91-A-185

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6. Usage of the lead chromate paint is limited to 130.9 gallons/12 month rolling average period for paint booth 5.

7. Records appropriate for demonstrating compliance with the above conditions 1 through 6 shall be kept for a rolling period of three (3) years.

CONDITION 4 - Construction Schedule

This conditional permit is void if on-site construction does not begin within one-hundred eighty (180) days after its issuance.

Please keep this letter attached to your form 6 and other permit materials and consider it a part thereof.

Sincerely,

Carl Wm. Youngquist

CARL WM. YOUNGQUIST, P.E.
AIR QUALITY SECTION

cc: Peter Hamlin, Bureau Chief
Field Office 1

Waterloo Industries
Special Conditions
Permit No. 91-A-186

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7. Total pair and solvent usage for booth 4 is limited to 5823 gallons/12 month rolling average peric .

8. Records appropriate for demonstrating compliance with the above conditions 1 through 7 shall be kept for a rolling period of three (3) years.

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

June 11, 1993

Jerry Stoll
Waterloo Industries
PO Box 2095
Waterloo, IA 50701

Dear Mr. Stoll:

This letter is regarding the application for an air quality construction permit, submitted by you and received in this office on 6-08-93 for the following emission point(s) at your facility:

Project Number: 93-139
Process: Dry Off Oven
Location: 300 Ansborough Ave. , Waterloo, IA

Your application as been assigned Project Number: 93-139. Please use this number when enquiring about the status of your application.

Your application appears to have the necessary information to satisfy all of the preliminary requirements and is being assigned to an engineer, * **however, this completeness review is a preliminary review which checks to see if all of the requirements have answers, not that these answers are sufficient. The engineers, at their discretion, may require more detailed information, modeling etc.. Therefore, this application should not be considered sufficient.**

We are in the process of building an AutoCad Release 11 library of property (plot) locations for all of the major sources of emissions in Iowa. If you have your facility on AutoCad, could we obtain a copy (disc) for our files? We would like a 3 1/2" HD diskette formatted to 1.44 Meg for DOS, but we will take any type of DOS diskette.

Your drawings should show the distances to, length, width and heights of nearby buildings, adjacent streets and properties, location and elevations of the emission point(s). The drawing should also locate property boundaries and any perimeter fences (and identify type). All emission points should be located and identified.

Sincerely,

Dean Peterson
Air Quality Section

Enclosed is a new Form 6 and an AIR QUALITY GUIDE for your use.

Waterloo Industries
Special Conditions
Permit No. 91-A-187

1. No emissions of hexavalent chromium from sources other than paint booths 1, 2, 3, 4, or 5.

2. Usage of the lead chromate paint is limited to 244.4 gallons/ 12 month rolling average period for paint booth 1.

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7. Total paint and solvent usage for booth 5 is limited to 5823 gallons/12 month rolling average period.

8. Records appropriate for demonstrating compliance with the above conditions 1 through 7 shall be kept for a rolling period of three (3) years.

APPENDIX J

AIR PERMIT NUMBER 93-A-311

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

CERTIFIED

August 5, 1993

Mr. Jerry Stoll
Waterloo Industries
P.O. Box 2095
Waterloo, IA 50701

Dear Mr. Stoll:

RE: Project No. 93-139
Waterwash Dry Off Oven

This letter and the attached Form 6 constitute a supplemental air quality construction permit for the following source located at your Waterloo, IA plant:

SOURCE	PERMIT NO.	RULE REFERENCED
Dry Off Oven	93-A-311	IAC 567-22.3(1)

IAC 567-22.3(1) states we are confident the subject sources will not cause or contribute to a violation of the National Ambient Air Quality Standards, etc. This permit is being issued subject only to the operation as described in your application and the following conditions:

CONDITION 1 - Notification of Start-up

This Department shall be provided with an appropriate written notice of at least fifteen (15) days before the control equipment and/or respective systems are placed in operation.

CONDITION 2 - Purpose

This conditional permit implies no engineering review of this installation other than the potential of the equipment for being operated in compliance with all Air Quality Emission Standards and other applicable Conditions as contained herein.

CONDITION 3 - Standard Conditions

The conditions listed herein are in addition to the seven standard conditions which are usual and customary. They are not meant to replace them - however, if there is a discrepancy, these special conditions take precedence.

UNIT 18

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515-281-5145 / TDD 515-242-5967 / FAX 515-281-8895

CONDITION 4 - Construction Schedule

This conditional permit is void if on-site construction does not begin within one-hundred eighty (180) days after its issuance.

Please keep this letter attached to your form 6 and other permit materials and consider it a part thereof.

Sincerely,

Carl Wm. Youngquist

CARL WM. YOUNGQUIST, P.E.
AIR QUALITY SECTION

cc: Peter Hamlin, Bureau Chief
Field Office 1

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

APPLICATION TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT
Read Instructions on Reverse
Print in Ink or Type

DNR USE
Permit Number 93-A-311
Plant Number 07-01-018
Project Number 93-139

APPLICANT Telephone Number (319) 235-7131 Ext. ____

1 Waterloo Industries — Name of Firm
2 Jerry Stoll — Person to Contact
3 P.O. BOX 2095 — Mailing Address; Waterloo — City; IA — State; 50701 — Zip Code
4 300 Ansborough Avenue — Equipment Location Address; Waterloo; IA; 50701

PROCESS EQUIPMENT (XXX) New ( ) Modification

5 Dry Off Oven — Type
7 Therma-Tron-X Company — Make and Model

PM_{10}=0.01 PM_{10}=0.04
6a Other =0.24 (lbs/hr) 6b Other = 1.06 (tons/year)
Max. Emissions Potential 8760 Hours/Year

POLLUTION CONTROL EQUIPMENT
8 N/A — Type

9 7/1/93 — Start Date
10 7/20/93 — Completion Date
Construction Schedule

11 N/A — Make and Model
12a N/A — Efficiency %
12b N/A — Air Flow Rate(scfm)

PM_{10}=0.01 lb/hr
13a Other = 0.24 lb/hr — Actual Before Control
13b N/A — Actual After Control
13c N/A — Requested Permit Limit
Emissions [specify units and contaminant (PM, VOC, NO_x, SO_2, CO or Pb)]
Other = VOC, NO$_x$, SO$_x$, CO

ENGINEER SUBMITTING PLANS
14 Jerry Stoll — Name; (319) 235-7131 — Telephone Number; ____ — Iowa P.E. No.

CERTIFICATION
15 Larry Kjar — Name; 6/7/93 — Date; Plant Manager — Title; (319) 235-7131 — Telephone Number

Signature Larry Kjar
I am the owner or owner's employee responsible for this installation.

FORM 6
542-3190

Printed on Recycled Paper

IOWA DEPARTMENT OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION DIVISION, AIR QUALITY COMPLIANCE INSPECTION

Company Name: Waterloo Industries INC. Facility: 07-01-018

ID # 6	Source Description & Location 7	INSTALLATION DATE 8	PERMIT NUMBER 9	Applicable Regulations 10	Cntl Code 11	Maximum Capacity or Operating Limits 12	Actual Operating Condition (Process Input Rate) 20	CNTL EQP 21	OPSCHED 22	RKEEPING 23	OPACITY 24	COMPLY STATUS 25	COMMENTS 26	INSPECTOR 27	DATE 28
1	Booth 1 Electrostatic Turbo Bells, Devilbiss Bells, Aero Bell	7/91	91-A-183S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
2	Booth 2 Electrostatic Bells + 1 robot gun Devilbiss Aero Bells (3)	7/91	91-A-184S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
3	Booth 3 Electrosatic Gun on Robot Devilbiss Gun	7/91	91-A-185S	23.4(13)	DF	Not Operating	Not Operating								4/21/95
4	Booth 4 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	1 gun operating 2.3 gallon/Dy	√	8 Hr/dy	√	0	4		RKM	4/21/95
5	Booth 5 Air Paint Guns Binks Model 18	7/91	91-A-186S	23.4(13)	DF	9.86 lb/hr	2 gun operating 4.7 gallon/Dy	√	8 Hr/dy	√	0	4		RKM	4/21/95
33	Line # 1 Dry Off Oven 2 Bake Ovens	1967		23.3(2) a+d	N		Dip Tank Lines		8 Hr/dy		0	4		RKM	4/21/95
12	Alkaline Cleaner Parts Degreaser Line # 1	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RKM	4/21/95
13	Deionized Water Rinse Sealer Line #1 #33	1967		23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RKM	4/21/95
32	Line # 3 Bake Oven Line	1967 1976		22.3(1)	N		Natural Gas 317°F		8 Hr/dy		0	4		RKM	4/21/95
* 6	Heat Cleaning Oven	9/91	91-A-220	23.4(12)	A	60 Lb/hr	Not Operating								4/21/94
7	Dry Off Oven Line #3	7/93	93-A-311	22.3(1)	N		Natural Gas 406°F		8 Hr/dy		0	4		RKM	4/21/95
8	Parts Washer Line #3	7/93	exempt	23.3(2)d	N		Preparation of Metal Parts		8 Hr/dy		0	4		RKM	4/21/95

Compliance Status		Control Equipment Code			
0 - Unknown	5 - On ERP Schedule	BF - Bag Filter	MC - Multiclone	SC - Scrubber	WW - Waterwall
1 - Not in Compliance	6 - Not on ERP Schedule	EP - Electrostatic Precip. Cyclone	CR - Cone Roof	VS - Venturi Scrubber	DF - Dry Filter
2 - In Compliance - Test	9 - In Compliance (Closed)	CY - Cyclone	FX - Fixed Roof	PBS - Packed Bed Scrubber	O - Other
4 - In Compliance - Insp.		A - Afterburner	IFR - Internal Floating Roof	PCS - Packed Column Scrubber	N - No Control

UNIT 18

542-3025 (rev 10/94)

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

June 11, 1993

Jerry Stoll
Waterloo Industries
PO Box 2095
Waterloo, IA 50701

Dear Mr. Stoll:

This letter is regarding the application for an air quality construction permit, submitted by you and received in this office on 6-08-93 for the following emission point(s) at your facility:

Project Number: 93-139
Process: Dry Off Oven
Location: 300 Ansborough Ave. , Waterloo, IA

Your application as been assigned Project Number: 93-139. Please use this number when enquiring about the status of your application.

Your application appears to have the necessary information to satisfy all of the preliminary requirements and is being assigned to an engineer, * **however, this completeness review is a preliminary review which checks to see if all of the requirements have answers, not that these answers are sufficient. The engineers, at their discretion, may require more detailed information, modeling etc.. Therefore, this application should not be considered sufficient.**

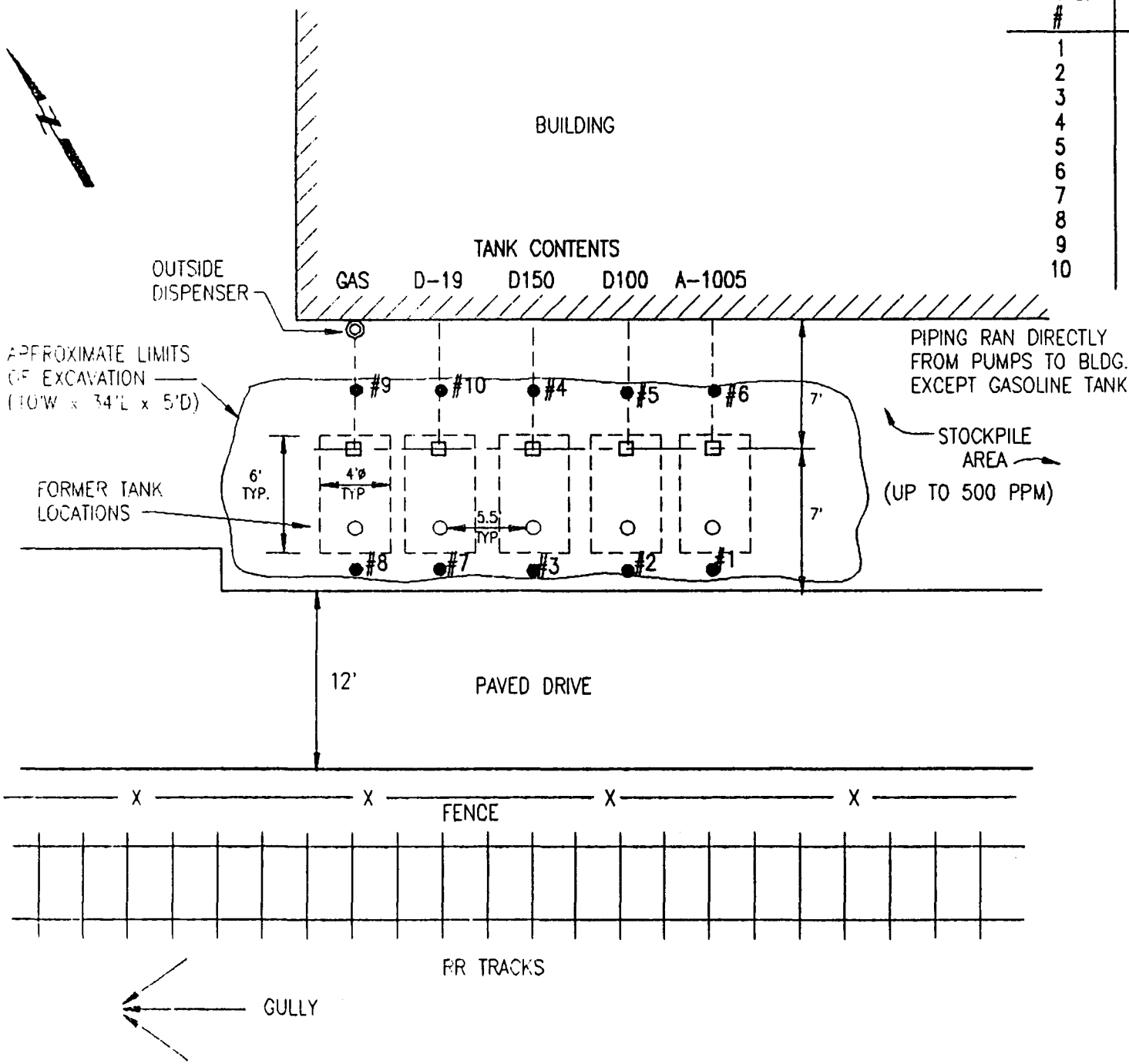
We are in the process of building an AutoCad Release 11 library of property (plot) locations for all of the major sources of emissions in Iowa. If you have your facility on AutoCad, could we obtain a copy (disc) for our files? We would like a 3 1/2" HD diskette formatted to 1.44 Meg for DOS, but we will take any type of DOS diskette.

Your drawings should show the distances to, length, width and heights of nearby buildings, adjacent streets and properties, location and elevations of the emission point(s). The drawing should also locate property boundaries and any perimeter fences (and identify type). All emission points should be located and identified.

Sincerely,

Dean Peterson
Air Quality Section

Enclosed is a new Form 6 and an AIR QUALITY GUIDE for your use.



SAMPLE #	DEPTH (FT)
1	4
2	4
3	4
4	2
5	3.5
6	1.5
7	4
8	3.5
9	4
10	4

PROJECT NO. 190333-0

SHEET NO. FIGURE 3

TITLE WATERLOO INDUSTRIES, INC. SEPTEMBER 23, 1991 TANK REMOVAL SAMPLE LOCATIONS

DATE 10-14-91

SCALE 1/8" = 1'

DRAWN JAK

FIELD BOOK

APPROVED KLT

REVISION

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, INC.

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, inc.

Highway 1 & Interstate 80 • P.O. Box 1050 • Iowa City, IA 52244-1050 • 319/354-3040 • FAX 319/354-6921

September 10, 1991

Iowa Department of Natural Resources
ATTN: Mr. Verne Shrunk
Wallace State Office Building
900 East Grand
Des Moines, IA 50309

FILE COPY

RE: Waterloo Industries
Waterloo, Iowa
Registration No. 8600006

Dear Mr. Shrunk:

This will confirm our conversation of September 6, 1991, regarding the removal of five underground storage tanks (1 - fuel, 4 - solvents) currently in progress at the Waterloo Industries, Waterloo, Iowa facility. Pavement covering the tank area was removed on August 28 and 29, 1991. Evaluation of the upper portion of the backfill covering the tanks indicated vapor levels, as determined by an HNu PI101 of 100 to 500 ppm over background. The tanks have not been removed yet. In accordance with Section 135.6(1)(a) of the Iowa Underground Tank Rules, Waterloo Industries asked us to notify the Iowa Department of Natural Resources (DNR) of these findings, and to confirm that Waterloo Industries intends to follow all of the applicable requirements regarding potential releases from underground storage tanks.

Based on our conversation, DNR currently considers a release to have occurred when, after removal of the tanks, piping, backfill, and 1 foot of native soil, the residual contamination remaining in the soil or groundwater exceeds the current action levels. Following removal of the tanks and piping samples will be collected and analyzed in accordance with current DNR requirements for tank closure, including Section 135.6(3) of the Iowa Underground Tank Rules. We will forward these results to you when available.

Thank you for your assistance in this matter. Please feel free to call if you have any questions.

Sincerely,

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, inc.

Scott Byram

Howard Scott Byram, P.E.
Project Manager

HSB/nlv
Copy: Barney Skiles, Waterloo Industries

190333-0

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

190335-0
Barron
Taylor

RECEIVED
OCT 1 1991
SHIVE-HATTERY
IOWA CITY

EXPLANATION OF SOIL OR WATER TESTING RESULTS FOR UNDERGROUND STORAGE TANKS

Enclosed are results from soil or water testing you have completed for an underground storage tank. This sheet will provide a brief explanation of the results.

Soil results are listed in ug/g, which is equivalent to ppm (in other words, 1 ug/g = 1 ppm). Water results are listed in mg/l, which is equivalent to ppm (again, 1 mg/l = 1 ppm). One part per billion (ppb) is equivalent to 0.001 mg/l, (see table below).

There are currently no published regulations which specify unacceptable levels of benzene, toluene, xylene, or ethyl benzene in soil. However, the current Iowa Department of Natural Resources cleanup level for hydrocarbons in soil is 100 ppm (or 100 ug/g).

The current Iowa Department of Natural Resources (DNR) clean-up level for benzene in groundwater is 5.0 ppb (0.005 mg/l). The current action level for toluene in groundwater is 2.42 ppm (2.42 mg/l), and the action level for total xylenes is 12 ppm (12 mg/l).

Following the receipt of your written report, you are required to send a copy of the report to Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, IA 50318. <u>WE RECOMMEND THAT YOU TAKE NO ACTION WITH REGARD TO YOUR UST SITE WITHOUT WRITTEN APPROVAL FROM THE IOWA DNR</u>.

If you have any questions regarding underground storage tank regulations, or what else may be required of you (for example, if your sample results are greater than the limits described below), please contact the Iowa DNR at 515-281-5145.

RELEVANT CONTAMINANT LEVELS

Total Hydrocarbons, Soil	100.0	ppm	100	ug/g	-------	
Extractable Hydrocarbons, Soil	100.0	ppm	100	ug/g	-------	
Benzene, Water	0.005	ppm	0.005	mg/l	5.0	ppb
Xylenes, Water	12.	ppm	12.	mg/l	12,000	ppb
Toluene, Water	2.42	ppm	2.420	mg/l	2420	ppb

EFFECTIVE DATE OCTOBER 24, 1990

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

09/23/1991

Sample No.: 144869
Job Number: 91.2388

Sample Description: Rain Water
WATER

Date Taken:

Date Received: 09/18/1991

	Result	Units	Date Analyzed/Analyst	
VOLATILES - BTEX (WATER)				
Benzene	<0.005	mg/L	09/19/1991	hlk
Ethylbenzene	<0.010	mg/L	09/19/1991	hlk
Toluene	<0.010	mg/L	09/19/1991	hlk
Xylenes, Total	<0.010	mg/L	09/19/1991	hlk
Total Hydrocarbons	0.61	mg/L	09/19/1991	hlk

Sample introduction performed in reference to EPA Method 5030 (purge and trap). Analysis performed in reference to EPA Method 8020 for volatile organics using flame ionization detection. (Iowa Method OA-1, Revision 1/10/90).

Method Detection Limits: Benzene <0.002 mg/L; Toluene <0.002 mg/L; Xylenes, Total <0.002 mg/L; Ethyl Benzene <0.002 mg/L Total Hydrocarbons <0.10 mg/L.

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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Cedar Falls, IA 50613
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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145510
Job Number: 91.2554

Sample Description: #1 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	85.11	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/27/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
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Fax: (319) 277-2425

ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145511
Job Number: 91.2554

Sample Description: #2 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.48	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/27/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145512
Job Number: 91.2554

Sample Description: #3 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.63	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/27/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145513
Job Number: 91.2554

Sample Description: #4 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.90	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	10/03/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145514
Job Number: 91.2554

Sample Description: #5 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.99	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	10/03/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145515
Job Number: 91.2554

Sample Description: #6 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.39	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	10/03/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145516
Job Number: 91.2554

Sample Description: #7 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.02	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/26/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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Cedar Falls Division
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Cedar Falls, IA 50613
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Fax: (319) 277-2425

ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145517
Job Number: 91.2554

Sample Description: #8 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.83	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/26/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/26/1991
Ethylbenzene	<0.5	ug/g	09/26/1991
Toluene	<0.5	ug/g	09/26/1991
Xylenes, Total	<0.5	ug/g	09/26/1991
Total Hydrocarbons	<15.	ug/g	09/26/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145518
Job Number: 91.2554

Sample Description: #9 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	86.41	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/26/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc
Cedar Falls Division
704 Enterprise Drive
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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145519
Job Number: 91.2554

Sample Description: #10 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	84.61	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<5.0	ug/g	09/26/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<0.5	ug/g	09/24/1991
Ethylbenzene	<0.5	ug/g	09/24/1991
Toluene	<0.5	ug/g	09/24/1991
Xylenes, Total	<0.5	ug/g	09/24/1991
Total Hydrocarbons	<15.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

10/04/1991

SHIVE HATTERY ENGINEERS &
ARCHITECTS, INC.
P.O. Box 1050
Iowa City, IA 52240

Sample No.: 145520
Job Number: 91.2554

Sample Description: #12 Waterloo Industries
SOIL

Date Taken: 09/23/1991

Date Received: 09/23/1991

	Result	Units	Date Analyzed
Solids, Total	87.73	%	09/24/1991
VOLATILES 8260-Med. level soil			
Acetone	<13.	ug/g	09/26/1991
VOLATILES - BTEX (NONAQUEOUS)			
Benzene	<2.5	ug/g	09/24/1991
Ethylbenzene	<2.5	ug/g	09/24/1991
Toluene	16.	ug/g	09/24/1991
Xylenes, Total	3.2	ug/g	09/24/1991
Total Hydrocarbons	570.	ug/g	09/24/1991

R. L. Bindert
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc
Cedar Falls Division
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Cedar Falls, IA 50613
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IOWA UST CHAIN OF CUSTODY

Waterloo Industries

Client Submitting Sample: Steve Hattery	Sample Collector: K Taylor
Name: Hwy 1 & I 80	Name: Same
Address: Iowa City IA	Address: Same
Phone: (319) 354 3040	Phone: ( ) Same

Client sample location identifier and tank contents*	UST Site Address Waterloo Industries Ansbourough Rd Cedar Falls IA	Date of sample collection	Sample Type		# of jars	Analysis Method	
			water	soil		OA1	OA2
#1	"	9-23-91		X	1	X	
#2	"	"		X	1	X	
#3	"	"		X	1	X	
#4	"	"		X	1	X	
#5	"	"		X	1	X	
#6	"	"		X	1	X	

Tank contains (contained): (G) Gas (D) Diesel fuel (FO) Fuel oil (K) Kerosene (O) Oil (MS) Mineral spirits (S) Other (specify) _____

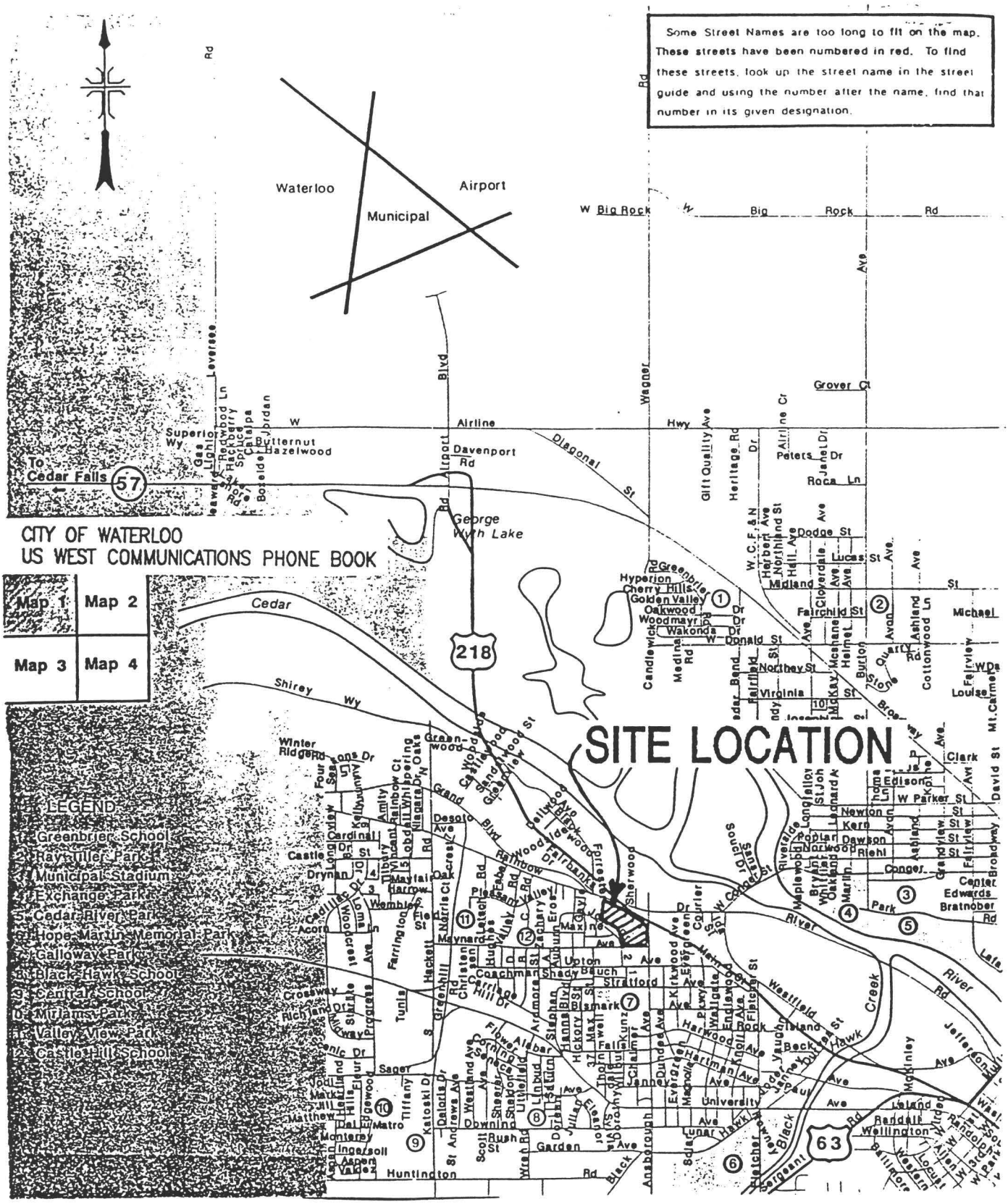
Comments: Solvents, thinner etc ANALYSE for BETX & ACETONE

Relinquished by	Date	Time	Received by	Date	Time
Kelly Taylor	9-23-91	3:20PM			

Shipping Notes/Damage/Lab Comments

Received for NET Midwest by: Norma Johnson 9/23/91 1520

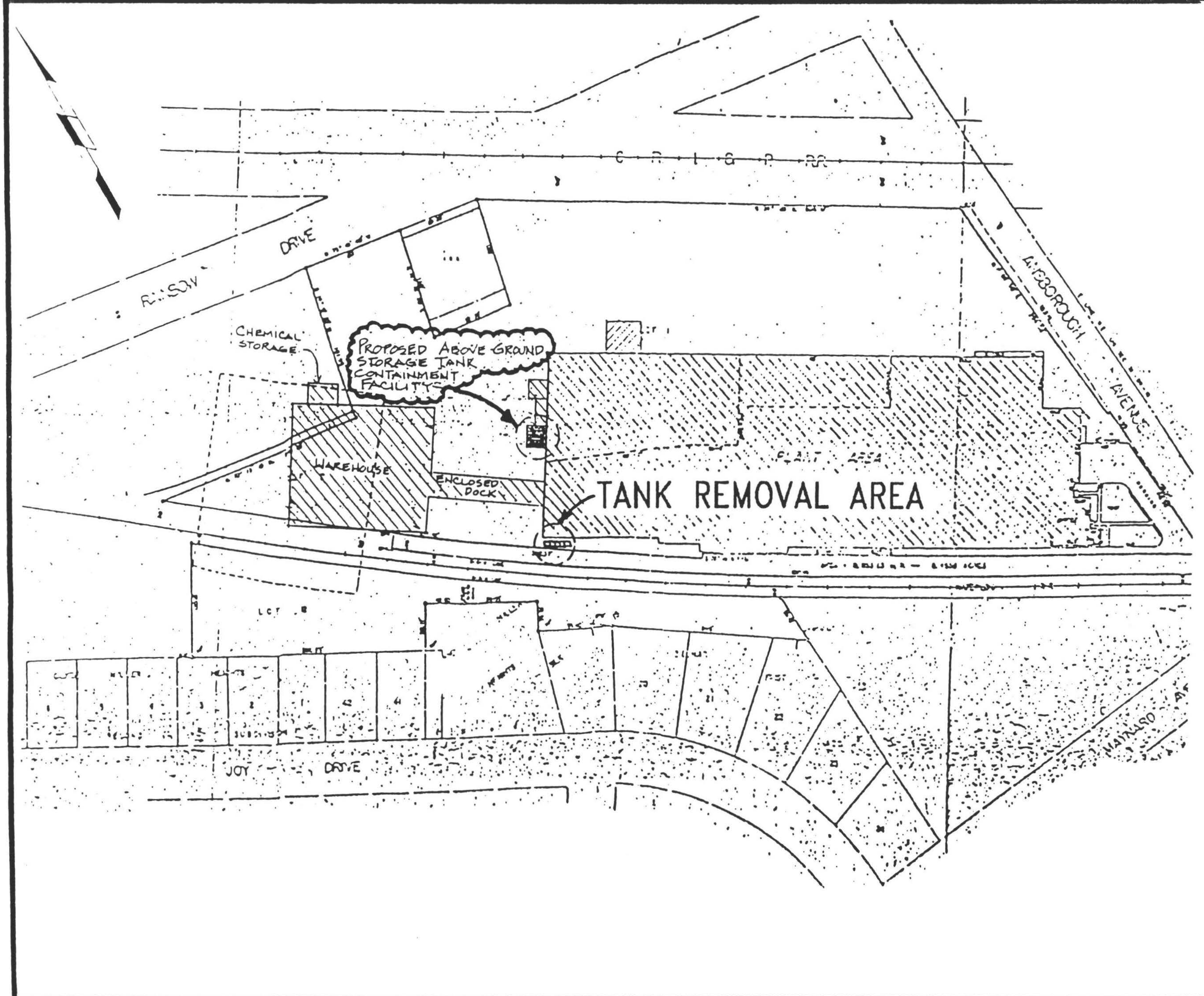
Custody Seals Intact? Y N N/A



SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, INC.

TITLE	WATERLOO INDUSTRIES, INC. SEPTEMBER 23, 1991 TANK REMOVAL SITE LOCATION		PROJECT NO. 190333-0
DATE	10/14/91	SCALE NONE	SHEET NO.
DRAWN	JAK	FIELD BOOK	FIGURE 1
APPROVED	KLT	REVISION	

N31243



TITLE	WATERLOO INDUSTRIES, INC. SEPTEMBER 23, 1991 TANK REMOVAL SITE LAYOUT
PROJECT NO.	190333-0
DATE	10/14/91
SCALE	1" = 100'
SHEET NO.	FIGURE 2
DRAWN	JAK
FIELD BOOK	
APPROVED	KLT
REVISION	

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, Inc.

NS1243

Soil Sampling

Samples of the native clay were collected from the sidewalls of the excavation at the depths shown on Figure 3. Sidewall samples were collected from 3 to 6 inches into the native soil with a clean spatula. The anchor slab was left in place at a depth of approximately 5 feet. Sample collection depth ranged from 1.5 to 4 feet. Samples were collected at those locations having the highest HNu readings. Two composite samples of the tank backfill sand were collected.

The samples were placed in 4-ounce glass jars with teflon lined lids and cooled to 4°C after collection. The samples were delivered directly to NET Midwest Laboratories, Cedar Falls, Iowa. The 10 sidewall samples and one of the composite samples were analyzed for Acetone, Total Hydrocarbons, and BETX in accordance with DNR Method OA1. The other composite sample was analyzed using the U.S. Environmental Protection Agency (US EPA) Toxicity Characteristic Leaching Procedure (TCLP) for Benzene. Sample collection, preservation, packaging and analysis were conducted in general accordance with US EPA Publication SW-846.

Conclusions

We discussed the requirements for tank closure with Verne Schrunk of the Iowa Department of Natural Resources (DNR) on September 6, 1991. Based on that conversation, as summarized in a September 10, 1991 letter from us (copy attached) to Mr. Schrunk, the DNR currently considers a release to have occurred when, after removal of the tanks, piping, backfill, and 1 foot of native soil, the contamination remaining in the soil or groundwater exceeds the current action levels.

Based on the field observations and results of laboratory analysis (see the attached Summary Table), and given that no native soil was removed, there has not been a release as defined by the DNR from the underground storage tanks removed at this site. The water perched around the five tanks contained only 0.61 ppm of total hydrocarbons, and the concentrations of tank constituents were below their respective method detection limits and DNR action levels. The tight clay sidewalls of the excavation did not exhibit evidence of contamination.

The composite sample of the backfill, labeled #12, contained over 100 ppm of Total Hydrocarbons; accordingly, the backfill will be disposed of in accordance with DNR guidelines. The TCLP result for composite backfill sample #11 indicated that the backfill is not above the limit for benzene toxicity (0.5 ppm) and that the backfill need not be disposed as a RCRA hazardous waste. Therefore, it is permissible to haul the backfill to a sanitary landfill for disposal with a special waste permit.

Tank registration tags were sent under separate cover.

Please contact us if additional information is required.

Sincerely,

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, inc.

Kelly L. Taylor
Project Engineer

H. Scott Byram, P.E.
Project Manager

KLT/HSB/nlv

Enc.

Copy: Jerry Stoll, Waterloo Industries, Inc.

190333-0

APPENDIX K

UNDERGROUND STORAGE TANK REMOVAL REPORT BY SHIVE-HATTERY

SHIVE-HATTERY
ENGINEERS AND ARCHITECTS, inc.

Highway 1 & Interstate 80 • P.O. Box 1050 • Iowa City, IA 52244-1050 • 319/354-3040 • FAX 319/354-6921

November 21, 1991 Sent By American Delivery Service

UGT Removal

Iowa Department of Natural Resources
Underground Storage Tank Section
ATTN: Ms. Lesley Campbell
900 East Grand
Des Moines, IA 50319

RE: Waterloo Industries, Inc.
Tank Closure Report
Registration Numbers: 1588 - 1592

Dear Ms. Campbell:

On behalf of Waterloo Industries, Inc., and in response to your letter to Barney Skiles dated November 8, 1991, we are submitting the following letter report summarizing the activities performed and observations made during the underground storage tank and piping removal conducted at the above referenced site on September 23, 1991. The site location is shown in Figures 1 and 2. After your review of the report and approval of the closure activities, please provide written confirmation that clean closure was achieved.

Background

The native soil is a very tight grey glacial till consisting of stiff clay with traces of sand and gravel. Five tanks were previously installed at the locations shown in Figure 3, in a coarse sand backfill. These tanks were 4 feet in diameter and 6 feet long, and each held 550 gallons. One tank held unleaded gasoline, one tank held D100 solvent, one tank held D150 solvent, one tank held Barsol A-1005, and one tank held Barsol D-19. Material safety data sheets for these substances are attached. Pumps mounted on each of the non-gasoline tanks dispensed product through underground piping and into the building. The unleaded gasoline was dispensed outside the building, adjacent to the unleaded gas tank. These were all raw material storage tanks. No wastes or spent solvents were stored in the tanks.

Tank Removal Observations

The concrete slab overlying the tanks was removed on August 27, 1991. Hand excavation indicated that groundwater was perched in the tank area to a level approximately 1 foot from the ground surface. Tank removal activities were postponed while a sample of the water was analyzed for the tank contents at NET Midwest Laboratories, Inc. Cedar Falls, Iowa. This sample was collected by a lab technician (NET) who mistakenly identified the sample as rain water

CIVIL • MECHANICAL • ELECTRICAL • STRUCTURAL • INDUSTRIAL • ENVIRONMENTAL • TRANSPORTATION • SURVEYING

rather than groundwater. Based on the attached analysis results provided in Appendix A and summarized in Table 1, the water perched around the tanks did not contain a detectable concentration of Benzene, Ethylbenzene, Toluene, or Total Xylene (BETX) and was therefore pumped out and discharged to the Waterloo sanitary sewer system.

Tank removal proceeded on September 23, 1991 after the perched water in the tank envelope was drained and the tanks purged of product. The concentration of volatile organics in the soil vapor was measured every 10 square feet, or more frequently when the color, odor, or texture of the soils changed. Organic vapors in the soil were monitored as a supplement to laboratory analysis, and as a guide for proper management of excavated soil. The vapor readings were made with the HNU Systems Inc. PI-101 Photo-Ionizer (HNU). The HNU uses a 10.2 electron-volt (eV) ultraviolet lamp to measure organic compounds in air. This instrument will detect concentrations of various substances with ionization potentials equal to or less than 10.2 eV in the low ppm range with a precision of approximately 1 percent of full scale. The HNU is calibrated to indicate organic vapor levels as benzene. Typical responses for the HNU for various hydrocarbons relative to benzene are as follows:

Compound	Response (Percent)
Benzene (Reference)	100
Toluene	100
Hexane	20
Methane	0

The tank backfill materials exhibited a hydrocarbon odor and HNU readings ranging from 50 to 500 ppm. The organic vapor concentrations at the east end of the excavation averaged approximately 350 ppm. This material was removed in order to extract the D100 solvent and Barsol A-1005 tanks, and the material was stockpiled on plastic sheeting. The sands surrounding the tanks toward the west end exhibited a mild odor, and produced HNU readings averaging approximately 60 ppm. This material was moved to the east end of the excavation to facilitate the removal of the three remaining tanks. This material, as well as the material stockpiled on the plastic sheeting, will be disposed of as special waste (see Conclusions). The native clays more than 2 to 3 inches beyond the tank backfill were relatively dry, and free from both detectable hydrocarbon odors and volatile organic vapors. A base slab was discovered during excavation. The slab covered the entire bottom of the excavation beneath all of the tanks. This physical barrier prevented collection of soil samples beneath any of the tanks.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc
Cedar Falls Division
704 Enterprise Drive
P O Box 625
Cedar Falls, IA 50613
Tel. (319) 277-2401
Fax. (319) 277-2425

IOWA UST CHAIN OF CUSTODY

Waterloo Indust

Client Submitting Sample: Shive-Hattery	Sample Collector: K Taylor
Name: Hwy 1 & I-80	Name: Same
Address: Iowa City	Address: Same
Phone: (319) 354 3040	Phone: ( ) Same

Client sample location identifier and tank contents*	UST Site Address Waterloo Industries Ansbourough Dr Cedar falls IA	Date of sample collection	Sample Type water	Sample Type soil	# of jars	Analysis Method OA1	Analysis Method OA2
#7	"	9-23-91		X	1	X	
#8	"	"		X	1	X	
#9	"	"		X	1	X	
#10	"	"		X	1	X	
#12	"	"		Comp-osite	1	X	
	"						

Tank contains (contained): (G) Gas (D) Diesel fuel (FO) Fuel oil (K) Kerosene (O) Oil (MS) Mineral spirits (S) Other (specify) _____

Comments: Solvents, thinner etc ANALYSE for BETX & ACETONE

Relinquished by	Date	Time	Received by	Date	Time
Kelly [illegible]	330 PM	9-23-91			

Shipping Notes/Damage/Lab Comments

Received for NET Midwest by: Norma Fobian 9/23/91 1520

Custody Seals Intact? Y N N/A

EXXON COMPANY U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 02/09/88
SUPERSEDES DATE: 10/08/87

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
AROMATIC 150

PRODUCT CODE
132040 - 00653

CHEMICAL NAME
Petroleum Solvent

CAS NUMBER
64742-94-5

PRODUCT APPEARANCE AND ODOR
Clear water-white liquid
Aromatic hydrocarbon odor

EMERGENCY TELEPHONE NUMBER
(713) 656-3424

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
This product can be defined as:		
Heavy aromatic solvent naphtha (petroleum)	64742-94-5	100%

It consists predominantly of C9-C11 aromatic hydrocarbons, primarily C10.

This product contains:		
Naphthalene	91-20-3	Approximately 9 mass %

See Section E for Health and Hazard Information

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT	BASIS
100 ppm (563 mg/m3) for an 8-hour workday	Recommended by Exxon

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
COMBUSTIBLE - Per DOT 49 CFR 173.115
63°C (145°F)
ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE
Approximately 443°C (830°F)
ASTM D 2155

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

HANDLING PRECAUTIONS
Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.8% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use water spray, dry chemical, foam or carbon dioxide. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have other central nervous system effects including death.

NATURE OF HAZARD AND TOXICITY INFORMATION
Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
176-210°C (350-410°F)

SPECIFIC GRAVITY (15.6 C/15.6 C)
0.90

MOLECULAR WEIGHT
138

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
Less than -18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
1.20 cP @ 25°C ASTM D 445

VAPOR PRESSURE
Less than 3 mm Hg @ 25°C
ASTM D 2879

VAPOR DENSITY (AIR = 1)
Approximately 4.8

PERCENT VOLATILE BY VOLUME
100 @ 1 atm. and 25°C (77°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
Less than 0.1

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302
The RQ for naphthalene is 100 pounds. This product contains approximately 9% naphthalene.

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355
Not applicable

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372
This product contains approximately 9% naphthalene.

EPA HAZARD CLASSIFICATION CODE:	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
	XXX		XXX			

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
UN 1255

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:
DIRECTOR OF INDUSTRIAL HYGIENE
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 3157
HOUSTON, TX 77252-2180
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:

MANAGER, MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2355
HOUSTON, TX 77252-2180
(713) 656-5949

EXXON COMPANY U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 10/08/87
SUPERSEDES DATE: 09/21/87

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
AROMATIC 100

PRODUCT CODE
132030 - 00652

CHEMICAL NAME
Petroleum Solvent

CAS NUMBER
64742-95-6

PRODUCT APPEARANCE AND ODOR
Clear water-white liquid
Aromatic hydrocarbon odor

EMERGENCY TELEPHONE NUMBER
(713) 656-3424

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
This product can be defined as: Light aromatic solvent naphtha (petroleum)	64742-95-6	100%

It consists predominantly of C8-C10 aromatic hydrocarbons, primarily C9.

This product contains:		
Xylene	1330-20-7	Approximately 5 mass %

See Section E for Health and Hazard Information

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT	BASIS
50 ppm (245 mg/m3) for an 8-hour workday	Recommended by Exxon

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
COMBUSTIBLE - Per DOT 49 CFR 173.115
41°C (106°F)
ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE
Approximately 471°C (880°F)
ASTM D 2155

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

HANDLING PRECAUTIONS
Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide. Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have other central nervous system effects including death.

NATURE OF HAZARD AND TOXICITY INFORMATION
Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
Approximately 152-168°C (306-335°F)

SPECIFIC GRAVITY (15.6 C/15.6 C)
0.872

MOLECULAR WEIGHT
120

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
Less than -18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
0.78 cP @ 25°C ASTM D 445

VAPOR PRESSURE
Less than 10 mm Hg @ 25°C
ASTM D 2879

VAPOR DENSITY (AIR = 1)
Approximately 4.1

PERCENT VOLATILE BY VOLUME
100 @ 1 atm. and 25°C (77°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
0.2

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302
The RQ for xylene is 1,000 pounds. This product contains approximately 5% xylene.

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355
The TPQ for pseudocumene is 10,000 pounds and the RQ is 1 pound. This product contains approximately 3.5% pseudocumene.

The TPQ for mesitylene is 10,000 pounds and the RQ is 1 pound. This product contains approximately 1.0% mesitylene.

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372
This product contains approximately 5% xylene.

EPA HAZARD CLASSIFICATION CODE:	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
	XXX		XXX			

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
UN 1255

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:

DIRECTOR OF INDUSTRIAL HYGIENE
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 3157
HOUSTON, TX 77252-2180
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:

MANAGER, MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2355
HOUSTON, TX 77252-2180
(713) 656-5949

MATERIAL SAFETY DATA SHEET

IDENTITY (As used on label and list)

BARSOL A-1005

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate tha

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Section I

HARTON SOLVENTS, INC.
1920 N.E. Broadway
P. O. Box 221
Des Moines, Iowa 50301

Emergency Telephone Number:
515 265-7998
Telephone Number for Information
515 265-7998
Date Prepared 10-85 Rev: 2-88

Section II - Hazardous Ingredients/Identity Information

Hazardous Components	CAS NO.	ACGIH TLV,ppm	OSHA PEL(ppm)	%(optional)
Toluene	108-88-3	100	200	>9 60%
Acetone	67-64-1	750	1000	>9 30%
Isopropyl Alcohol	67-63-0	400	400	>9 10%

Calculated TLV® of Mixture: 175 ppm
NFPA Hazard: Health 2 Flammability 3 Reactivity 0
TLV® Registered by the ACGIH

Section III - Physical/Chemical Characteristics

Boiling Point 63 82 111 °C/ 146 179 232°F
Vapor Pressure (mm Hg.) 61.8
Vapor Density (Air = 1) 3.1
Specific Gravity (H_2O=1) 0.840
Melting Point n/a
Evaporation Rate (Butyl Acetate = 1) 3.6

Solubility in Water Appreciable
Appearance and Odor Clear and Water White - Ketone Odor

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) -17°C / 2 °F TCC
Flammable Limits LEL 2.3 UEL n/a

Extinguishing Media: NFPA Class B Extinguishers (CO_2 or Foam) for Class I B liquid fires
Special Fire Fighting Procedures: Water spray may be effective on fire. Use vapor spray protect fire fighters and cool closed containers. Use fog nozzles if water is used. Use air-supplied breathing masks.
Unusual Fire and Explosion Hazards: EXTREMELY FLAMMABLE!! Keep containers tightly closed Closed containers may explode if exposed to extreme heat.

Section V - Reactivity Data

Stability: Unstable
Stable XX
Conditions to Avoid: Isolate from oxidizers, heat, sparks, electrical equipment and open flames

Incompatibility (Materials to Avoid): Isolate from strong oxidizers such as permanganate.

Hazardous Decomposition or Byproducts: Carbon Monoxide from burning

Hazardous : May Occur
Polymerization : Will Not Occur XX

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	No	No

Health Hazards (Acute and Chronic): INHALING: Anesthetic. Irritates respiratory tract. May cause serious nervous system depression. Breathing of vapor may cause irritation. SKIN & EYE: Primary irritation. INGESTION: Vapor harmful. Harmful or fatal if swallowed.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	No	No	No

Signs and Symptoms of Exposure: Headache, dizziness, drowsiness, nausea, unconsciousness, coma and possibly death in high concentration of vapors in confined areas.

Medical Conditions
Generally Aggravated by Exposure: Not known.

Emergency and First Aid Procedures: EYES: Wash with water for 15 minutes. SKIN: Wash with soap and water. INHALATION: Remove to fresh air. INGESTION: Get medical attention! DO NOT INDUCE vomiting.

Section VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Contain spill so that it does not get into streams or groundwater. Absorb with absorbent or sand.

Waste Disposal Method: Recycle or incinerate observing local, state & Federal regulations.

Precautions to be Taken in Handling and Storing: Isolate from oxidizers, heat, sparks, electric equipment and open flame.

Other Precautions: Do not flame cut, saw, braze or weld. Empty container hazardous! Continue all label precautions. Vapors may cause flash fire.

Section VIII - Control Measures

Respiratory Protection (Specify Type): None. If above TLV, use self-contained air pack.

Ventilation Local Exhaust: Ventilate to reduce levels of air contaminants below that which may cause personal injury or illness. Special: None
Mechanical (General): Yes Other: None

Protective Gloves: Yes (must not dissolve in solvents) Eye Protection: Required. Splash proof goggles or face shield

Other Protective Clothing or Equipment: None

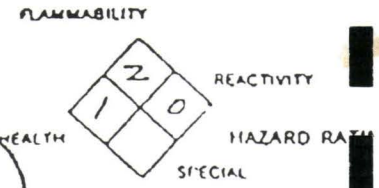
Work/Hygienic Practices: Follow safe work practices. Wash hands prior to eating or smoking.

Legal responsibility is assumed only for the fact that all studies reported here & all opinions are those of qualified experts. Buyer assumes all risk & liability. He accepts & uses this material on these conditions.

MATERIAL SAFETY DATA SHEET

APPROVED BY U S DEPT OF LABOR, ESSENTIALLY SIMILAR TO FORM OSHA 20

BARTON SOLVENTS, INC.
CORPORATE OFFICE
P. O. BOX 221
DES MOINES, IOWA 50301
EMERGENCY PHONE: 515 265-7998



CHEMICAL NAME & SYNONYMS: Solvent
CHEMICAL FAMILY: Hydrocarbon
FORMULA: n/a

TRADE NAME: Barsol D-19 (Rule 66-360)

I. PHYSICAL DATA

BOILING RANGE: 154 163 181°C / 310 325 358°F
API GRAVITY: 51.9
SPECIFIC GRAVITY (WATER=1): .772
POUNDS/GALLON: 6.420
VAPOR PRESSURE(mm of Hg)@20°C: 3.0
VAPOR DENSITY(air=1): 4.7
SOLUBILITY IN WATER: Negligible
SOLUBILITY IN ACID(85% H_2SO_4): Negligible
DRY TIME(Ether=1): 30.0
% VOLATILE BY VOL: 100
APPEARANCE: Clear, Water-White
ODOR: Mild, Non-Residual

II. HAZARDOUS INGREDIENTS

MATERIAL	CAS #	VOL(%)	TLV(ppm)
Petroleum Distillate	64742-48-9	100	100

III. FIRE & EXPLOSION HAZARD DATA

LOWER FLAMMABLE LIMIT IN AIR(% BY VOL): .9
FLASH POINT(TEST METHOD): 39°C / 103°F (TCC)
FLAMMABILITY CLASSIFICATION: Class II
EXTINGUISHING MEDIA : NFPA Class B extinguishers (CO_2 or foam) for Class II liquid fires.
SPECIAL FIRE FIGHTING PROCEDURES : Water spray may be ineffective on fire but can protect fire fighters & cool closed containers. Use fog nozzles if water is used. Use air-supplied breathing masks.
UNUSUAL EXPLOSION AND FIRE PROCEDURES: COMBUSTIBLE! Keep away from heat & open flame.

Legal responsibility is assumed only for the fact that all studies reported here & all opinions are those of qualified experts. Buyer assumes all risk & liability. He accepts & uses this material on these conditions.

APPENDIX L

AIR PERMIT NUMBER 91-A-220 AND SOLID WASTE AUTHORIZATIONS

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

January 3, 1991

Mr. Jerry Stoll
Waterloo, Industries, Inc.
P.O. Box 2095
Waterloo, IA 50704

Subject: Heat Cleaning Oven
Permit 91-A-220

Dear Mr. Stoll:

In accordance with provisions specified in paragraph 567--22.1(3)e of the Iowa Administrative Code (IAC), this letter represents a supplemental permit incorporating the following change in permit 91-A-220.

Description of Change

Operation of the heat cleaning oven shall be modified to include the incineration of used paint filter panels.

All other conditions of permit 92-A-220 shall remain the same.

Sincerely,

Michael Hayward

Michael Hayward, P.E.
Air Quality Section

cc: Field Office 1

WALLACE STATE OFFICE BUILDING / DES MOINES, IOWA 50319 / 515-281-5145 / TDD 515-242-5967

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~~340~~
155

PERMITS

RECORD COPY Conv-1

File Name Waterloo Industries

Senders Initials bz

AIR QUALITY PERMIT

WATERLOO INDUSTRIES INC

PROJECT 91-169

PERMIT 91-A-220

IOWA DEPARTMENT OF NATURAL RESOURCES

RECORD OF TELEPHONE CONVERSATION

DATE 12-6-91	TIME	[] INITIATED [] RECEIVED	FILE NO.	Routing To	Initials
EMPLOYEE NAME M. Hayward		PHONE NO. 281-3499			
BUREAU/DIVISION					
OTHER PARTY NAME Bill Lund		PHONE NO. 913-551-7816			
FIRM/ADDRESS EPA Region VII					
SUBJECT Waterloo Industries					

DEPARTMENT	CONVERSATION	OTHER PARTY
Is it ok to burn paint filter panels in paint hook burn-off oven?	It may be as long as RCRA procedures are followed.	
I will have Mr. Stoll call you directly to discuss the plan.	OK	
OK	Reply from Mr. Lund — January 3, 1992 Metal hooks are considered recycled items and therefore is exempt from RCRA Ref: 261.6 A(b) II Paint Filters are not considered under RCRA The only consideration would be possible hazardous compounds in the filter panels	

DNR form 68 (Feb.88)

Printed on Recycled Paper

542-3200

WATERLOO INDUSTRIES INC.®

November 6, 1991

Ms. Christine Spackman
I.D.N.R. - Air Quality Section
Wallace State Office Building
Des Moines, IA 50319

Dear Ms. Spackman:

This letter is in reference to our phone conversation concerning our heat cleaning oven (permit #91-A-220) and our desire to burn some spent paint filters as well as cleaning paint hooks.

We currently landfill the filters after obtaining a SWA from the IDNR which involved having a TCLP and hydrocarbon test plus pH tests for our local landfill.

The volume of the filters is around 150-200 lbs/week; these are treated with a small amount of lime to adjust the pH up, for landfill environment. The paint is the same as what is on the hooks and the remaining ash is basically the same.

We had some filters tested for burn characteristics at the oven manufacturer, (ACE) and the results reviled an 80% reduction in combustible material weight and the volume of material reduced by about 95%. (See pictures)

The oven is rated at 60 lbs/hr (combustible material), and the permit application indicated this maximum figure and with a particulate emission rate of .023 lbs/hr. The hooks will only account for about 8% of the maximum rate of 60 lbs/hr., therefore there is more than enough capacity to handle the paint filters which will be 150-200 lbs/wk. of combustible material.

Uncontrolled emissions

$$\frac{200 \text{ lbs.}}{24 \text{ hrs.}} = 8.34 \text{ lbs/hr. x } 20\% \text{ ash residue}$$

$$= 5.0 \text{ possible particulate}$$
$$\text{x } (16 \text{ hrs x } 238 \text{ days})$$
$$= \frac{19{,}040/\text{yr}}{2000} = 9.52 \text{ tons/yr}$$

300 ANSBOROUGH AVE. • P.O. BOX 2095 • WATERLOO, IOWA 50704 U.S.A. • Tel. 319-235-7131
CORP FAX: 319-232-3924 • PLANT FAX: 319-235-6408

Expected emissions @ 99% oven efficiency

5.0 lbs/hr x .99 afterburner efficiency = .05 lbs/hr

x (16 x 238)
$= \frac{190}{2000}$ / yr = .095 tons/yr

Potential to emit

.05 lbs/hr x 8760 hrs/yr = $\frac{438}{2000}$ lbs/yr

= .219 tons/yr

With these figures and comments, I request an amendment to our permit to process these filters.

Thank you.

Sincerely,

Jerry Stoll

Jerry Stoll
Project Engineer
Waterloo Industries

JS:kmh

attachment

IOWA DEPARTMENT OF NATURAL RESOURCES

RECORD OF TELEPHONE CONVERSATION

DATE 12-6-91	TIME 1:00	[] INITIATED [] RECEIVED	FILE NO.	Routing To	Initials
EMPLOYEE NAME Michael Hayward		PHONE NO.			
BUREAU/DIVISION					
OTHER PARTY NAME Jerry Stoll		PHONE NO.			
FIRM/ADDRESS Waterloo Industries					
SUBJECT Paint Filters US RCRA					

DEPARTMENT CONVERSATION OTHER PARTY

Call Bill Lund to discuss RCRA aspect of burning paint filters

Reply to me with your discussion results

Answering Machine

PROCESS -

Burn dry cured alykd spray paint from hooks
Oven max = 60 lbs./hr.
Oven has after burner which is 99% efficient in burning particulates and 100% in voc's.
Published max. particulate = .023 lbs./hr.

UNCONTROLLED EMISSIONS -

60 lbs. maximum combustible material x 20% residue (ashes remaining after burn)
= 48 lbs./hr. possible particulate up stack x (16 hr/day x 238)
= 182,784 lbs./yr. ÷ 2000 = 91 tons/yr.

EXPECTED EMISSIONS - @ 99% efficiency

48 lbs./hr. x 99% after burner efficiency = .48 lbs./hr.
x (16 hrs./day x 238 days) = $\frac{1827 \text{ lbs/yr.}}{2000}$ = .91 tons/yr.

EXPECTED EMISSIONS - @ .023 lbs./hr.

.023 lbs./hr. x (16 hrs./day x 238) = $\frac{87 \text{ lbs./yr.}}{2000}$ = .044 ton[illegible]

POTENTIAL TO EMIT -

.023 lbs./hr. x 8760 hrs./yr. = $\frac{201 \text{ lbs./yr.}}{2000}$ = .10 ton/yr.

Jerry Stoll
7/23/91

Project Description

This application involves the proposed installation of a heat cleaning oven to be used to clean our spray line and E-coat paint hooks and metal paint collector baffles.

Our current process to clean these hooks uses a hot alkaline strip tank, which is labor intensive and emits foul odors and non-toxic fumes; see MSDS. The hooks vary in size from 1/8" rod to 1/2" square rod, and accumulate paint during the painting process. The proposed baffles will be made of 1/8" expanded metal and placed in front of the dry filters to collect a large volume of over spray. The paper filters which are 99% efficient will collect the remaining over spray. The paint will be completely cured on the substrate prior to being placed in the oven.

The oven will handle a maximum of 60 lbs./hr of combustible material at an operating temperature of approximately 800°F. The after-burner eliminates virtually all particulates and odors from escaping to atmosphere which compiles to EPA standards; the discharge consists primarily of water vapor and carbon dioxide.

A stack sampling from another company is attached; this was supplied by the oven manufacturer. Also attached is a write up on metal paint collectors incinerated in the bake oven, therefore requiring less paper filters being used and land filled.

Jerry Stoll
7/23/91

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo, IA 50704

08/20/1991

Sample No.: 138617
Job Number: 91.0365

Sample Description: Sample #2

Date Taken:

Date Received: 07/19/1991

Hydrocarbon Solvent	15000.	ug/g

NOTE: Analyzed in reference to Iowa Method OA-2.

R.L. Bindert
Project Manager

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

To: Gary Wilcox
Black Hawk County Solid Waste Management Commission
County Courthouse
P.O. Box 208
Waterloo, Iowa 50704

Authorization No. 070108209/

SPECIAL WASTE AUTHORIZATION

Disposal Site: Black Hawk County Sanitary Landfill (7-SDP-1-75P)

The following and attached instructions 21.1 apply ONLY to the specific waste described and to the volume and time period specified. This is not an overall approval to accept other toxic or hazardous wastes or industrial sludges. DNR must authorize the disposal of such additional wastes from the same generator or similar wastes from a different generator. Failure to obtain this approval is a violation of Solid Waste Disposal Rule 102.14. These instruction in no way obligate the above-named disposal site to accept the described waste. The disposal site has the final decisions whether to accept the waste, and does so at its own risk. This form shall be kept in the office of the sanitary landfill for review by DNR personnel. Each disposal shall be recorded on the reverse of this form and reported in accordance with the reporting requirements contained in the landfill's permit.

By delivery of this waste, the waste generator certifies that the intended disposal of the described waste is in compliance with all RCRA hazardous waste regulations.

Waste and Volume:	Approximately 75 lbs of paint filters twice per week. The filters must be baked for at least 25 minutes to flash off the volatiles.
Generator:	Waterloo Industries, 300 Ansborough Ave, Waterloo, Iowa 50704, Jerry Stoll 319/ 235-1731
Disposal Period:	Until August 13, 1994
Landfill Operator:	Bill Heithoff 319/296-2524

If you have any questions regarding this authorization, please contact Gayle Strong at 515/281-3426.

Authorized by: Morris Preston Date: 8/16/91
Supervisor, Solid Waste Section

cc: Field Office - 1
Bill Heithoff, Landfill Operator
Gayle Farrell/Records
Jerry Stoll, Waterloo Industries

Ringelmann Chart, or 40 percent opacity. Vehicles powered by diesel fuel cannot exceed the standard for more than five consecutive seconds, whereas the standard is less stringent for vehicles powered by gasoline which are limited to five consecutive seconds of visible emissions, which may be higher than the standard. Exempt are startup and testing procedures and when emissions are present in uncombined water, such as condensed water vapor.

Fugitive Dust Regulations

Fugitive dust control requires that reasonable precautions be taken to prevent particulate matter from becoming airborne in quantities that create a nuisance. Exempt are farming operations or dust generated by ordinary travel on upaved roads. In nonattainment areas, no fugitive dust can travel beyond a property line of a source for which an emission standard has been established. In attainment areas, reasonable precautions include preventing fugitive dust from traveling beyond a property line. Other reasonable precautions include:

- Use of water or chemicals for control of dust during demolitions, construction, the grading of roads, or the clearing of land.
- Use of containment or control equipment during handling and transfer of dusty materials, such as grain, fertilizer, or limestone. Included is the covering of open vehicles that transport materials that contain dust.
- Other reasonable precautions can be found in *Identification of Techniques for the Control of Industrial Fugitive Dust Emissions*, which is available from the Iowa Department of Natural Resources.

Other Standards

Specific processes for which *specialized standards* apply are asphalt batching plants, cement kilns, cupolas for metallurgical melting, electric furnaces for metallurgical melting, sand handling and surface finishing operations in metal processing, lime kilns, meat smokehouses, phosphate processing plants, portland cement plants, and painting and surface coating operations.

Incinerator Standards

The specialized standard for *incinerators* controls particulate matter and visible emissions. Particulate matter from an incinerator with a rated refuse burning capacity of 1,000 or more pounds per hour is limited to 0.2 grains/standard cubic foot of exhaust gas adjusted to 12 percent carbon dioxide. Incinerators with less capacity are limited to 0.35 grain/standard cubic foot of exhaust gas adjusted to 12 percent carbon dioxide. Visible emissions from incinerators are limited to 40 percent opacity. Visible emissions that have 60 percent opacity may be emitted for not more than three minutes in any 60-minute period during a breakdown or cleaning.

Odor Laws

As an agricultural state, Iowa has in its regulations strategies for reducing odors from farm operations. The laws exempt periodic spreading of animal waste but suggest reasonable care be taken to plow under odorous material and to carry out such activities only on dry sunny days.

Anaerobic feeding lagoons are subject to detailed permitting, design, and operational requirements. Industrial anaerobic lagoons also are subject to design standards and must use water with limited sulfate content. For lagoons constructed since Feb. 22, 1979, and designed to treat 100,000 grams per day or less the sulfate content may not exceed 250 milligrams per liter. Larger lagoons must limit water sulfate content to 100 mg/l if they were constructed since the 1979 date.

The state also spells out procedures for handling odor complaints. To be addressed, complaints must come from at least three occupied premises within a five-mile radius of the suspected source. The odor must allegedly occur in a fre-

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NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Cedar Falls Division
704 Enterprise Drive
P.O. Box 625
Cedar Falls, IA 50613
Tel: (319) 277-2401
Fax: (319) 277-2425

ANALYTICAL REPORT

Mr. Jerry Stoll
WATERLOO INDUSTRIES
300 Ansborough
Waterloo IA 50704

07-03-91

Sample No.: 134460

Sample Description: Paint Filter

Date Taken: Unknown

Date Received: 06-21-91 0940

Parameter	Results	Units	Matrix Spike % Recovery
TCLP TEST			
Extract Final pH	4.9	units	
TCLP - Arsenic	<0.050	mg/L	93
TCLP - Barium	<5.0	mg/L	84
TCLP - Cadmium	<0.50	mg/L	95
TCLP - Chromium	<1.0	mg/L	102
TCLP - Lead	<1.0	mg/L	101
TCLP - Mercury	<0.0500	mg/L	98
TCLP - Selenium	<0.050	mg/L	110
TCLP - Silver	<0.50	mg/L	104

Matrix spike correction factors have been applied to the above results.

Cheryl L. Wilson
Project Manager

only concern. Issues that will dominate the work of PUR researchers the world over in the 1990s will include recycling and solid waste, and energy consumption. "After energy saving, the next most important challenge is the reduction of plastics waste, coupled with the question of how plastics waste can best be reused," said Dr. Günter Oertel, president of ISOPA and managing director of the PUR applications development section of Bayer AG, Leverkusen, Germany, in his keynote address.

Another issue is costs: the development of CFC alternatives comes with a substantial price tag. Theo Walthie, vice president of polyurethanes and thermoset resins for Dow Europe S.A., comments: "In the past five years we may have spent more than half of our research funds on the CFC-replacement issue. At some point there has to be a return on that investment." Just what the solutions will cost is tough to predict, but suppliers are betting that the improved foam properties now seen as one consequence of many CFC alternatives will more than pay for the cost premium.

CFC substitutes

While virtually all companies interviewed in Nice agreed that the basics of the CFC replacement problems "have been licked", many also stress that much fine tuning is still required. So in the next several years, a substantial number of new formulations will be introduced, researchers say, that will come up with novel ways to blow foams without CFCs. It is almost now a race to see who will be first in entirely eliminating CFCs.

Car companies are seemingly taking the lead. Ford Motor plans to rid all car seating and interior trim of CFCs by 1993. Other car makers are expected to make similar moves in both Europe and the U.S.

What are the substitutes? The list remains short and includes the various HCFCs such as HCFC 123, 141b and 22. These materials are seen as temporary solutions only, partially due to their high chlorine content—another substance whose emissions may become subject of regulations—and the threat of toxicological problems. All companies interviewed on the subject stressed that any toxicological tests so far are incomplete and that one has to wait for more tests before one can decide on those substances' safety.

HCFCs are seen to have performance problems also. Sources at BASF say "HCFC 123 and 141b may lower a foam's K-factor" because of their higher vapor-phase thermal conductivity. However, some companies are now introducing solutions to just that problem.

Novel blowing agents are in the works. But it will be some time before their potential becomes clear. In Nice, Bayer reported on a new blowing agent known as R 356 that is chlorine-free, non ozone-depleting and non-combustible. The blowing agent, 1,1,1,4,4,4-hexafluorobutane, is said to fully satisfy technical standards for Europe's appliance industry. The additive can be used without requiring mold or process changes in applications such as refrigeration.

Bayer cautions that this is a new substance and not all environmental and toxicological tests are complete. Also unknown is when it may become available in the U.S. through Mobay. And BASF has developed chlorofluoromethane (R22) as the primary blowing agent for polyurethane foams using conventional low- and high-pressure foam mixing equipment. BASF sources say that while it may not be the ultimate solution, R22 does offer good foam properties without process modifications and at an acceptable price. And Dow says it is working on a 40:60 blend of R22 and 141b for some foam applications.

Many processors in Europe are also working with pentane as an alternative blowing agent, a material that few expect to advance to a high use level in the U.S. because of its combustibility potential during manufacturing. Water, it appears, is ultimately the most promising blowing agent: however, it requires the

Recycling: key research target

This was the first polyurethane meeting where recycling technologies were the subject of major separate technical sessions. Said ICI's Robert Reen: "A major challenge is recycling solid waste—with zero process waste as the goal." He reported that ICI now has systems that allow up to 10% recycle content in RIM and that this percentage needs to be raised. And, according to Dow's Theo Walthie, "The experience with CFCs has made us realize that we can probably solve any problem."

All suppliers are active in this area, including Mobay, Bayer and Dow. For instance both Dow and Mobay earlier this year introduced techniques for recycling RIM scrap. The Mobay/Bayer process calls for thermoforming/compression molding the scrap while Dow incorporates the material into the RIM feedstream for making new parts. (See *Plastics World*, February, p.14.)

But that's not all.

Bayer also reported on new techniques for recycling flexible microcellular foam scrap by combining it with virgin thermoplastic polyurethanes (TPU) and using the resultant injection molding compound for the production of new parts. To accomplish this, foam scrap is granulated and dried and then compounded with TPU.

Bayer also detailed how energy recovery can play a role in solid waste disposal, demonstrating the feasibility of incinerating PUR RIM scrap. Bayer says research shows that the incineration of such waste can be done in a way to reduce dioxin emissions by carefully choosing the incineration method. Bayer tested a fluidized bed combustor, a waste incineration plant and a rotary kiln combustor. All units proved suitable for handling RIM scrap and stayed within EPA guidelines for emissions.

Mobay has developed new scrap reclaim for production lines producing flexible microcellular foams for applications such as integral skin shoe soles. On average, 5-10% of scrap is generated on such lines, according to Mobay. With Mobay's method—already tested and further fine tuned by Jones & Vining Inc.—consists of sorting and grinding scrap to small and homogeneous particles, followed by drying and compounding with thermoplastics polyurethanes for extrusion or pelletizing.

Du Pont Canada Inc., Mississauga, Ontario, is one of several companies developing techniques for the recovery and reclaiming of fluorocarbon blowing agents. Du Pont claims to have developed technology for just such a purpose, and that the process—designed to recover CFCs from old appliances, boardstock and bunstock scrap—could be developed into a continuous economical process.

taining approximately 15,000 cubic yards of landfilled material, was excavated and the material separated into soil and residual components. Because the soil component (material that passed through a one-inch screen) comprised approximately half the volume of the excavated material, establishing its suitability for nonlandfill use was identified as the primary criterion for success. Clough, Harbour & Associates designed and carried out the environmental monitoring plan, analyzing soil samples for a broad range of contaminants and pathogens. The results were very encouraging and indicate the soil will very likely qualify for declassification as a solid waste and will be considered acceptable for off-site use as clean fill.

Yet to be evaluated for material recovery is the fraction that passed through a three-inch screen but was rejected by the one-inch screen. This material comprises nearly one-fourth of the volume of excavated material and consists largely of potentially recyclable cans and bottles.

The material larger than three inches, which included plastics, textiles, paper, grubbing, wood and metal, will be processed for ferrous metal removal and for evaluation as a potential energy product. A full-scale test burn at an energy recovery incinerator is planned. Energy value, stack emissions and ash content will be evaluated at that time. Methods of reducing the volume of these materials for re-landfilling also will be evaluated.

PROCESSING THE MATERIALS

Designing a landfill reclamation operation is a question of logistics. The type, number, size and order of screens to be used are all elements to be considered. Determining the desired end use for the facility establishes the basis for making

Landfill Reclamation As An Energy Source

Field tests show when you mine MSW from a landfill, the soil and recyclables can be separated easily into usable form. The next question is whether you can use the remaining fraction, rather than burying it again. Experiments indicate that nonrecyclable fraction can be successfully burned, which could help maintain waste stream input at waste-to-energy (WTE) plants.

In eastern Pennsylvania, the Lancaster County Solid Waste Management Authority began digging up waste from its landfill to meet the fuel requirements of its 8000 tpw WTE incinerator. Excavations are up to about an average of 1500-2000 per week, demonstrating the potential for pairing landfill and WTE operations to free up significant amounts of permitted landfill space.

Excavation and incineration also could be an alternative hazardous-waste remediation strategy for communities with access to incinerators. Rather than pay to have hazardous wastes shipped to another landfill site and entombed again, the material could be incinerated to capture its energy content and safely reduce its volume.

According to Herb Flosdorf, director of the Lancaster County Solid Waste Management Authority, more research needs to be done on the varying characteristics of exhumed MSW, and how differing moisture content, energy value and other factors will affect the combustion process. The MSW currently being excavated and burned in the Lancaster incinerator is only three years old, for example. John Sharf, a member of the county authority's board of directors who worked on combustion engineering in the glass industry, notes that the moisture content of the excavated MSW is different from freshly collected material, indicating differences in gas content and combustion temperatures.

Pretreatment of different waste streams may have to be handled differently. Not only must the excavated waste be cleaned of as much soil as possible, its higher moisture content and biodegraded condition makes its combustion characteristics more variable. In Lancaster County, incinerator managers are trying several methods to maintain consistency. Excavated waste is premixed with new MSW or with wood chips and tires. Also a supplemental stream of propane is fed into the combustion chamber to maintaing the temperature, ensuring proper emission control and cost-efficiency.

The US Evironmental Protection Agency (EPA) is conducting cost analysis and environmental impact analysis studies at the Collier County, FL, landfill reclamation site, says Lynnann Hitchens of the EPA's Risk Reduction Engineering Laboratory. The Collier County Solid Waste Department applied for analysis as part of EPA's MSW Innovative Technology Evaluation Program (MITE). Hitchens, MITE project officer overseeing the economic studies and soil and air sampling, says EPA may examine a reclamation/incineration project in the future.

As the amount of data on landfill reclamation grows, it may eventually change the way communities plan their SWM systems, suggests Flosdorf. If a city or county is planning to build a WTE plant in the future, they may want to stockpile MSW going to the landfill now for easy recovery if the WTE plant needs additional fuel. That may include preprocessing such as separating recyclables and noncombustible materials, sizing the waste with shredders and using foam or other artificial covers to eliminate the need to separate daily cover soil later.

Sept 1991	Waterloo Industries Waterloo, Iowa	M. Hayward

Project 91-169
Plant 07-01-018
Permit 91-A-220

Heat cleaning oven for metal parts

Ace, Inc. Model RKG-260

Uncontrolled Emission

Emission Factor 35 lb/ton

$E = 35\ lb/ton\ \frac{60}{2000}\ tons/hr = 1.05\ lb/hr$; 4.6 tons/yr

Allowable Emission

$C = 0.35\ gr/SCF$ @ 12% CO_2

$E = 0.35\ gr/SCF\ 300\ scf/min\ 60\ min/hr\ \frac{lb}{7000\ gr} = 0.90\ lb/hr$; 3.94 tons/yr

Expected Emission

(80% removal is expected)

$E = 1.05\ lb/hr \left[\frac{100-80}{100}\right] = 0.21\ lb/hr$; 0.92 tons/yr

Potential to Emit

$E = 0.35\ gr/scf\ 300\ scf/min\ 60\ min/hr\ \frac{lb}{7000\ gr} = 0.90\ lb/hr$; 3.49 tons/yr

This is not a major modification
PSD does not apply.

IOWA DEPARTMENT OF NATURAL RESOURCES

AIR QUALITY SECTION

~~340~~ 155

APPLICATION AND PERMIT TO INSTALL OR ALTER EQUIPMENT OR CONTROL EQUIPMENT

Read Instructions on Reverse
Print in Ink or Typewrite

DNR USE
Permit No. 91-A-220-S
Plant No. 07-01-018
Project No. 91769

APPLICANT INFORMATION

1 FIRM NAME	2 PERSON TO CONTACT
Waterloo Industries, Inc.	Jerry Stoll

3 MAILING ADDRESS	City	State	Zip Code
P.O. Box 2095	Waterloo	IA	50701

4 EQUIPMENT LOCATION ADDRESS
300 Ansborough Ave.

PROCESS OR SOURCE INFORMATION

5 TYPE	[X] New [ ] Modification	6 CAPACITY (Pounds/Hour)	(Tons/Year)
Heat cleaning oven		60	

7 MAKE & MODEL
Ace Inc. Model RKG-260

POLLUTION CONTROL EQUIPMENT INFORMATION

8 TYPE	9 EFFICIENCY	10 AIR FLOW RATE (SCFM)
Afterburner	99%	300

11 MAKE & MODEL
Integral to Model RKG - 260

12 CONSTRUCTION SCHEDULE Start Date	Completion Date	13 EMISSIONS (specify units) Before Control	After Control
8-30-91	9-10-91		Particulate 0.023 LBS/HR

ENGINEER SUBMITTING PLANS

14 NAME	Phone	Iowa P.E. Number
Jerry Stoll	235-7131	

CERTIFICATION

15 I am the owner or the owner's employee responsible for this installation.

Signature	Date	Title	Phone
Jerry Stoll	7-23-91	Ind. Engr.	319-235-7131

DNR USE ONLY

This equipment has been evaluated for conformance with rule(s) 567--23.4(12) of the Iowa Natural Resources Commission and found to have the potential to comply. This permit is issued subject to the conditions listed on the reverse.

RECORD COPY

Under Direction of the Director

ENVIRONMENTAL PROTECTION DIVISION

Michael Hayward

File Name Waterloo Industries, Inc.

Senders Initials MH

Date Sept 27, 1991

DNR form 6 (Sep 87)

542-3190

Project Description

This application involves the proposed installation of a heat cleaning oven to be used to clean our spray line and E-coat paint hooks and metal paint collector baffles.

Our current process to clean these hooks uses a hot alkaline strip tank, which is labor intensive and emits foul odors and non-toxic fumes; see MSDS. The hooks vary in size from 1/8" rod to 1/2" square rod, and accumulate paint during the painting process. The proposed baffles will be made of 1/8" expanded metal and placed in front of the dry filters to collect a large volume of over spray. The paper filters which are 99% efficient will collect the remaining over spray. The paint will be completely cured on the substrate prior to being placed in the oven.

The oven will handle a maximum of 60 lbs./hr of combustible material at an operating temperature of approximately 800°F. The after-burner eliminates virtually all particulates and odors from escaping to atmosphere which compiles to EPA standards; the discharge consists primarily of water vapor and carbon dioxide.

A stack sampling from another company is attached; this was supplied by the oven manufacturer. Also attached is a write up on metal paint collectors incinerated in the bake oven, therefore requiring less paper filters being used and land filled.

Jerry Stoll
7/23/91

Air ✓ ~~340~~ 155

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

September 27, 1991

RECORD COPY
File Name Waterloo Industries, Inc.
Signature M. Hayward

Mr. Jerry Stoll
Project Engineer
Waterloo Industries, Inc.
P.O. Box 2095
Waterloo, IA 50704

Dear Mr. Stoll:

This letter is in response to a permit application to install or alter equipment or control equipment. Subrule 567--22.1(1) of the Iowa Administrative Code requires that each person planning to install, reconstruct, construct or alter equipment capable of emitting air contaminants must obtain a permit from this department before starting construction.

The proposal was to install a heat cleaning oven. It has been determined from the information submitted that the described system has the potential to be operated in compliance with the applicable air quality regulations. A permit, to be identified by administrative number 91-A-220 has therefore been written for the source. A copy of the permit is enclosed.

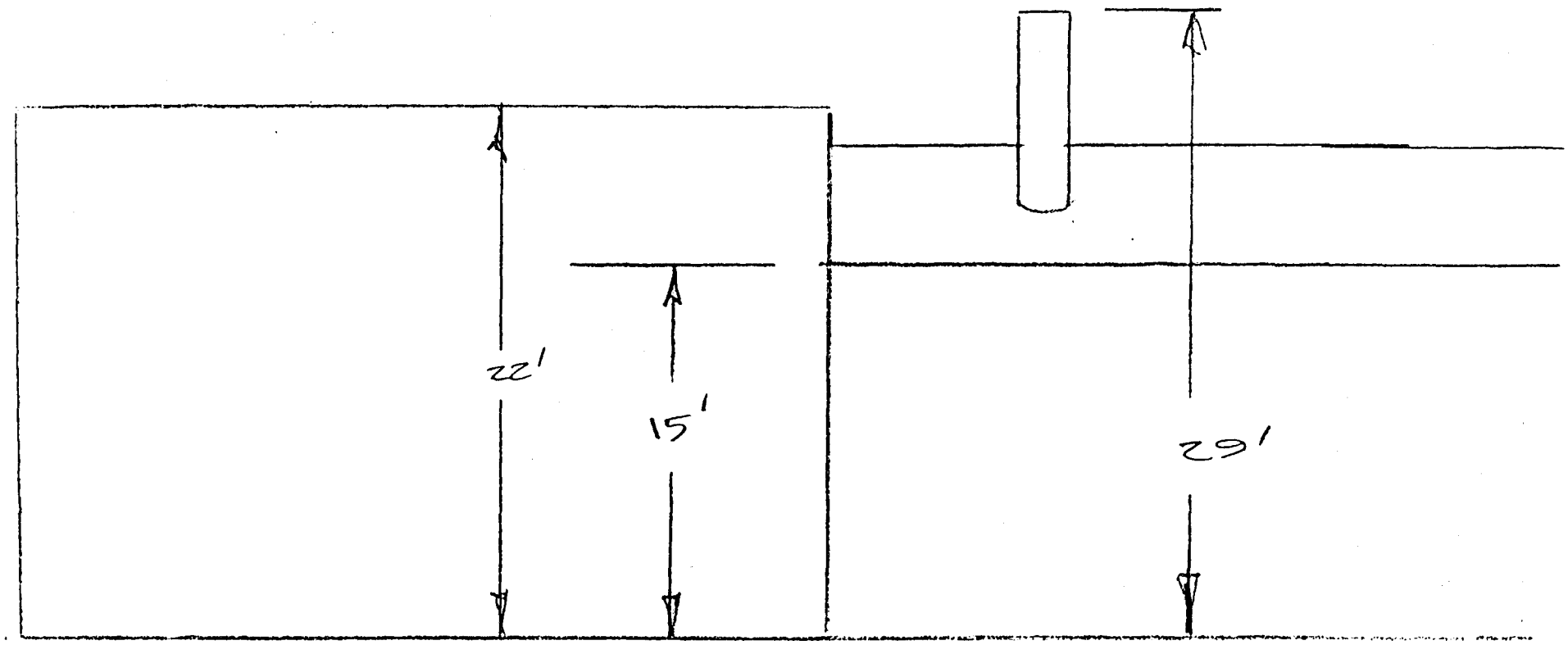
Sincerely,

Michael Hayward

Michael Hayward, P.E.
Air Quality Section

Enclosure

cc: Field Office 1



ROOF & STACK ELEVATIONS

7/91

PROCESS -

Burn dry, cured alykd spray paint from hooks
Oven max = 60 lbs./hr.
Oven has after burner which is 99% efficient in burning particulates and 100% in voc's.
Published max. particulate = .023 lbs./hr.

UNCONTROLLED EMISSIONS -

60 lbs. maximum combustible material x 20% residue (ashes remaining after burn)
= 48 lbs./hr. possible particulate up stack x (16 hr/day x 238)
= 182,784 lbs./yr. ÷ 2000 = 91 tons/yr.

EXPECTED EMISSIONS - @ 99% efficiency

48 lbs./hr. x 99% after burner efficiency = .48 lbs./hr.
x (16 hrs./day x 238 days) = $\frac{1827 \text{ lbs/yr.}}{2000}$ = .91 tons/yr.

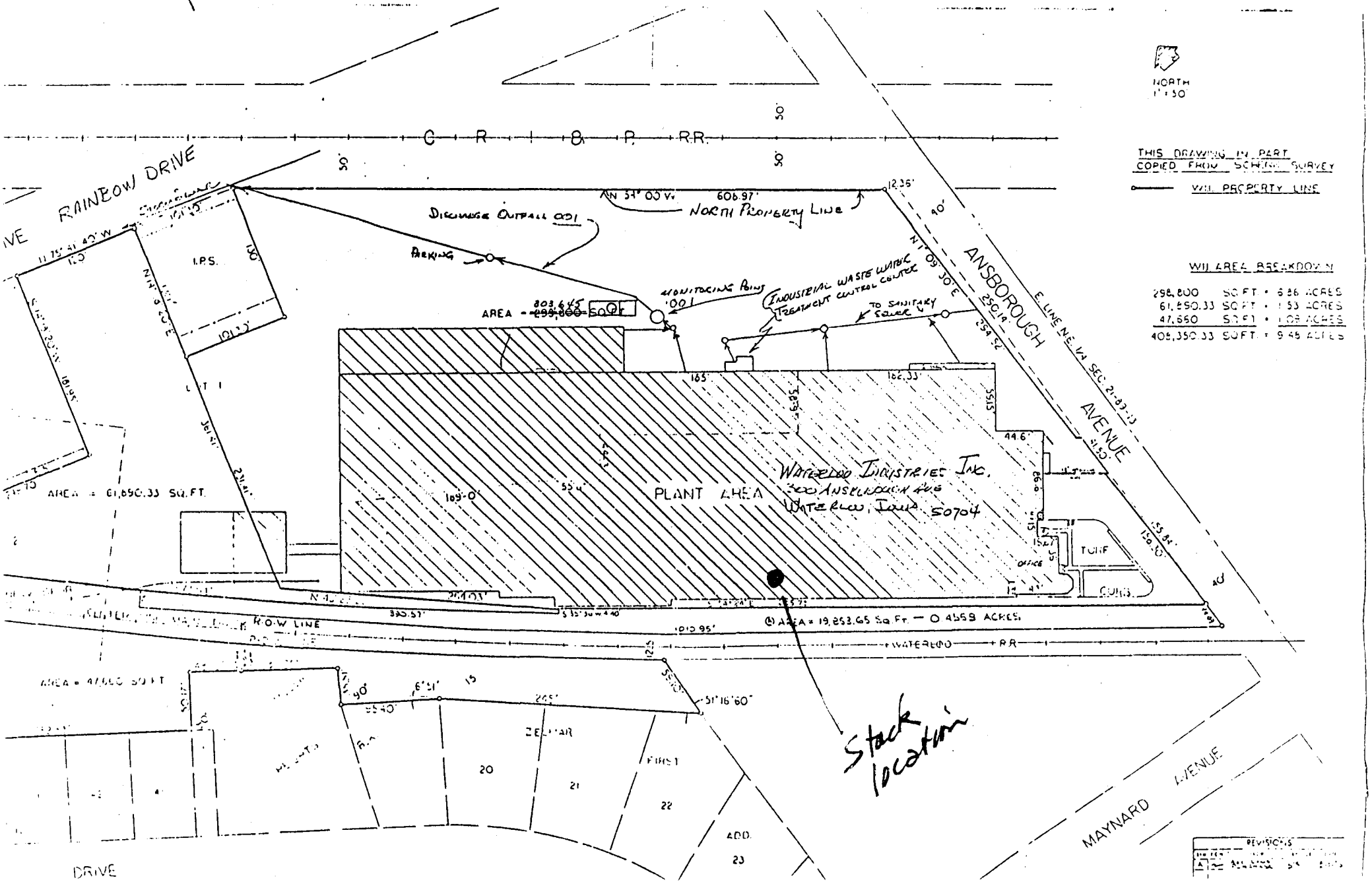
EXPECTED EMISSIONS - @ .023 lbs./hr.

.023 lbs./hr. x (16 hrs./day x 238) = $\frac{87 \text{ lbs./yr.}}{2000}$ = .044 tons/yr.

POTENTIAL TO EMIT -

.023 lbs./hr. x 8760 hrs./yr. = $\frac{201 \text{ lbs./yr.}}{2000}$ = .10 ton/yr.

Jerry Stoll
7/23/91



NORTH
1" = 50'
THIS DRAWING IN PART COPIED FROM SCHENK SURVEY
WIL PROPERTY LINE
WIL AREA BREAKDOWN
298,800 SQ FT = 6.86 ACRES
61,890.33 SQ FT = 1.53 ACRES
47,660 SQ FT = 1.09 ACRES
408,350.33 SQ FT = 9.48 ACRES
C R & P RR
RAINBOW DRIVE
NORTH PROPERTY LINE
DISCHARGE OUTFALL 001
PARKING
MONITORING POINT 001
INDUSTRIAL WASTE WATER TREATMENT CONTROL CENTER
TO SANITARY SEWER
AREA = 803,645 SQ FT
I.P.S.
ANSBOROUGH AVENUE
E. LINE N.E. 1/4 SEC. 21-89-13
PLANT AREA
WATERLOO INDUSTRIES INC.
300 ANSBOROUGH AVE
WATERLOO, IOWA 50704
AREA = 61,890.33 SQ.FT.
TURF
OFFICE
CURB
R.O.W. LINE
AREA = 19,853.65 Sq. Ft. — 0.4558 ACRES
WATERLOO RR
AREA = 47,660 SQ FT
ZELMAR
FIRST
ADD.
MAYNARD AVENUE
DRIVE
Stack location
REVISIONS

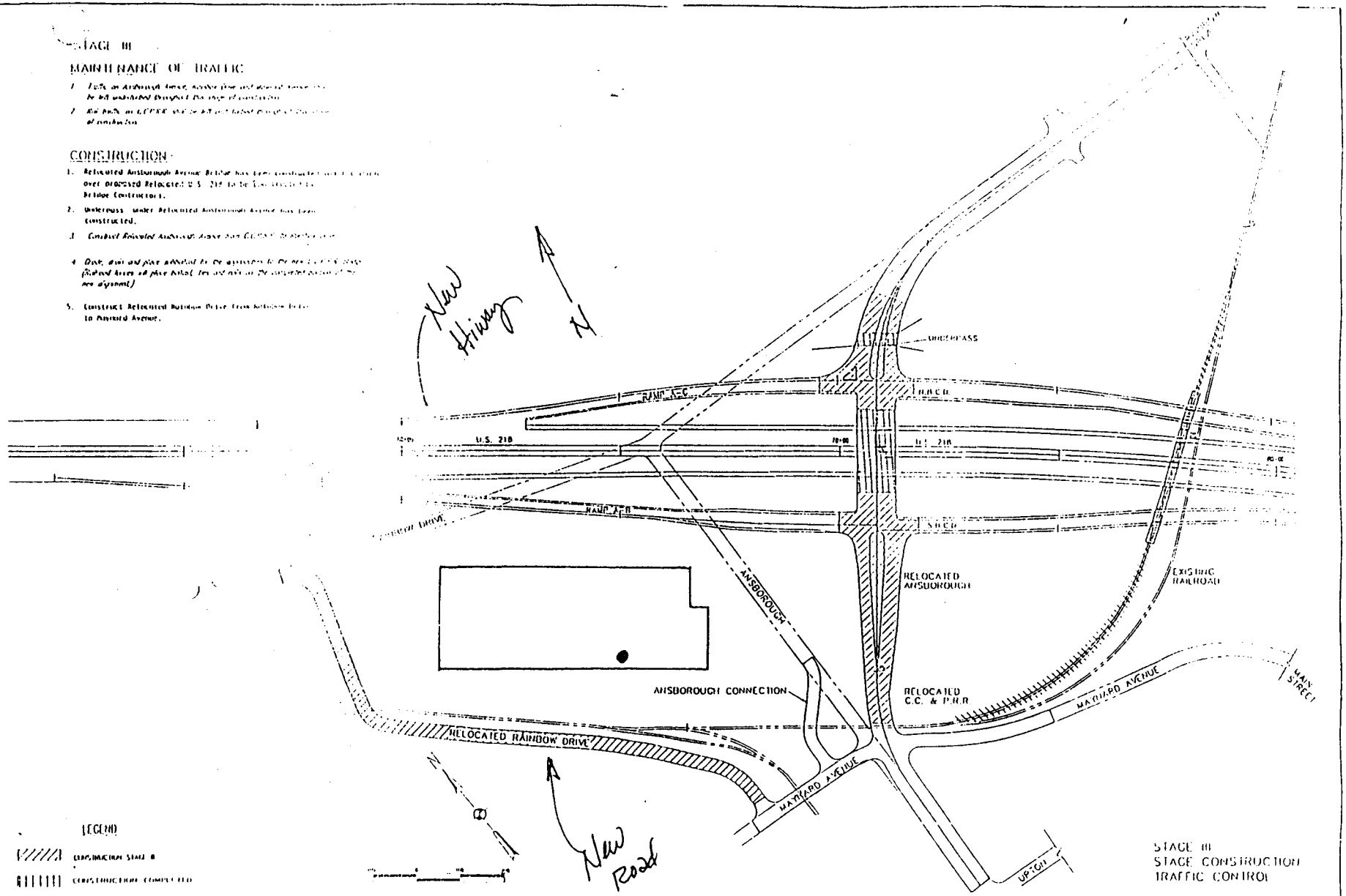
STAGE III

MAINTENANCE OF TRAFFIC

1. Traffic on Ansborough Avenue, Rainbow Drive and Maynard Avenue [illegible] be left undisturbed throughout the stage of construction.
2. Rail traffic on C.C.P.R.R. shall be left undisturbed throughout the stage of construction.

CONSTRUCTION

1. Relocated Ansborough Avenue Bridge has been constructed [illegible] over proposed Relocated U.S. 218 to be [illegible] Bridge Contractors.
2. Underpass under Relocated Ansborough Avenue has been constructed.
3. Construct Relocated Ansborough Avenue from C.C.P.R.R. to [illegible]
4. Dock, drain and place subbase for the approaches to the new C.C.P.R.R. [illegible] (Railroad tracks will place behind [illegible] on the completed portion of the new alignment.)
5. Construct Relocated Rainbow Drive from Rainbow Drive to Maynard Avenue.



LEGEND

CONSTRUCTION STAGE III

CONSTRUCTION COMPLETED

STAGE III
STAGE CONSTRUCTION
TRAFFIC CONTROL

COUNTY BLACK HAWK

PROJECT NUMBER IX-218-7(147)-50-07

STAGE III (PC2)

SPECIFICATIONS

Gas Heat Cleaning Ovens

Model	220-RKG	230-RKG	240-RKG	245-RKG	260-RKG	270-RKG	280-RKG
Min. Gas Pressure W.C.	5"	5"	5"	5"	5"	5"	5"
Interior Vol. Cu. Ft	17.5	37.6	66.1	159.1	264.7	413.2	617.2
Interior Dimensions	W D H 27"×25.5"×44.5"	W D H 39"×37.5"×44.5"	W D H 44"×46"×56.5"	W D H 63"×61.5"×71"	W D H 75"×73.5"×83"	W D H 87"×85.5"×96"	W D H 99"×97.5"×110.5"
Outside Dimensions	72"×56"×70"	65"×68"×70"	67"×76"×82.5"	88"×96.5"×100"	100"×112"×116"	137"×126"×131"	149"×138"×146"
Working Height Over Cart	36"	36"	48"	60"	72"	84"	96"
Cu. Ft. Vol. Over Cart	14.3	30.4	56.2	134.5	229.6	361.5	536.2
Cart Rating Lbs.	2,000	3,200	3,200	8,000	8,000	8,000	8,000
Max. Combustible Content Lbs./hour	20	30	40	50	60	70	80
Max. Current Amp.	10	10	10	10	10	20	20
Natural Gas Max. CF/Hour	625	625	625	625	625	1000	1200
Normal CF/Hour	475	500	535	565	588	650	750
Power Supply Amp. 120/1/50/60	20	20	20	20	20	30	30
Shipping Weight Lbs.	1,600	2,000	2,300	3,000	4,000	6,000	7,000

CONSTRUCTION

The oven is fabricated from 11 ga. steel which is painted with 400°F. heat resisting paint. All three chambers are lined with high temperature insulation. The hinged swing-out front door is lined with high temperature insulation and equipped with safety type locking latch. Cart tracks are installed in the insulated floor. Removable rail extensions for cart are provided. The self supporting exhaust stack is fully lined with 2,700°F. sleeve insulation.

GAS BURNERS

Both main burner and afterburner are independently equipped with a combustion air blower, pilot, and spark ignition system. An individual actuated electronic safety system shuts down the burners in the event of electric, gas or flame failure. Standard burners use natural gas. LPG burners are available.

EXHAUST SYSTEM

Natural draft.

CONTROLS

Temperature in the main chamber is monitored by a thermocouple located in the main chamber. A solid state indicating temperature controller shuts off the burner and its blower. This restricts air to the main chamber, suppressing combustion and controlling setpoint temperature.

An adjustable cycle timer shuts the oven down at completion of the process. The oven also has a separate backup primary chamber excess temperature control.

CONTROLLED COMBUSTION SYSTEM

Designed to anticipate and suppress the rate of combustion of volatile material from the parts being processed. Water atomizing nozzles are automatically turned on above setpoint by a solid state control and the mist cools the volatile material.

ace™

ARMATURE COIL EQUIPMENT, INC.

4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2696
216-267-6366

ace™

HEAT CLEANING OVEN

OVEN DESIGN

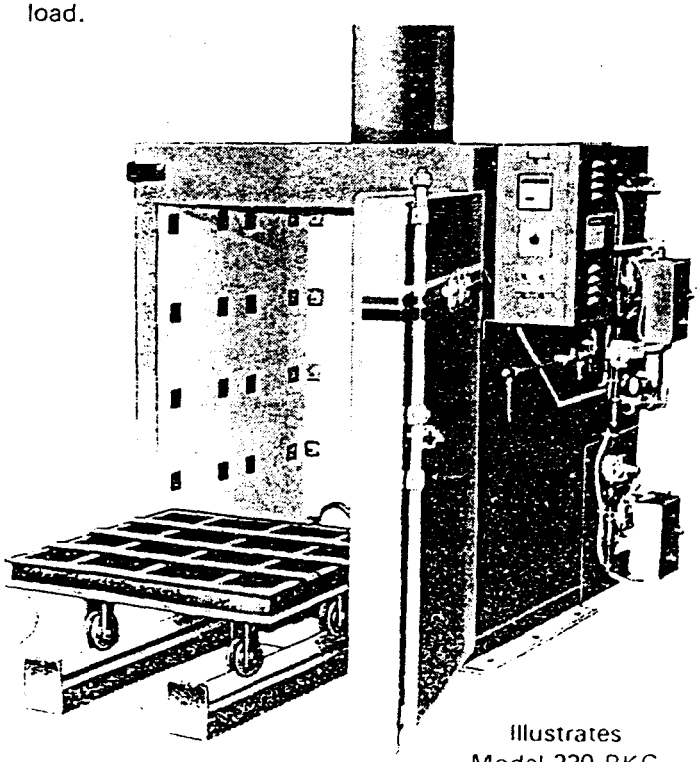
ACE heat cleaning ovens are designed to remove paint, grease, oil, varnish, epoxy, rubber and other combustible materials. Heat clean engine blocks, heads, paint hooks, stators, rubber-to-metal bonded parts - virtually any metal parts. They will also debond brake shoes and clutch plates. The load is heated to 650° - 750°F. (340° - 400°C.), in an oxygen deficient atmosphere, where the combustible hydrocarbons decompose. Parts leave the oven completely dry. Ash residue is easily removed.

GUARD AGAINST HOT SPOT DISTORTION

Ace Heat Cleaning Ovens are your guarantee against hot spot distortion. The heaters emit uniformly controlled heat, which is evenly distributed throughout the chamber. This method totally eliminates the concentration of intense heat or flame entering the chamber, which could overheat, warp or melt parts.

SHORT TIME CYCLES

Average time cyles of 1 to 2 hours at normal temperatures of 650° to 750°F., depending upon combustible load.



Patent Pending

Illustrates Model 230-RKG

HEAT CLEAN WITHOUT AIR POLLUTION

The afterburner chamber is designed to provide excess air for complete combustion of the effluent. Discharges to atmosphere are harmless by-products of combustion, conforming to tough EPA air emission standards.

ELIMINATE CHEMICAL PROCESSING

This controlled process eliminates the problems associated with chemical cleaning, such as: High cost of chemicals and solvents, expensive sludge disposal, health risks related to toxic materials, and manual labor.

CONSTRUCTION

This oven is fabricated from 11 gauge steel and coated with a high temperature, rust resistant paint. The most modern state-of-the-art insulation, rated for 2,300°F., lines the oven and self-supporting exhaust stack, to offer you maximum energy efficiency. The thick door is securely sealed by husky cam type latching mechanisms located on the top and bottom of the door. For reasons of safety, the latch is designed to accept a lock, as the door should not be opened during the heating cycle.

MAIN CHAMBER CONTROLS

A programmed digital microprocessor-based time-temperature controller and water suppression system are installed to suppress combustion for high combustible loads. Main chamber temperature is controlled by a thermocouple located in the main chamber. This thermocouple interfaces to the microprocessor-based controller. The heaters are turned from high to low fire to maintain the setpoint temperature.

EXCESS TEMPERATURE CONTROL

An excess temperature controller with a "Manual Reset" button is installed for the main chamber. This controller is a direct acting thermal expansion switch, which automatically turns off the main chamber heaters if the temperature rises above the setpoint. It is installed as a separate backup to protect the oven and load from excess temperature.

CONVENIENT AUTOMATIC CONTROLS

This oven has all the controls you will need! Temperature is accurately controlled at setpoint throughout the cycle. Time and temperature are automatically controlled without operator attendance, and are automatically shut off at end of the time cycle.

METHODS OF OPERATION

MODEL	RKG	FG	RKE
Main Chamber	Gas	Electric	Electric
Afterburner	Gas	Gas	Electric
Type of Heat	Convection	Infrared	Infrared
Exhaust	Natural Draft	Natural Draft	Blower

SPECIFICATIONS

MODEL-RKG GAS OVENS

MODEL -RKG	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NATURAL GAS MAX. CFH	NORM. CFH	MAX. AMP.	POWER SUPPLY AMP. 120/1/50/60	VOLUME OVER CART CU. FT.	SHIP WEIGHT LBS.
230	36	36	47	36	56	64	58	3,200	30	625	525	10	20	27.0	2,000
240	48	48	59	48	68	76	70	3,200	40	625	560	10	20	64.0	2,300
330	36	60	33	24	54	93	61	2,000	30	625	525	10	20	30.0	2,200
363	36	84	44	36	65	110	70	• 4,500	35	625	540	10	20	63.0	3,000
245	60	60	72	60	80	94	85	8,000	50	625	565	10	20	125.0	3,500
3144	48	108	60	48	66	143	73	# 4,800	40	625	570	10	20	144.0	3,000
•• 260	72	72	83	72	100	112	116	8,000	60	625	588	10	20	216.0	4,000
•• 270	84	84	96	84	111	129	131	8,000	70	850	700	10	30	343.0	6,000
•• 280	96	96	110	96	125	143	146	8,000	80	850	750	10	30	512.0	7,000

NATURAL GAS INLET PRESSURE 5" TO 13.6" W.C.
PROPANE INLET PRESSURE 11" W.C.

•• Double Door Ovens
• 6 Wheels
8 Wheels

7' 8' 8'

MODEL-EG ELECTRIC/GAS OVENS

MODEL -EG	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NORMAL USAGE GAS CFH	ELEC. KW/HR	MAX. AMP. VOLTAGE 240	480	AMP. SERV. VOLTAGE 240	480	SHIP WEIGHT
212	24	36	33	24	48	48	60	2,000	14	120	15	50	25	100	100	1,600
218	24	54	33	24	48	66	60	2,000	15	120	20	65	33	100	100	1,800

MODEL-RKE ELECTRIC OVENS

MODEL -RKE	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NORMAL USAGE 240 V. KW/HR	480 V. KW/HR	MAX. AMP. VOLTAGE 240	480	AMP. SERV. VOLTAGE 240	480	SHIP WEIGHT LBS.
230	36	36	44	36	62	88	70	3,200	24	20	24	100	70	125	100	2,000
240	41	44	56	48	67	96	82	3,200	32	23	26	100	70	125	100	[illegible]

Since 1919

ace

ARM[redacted], INC.

Printed in U.S.A. 7.88

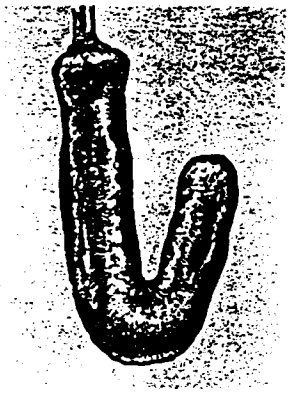
ace™

HEAT CLEANING OVENS

Thermal cleaning of fixtures, hooks, racks, baskets, jigs and parts

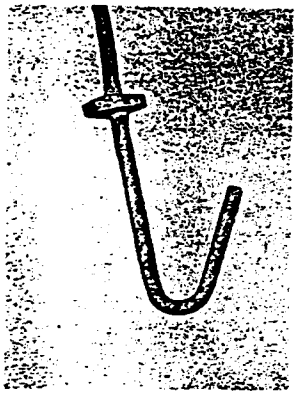
WITHOUT CHEMICALS

Ace gas-fired heat cleaning ovens are designed to remove hydrocarbon-based coatings from metal parts while leaving the parent metal unaffected. This is accomplished by heating the load to 700-800°F. (380-430°C.) in an oxygen deficient atmosphere. The combustible hydrocarbons decompose into volatiles, smoke, fumes and ash. Ash residue may be disposed of with the trash.



Before

After thermal stripping — 800°F



Residue ash removed with slight tapping

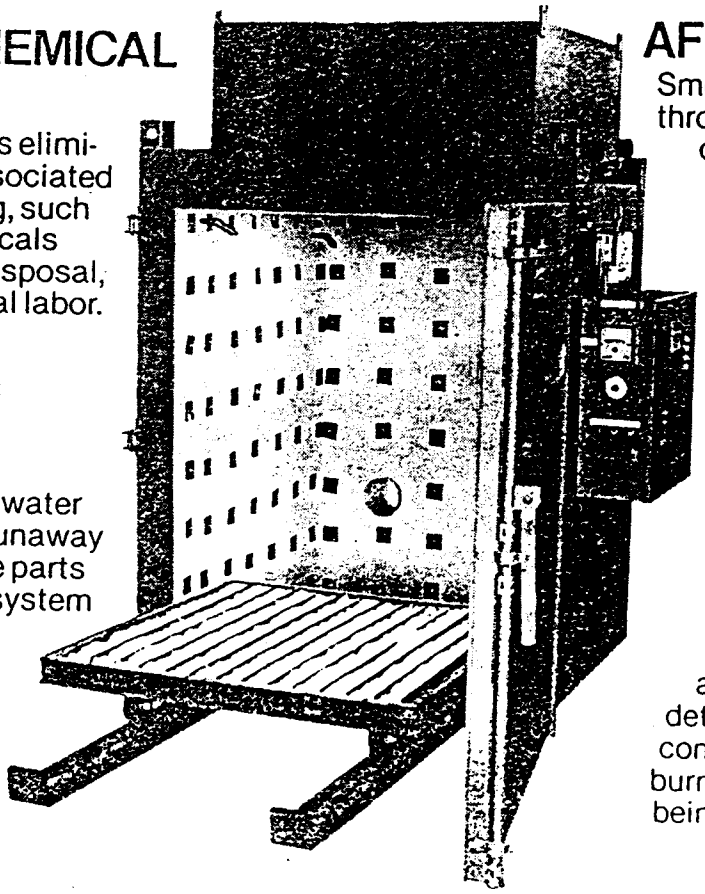
ELIMINATE CHEMICAL PROCESSING

This controlled process eliminates the problems associated with chemical cleaning, such as: high cost of chemicals and solvents, sludge disposal, health risks and manual labor.

WATER SUPPRESSION SYSTEM

An adjustable setpoint water mist system prevents runaway fires and damage to the parts being processed. This system automatically cycles at the setpoint temperature. Volatile emissions are cooled before they reach a runaway temperature.

Patent Pending



AFTERBURNER

Smoke and fumes are drawn through the integral afterburner chamber for oxidation at temperatures of up to 1,500°F for ½ to ¾ second residence time. Discharges are harmless byproducts conforming to EPA standards.

LARGE LOAD CAPACITY AND SHORT TIME CYCLES

ACE ovens can clean two or three large loads per day of heavily coated hooks and hangers. Cycles are determined by the maximum combustible content the afterburner will handle per hour without being overloaded.

PRICE LIST NO. 789-10

ITEM		PRICE
	ACCESSORIES	
OA-130	Expanded Metal Guards. 16 Ga. Carbon Steel, On 3 Sides & Door	*
OA-200	Additional Galv. Exh. Stack With 2,300° F. Insulation	$ 60.00 Ft.
OA-210	Galvanized Exh. Stack With 2,700° F. Insulation For First 10 Ft	300.00
OA-210A	Additional Galv. Exh. Stack With 2,700° F. Insulation	90.00 Ft.
OA-220	Stainless Exh. Stack With 2,300° F. Insulation For First 10 Ft	300.00
OA-220A	Additional Stainless Exh. Stack With 2,300° F. Insulation	90.00 Ft.
OA-230	Stainless Exh. Stack With 2,700° F. Insulation For First 10 Ft	600.00
OA-230A	Additional Stainless Exh. Stack With 2,700° F. Insulation	120.00 Ft.
OA-310	Exh. Stack Weather Cap - Galv	48.00
OA-311	Exh. Stack Weather Cap - Stainless	130.00
OA-320	Exh. Stack Storm Collar - Galv	85.00
OA-321	Exh. Stack Storm Collar - Stainless	150.00
OA-330	Exh. Stack Adjustable Roof Flashing - Galv.	160.00
OA-331	Exh. Stack Adjustable Roof Flashing - Stainless	210.00
OA-410	Gas Regulator For Pressure Over 1/2 PSI, (Customer To Advise Inlet Pressure)	(185.00)*
OA-412	Gas Pressure Gauge...0-30 IWC	60.00
OA-500	Spare Stainless Water Spray Nozzle	29.00
OA-510	Additional Water Nozzles Installed In Primary Water System	210.00
OA-512	Additional Water Nozzles Installed In Secondary Water System	210.00
OA-515	Water Line Strainer, Brass, 1/2" Pipe Connection Female NPT	90.00
OA-520	By-Pass Valve Installed To Manually Turn On Primary Water System	105.00
OA-550	Aux. Unit To De-activate & Re-activate Primary & Secondary Water System	1,050.00
OA-560	Water Supply Back-Up System Assembly With Tank, Pump & Valves	*
OA-610	Cartridge Of Hi-Temperature Lubricant, 1,000° F. Rating For Wheel Casters	11.00
OA-710	3 Trays On Floor & 2 Deflectors Under Cart To Catch Residue	525.00
OA-715	Rack With Shelves Made From Bar Grating, For Cart	
OA-720	Additional Cart	*
OA-810	Transformer For Supply Voltages Other Than 120 Volt, 1 Phase, 60 HZ (Customer To Specify Primary Voltage, Phase & HZ)	150.00
OA-815	System To Automatically Start Oven At A Designated Time	525.00
OA-817	Programmable Excess Temp. Control To Shut-Off M.B. Over Setpoint	1,000.00
OA-820	Circular Chart Temperature Recorder & Thermocouple	1,200.00
OA-855	Afterburner Preheat Timer	200.00
OA-910	Weather Guard On Burners For Outside Use	525.00
OA-920	Vapor Barrier Coating On Inside Enclosure And Exh. Stack (10 Ft.) As Protection Of Steel Against Corrosion & Chemical Actions	*
OA-921	Additional Exh. Stack Vapor Barrier Coating	25.00 Ft.
OA-1010	Burners And Controls Mounted On Left Side Of Oven	295.00
OA-1015	Remote Electric Control Panel With 10 Ft. Of Extension Wire	385.00
OA-1020	Door Hinged On Left Side of Oven	160.00
OA-2010	Start-Up Or Service By An ACE Representative	65.00 Hr.
	Travel Portal To Portal, Preparation & Report Time	50.00 Hr.
	Plus Round Trip Air, Ground Transportation & Lodging	
OA-2030	Second Afterburner Required For Rubber Or Urethane Exceeding 300 Lbs./Load	4,000.00
OA-2040	Powered Cart For Loads To 10,000 Lbs. At Travel Of 15 R.P.M.	*

* PRICE BASED ON OVEN SIZE

ARMATURE COIL EQUIPMENT, INC.
4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2699

EFFECTIVE OCTOBER 2, 1989
PRICES AND SIZES SUBJECT
TO CHANGE WITHOUT NOTICE
F.O.B. CLEVELAND, OHIO

ARMATURE COIL EQUIPMENT, INC.
4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2696

216-267-6366
1-800-255-1241
FAX 216-267-4361

PRICE LIST NO. 789-10

MODEL		PRICE
	MICRO-RAMP ACE HEAT CLEANING OVEN	
230-REG	27.0 Cu. Ft. Usable Volume Over Cart, 36"W x 36"D x 36"H	$ 7,980.00
330-REG	30.0 Cu. Ft. Usable Volume Over Cart, 36"W x 60"D x 24"H	9,450.00
463-REG	63.0 Cu. Ft. Usable Volume With Rack, 36"W x 36"D x 84"H	13,550.00
363-REG	63.0 Cu. Ft. Usable Volume Over Cart, 36"W x 84"D x 36"H	13,650.00
240-REG	64.0 Cu. Ft. Usable Volume Over Cart, 48"W x 48"D x 46"H	11,860.00
245-REG	125.0 Cu. Ft. Usable Volume Over Cart, 60"W x 60"D x 60"H	15,750.00
3144-REG	144.0 Cu. Ft. Usable Volume Over Cart, 48"W x 108"D x 48"H	17,330.00
3160-REG	160.0 Cu. Ft. Usable Volume Over Cart, 48"W x 120"D x 48"H	19,950.00
3210-REG	210.0 Cu. Ft. Usable Volume Over Cart, 72"W x 84"D x 60"H	22,050.00
260-REG	216.0 Cu. Ft. Usable Volume Over Cart, 72"W x 72"D x 72"H	23,100.00
3245-REG	245.0 Cu. Ft. Usable Volume Over Cart, 84"W x 84"D x 60"H	26,250.00
3288-REG	288.0 Cu. Ft. Usable Volume Over Cart, 72"W x 96"D x 72"H	28,000.00
270-REG	343.0 Cu. Ft. Usable Volume Over Cart, 84"W x 84"D x 84"H	28,350.00
3416-REG	416.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 78"H	32,030.00
280-REG	480.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 90"H	33,080.00
3512-REG	512.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 96"H	35,000.00
3600-REG	600.0 Cu. Ft. Usable Volume Over Cart, 96"W x 120"D x 90"H	38,000.00

STANDARD EQUIPMENT SUPPLIED: SINGLE PLATFORM CART, 10 FT. GALV. EXH. STACK WITH 2,300°F. RATED INSULATION. PRIMARY WATER SUPPRESSION SYSTEM, MODEL 2050 PROGRAMMED 1 RECIPE TEMPERATURE CONTROLLER.

ITEM		PRICE
	RECOMMENDED **ACCESSORIES** FOR BURNING PAINT	
AM-200	Non-Asbestos Mittens	48.00
OA-1080	Secondary Water Suppression System (Back-Up)	420.00
OA-1082	Third Water Suppression System (Under Cart)	1,050.00
OA-1090	Exhaust Stack Digital Indicating Temperature Controller (Required In CA, IL, MA, NJ, PA)	580.00
OA-1092	System To Keep Afterburner On 0-10 Hrs. Longer Than Heat Cycle	420.00
OA-1095	Electric Safety Door Lock System	580.00
OA-2052	Multi-Programmed 8 Recipe Temperature Controller	265.00
OA-2550	Manometer, Pressure Indicating System	125.00
OA-2600	(FM) Factory Mutual Combustion Safety Equipment System	(1,370.00)*
OA-2550	(IRI) Industrial Risk Insurers Combustion Safety Equipment System	(1,370.00)*

yes

- level of exhaust in stack

2 Burners

* PRICE BASED ON OVEN SIZE

Printed in U.S.A.

Ramp elevation of temp. 2 hrs to arrive @ 700°

685

MAIN BURNER HIGH-FIRE, LOW-FIRE SYSTEM

Our system turns the main burner from high-fire to low-fire at setpoint.

NOTICE: We do not turn off the main burner at setpoint. The competition turns the main burner off over setpoint and on under setpoint.

CYCLE TIMER

The cycle timer automatically turns off the after-burner and main burner at the end of the heat cycle.

WATER MIST INJECTION SYSTEM

The ACE system consists of a primary and (optional) backup secondary system. The system(s) rigidly maintains the temperature profile programmed into the Micro Ramp temperature controller. The automatically-operated water injection system(s) turns on any time oven temperature exceeds the profile setpoint temperature. Both water systems are **automatically checked** for one minute at the start of each cycle.

AIR POLLUTION CODES

Our ovens are designed to comply with tough EPA requirements. State and/or local permits are usually required before the oven is installed. Forward the application forms to us for insertion of technical data. Laboratory air pollution test results and additional data are available upon request.

Will your present oven comply with *new* tough EPA air pollution regulations?

OPERATING COST

Approximately $3.00 per hour, depending on oven size.

FREE TESTING

Send us a sample lot of your parts that need heat cleaning. We will process them and send you a complete test report of cycle time, temperature, gas consumption and other data. You judge the results. **No Charge** to you.

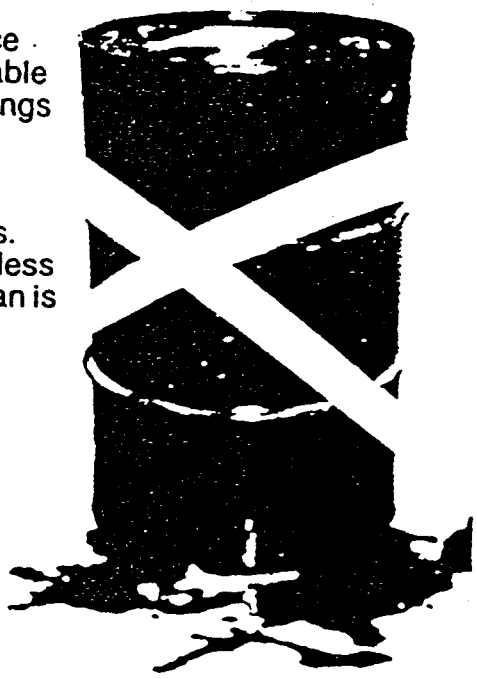
JUST HOW SAFE IS YOUR STRIPPING PROCESS?

1. Does your stripping process expose workers to hazardous chemicals or unsafe conditions?
2. Are you experiencing dangerous run-away fires or explosions in your present oven?
3. Do your employees complain of toxic fumes and smoke inhalation?

Eliminate the above hazards with an ACE heat cleaning oven.

ELIMINATE MESSY CHEMICALS AND COSTLY SLUDGE DISPOSAL PROBLEMS

You will experience considerable labor savings over chemical cleaning processes. Also, use less energy than is required to heat your chemical tank.



AFTERBURNER

To comply with air pollution standards, our ovens are equipped with an afterburner which completely eliminates smoke and odors.

Gaseous products, consisting of volatile vapors and smoke, pass into the afterburner. This mixture is totally oxidized by increasing the temperature. Temperatures in excess of 1,600° F. are maintained for complete oxidation of the effluent.

Discharge to atmosphere from the exhaust stack is a fraction of EPA standards and in compliance with local/state regulations.

The afterburner firebox is engineered to handle the *maximum flow rate* from the main chamber.

Our afterburner stays on high-fire continuously during the heat cycle. This is necessary for complete combustion of smoke and fumes.

BACKUP EXCESS TEMPERATURE CONTROL

The excess temperature control has a **"Manual Reset"** button.
It is intended as a *separate backup* to protect the oven and load from excess temperature caused by a control or relay failure.

INSULATION MATERIAL

Our oven is completely lined with 2,300° F. rated board & blanket insulation. **No Asbestos**.
It also contains no castable insulation, which can crack and crumble from thermal shock.

PRESSURE RELIEF MECHANISM

The National Fire Code requires furnaces and ovens to have an explosion relief mechanism. **Our ovens are equipped with an explosion relief door or hatch.** Should there be an explosion, the door or hatch will momentarily open to relieve the pressure. It will immediately close, preventing smoke and fire from entering your building.

NATURAL DRAFT EXHAUST SYSTEM

The oven is supplied with 10 feet of high temperature insulated galvanized steel exhaust stack as standard equipment. An exhaust blower is not required.

INSTALLATION LOCATION

The oven may be installed inside or outside a building. Your Building Department can advise local clearance requirements.
Outside installations should be protected from rain and snow with a roof or shed. Also, the water system should be protected from freezing.

TIME CYCLE

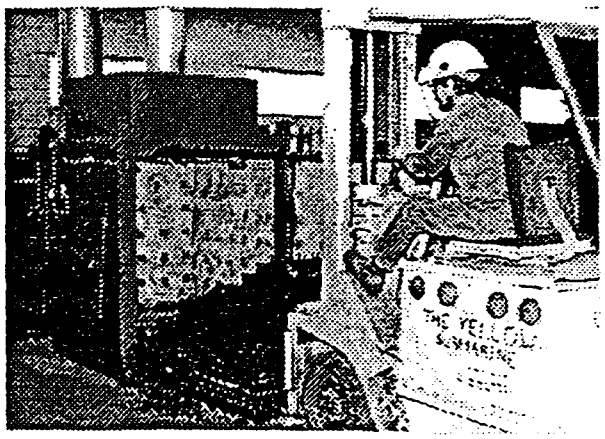
The oven is designed to handle two or three cycles per day. Cycle time is determined by the maximum combustible content the afterburner can handle per hour without being overloaded. The afterburner capacity of the ovens ranges up to 80 pounds of combustible material per hour.

OPERATING TEMPERATURE

Approximately 800° F. for typically processed material.

BATCH TYPE OVEN

A basket of parts is loaded into the oven for stripping. Just one person is needed to load the oven and start the cleaning process. The oven operates unattended after start-up.



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4725 MANUFACTURING ROAD • CLEVELAND, OHIO 44135-2696 • (216) 267-6366
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BULLETIN 105

ACE GAS HEAT CLEANING OVENS

This heat cleaning oven is designed to remove cured hydrocarbon coatings from metal parts, jigs, hangers, fixtures and finished parts. The charge is heated to 700-850° F. to decompose the combustible material into smoke and ashes. Smoke & fumes from the combustibles are drawn thru the afterburner firebox where the temperature is raised to 1,500° F.or more with a retention time of 0.7 to 0.9 seconds for complete combustion. The effluent discharge to atmosphere from the exhaust stack consists primarily of water vapor and carbon dioxide which are pollution free, invisible, odorless and harmless.

TEMPERATURE CONTROL SYSTEM

The programmed time/temperature controller and water suppression system are installed to suppress combustion for high combustible content loads. The controller has a microprocessor-based instrument installed. This technology has been fully exploited to provide sophisicated features and outstanding performance never previously available. Patented.

Model 2050 Programmer (Standard Equipment)
One recipe storage capability.

Model 2052 Programmer (Accessory)
Eight recipe storage capability. Recipes are stored in internal memory and activated as needed from the front panel. Each recipe can be used for a different metal or a different combustible material.

Both programmers have a security electronic combination lock. It is used to lock all variable parameters and prevent unauthorized tampering.

Extremely easy to use. The operator merely presses the "RUN" button to start the program.
Turning the cycle timer from zero to the desired heat time turns on the afterburner and main burner.

Run-away fires, explosions and melt downs of aluminum are totally eliminated by our temperature control system.
This is accomplished by controlling the rate of combustion over a programmed period of time and temperature.

Both programmers have a two year warranty.

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4725 MANUFACTURING ROAD • CLEVELAND, OHIO 44135-2696 • 216-267-6366
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March 12, 1991

Waterloo Industries
Attn: Jerry Stoll
P.O. Box 2095
Waterloo, IA 50704

Subject: MICRO-RAMP ACE HEAT CLEANING OVEN FOR STRIPPING PAINT HOOKS

Dear Mr. Stoll,

We are enclosing literature to update you on the latest design and technology improvments to heat clean paint hooks and racks.

This batch-type MICRO-RAMP OVEN easily removes paint without damaging the metal parts by closely maintaining temperature. Runaway fires are totally eliminated by our water suppression system and patented temperature control system. Smoke and fumes are incinerated in the afterburner and exhaust is only harmless by-products of combustion, conforming to EPA air pollution standards.

Typical cleaning cycles are 2 to 3 hours, depending on the size load. Operating cost is approximately $3.00/hour.

Send us a load of heavily coated paint hooks or parts. We will process them in our Model 240-RKG test oven, 48"W x 48"D x 48"H, to show what our heat cleaning oven can do for you.

The cleaned parts will be returned to you with a complete test report. The report includes a documented strip chart record of time and temperature of the entire heat cycle. There is no charge for processing, however we ask that you please prepay the freight.

If you wish any further information or clarification, please do not hesitate to call us toll free 1-800-255-1241 for expert technical assistance.

Sincerely yours,

ARMATURE COIL EQUIPMENT, INC.

Robert F. Heran KL

Robert F. Heran
President

RFH/em
Encs

steel letters
JBI
Osseo, W.I.

ACE GAS HEAT CLEANING OVENS

PRESSURE RELIEF DOOR

The National Fire Code requires furnaces and ovens to provide an explosion relief mechanism to relieve sudden excess pressure. Our oven is equipped with explosion relief door latches. Should there be an explosion, the door will open to relieve the pressure and then immediately close, keeping out air (oxygen) to prevent ignition of combustibles in the oven.

COMBUSTION AIR

The oven will perform satisfactorily when an adequate supply of combustion air is assured. Many buildings have exhaust fans, cleaning booths, paint spray booths, etc. where air is drawn out faster than it comes in thru cracks, leaks, windows and doors. This creates a negative pressure inside the building, sufficient to overcome the natural draft created by the oven exhaust stack, and the oven will not function properly.
The maximum negative pressure in the building must not exceed 0.05 inches of water column.

NATURAL DRAFT EXHAUST SYSTEM

The oven is supplied with 10 feet of insulated exhaust stack. Additional 2 foot sections of insulated exhaust stack are available at extra cost should the roof be higher. The stack must be installed in a vertical position.

INSTALLATION LOCATION

The oven may be installed inside a building or outside. Install on a level, non-combustible floor, with a minimum clearance of 12 inches to any combustible material. Sufficient clearance must be allowed in front for loading and unloading and on the right side for servicing the control panel and burners. Your Building Department can advise local clearance requirements.

Outside installations should be protected from rain and snow with a roof or shed.

TIME CYCLE

The oven is designed for two or three cycles per day. Cycles are determined by the maximum combustible content the afterburner will handle per hour without being overloaded. This is controlled by the C.C.S. system. The afterburner capacity of the oven ranges up to 80 pounds of combustible material per hour.
Most material will be heat cleaned at 700° F. to 800° F. Time must be allowed for the load to reach setpoint temperature, which depends on weight, method of loading, dimensions and size of the material. An adjustable timer is installed to automatically turn on and off the burners.

ACE GAS HEAT CLEANING OVENS

Turns on at a temperature 10° F. (adjustable parameter) higher than the primary system setpoint.
The competition does not supply a secondary (backup) system.

The operator keeps the oven door open for one minute at the start and makes absolutely certain all nozzles spray the correct volume of water.
The primary and secondary water suppression system nozzles are automatically turned on for one minute each time the program is started.
Since the water check is programmed into memory of the controller, no additional switches, other than the "RUN" button need be pressed.

We control the primary and secondary water systems at setpoint from the moment the programmer is turned on until it ends.
The primary water turns on 1° F. over the primary setpoints.
The setpoint continuously changes (approximately 1° F. per minute) up the ramp.
NOTE: Paint, varnish, grease and rubber start burning at approximately 500° F.

EXAMPLE: A program is entered into memory of the programmer to ramp the primary setpoint from 70° F. to 850° F. over a three hour period and dwell (soak) at 850° F. for two hours.

The primary setpoint will be 500° F. at some point in time during the three hour ramp.
The primary water system turns on when the primary setpoint is 500° F. and the oven temperature is 501° F.
The secondary water system turns on when the primary setpoint is 500° F. and the oven temperature is 510° F.
NOTICE: The primary water system turns on 1° F. over any setpoint and off under the setpoint.

The competition only supplies a one setpoint temperature controller.
Using the same example as above, their controller would be set for 850° F. and their cycle timer for five hours.
Unfortunately, combustibles start burning at about 500° F., but the competition's primary water system does not turn on until the temperature exceeds 850° F.
They do not supply a secondary water (backup) system.
It makes good sense to install a backup system for a critical operation.

The competition could experience run-away fires or explosions before their primary water system turned on.
The competition's temperature controller does not have the capability to slowly ramp the temperature up to 850° F. over a programmed three hour period...per the above example.

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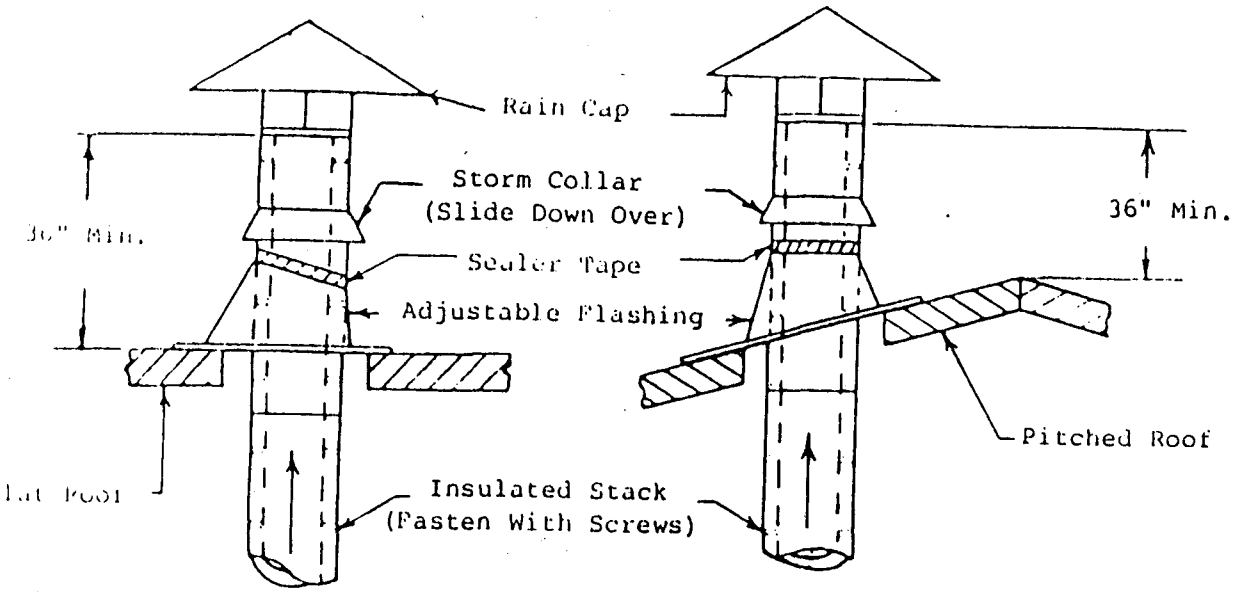
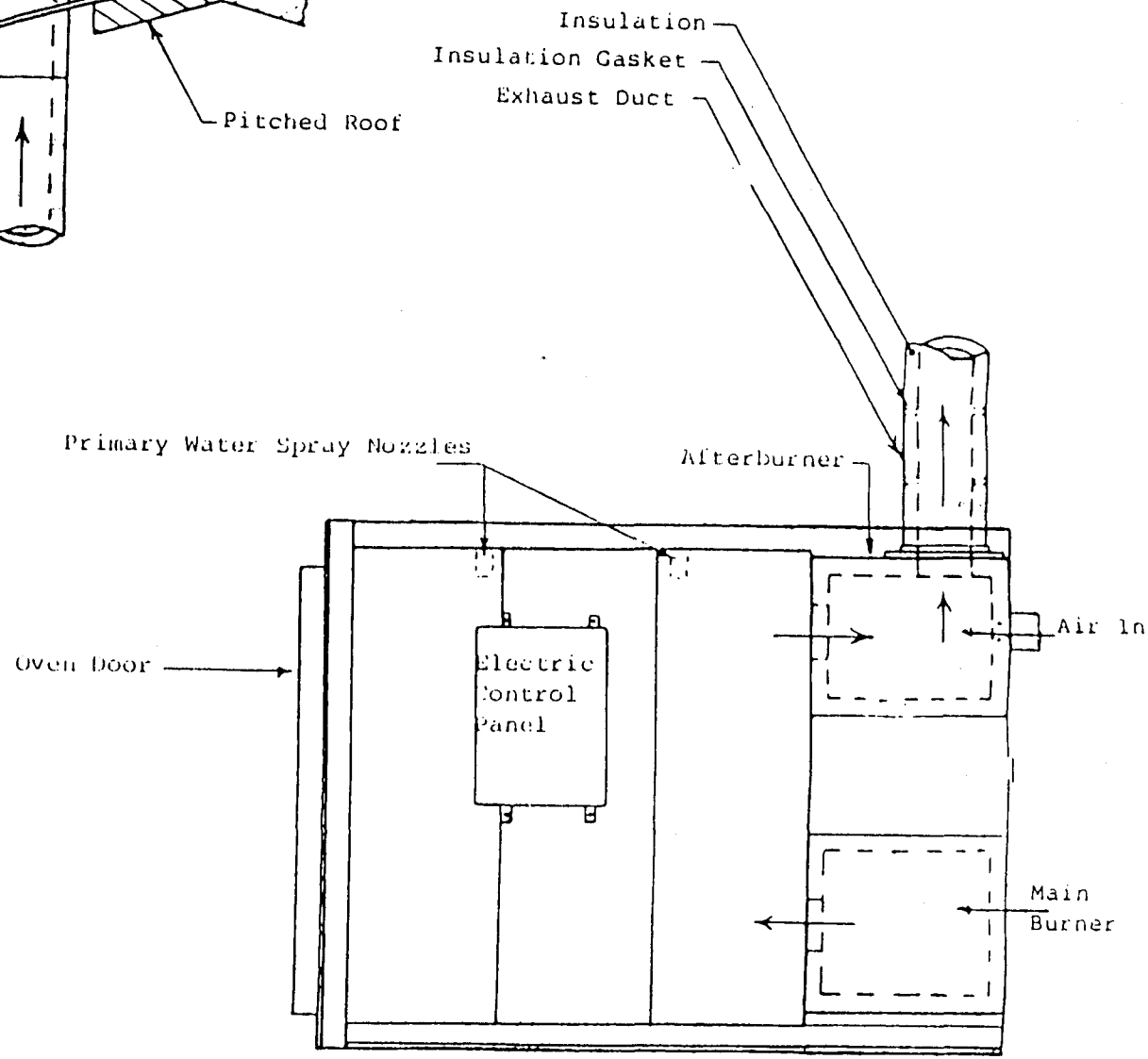
[illegible] MANUFACTURING ROAD • CLEVELAND OHIO 44135 • (216) 267-8363

HEAT CLEANING OVEN

1. Eliminate Messy Chemicals.
   Caustic chemicals are toxic and dangerous to handle.
2. No Costly Sludge Disposal Problems.
   A small quantity of ash residue.
3. Cleans Faster Than Chemicals.
   Chemical cleaning takes days. Heat cleaning takes hours.
4. Clean Rejects.
   No warping, annealing, distortion or damage.
5. Operating Cost.
   Model 230-RKG, 500 Cu. Ft. Gas/Hr. x $.50/100 Cu. Ft. = $2.50/Hr.
6. Installation.
   One day. Supplied completely assembled, wired and piped.
7. Batch Load.
   Save labor and loading time.
8. Ease Of Loading.
   Single platform cart supplied with track inside and outside oven.
9. Short Time Cycles.
   Normal time cycle 3 to 4 hours.
10. Parts Leave Oven Completely Dry.
    Only ash residue remains on parts.
11. Better and Faster Cleanup.
    Blast them for 30 seconds instead of 30 minutes.
12. Large Load Capacity.
    Oven designed for full loads.
13. No Pollution Problems.
    Meets tough EPA air pollution standards.
14. Insulated Cart.
    Lubrication on cart wheel bearings will not burn out.
15. Insulation - High Temperature Rated Board and Blanket.
    No castable refractory which is subject to thermal shock cracking.
16. Thermal Decomposition of Combustible Coatings.
    No open flame in oven chamber from main burner or afterburner.
17. Pressure Relief Hatch and Enclosure Supplied.
    Safety protection for personnel and oven.
18. Ease of Maintenance.
    Designed with three separate chambers for ease of access.
19. Free Demonstration.
    Ship ACE your heavily coated parts for heat cleaning.
20. Demonstration Test Data.
    Includes time cycle, temperature and gas usage.

SCHEMATIC ARRANGEMENT DRG.





MOD[redacted]RKG[redacted]S [redacted]T [redacted]NI[redacted]OVE[redacted]

HEAT CLEAN IT!

HEAVILY COATED PARTS, FIXTURES AND HOOKS EASILY CLEANED

1. Rejected parts can now be cleaned effectively and economically with heat. **Our patented MICRO-RAMP SYSTEM eliminates run-away fires**...Result - *no damage to your parts*.

2. This *distortion-free process* is especially useful when hardness and close tolerances are required to be maintained.

3. Heavily coated parts, up to 80 Lbs. per hour of combustibles, can be processed in 2-3 hours, depending upon the load and oven size.

4. The extra capacity afterburner eliminates all smoke and odors and assures compliance with air pollution regulations.

5. Our metal liner protects the insulation on the interior sidewalls and door against mechanical damage; thus eliminating the need for frequently replacing the insulation.

6. Many standard models are now available to process small, medium or large loads.

7. Companies are turning to heat cleaning in order to avoid toxic chemical strippers, water pollution problems, and the high cost of waste disposal.

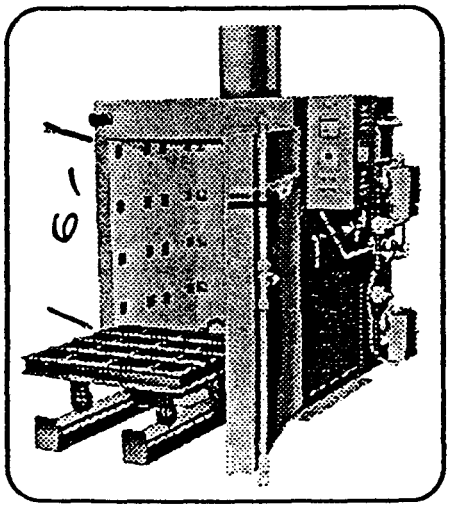
8. There are many confirmed benefits of heat cleaning vs. chemical strippers.

9. ***Reclaim your defective parts*** for recoating, by cleaning them in the ACE oven.

10. A heat cleaning oven reduces costly material handling. **It's a great labor saver!**

11. Now it is possible for you to operate a lot faster and cleaner, because of our semi-automatic and virtually maintenance free operation.

It's safe! It's quick! It's easy!



Since 1919

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4725 MANUFACTURING RD.
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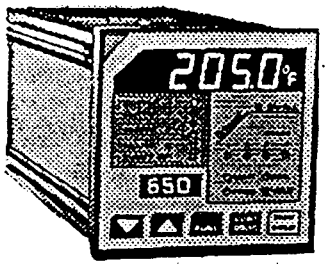
MODEL 2050 PROGRAMMER

(Standard Equipment)
One recipe storage capability.



MODEL 2052 PROGRAMMER

(Accessory)
Eight recipe storage capability. Recipes are stored in internal memory and activated as needed from the front panel. Each recipe can be used for a different metal or a different combustible material.

WIN THE HEAT CLEANING RACE

You cannot afford to use an outmoded temperature control system. Your risk of damage is too great. Play it safe with ACE. **Our new MICRO-RAMP temperature control system takes the risk out of costly run-away fires.**

Operators who work with our temperature controller find it the most complete system available. Because it's pre-programmed, it also is the safest and easiest to use. You can move easily from recipe to recipe.

The control gives you a visual readout of the setpoint temperature and time remaining on each recipe. *It continually reads out oven temperature 24 hours per day.*

The first recipe is programmed by ACE. The other seven recipes are programmed by the customer, who then enters a security code number to prevent unauthorized tampering.

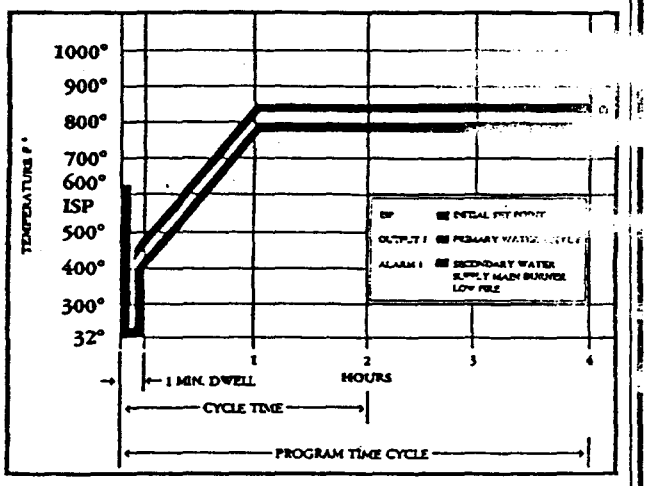
Any of the eight recipes may be selected by the operator. Only the chosen recipe will be displayed. This saves time and helps the operator. In fact, operator commands are so simple that even a new user, or one not trained specifically on the controller, can use it with very little training.

Run-away fires, explosions and melt downs of aluminum are totally eliminated by our temperature control system. This is accomplished by controlling the rate of combustion over a programmed period of time and temperature.

SIMPLY STATED, WE BEAT THE PANTS OFF THE COMPETITION

Our spark of innovation is the MICRO-RAMP SYSTEM. ACE's system has tremendous advantages over the competition's outmoded temperature controller. *Competition simply cannot control the rate of combustion up to setpoint, because their controller has no programmed ramp!*

Our **MICRO-RAMP** system is programmed to slowly increase (RAMP) temperature up over a fixed period of time. **It is especially important to suppress combustion during the heat-up time to 800° F. for highly combustible loads.** Heat-up without a RAMP may cause dangerous run-away fires.



MICRO-RAMP PROFILE

The above profile illustrates a 1 minute water check, 1 hour ramp and 3 hours at 800° F. setpoint. Our water mist system turns on any time oven temperature exceeds the profile by 10° F. **It is critical to rigidly control dangerous run-away fires during the ramp stage.** Typically, combustibles start burning at 500° F. Competition has no ramp.

SPECIFICATIONS

Gas Heat Cleaning Ovens

Model	220-RKG	230-RKG	240-RKG	245-RKG	260-RKG	270-RKG	280-RKG
Min. Gas Pressure W.C.	5"	5"	5"	5"	5"	5"	5"
Interior Vol. Cu. Ft.	17.5	37.6	66.1	159.1	264.7	413.2	617.2
Interior Dimensions	W D H 27"×25.5"×44.5"	W D H 39"×37.5"×44.5"	W D H 44"×46"×56.5"	W D H 63"×61.5"×71"	W D H 75"×73.5"×83"	W D H 87"×85.5"×96"	W D H 99"×97.5"×110.5"
Outside Dimensions	72"×56"×70"	65"×68"×70"	67"×76"×82.5"	88"×96.5"×100"	100"×112"×116"	137"×126"×131"	149"×138"×146"
Working Height Over Cart	36"	36"	48"	60"	72"	84"	96"
Cu. Ft. Vol. Over Cart	14.3	30.4	56.2	134.5	229.6	361.5	536.2
Cart Rating Lbs.	2,000	3,200	3,200	8,000	8,000	8,000	8,000
Max. Combustible Content Lbs./hour	20	30	40	50	60	70	80
Max. Current Amp.	10	10	10	10	10	20	20
Natural Gas Max. CF/Hour	625	625	625	625	625	1000	1200
Normal CF/Hour	475	500	535	565	588	650	750
Power Supply Amp. 120/1/50/60	20	20	20	20	20	30	30
Shipping Weight Lbs.	1,600	2,000	2,300	3,000	4,000	6,000	7,000

CONSTRUCTION

The oven is fabricated from 11 ga. steel which is painted with 400°F. heat resisting paint. All three chambers are lined with high temperature insulation. The hinged swing-out front door is lined with high temperature insulation and equipped with safety type locking latch. Cart tracks are installed in the insulated floor. Removable rail extensions for cart are provided. The self supporting exhaust stack is fully lined with 2,700°F. sleeve insulation.

GAS BURNERS

Both main burner and afterburner are independently equipped with a combustion air blower, pilot, and spark ignition system. An individual actuated electronic safety system shuts down the burners in the event of electric, gas or flame failure. Standard burners use natural gas. LPG burners are available.

EXHAUST SYSTEM

Natural draft.

CONTROLS

Temperature in the main chamber is monitored by a thermocouple located in the main chamber. A solid state indicating temperature controller shuts off the primary burner and its blower. This restricts air to the main chamber, suppressing combustion and controlling setpoint temperature.

An adjustable cycle timer shuts the oven down at completion of the process. The oven also has a separate backup primary chamber excess temperature control.

CONTROLLED COMBUSTION SYSTEM

Designed to anticipate and suppress the rate of combustion of volatile material from the parts being processed. Water atomizing nozzles are automatically turned on above setpoint by a solid state control and the mist cools the volatile material.

ace™

ARMATURE COIL EQUIPMENT, INC.

4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2696
216-267-6366

ace™

HEAT CLEANING OVEN

OVEN DESIGN

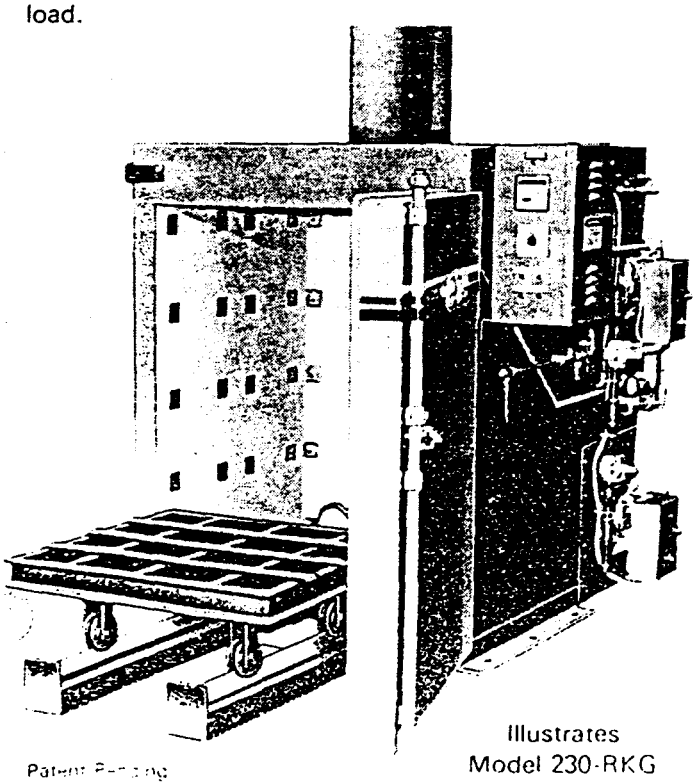
ACE heat cleaning ovens are designed to remove paint, grease, oil, varnish, epoxy, rubber and other combustible materials. Heat clean engine blocks, heads, paint hooks, stators, rubber-to-metal bonded parts - virtually any metal parts. They will also debond brake shoes and clutch plates. The load is heated to 650° - 750°F. (340° - 400°C.), in an oxygen deficient atmosphere, where the combustible hydrocarbons decompose. Parts leave the oven completely dry. Ash residue is easily removed.

GUARD AGAINST HOT SPOT DISTORTION

Ace Heat Cleaning Ovens are your guarantee against hot spot distortion. The heaters emit uniformly controlled heat, which is evenly distributed throughout the chamber. This method totally eliminates the concentration of intense heat or flame entering the chamber, which could overheat, warp or melt parts.

SHORT TIME CYCLES

Average time cyles of 1 to 2 hours at normal temperatures of 650° to 750°F., depending upon combustible load.



Patent Pending

Illustrates
Model 230-RKG

HEAT CLEAN WITHOUT AIR POLLUTION

The afterburner chamber is designed to provide excess air for complete combustion of the effluent. Discharges to atmosphere are harmless by-products of combustion, conforming to tough EPA air emission standards.

ELIMINATE CHEMICAL PROCESSING

This controlled process eliminates the problems associated with chemical cleaning, such as: High cost of chemicals and solvents, expensive sludge disposal, health risks related to toxic materials, and manual labor.

CONSTRUCTION

This oven is fabricated from 11 gauge steel and coated with a high temperature, rust resistant paint. The most modern state-of-the-art insulation, rated for 2,300°F., lines the oven and self-supporting exhaust stack, to offer you maximum energy efficiency. The thick door is securely sealed by husky cam type latching mechanisms located on the top and bottom of the door. For reasons of safety, the latch is designed to accept a lock, as the door should not be opened during the heating cycle.

MAIN CHAMBER CONTROLS

A programmed digital microprocessor-based time-temperature controller and water suppression system are installed to suppress combustion for high combustible loads. Main chamber temperature is controlled by a thermocouple located in the main chamber. This thermocouple interfaces to the microprocessor-based controller. The heaters are turned from high to low fire to maintain the setpoint temperature.

EXCESS TEMPERATURE CONTROL

An excess temperature controller with a "Manual Reset" button is installed for the main chamber. This controller is a direct acting thermal expansion switch, which automatically turns off the main chamber heaters if the temperature rises above the setpoint. It is installed as a separate backup to protect the oven and load from excess temperature.

CONVENIENT AUTOMATIC CONTROLS

This oven has all the controls you will need! Temperature is accurately controlled at setpoint throughout the cycle. Time and temperature are automatically controlled without operator attendance, and are automatically shut off at end of the time cycle.

METHODS OF OPERATION

MODEL	RKG	FG	RKE
Main Chamber	Gas	Electric	Electric
Afterburner	Gas	Gas	Electric
Type of Heat	Convection	Infrared	Infrared
Exhaust	Natural Draft	Natural Draft	Blower

SPECIFICATIONS

MODEL-RKG GAS OVENS

MODEL -RKG	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NATURAL GAS MAX. CFH	NORM. CFH	MAX. AMP.	POWER SUPPLY AMP. 120/1/50/60	VOLUME OVER CART CU. FT.	SHIP WEIGHT LBS.
230	36	36	47	36	56	64	58	3,200	30	625	525	10	20	27.0	2,000
240	48	48	59	48	68	76	70	3,200	40	625	560	10	20	64.0	2,300
330	36	60	33	24	54	93	61	2,000	30	625	525	10	20	30.0	2,200
363	36	84	44	36	65	110	70	• 4,500	35	625	540	10	20	63.0	3,000
245	60	60	72	60	80	94	85	8,000	50	625	565	10	20	125.0	3,500
3144	48	108	60	48	66	143	73	# 4,800	40	625	570	10	20	144.0	3,000
** 260	72	72	83	72	100	112	116	8,000	60	625	588	10	20	216.0	4,000
** 270	84	84	96	84	111	129	131	8,000	70	850	700	10	30	343.0	6,000
** 280	96	96	110	96	125	143	146	8,000	80	850	750	10	30	512.0	7,000

NATURAL GAS INLET PRESSURE 5" TO 13.6" W.C.
PROPANE INLET PRESSURE 11" W.C.

** Double Door Ovens
• 6 Wheels
8 Wheels

7' 8' 8'

MODEL-EG ELECTRIC/GAS OVENS

MODEL -EG	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NORMAL USAGE GAS CFH	ELEC. KW/HR	MAX. AMP. VOLTAGE 240	480	AMP. SERV. VOLTAGE 240	480	SHIP
212	24	36	33	24	48	48	60	2,000	14	120	15	50	25	100	100	1,600
218	24	54	33	24	48	66	60	2,000	15	120	20	65	33	100	100	1,800

MODEL-RKE ELECTRIC OVENS

MODEL -RKE	INSIDE INCHES W	D	H	OVER CART H"	OUTSIDE INCHES W	D	H	CART RATING LBS.	MAXIMUM COMBUSTIBLE LBS/HR	NORMAL USAGE 240 V. KW/HR	480 V. KW/HR	MAX. AMP. VOLTAGE 240	480	AMP. SERV. VOLTAGE 240	480	SHIP
230	36	36	44	36	62	88	70	3,200	24	20	24	100	[illegible]	[illegible]	[illegible]	[illegible]
240	41	44	56	48	67	96	82	3,200	32	23	26	100	70	125	100	2,300

Since 1919

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ARMA[redacted], INC.

Printed in U.S.A. 7/88

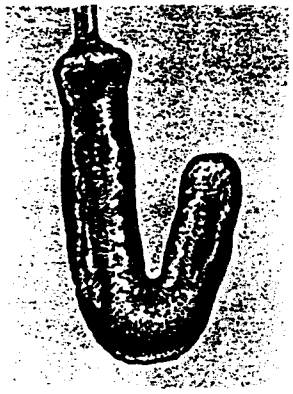
ace™

HEAT CLEANING OVENS

Thermal cleaning of fixtures, hooks, racks, baskets, jigs and parts

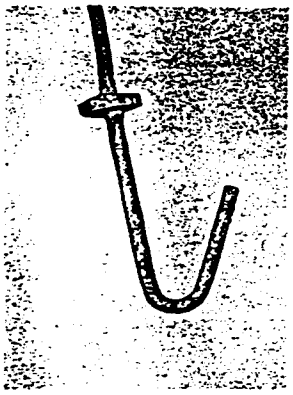
WITHOUT CHEMICALS

Ace gas-fired heat cleaning ovens are designed to remove hydrocarbon-based coatings from metal parts while leaving the parent metal unaffected. This is accomplished by heating the load to 700-800°F. (380-430°C.) in an oxygen deficient atmosphere. The combustible hydrocarbons decompose into volatiles, smoke, fumes and ash. Ash residue may be disposed of with the trash.



Before

After thermal stripping — 800°F



Residue ash removed with slight tapping

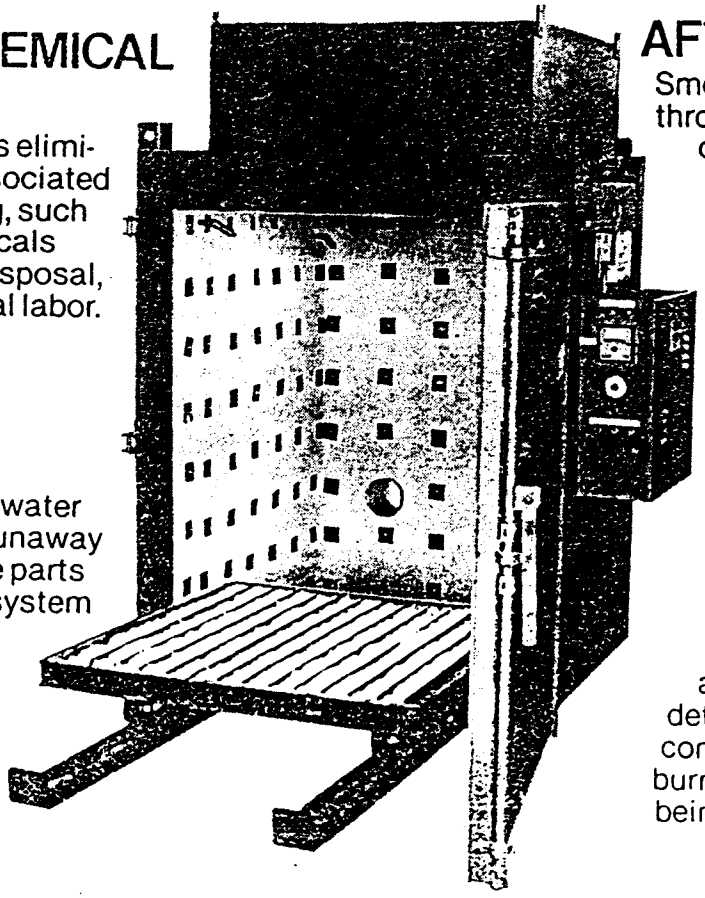
ELIMINATE CHEMICAL PROCESSING

This controlled process eliminates the problems associated with chemical cleaning, such as: high cost of chemicals and solvents, sludge disposal, health risks and manual labor.

WATER SUPPRESSION SYSTEM

An adjustable setpoint water mist system prevents runaway fires and damage to the parts being processed. This system automatically cycles at the setpoint temperature. Volatile emissions are cooled before they reach a runaway temperature.

Patent Pending



AFTERBURNER

Smoke and fumes are drawn through the integral afterburner chamber for oxidation at temperatures of up to 1,500°F for ½ to ¾ second residence time. Discharges are harmless byproducts conforming to EPA standards.

LARGE LOAD CAPACITY AND SHORT TIME CYCLES

ACE ovens can clean two or three large loads per day of heavily coated hooks and hangers. Cycles are determined by the maximum combustible content the afterburner will handle per hour without being overloaded.

PRICE LIST NO. 789-10

ACCESSORIES

ITEM		PRICE
OA-130	Expanded Metal Guards. 16 Ga. Carbon Steel, On 3 Sides & Door	*
OA-200	Additional Galv. Exh. Stack With 2,300° F. Insulation	$ 60.00 Ft.
OA-210	Galvanized Exh. Stack With 2,700° F. Insulation For First 10 Ft	300.00
OA-210A	Additional Galv. Exh. Stack With 2,700° F. Insulation	90.00 Ft.
OA-220	Stainless Exh. Stack With 2,300° F. Insulation For First 10 Ft	300.00
OA-220A	Additional Stainless Exh. Stack With 2,300° F. Insulation	90.00 Ft.
OA-230	Stainless Exh. Stack With 2,700° F. Insulation For First 10 Ft	600.00
OA-230A	Additional Stainless Exh. Stack With 2,700° F. Insulation	120.00 Ft.
OA-310	Exh. Stack Weather Cap - Galv	48.00
OA-311	Exh. Stack Weather Cap - Stainless	130.00
OA-320	Exh. Stack Storm Collar - Galv	85.00
OA-321	Exh. Stack Storm Collar - Stainless	150.00
OA-330	Exh. Stack Adjustable Roof Flashing - Galv.	160.00
OA-331	Exh. Stack Adjustable Roof Flashing - Stainless	210.00
OA-410	Gas Regulator For Pressure Over 1/2 PSI, (Customer To Advise Inlet Pressure)	(185.00)*
OA-412	Gas Pressure Gauge...0-30 IWC	60.00
OA-500	Spare Stainless Water Spray Nozzle	29.00
OA-510	Additional Water Nozzles Installed In Primary Water System	210.00
OA-512	Additional Water Nozzles Installed In Secondary Water System	210.00
OA-515	Water Line Strainer, Brass, 1/2" Pipe Connection Female NPT	90.00
OA-520	By-Pass Valve Installed To Manually Turn On Primary Water System	105.00
OA-550	Aux. Unit To De-activate & Re-activate Primary & Secondary Water System	1,050.00
OA-560	Water Supply Back-Up System Assembly With Tank, Pump & Valves	*
OA-610	Cartridge Of Hi-Temperature Lubricant, 1,000° F. Rating For Wheel Casters	11.00
OA-710	3 Trays On Floor & 2 Deflectors Under Cart To Catch Residue	525.00
OA-715	Rack With Shelves Made From Bar Grating, For Cart	*
OA-720	Additional Cart	*
OA-810	Transformer For Supply Voltages Other Than 120 Volt, 1 Phase, 60 HZ (Customer To Specify Primary Voltage, Phase & HZ)	150.00
OA-815	System To Automatically Start Oven At A Designated Time	525.00
OA-817	Programmable Excess Temp. Control To Shut-Off M.B. Over Setpoint	1,000.00
OA-820	Circular Chart Temperature Recorder & Thermocouple	1,200.00
OA-855	Afterburner Preheat Timer	200.00
OA-910	Weather Guard On Burners For Outside Use	525.00
OA-920	Vapor Barrier Coating On Inside Enclosure And Exh. Stack (10 Ft.) As Protection Of Steel Against Corrosion & Chemical Actions	*
OA-921	Additional Exh. Stack Vapor Barrier Coating	25.00 Ft.
OA-1010	Burners And Controls Mounted On Left Side Of Oven	295.00
OA-1015	Remote Electric Control Panel With 10 Ft. Of Extension Wire	385.00
OA-1020	Door Hinged On Left Side of Oven	160.00
OA-2010	Start-Up Or Service By An ACE Representative	65.00 Hr.
	Travel Portal To Portal, Preparation & Report Time	50.00 Hr.
	Plus Round Trip Air, Ground Transportation & Lodging	
OA-2030	Second Afterburner Required For Rubber Or Urethane Exceeding 300 Lbs./Load	4,000.00
OA-2040	Powered Cart For Loads To 10,000 Lbs. At Travel Of 15 R.P.M.	*

* PRICE BASED ON OVEN SIZE

ARMATURE COIL EQUIPMENT, INC.
4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2695

EFFECTIVE OCTOBER 2, 1989
PRICES AND SIZES SUBJECT
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F.O.B. CLEVELAND, OHIO

ARMATURE COIL EQUIPMENT, INC.
4725 MANUFACTURING ROAD
CLEVELAND, OHIO 44135-2696

216-267-6366
1-800-255-1241
FAX 216-267-4361

PRICE LIST NO. 789-10

MODEL		PRICE
	MICRO-RAMP ACE HEAT CLEANING OVEN	
230-REG	27.0 Cu. Ft. Usable Volume Over Cart, 36"W x 36"D x 36"H	$ 7,980.00
330-REG	30.0 Cu. Ft. Usable Volume Over Cart, 36"W x 60"D x 24"H	9,450.00
463-REG	63.0 Cu. Ft. Usable Volume With Rack, 36"W x 36"D x 84"H	13,550.00
363-REG	63.0 Cu. Ft. Usable Volume Over Cart, 36"W x 84"D x 36"H	13,650.00
240-REG	64.0 Cu. Ft. Usable Volume Over Cart, 48"W x 48"D x 48"H	11,860.00
245-REG	125.0 Cu. Ft. Usable Volume Over Cart, 60"W x 60"D x 60"H	15,750.00
3144-REG	144.0 Cu. Ft. Usable Volume Over Cart, 48"W x 108"D x 48"H	17,330.00
3160-REG	160.0 Cu. Ft. Usable Volume Over Cart, 48"W x 120"D x 48"H	19,950.00
3210-REG	210.0 Cu. Ft. Usable Volume Over Cart, 72"W x 84"D x 60"H	22,050.00
260-REG	216.0 Cu. Ft. Usable Volume Over Cart, 72"W x 72"D x 72"H	23,100.00
3245-REG	245.0 Cu. Ft. Usable Volume Over Cart, 84"W x 84"D x 60"H	26,250.00
3288-REG	288.0 Cu. Ft. Usable Volume Over Cart, 72"W x 96"D x 72"H	28,000.00
270-REG	343.0 Cu. Ft. Usable Volume Over Cart, 84"W x 84"D x 84"H	28,350.00
3416-REG	416.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 78"H	32,030.00
280-REG	480.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 90"H	33,080.00
3512-REG	512.0 Cu. Ft. Usable Volume Over Cart, 96"W x 96"D x 96"H	35,000.00
3600-REG	600.0 Cu. Ft. Usable Volume Over Cart, 96"W x 120"D x 90"H	38,000.00

STANDARD EQUIPMENT SUPPLIED: SINGLE PLATFORM CART, 10 FT. GALV. EXH. STACK WITH 2,300°F. RATED INSULATION. PRIMARY WATER SUPPRESSION SYSTEM, MODEL 2050 PROGRAMMED 1 RECIPE TEMPERATURE CONTROLLER.

ITEM		PRICE
	RECOMMENDED **ACCESSORIES** FOR BURNING PAINT	
AM-200	Non-Asbestos Mittens	48.00
OA-1080	Secondary Water Suppression System (Back-Up)	420.00
OA-1082	Third Water Suppression System (Under Cart)	1,050.00
OA-1090	Exhaust Stack Digital Indicating Temperature Controller (Required In CA, IL, MA, NJ, PA)	580.00
OA-1092	System To Keep Afterburner On 0-10 Hrs. Longer Than Heat Cycle	420.00
OA-1095	Electric Safety Door Lock System	580.00
OA-2052	Multi-Programmed 8 Recipe Temperature Controller	265.00
OA-2550	Manometer, Pressure Indicating System	125.00
OA-2600	(FM) Factory Mutual Combustion Safety Equipment System	(1,370.00)*
OA-2550	(IRI) Industrial Risk Insurers Combustion Safety Equipment System	(1,370.00)*

* PRICE BASED ON OVEN SIZE

yes

level of exhaust in stack

2 Burners

Printed in U.S.A.

Ramp elevation of temp. 2 hrs to arrive @ 700°

685

MAIN BURNER HIGH-FIRE, LOW-FIRE SYSTEM

Our system turns the main burner from high-fire to low-fire at setpoint.

NOTICE: We do not turn off the main burner at setpoint. The competition turns the main burner off over setpoint and on under setpoint.

CYCLE TIMER

The cycle timer automatically turns off the after-burner and main burner at the end of the heat cycle.

WATER MIST INJECTION SYSTEM

The ACE system consists of a primary and (optional) backup secondary system. The system(s) rigidly maintains the temperature profile programmed into the Micro Ramp temperature controller. The automatically-operated water injection system(s) turns on any time oven temperature exceeds the profile setpoint temperature. Both water systems are **automatically checked** for one minute at the start of each cycle.

AIR POLLUTION CODES

Our ovens are designed to comply with tough EPA requirements. State and/or local permits are usually required before the oven is installed. Forward the application forms to us for insertion of technical data. Laboratory air pollution test results and additional data are available upon request.

Will your present oven comply with ***new*** tough EPA air pollution regulations?

OPERATING COST

Approximately $3.00 per hour, depending on oven size.

FREE TESTING

Send us a sample lot of your parts that need heat cleaning. We will process them and send you a complete test report of cycle time, temperature, gas consumption and other data. You judge the results. **No Charge** to you.

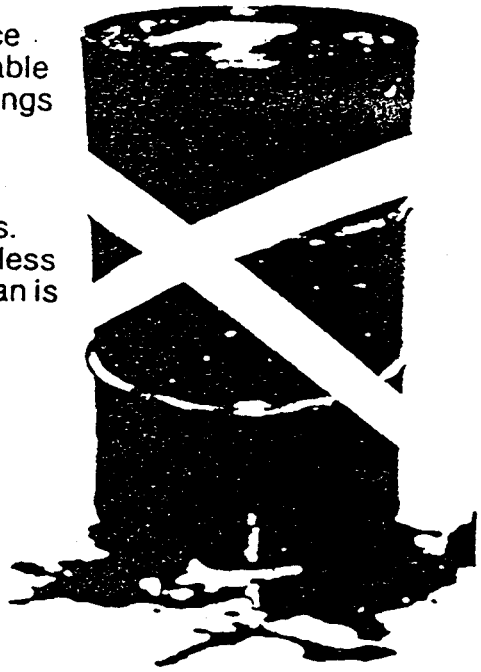
JUST HOW SAFE IS YOUR STRIPPING PROCESS?

1. Does your stripping process expose workers to hazardous chemicals or unsafe conditions?
2. Are you experiencing dangerous run-away fires or explosions in your present oven?
3. Do your employees complain of toxic fumes and smoke inhalation?

Eliminate the above hazards with an ACE heat cleaning oven.

ELIMINATE MESSY CHEMICALS AND COSTLY SLUDGE DISPOSAL PROBLEMS

You will experience considerable labor savings over chemical cleaning processes. Also, use less energy than is required to heat your chemical tank.



AFTERBURNER

To comply with air pollution standards, our ovens are equipped with an afterburner which completely eliminates smoke and odors.

Gaseous products, consisting of volatile vapors and smoke, pass into the afterburner. This mixture is totally oxidized by increasing the temperature. Temperatures in excess of 1,600° F. are maintained for complete oxidation of the effluent.

Discharge to atmosphere from the exhaust stack is a fraction of EPA standards and in compliance with local/state regulations.

The afterburner firebox is engineered to handle the *maximum flow rate* from the main chamber.

Our afterburner stays on high-fire continuously during the heat cycle. This is necessary for complete combustion of smoke and fumes.

BACKUP EXCESS TEMPERATURE CONTROL

The excess temperature control has a "Manual Reset" button.
It is intended as a *separate backup* to protect the oven and load from excess temperature caused by a control or relay failure.

INSULATION MATERIAL

Our oven is completely lined with 2,300° F. rated board & blanket insulation. No Asbestos.
It also contains no castable insulation, which can crack and crumble from thermal shock.

PRESSURE RELIEF MECHANISM

The National Fire Code requires furnaces and ovens to have an explosion relief mechanism. Our ovens are equipped with an explosion relief door or hatch. Should there be an explosion, the door or hatch will momentarily open to relieve the pressure. It will immediately close, preventing smoke and fire from entering your building.

NATURAL DRAFT EXHAUST SYSTEM

The oven is supplied with 10 feet of high temperature insulated galvanized steel exhaust stack as standard equipment. An exhaust blower is not required.

INSTALLATION LOCATION

The oven may be installed inside or outside a building. Your Building Department can advise local clearance requirements.
Outside installations should be protected from rain and snow with a roof or shed. Also, the water system should be protected from freezing.

TIME CYCLE

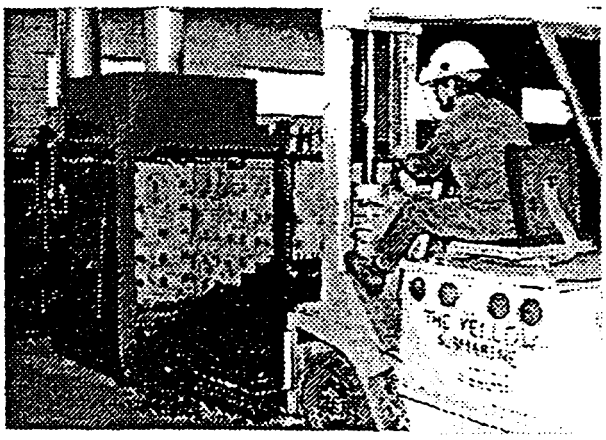
The oven is designed to handle two or three cycles per day. Cycle time is determined by the maximum combustible content the afterburner can handle per hour without being overloaded. The afterburner capacity of the ovens ranges up to 80 pounds of combustible material per hour.

OPERATING TEMPERATURE

Approximately 800° F. for typically processed material.

BATCH TYPE OVEN

A basket of parts is loaded into the oven for stripping. Just one person is needed to load the oven and start the cleaning process. The oven operates unattended after start-up.



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Since 1919 • 1-800-255-1241

BULLETIN 105

ACE GAS HEAT CLEANING OVENS

This heat cleaning oven is designed to remove cured hydrocarbon coatings from metal parts, jigs, hangers, fixtures and finished parts. The charge is heated to 700-850° F. to decompose the combustible material into smoke and ashes. Smoke & fumes from the combustibles are drawn thru the afterburner firebox where the temperature is raised to 1,500° F.or more with a retention time of 0.7 to 0.9 seconds for complete combustion. The effluent discharge to atmosphere from the exhaust stack consists primarily of water vapor and carbon dioxide which are pollution free, invisible, odorless and harmless.

TEMPERATURE CONTROL SYSTEM

The programmed time/temperature controller and water suppression system are installed to suppress combustion for high combustible content loads. The controller has a microprocessor-based instrument installed. This technology has been fully exploited to provide sophisicated features and outstanding performance never previously available. Patented.

Model 2050 Programmer (Standard Equipment)
One recipe storage capability.

Model 2052 Programmer (Accessory)
Eight recipe storage capability. Recipes are stored in internal memory and activated as needed from the front panel. Each recipe can be used for a different metal or a different combustible material.

Both programmers have a security electronic combination lock. It is used to lock all variable parameters and prevent unauthorized tampering.

Extremely easy to use. The operator merely presses the "RUN" button to start the program.
Turning the cycle timer from zero to the desired heat time turns on the afterburner and main burner.

Run-away fires, explosions and melt downs of aluminum are totally eliminated by our temperature control system.
This is accomplished by controlling the rate of combustion over a programmed period of time and temperature.

Both programmers have a two year warranty.

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March 12, 1991

Waterloo Industries
Attn: Jerry Stoll
P.O. Box 2095
Waterloo, IA 50704

Subject: MICRO-RAMP ACE HEAT CLEANING OVEN FOR STRIPPING PAINT HOOKS

Dear Mr. Stoll,

We are enclosing literature to update you on the latest design and technology improvments to heat clean paint hooks and racks.

This batch-type MICRO-RAMP OVEN easily removes paint without damaging the metal parts by closely maintaining temperature. Runaway fires are totally eliminated by our water suppression system and patented temperature control system. Smoke and fumes are incinerated in the afterburner and exhaust is only harmless by-products of combustion, conforming to EPA air pollution standards.

Typical cleaning cycles are 2 to 3 hours, depending on the size load. Operating cost is approximately $3.00/hour.

Send us a load of heavily coated paint hooks or parts. We will process them in our Model 240-RKG test oven, 48"W x 48"D x 48"H, to show what our heat cleaning oven can do for you.

The cleaned parts will be returned to you with a complete test report. The report includes a documented strip chart record of time and temperature of the entire heat cycle. There is no charge for processing, however we ask that you please prepay the freight.

If you wish any further information or clarification, please do not hesitate to call us toll free 1-800-255-1241 for expert technical assistance.

Sincerely yours,

ARMATURE COIL EQUIPMENT, INC.

Robert F. Heran KL

Robert F. Heran
President

RFH/em
Encs

Steel Filters
JBI
Osseo, W.I.

PRESSURE RELIEF DOOR

The National Fire Code requires furnaces and ovens to provide an explosion relief mechanism to relieve sudden excess pressure. Our oven is equipped with explosion relief door latches. Should there be an explosion, the door will open to relieve the pressure and then immediately close, keeping out air (oxygen) to prevent ignition of combustibles in the oven.

COMBUSTION AIR

The oven will perform satisfactorily when an adequate supply of combustion air is assured. Many buildings have exhaust fans, cleaning booths, paint spray booths, etc, where air is drawn out faster than it comes in thru cracks, leaks, windows and doors. This creates a negative pressure inside the building, sufficient to overcome the natural draft created by the oven exhaust stack, and the oven will not function properly.
The maximum negative pressure in the building must not exceed 0.05 inches of water column.

NATURAL DRAFT EXHAUST SYSTEM

The oven is supplied with 10 feet of insulated exhaust stack. Additional 2 foot sections of insulated exhaust stack are available at extra cost should the roof be higher. The stack must be installed in a vertical position.

INSTALLATION LOCATION

The oven may be installed inside a building or outside. Install on a level, non-combustible floor, with a minimum clearance of 12 inches to any combustible material. Sufficient clearance must be allowed in front for loading and unloading and on the right side for servicing the control panel and burners. Your Building Department can advise local clearance requirements.

Outside installations should be protected from rain and snow with a roof or shed.

TIME CYCLE

The oven is designed for two or three cycles per day. Cycles are determined by the maximum combustible content the afterburner will handle per hour without being overloaded. This is controlled by the C.C.S. system. The afterburner capacity of the oven ranges up to 80 pounds of combustible material per hour.
Most material will be heat cleaned at 700° F. to 800° F. Time must be allowed for the load to reach setpoint temperature, which depends on weight, method of loading, dimensions and size of the material. An adjustable timer is installed to automatically turn on and off the burners.

ACE GAS HEAT CLEANING OVENS

Turns on at a temperature 10° F. (adjustable parameter) higher than the primary system setpoint.
The competition does not supply a secondary (backup) system.

The operator keeps the oven door open for one minute at the start and makes absolutely certain all nozzles spray the correct volume of water.
The primary and secondary water suppression system nozzles are automatically turned on for one minute each time the program is started.
Since the water check is programmed into memory of the controller, no additional switches, other than the "RUN" button need be pressed.

We control the primary and secondary water systems at setpoint from the moment the programmer is turned on until it ends.
The primary water turns on 1° F. over the primary setpoint.
The setpoint continuously changes (approximately 1° F. per minute) up the ramp.
NOTE: Paint, varnish, grease and rubber start burning at approximately 500° F.

EXAMPLE: A program is entered into memory of the programmer to ramp the primary setpoint from 70° F. to 850° F. over a three hour period and dwell (soak) at 850° F. for two hours.

The primary setpoint will be 500° F. at some point in time during the three hour ramp.
The primary water system turns on when the primary setpoint is 500° F. and the oven temperature is 501° F.
The secondary water system turns on when the primary setpoint is 500° F. and the oven temperature is 510° F.
NOTICE: The primary water system turns on 1° F. over any setpoint and off under the setpoint.

The competition only supplies a one setpoint temperature controller.
Using the same example as above, their controller would be set for 850° F. and their cycle timer for five hours.
Unfortunately, combustibles start burning at about 500° F., but the competition's primary water system does not turn on until the temperature exceeds 850° F.
They do not supply a secondary water (backup) system.
It makes good sense to install a backup system for a critical operation.

The competition could experience run-away fires or explosions before their primary water system turned on.
The competition's temperature controller does not have the capability to slowly ramp the temperature up to 850° F. over a programmed three hour period...per the above example.

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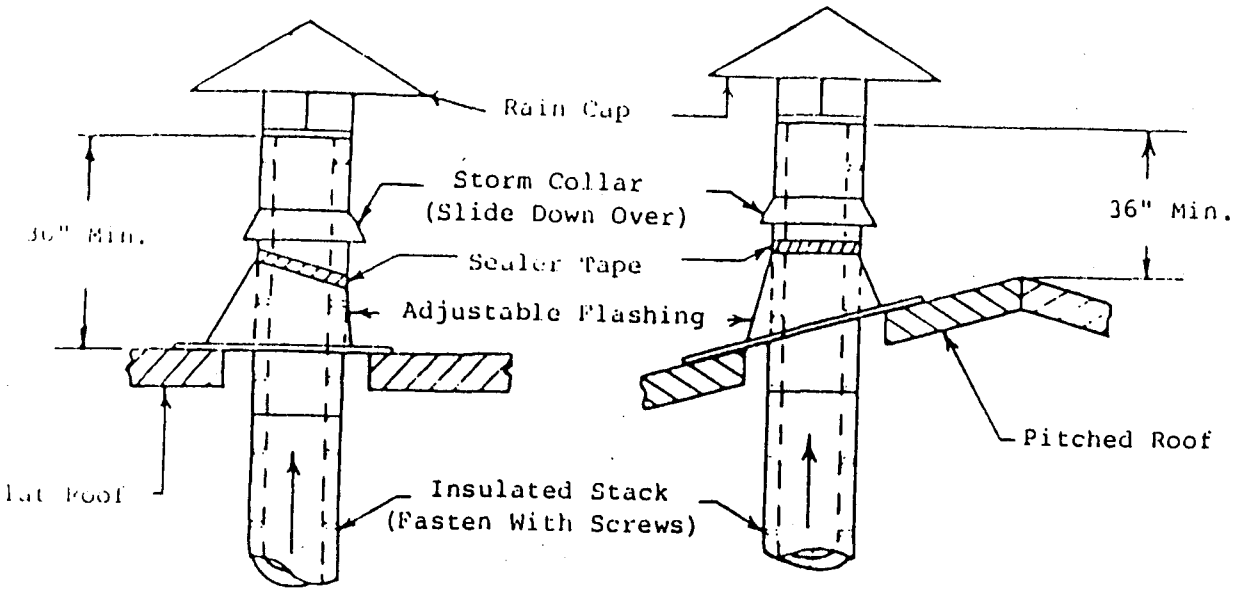
ARMATURE COIL EQUIPMENT, INC.

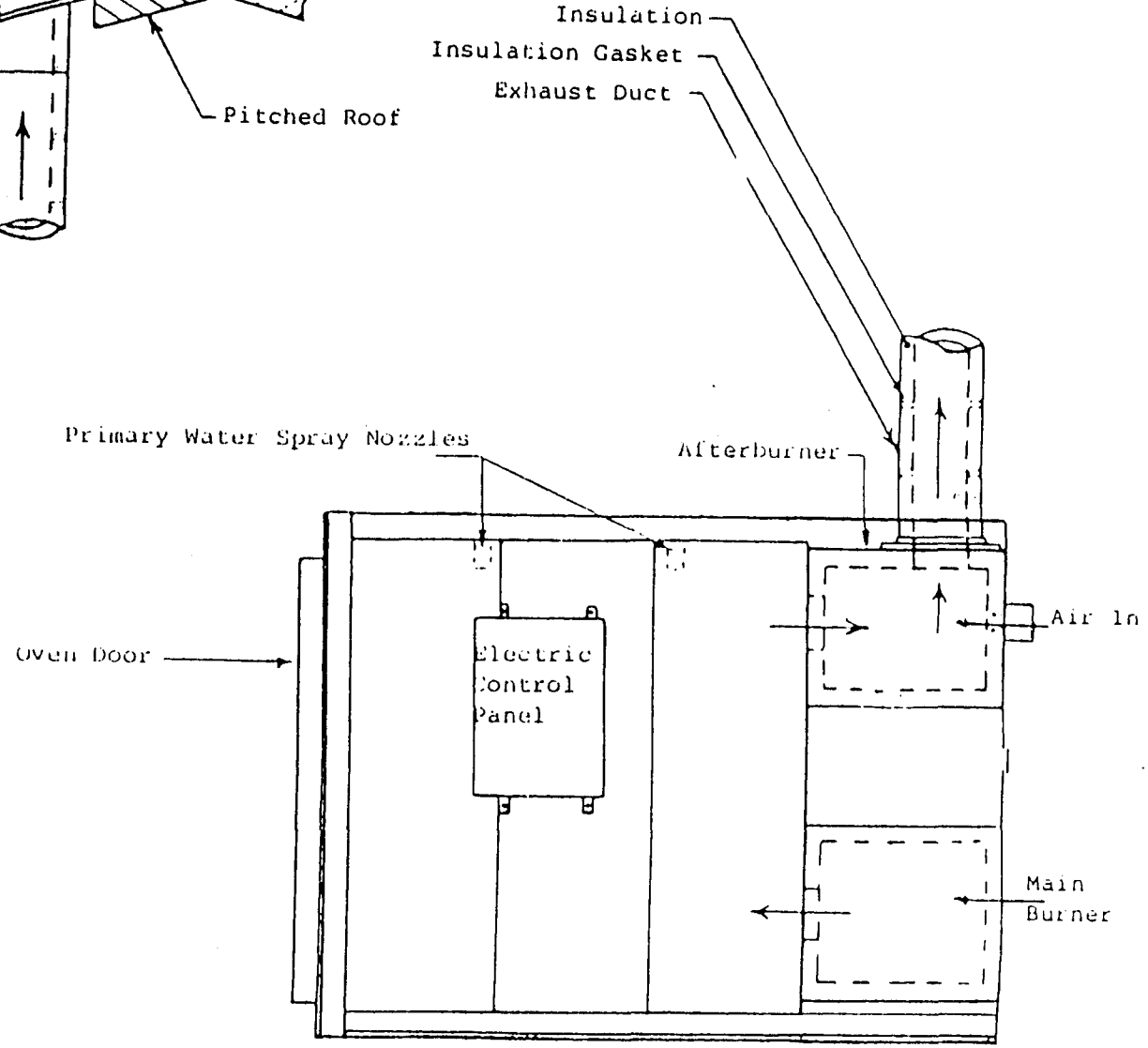
[illegible] MANUFACTURING ROAD • CLEVELAND OHIO [illegible] • (216) 267-8363

HEAT CLEANING OVEN

1. Eliminate Messy Chemicals.
   Caustic chemicals are toxic and dangerous to handle.
2. No Costly Sludge Disposal Problems.
   A small quantity of ash residue.
3. Cleans Faster Than Chemicals.
   Chemical cleaning takes days. Heat cleaning takes hours.
4. Clean Rejects.
   No warping, annealing, distortion or damage.
5. Operating Cost.
   Model 230-RKG, 500 Cu. Ft. Gas/Hr. x $.50/100 Cu. Ft. = $2.50/Hr.
6. Installation.
   One day. Supplied completely assembled, wired and piped.
7. Batch Load.
   Save labor and loading time.
8. Ease Of Loading.
   Single platform cart supplied with track inside and outside oven.
9. Short Time Cycles.
   Normal time cycle 3 to 4 hours.
10. Parts Leave Oven Completely Dry.
    Only ash residue remains on parts.
11. Better and Faster Cleanup.
    Blast them for 30 seconds instead of 30 minutes.
12. Large Load Capacity.
    Oven designed for full loads.
13. No Pollution Problems.
    Meets tough EPA air pollution standards.
14. Insulated Cart.
    Lubrication on cart wheel bearings will not burn out.
15. Insulation - High Temperature Rated Board and Blanket.
    No castable refractory which is subject to thermal shock cracking.
16. Thermal Decomposition of Combustible Coatings.
    No open flame in oven chamber from main burner or afterburner.
17. Pressure Relief Hatch and Enclosure Supplied.
    Safety protection for personnel and oven.
18. Ease of Maintenance.
    Designed with three separate chambers for ease of access.
19. Free Demonstration.
    Ship ACE your heavily coated parts for heat cleaning.
20. Demonstration Test Data.
    Includes time cycle, temperature and gas usage.

SCHEMATIC ARRANGEMENT DRG.





MODEL RKG GAS HEAT CLEANING OVEN

HEAT CLEAN IT!

HEAVILY COATED PARTS, FIXTURES AND HOOKS EASILY CLEANED

1. Rejected parts can now be cleaned effectively and economically with heat. **Our patented MICRO-RAMP SYSTEM eliminates run-away** fires...Result - *no damage to your parts*.

2. This *distortion-free process* is especially useful when hardness and close tolerances are required to be maintained.

3. Heavily coated parts, up to 80 Lbs. per hour of combustibles, can be processed in 2-3 hours, depending upon the load and oven size.

4. The extra capacity afterburner eliminates all smoke and odors and assures compliance with air pollution regulations.

5. Our metal liner protects the insulation on the interior sidewalls and door against mechanical damage; thus eliminating the need for frequently replacing the insulation.

6. Many standard models are now available to process small, medium or large loads.

7. Companies are turning to heat cleaning in order to avoid toxic chemical strippers, water pollution problems, and the high cost of waste disposal.

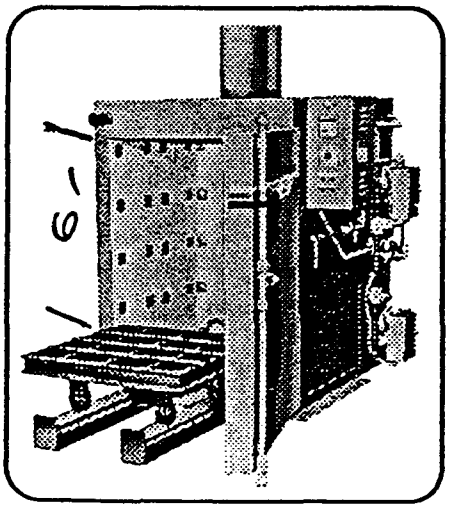
8. There are many confirmed benefits of heat cleaning vs. chemical strippers.

9. *Reclaim your defective parts* for recoating, by cleaning them in the ACE oven.

10. A heat cleaning oven reduces costly material handling. **It's a great labor saver!**

11. Now it is possible for you to operate a lot faster and cleaner, because of our semi-automatic and virtually maintenance free operation.

It's safe! It's quick! It's easy!



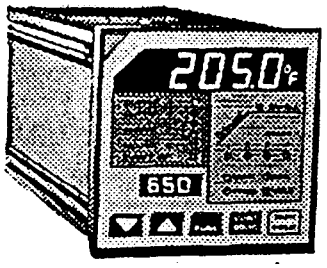
Since 1919

ace

ARMATURE COIL EQUIPMENT, INC.
4725 MANUFACTURING RD.
CLEVELAND, OHIO 44135
1-800-255-1241
216-267-6366
FAX 216-267-4361

MODEL 2050 PROGRAMMER

(Standard Equipment)
One recipe storage capability.



MODEL 2052 PROGRAMMER

(Accessory)
Eight recipe storage capability. Recipes are stored in internal memory and activated as needed from the front panel. Each recipe can be used for a different metal or a different combustible material.

WIN THE HEAT CLEANING RACE

You cannot afford to use an outmoded temperature control system. Your risk of damage is too great. Play it safe with ACE. **Our new MICRO-RAMP temperature control system takes the risk out of costly run-away fires.**

Operators who work with our temperature controller find it the most complete system available. Because it's pre-programmed, it also is the safest and easiest to use. You can move easily from recipe to recipe.

The control gives you a visual readout of the setpoint temperature and time remaining on each recipe. *It continually reads out oven temperature 24 hours per day.*

The first recipe is programmed by ACE. The other seven recipes are programmed by the customer, who then enters a security code number to prevent unauthorized tampering.

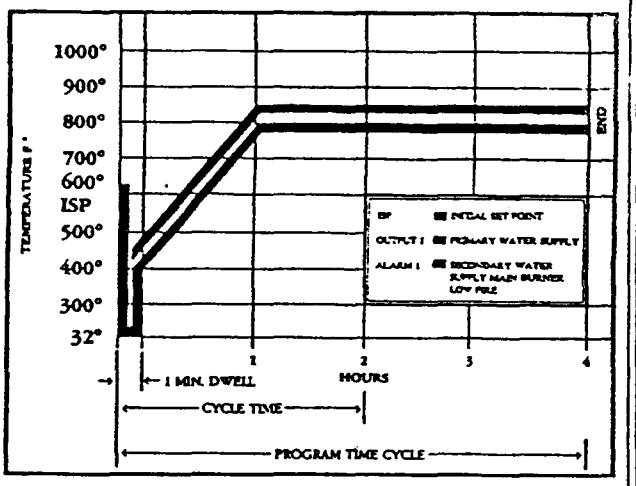
Any of the eight recipes may be selected by the operator. Only the chosen recipe will be displayed. This saves time and helps the operator. In fact, operator commands are so simple that even a new user, or one not trained specifically on the controller, can use it with very little training.

Run-away fires, explosions and melt downs of aluminum are totally eliminated by our temperature control system. This is accomplished by controlling the rate of combustion over a programmed period of time and temperature.

SIMPLY STATED, WE BEAT THE PANTS OFF THE COMPETITION

Our spark of innovation is the MICRO-RAMP SYSTEM. ACE's system has tremendous advantages over the competition's outmoded temperature controller. *Competition simply cannot control the rate of combustion up to setpoint, because their controller has no programmed ramp!*

Our MICRO-RAMP system is programmed to slowly increase (RAMP) temperature up over a fixed period of time. **It is especially important to suppress combustion during the heat-up time to 800° F. for highly combustible loads.** Heat-up without a RAMP may cause dangerous run-away fires.



MICRO-RAMP PROFILE

The above profile illustrates a 1 minute water check, 1 hour ramp and 3 hours at 800° F. setpoint. Our water mist system turns on any time oven temperature exceeds the profile by 10° F. **It is critical to rigidly control dangerous run-away fires during the ramp stage.** Typically, combustibles start burning at 500° F. Competition has no ramp.

ENVIRONMENTAL SOURCE SAMPLERS, INC. — AIR QUALITY CONSULTANTS

SOURCE TEST REPORT
AERO MOLDED PLASTICS
BYESVILLE, OHIO
ACE MODEL 3210RKG OVEN INCINERATOR
PARTICULATE EMISSIONS

January 5, 1990

Prepared for:

ARMATURE COIL EQUIPMENT COMPANY

Cleveland, Ohio

Prepared by:

ENVIRONMENTAL SOURCE SAMPLERS, INC.

Huntersville, North Carolina

ace

ARMATURE COIL EQUIPMENT, INC.

4725 MANUFACTURING ROAD • CLEVELAND, OHIO 44135-2696 • 216-267-6366
Since 1919 • FAX: 216-267-4361 • 1-800-255-1241

June 19, 1991

Waterloo Industries
Attention: Jerry Stoll
P.O. Box 2095
Waterloo, IA 50704

Subject: Particulate Emissions Test Report

from another company using this style oven.

Dear Mr. Stoll,

In response to your request, we are enclosing a copy of the Particulate Emissions Test Report, Schematic Arrangement Drg., Control Equipment Information and Specification Sheet.

If you wish any further information or clarification, please do not hesitate to call upon us for technical assistance.

Sincerely yours,

ARMATURE COIL EQUIPMENT, INC.

Robert F. Heran
President

RFH/em
Encs.

ESS

ENVIRONMENTAL
SOURCE SAMPLERS

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APPENDICES

APPENDIX A-FIELD DATA SHEETS

APPENDIX B-CALCULATIONS

APPENDIX C-OPERATIONAL DATA

APPENDIX D-LABORATORY DATA

APPENDIX E-CALIBRATION DATA

2.0 SUMMARY AND DISCUSSION OF RESULTS

The test results are summarized on the following page. Field data sheets are included in Appendix A; calculations in Appendix B; operational data in Appendix C; laboratory data in Appendix D; and calibration data in Appendix E.

The average particulate emission rate for the three (3) test runs conducted is 0.023 pound of particulate matter per hour. This compares with the permissable emission rate of 0.165 pound per hour.

The paint racks loaded for runs 1 and 2 weighed 470 pounds, and the racks loaded for the third test run weighed 540 pounds. A three hour burn cycle was assumed in calculating the allowable emission rate.

ESS

ENVIRONMENTAL
SOURCE SAMPLERS

1.0 INTRODUCTION

On January 5, 1990, Environmental Source Samplers, Inc. (ESS) conducted particulate emissions testing for the Armature Coil Equipment Company (ACE). Testing was conducted on the ACE Model 3210RKG oven incinerator located at Aero Molded Plastics Company in Byesville, Ohio.

Three (3) particulate emission test runs were performed in the stack serving the unit's afterburner. Particulate emission testing was conducted as outlined in U.S. Environmental Protection Agency (EPA) Method 5. EPA Methods 1 through 4 were used in support of EPA Method 5.

The purpose of the testing was to determine compliance with Ohio Environmental Protection Agency (Ohio EPA) particulate emission limitations.

Personnel present during the test series included:

Mr. Dean Ponchat, Ohio EPA
Mr. Gene Zurvise, Aero Molded Plastics
Mr. Robert Koptis, Armature Coil Equipment
Mr. Tom Lovell, Environmental Source Samplers
Mr. Dayne Loy, Environmental Source Samplers

3.0 PROCESS DESCRIPTION AND OPERATION

The Armature Coil Equipment Model 3210RKG oven has an inside working area of 84" deep by 60" high by 72" wide. The main chamber burner is rated at 225,000 BTU/hr, and the afterburner is rated at 425,000 BTU.hr.

The main burner will not start unless the afterburner is already in service. The main chamber burner may throttle down to about 100,000 BTU/hr during the end of the burn cycle.

The heat enters the main chamber through three (3) ports located under the cart. Main chamber temperatures are typically 800 - 850 degrees F. Two (2) outside air ports are located in the afterburner for combustion air. Afterburner chamber temperatures are typically 1300 - 1500 degrees F.

The first burn consisted of 20 cowl vent racks weighing about 22 pounds each, and 2 1039 racks weighing about 15 pounds each. This burn cycle lasted about three (3) hours. The first test run was commenced after the stack temperature had reached 1300 degrees. The second test run was conducted during the second half of the three (3) hour burn cycle.

The second burn consisted of 18 louver racks weighing about 20 pounds each, and 12 1039 racks weighing 15 pounds each. The third test run was started after the stack temperature had reached 1250 degrees.

ESS

ENVIRONMENTAL SOURCE SAMPLERS

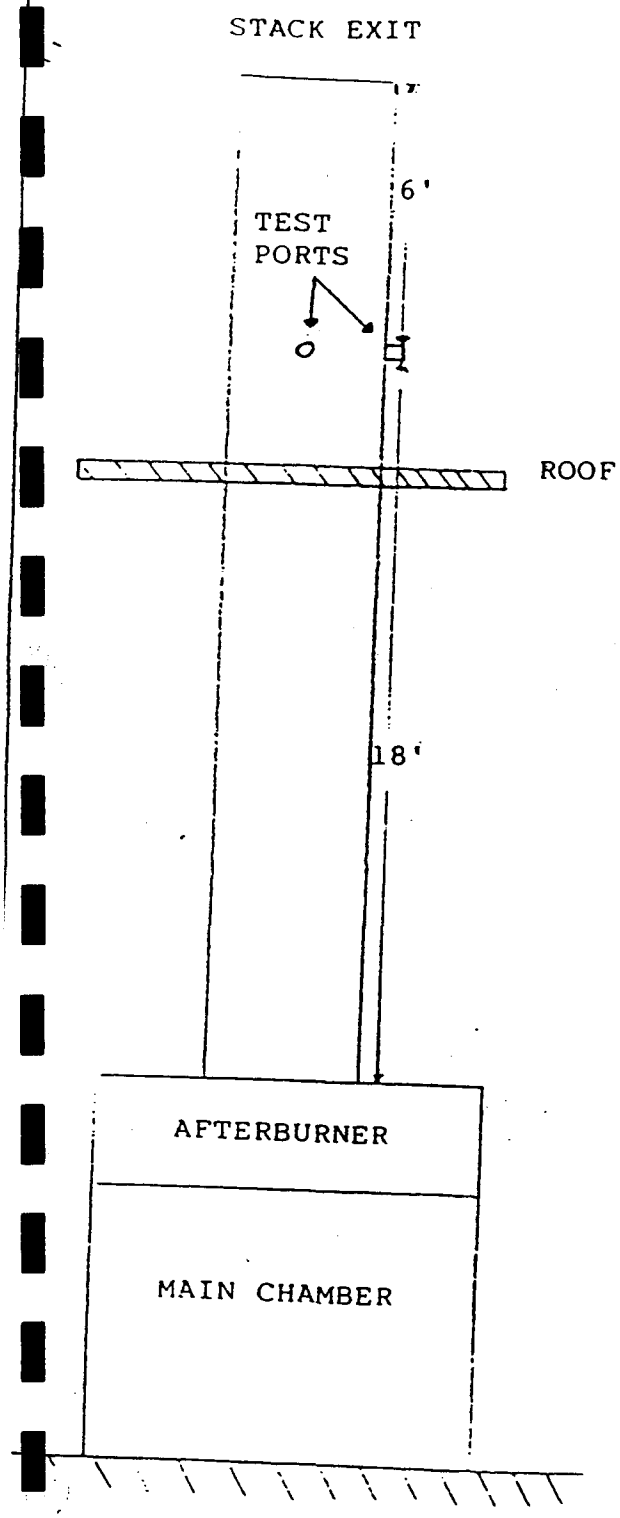
AERO MOLDED PLASTICS
BYESVILLE OHIO
PARTICULATE EMISSIONS TEST SUMMARY

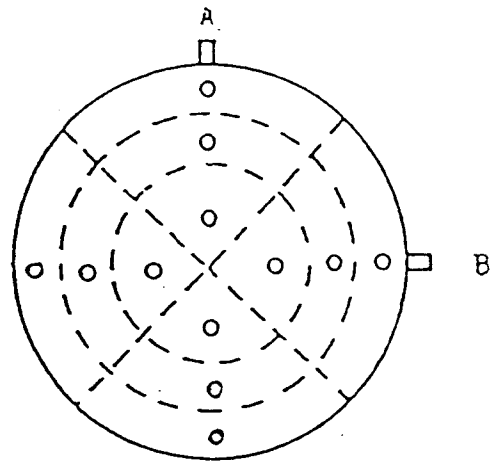
RUN #	1	2	3	AVG
DATE	1/05/90	1/05/90	1/05/90	
TIME START (EST)	12:05	13:25	16:18	
TIME COMPLETE (EST)	13:07	14:26	17:22	
FLUE GAS TEMP (F)	1387.2	1429.3	1356.3	1390.9
FLUE GAS VELOCITY (FPS)	16.44	17.39	14.88	16.24
FLUE GAS FLOWRATE (M ACFM)	1.055	1.116	0.955	1.042
FLUE GAS FLOWRATE (M DSCFM)	0.235	0.242	0.215	0.231
VOL OF GAS SAMPLES (DSCF)	47.71	49.18	44.59	47.16
MOISTURE (%)	20.8	21.1	21.5	21.1
ISOKINETIC SAMPLE RATE (%)	104.9	105.0	107.5	105.8
BAROMETRIC PRESSURE (IN HG)	29.45	29.45	29.45	29.45
STACK PRESSURE (IN HG)	29.45	29.45	29.45	29.45
OXYGEN (%)	8.7	9.3	9.2	9.1
CARBON DIOXIDE (%)	8.7	7.4	7.5	7.9
CARBON MONOXIDE (%)	0.0	0.0	0.0	0.0
NITROGEN (%)	82.6	83.3	83.3	83.1
MOLECULAR WEIGHT OF GAS(MOLES)	27.43	27.25	27.21	27.30
PARTICULATE (GR/DSCF)	0.0121	0.0122	0.0114	0.0119
PARTICULATE (LBS/HR)	0.024	0.025	0.021	0.023
ALLOWABLE (LBS/HR)	0.157	0.157	0.180	0.165

ESS

ENVIRONMENTAL SOURCE SAMPLERS

AERO MOLDED PLASTICS
BYESVILLE, OHIO
ACE MODEL 3210RKG INCINERATOR
STACK SAMPLING LOCATION





STACK I.D. = 14.0 "
INSIDE WALL DISTANCE

TO POINT NUMBER		
1	=	13.4"
2	=	12.0"
3	=	9.9"
4	=	4.1"
5	=	2.0"
6	=	0.6"

4.0 SAMPLING POINT LOCATION

Two (2) test ports were located at 90 degree angles in the 14.0 inch I.D. insulated stack serving the oven and afterburner. The test ports were located 18 feet, or 15.4 stack diameters downstream of the afterburner chamber, and 6 feet, or 5.1 stack diameters upstream of the stack exit.

According to the procedures of EPA Method 1, a total of 12 points were sampled. Six (6) points were sampled at each test port for 5.0 minutes each, resulting in 60 minute test runs.

A diagram of the stack sampling location appears on the following page.

ESS

ENVIRONMENTAL SOURCE SAMPLERS

PRELIMINARY: EPA METHODS 1 & 2

Plant Name Aero Molded Plastics Stack Name Afterburner

Date 1/5/90 Time 0900 Oper. Loy Stack I.D. (port) 14.0"

Probe (pitot)# 3-1 PTCF 0.84 Stack Pres., "H_2) -0.04

Bar. Pres., "Hg 29.45 Port Ext. 4 Pitot Leak Ck. (Y/N) Y

Stack Temp., °F 1150

Point No.	%Dia.	% Dia. / 100 x Stack I.D @ Port	ΔP	temp stack °F	
A1	95.6	13.4	0.025	1090	
2	85.4	12.0	0.030	1091	
3	70.4	9.9	0.040	1092	
4	29.6	4.1	0.025	1094	
5	14.6	2.0	0.020	1100	
6	4.4	0.6	0.010	1106	
B1	SAME	as 'A'	0.025	1120	
2			0.035	1130	
3			0.035	1140	
4			0.025	1145	
5			0.020	1145	
6			0.010	1146	
			Avg. $\sqrt{\Delta P}$	Avg. °F	

5.0 FIELD AND ANALYTICAL PROCEDURES

EPA Methods 1 - 5, as outlined in the Code of Federal Regulations, Chapter I, Title 40, Part 60, Appendix A, were utilized in performing the particulate emissions tests. A stainless steel lined probe was used in conjunction with attached flow and stack gas temperature sensors for the particulate tests. A heated filter box contained a glass fiber filter.

An integrated gas sample was collected during each particulate test run according to the procedures of EPA Method 3. The contents of the collection bag were analyzed for oxygen, carbon dioxide, and carbon monoxide by orsat analysis. The results of this analysis were used to determine the molecular weight of the flue gas.

EPA Method 5 procedures were followed during the sampling, analysis, and calculation phases of each particulate test run. These procedures are detailed on the following pages.

ORSAT GAS ANALYSIS

Plant : AERO MOLDED PLASTICS

Test No.: 2

Date : 1/05/90

	Reading 1 = %CO2	Reading 2 %O2	Reading 3 %CO	%N2
ield Reading 1 :	7.4	16.8	9.4	16.8	0.0	83.2
ield Reading 2 :	7.4	16.6	9.2	16.6	0.0	83.4
verage :	7.4	9.3	0.0	83.3

A DENSITY CORRECTION FACTOR

omponent	Vol. Percent/100	X Moisture Correction	X Mol. Wt. =	Weight Per Mole Wet Basis
ater	0.211	1.0	18.0	3.798
arbon Dioxide	0.074 (Dry Basis)	0.789	44.0	2.569
arbon Monoxide	0.000 (Dry Basis)	0.789	28.0	0.000
xygen	0.093 (Dry Basis)	0.789	32.0	2.348
itrogen & Inerts	0.833 (Dry Basis)	0.789	28.2	18.534

verage Moleculer Weight 27.25

ORSAT GAS ANALYSIS

Plant : AERO MOLDED PLASTICS

Test No.: 1

Date : 1/05/90

	Reading 1 = %CO2	Reading 2	%O2	Reading 3	%CO	%N2
ield Reading 1 :	8.6	17.4	8.8	17.4	0.0	82.6
ield Reading 2 :	8.8	17.4	8.6	17.4	0.0	82.6
verage :	8.7		8.7		0.0	82.6

AS DENSITY CORRECTION FACTOR

mponent	Vol. Percent/100	X Moisture Correction	X Mol. Wt. =	Weight Per Mole Wet Basis
ter	0.208	1.0	18.0	3.744
rbon Dioxide	0.087 (Dry Basis)	0.792	44.0	3.032
rbon Monoxide	0.000 (Dry Basis)	0.792	28.0	0.000
ygen	0.087 (Dry Basis)	0.792	32.0	2.205
trogen & Inerts	0.826 (Dry Basis)	0.792	28.2	18.448

erage Moleculer Weight 27.43

Test Calculations

Plant : AERO MOLDED PLASTICS
Location : BYESVILLE OHIO

Date : 1/05/90
Test No.: 1

1.	Sample Volume (ft^3)	: 46.903	9.	Ms	: 27.43
2.	Barr. Pressure (in. Hg.)	: 29.45	10.	Nozzle Dia. (in.)	: 0.795
3.	Avg. Delta H (in.W.C.)	: 2.532	11.	Stack Press. in.Hg.)	: 29.45
4.	Avg. Tm (F)	: 54.2	12.	Sampling Time (min.)	: 60.0
5.	Condensed H2O (ml)	: 266.0	13.	Total Weight (g)	: 0.0375
6.	Avg. Delta P (in.W.C.)	: 0.023	14.	Stack Area (ft^2)	: 1.070
7.	Pitot Factor (Cp)	: 0.84	15.	% O2	: 8.7
8.	Avg. Ts (F)	: 1387.2			

DRY GAS VOLUME

$$V_{m\,STD} = \frac{17.65 \times 46.903 \times [29.45 + (2.532/13.6)]}{54.2 + 460} = 47.713 \text{ ft}^3$$

VOLUME OF WATER VAPOR

$$V_{w\,STD} = 0.0471 \times 266.0 = 12.529 \text{ ft}^3$$

MOISTURE CONTENT

$$Bw = \frac{12.529}{12.529 + 47.713} = 0.208$$

VELOCITY

$$V(fps) = 2.9 \times 0.84 \times [0.023 \times (1387.2 + 460) \times (28.95/27.43) \times (29.92/29.45)]^{1/2}$$
$$= 16.44 \text{ fps}$$

% ISOKINETIC

$$\%I = \frac{17.313 \times 47.713 \times (1387.2 + 460)}{(0.795)^2 \times 29.45 \times (1 - 0.208) \times 16.440 \times 60} = 104.9\ \%$$

EMISSIONS

$$GR/SCFD = \frac{0.0375 \times 15.43}{47.713} = 0.0121 \text{ GR/SCFD}$$

$$LBS/HR = \frac{9.08 \times 0.0121 \times 1.070 \times 16.44 \times 29.45 \times (1 - 0.208)}{1387.2 + 460} = 0.024 \text{ LBS/HR}$$

$$ACFM = 16.44 \times 1.070 \times 60 = 1055 \text{ ACFM}$$

$$DSCFM = \frac{1055 \times 29.45 \times 528 \times 0.208}{29.92 \times (460 + 1387.2)} = 235 \text{ DSCFM}$$

ORSAT GAS ANALYSIS

Plant : AERO MOLDED PLASTICS

Test No.: 3

Date : 1/05/90

	Reading 1 = %CO2	Reading 2	%O2	Reading 3	%CO	%N2
eld Reading 1 :	7.4	16.8	9.4	16.8	0.0	83.2
eld Reading 2 :	7.6	16.6	9.0	16.6	0.0	83.4
erage :	7.5		9.2		0.0	83.3

3 DENSITY CORRECTION FACTOR

mponent	Vol. Percent/100 X	Moisture Correction X	Mol. Wt. =	Weight Per Mole Wet Basis
:er	0.215	1.0	18.0	3.870
·bon Dioxide	0.075 (Dry Basis)	0.785	44.0	2.590
·bon Monoxide	0.000 (Dry Basis)	0.785	28.0	0.000
/gen	0.092 (Dry Basis)	0.785	32.0	2.311
:rogen & Inerts	0.833 (Dry Basis)	0.785	28.2	18.440

:rage Moleculer Weight 27.21

Test Calculations

Client : AERO MOLDED PLASTICS
Location : BYESVILLE OHIO

Date : 1/05/90
Test No.: 3

1.	Sample Volume (ft^3) :	43.715	9.	Ms :	27.21
2.	Barom. Pressure (in. Hg.):	29.45	10.	Nozzle Dia. (in.) :	0.795
3.	Avg. Delta H (in.W.C.) :	2.170	11.	Stack Press. (in.Hg.):	29.45
4.	Avg. Tm (F) :	52.4	12.	Sampling Time (min.):	60.0
5.	Condensed H2O (ml) :	%259.0	13.	Total Weight (g) :	0.0330
6.	Avg. Delta P (in.W.C.) :	0.019	14.	Stack Area (ft^2) :	1.070
7.	Pitot Factor (Cp) :	0.84	15.	% O2 :	9.0
8.	Avg. Ts (F) :	1356.3			

DRY GAS VOLUME

$$Vm\ STD = \frac{17.65 \times 43.715 \times [29.45 + (2.170/13.6)]}{52.4 + 460} = 44.586\ ft^3$$

VOLUME OF WATER VAPOR

$$Vw\ STD = 0.0471 \times \%259.0 = \%12.199\ ft^3$$

MOISTURE CONTENT

$$Bw = \frac{\%12.199}{\%12.199 + 44.586} = 0.215$$

VELOCITY

$$V(fps) = 2.9 \times 0.84 \times [0.019 \times (\%1356.3 + 460) \times (28.95/27.21) \times (29.92/29.45)]^{1/2}$$
$$= 14.88\ fps$$

% ISOKINETIC

$$\%I = \frac{17.313 \times 44.586 \times (\%1356.3 + 460)}{(0.795)^2 \times 29.45 \times (1 - 0.215) \times 14.880 \times 60} = 107.5\ \%$$

EMISSIONS

$$GR/SCFD = \frac{0.0330 \times 15.43}{44.586} = 0.0114\ GR/SCFD$$

$$LBS/HR = \frac{9.08 \times 0.0114 \times 1.070 \times 14.88 \times 29.45 \times (1 - 0.215)}{\%1356.3 + 460} = 0.021\ LBS/HR$$

$$ACFM = 14.88 \times 1.070 \times 60 = 955\ ACFM$$

$$DSCFM = \frac{955 \times 29.45 \times 528 \times 0.215}{29.92 \times (460 + \%1356.3)} = 215\ DSCFM$$

Test Calculations

Date : 1/05/90
Test No.: 2

: AERO MOLDED PLASTICS
ocation : BYESVILLE OHIO

. Sample Volume (ft^3)	: 48.804	9.	Ms	:	27.25
. Barr. Pressure (in. Hg.)	: 29.45	10.	Nozzle Dia. (in.)	:	0.795
. Avg. Delta H (in.W.C.)	: 2.583	11.	Stack Press. in.Hg.)	:	29.45
. Avg. Tm (F)	: 59.1	12.	Sampling Time (min.)	:	60.0
. Condensed H2O (ml)	: 279.5	13.	Total Weight (g)	:	0.0388
. Avg. Delta P (in.W.C.)	: 0.025	14.	Stack Area (ft^2)	:	1.070
. Pitot Factor (Cp)	: 0.84	15.	% O2	:	9.3
. Avg. Ts (F)	: 1429.3				

RY GAS VOLUME

$$V_{m\,STD} = \frac{17.65 \times 48.804 \times [29.45 + (2.583/13.6)]}{59.1 + 460} = 49.184 \text{ ft}^3$$

OLUME OF WATER VAPOR

$V_{w\,STD}$ = 0.0471 X %279.5 = %13.164 ft^3

OISTURE CONTENT

$$B_w = \frac{\%13.164}{\%13.164 + 49.184} = 0.211$$

ELOCITY

$$V_s(fps) = 2.9 \times 0.84 \times [0.025 \times (\%1429.3 + 460) \times (28.95/27.25) \times (29.92/29.45)]^{1/2}$$
$$= 17.39 \text{ fps}$$

% ISOKINETIC

$$\%I = \frac{17.313 \times 49.184 \times (\%1429.3 + 460)}{(0.795)^2 \times 29.45 \times (1 - 0.211) \times 17.390 \times 60} = 105.0\ \%$$

EMISSIONS

$$GR/SCFD = \frac{0.0388 \times 15.43}{49.184} = 0.0122 \text{ GR/SCFD}$$

$$LBS/HR = \frac{9.08 \times 0.0122 \times 1.070 \times 17.39 \times 29.45 \times (1 - 0.211)}{\%1429.3 + 460} = 0.025 \text{ LBS/HR}$$

ACFM = 17.39 X 1.070 X 60 = 1116 ACFM

$$DSCFM = \frac{1116 \times 29.45 \times 528 \times 0.211}{29.92 \times (460 + \%1429.3)} = 242 \text{ DSCFM}$$

ESS

ENVIRONMENTAL SOURCE SAMPLERS

ANALYTICAL DATA

Plant Aero Molded Plastics

Date 1/5/90

Run No. 2

Filter No. 500

Amount liquid lost during transport 0

Acetone blank volume, ml 200

Acetone wash volume, ml 290

Acetone blank concentration, mg/mg (equation 5-4) 0.0

Acetone wash blank, mg (equation 5-5) 0.0

CONTAINER NUMBER	WEIGHT OF PARTICULATE COLLECTED, g		
	FINAL WEIGHT	TARE WEIGHT	WEIGHT GAIN
1	0.3771	0.3461	0.0310
2	81.2287	81.2209	0.0078
TOTAL			0.0388
		Less acetone blank	0.0000
		Weight of particulate matter	0.0388

	VOLUME OF LIQUID WATER COLLECTED		
	IMPINGER VOLUME, ml.	SILICA GEL WEIGHT, g	
FINAL	464	265.5	
INITIAL	200	250.0	
LIQUID COLLECTED	264	15.5	
TOTAL VOLUME COLLECTED	279.5	g*	ml

* CONVERT WEIGHT OF WATER TO VOLUME BY DIVIDING TOTAL WEIGHT INCREASE BY DENSITY OF WATER (1g/ml).

$$\frac{\text{INCREASE, g}}{1\ \text{g/ml}} = \text{VOLUME WATER, ml}$$

ESS

ENVIRONMENTAL SOURCE SAMPLERS

ANALYTICAL DATA

Plant Aero Molded Plastic

Date 1/5/1990

Run No. 1

Filter No. 338

Amount liquid lost during transport 0

Acetone blank volume, ml 200

Acetone wash volume, ml 280

Acetone blank concentration, mg/g (equation 5-4) 0.0

Acetone wash blank, mg (equation 5-5) 0.0

CONTAINER NUMBER	WEIGHT OF PARTICULATE COLLECTED, g		
	FINAL WEIGHT	TARE WEIGHT	WEIGHT GAIN
1	0.3722	0.3421	0.0301
2	79.2283	79.2209	0.0074
TOTAL			0.0375
Less acetone blank			0.0000
Weight of particulate matter			0.0375

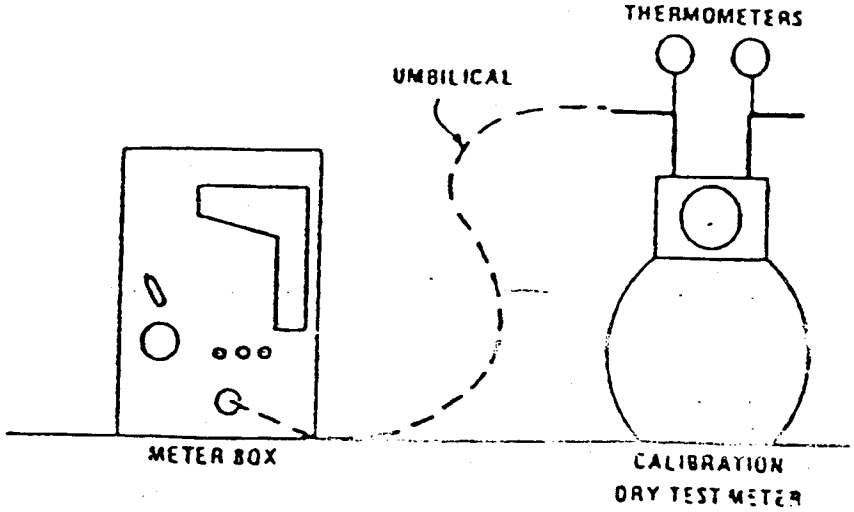
	VOLUME OF LIQUID WATER COLLECTED	
	IMPINGER VOLUME, ml.	SILICA GEL WEIGHT, g
FINAL	450	264.0
INITIAL	200	245.0
LIQUID COLLECTED	250	16.0
TOTAL VOLUME COLLECTED	266.0	g* ml

* CONVERT WEIGHT OF WATER TO VOLUME BY DIVIDING TOTAL WEIGHT INCREASE BY DENSITY OF WATER (1g/ml).

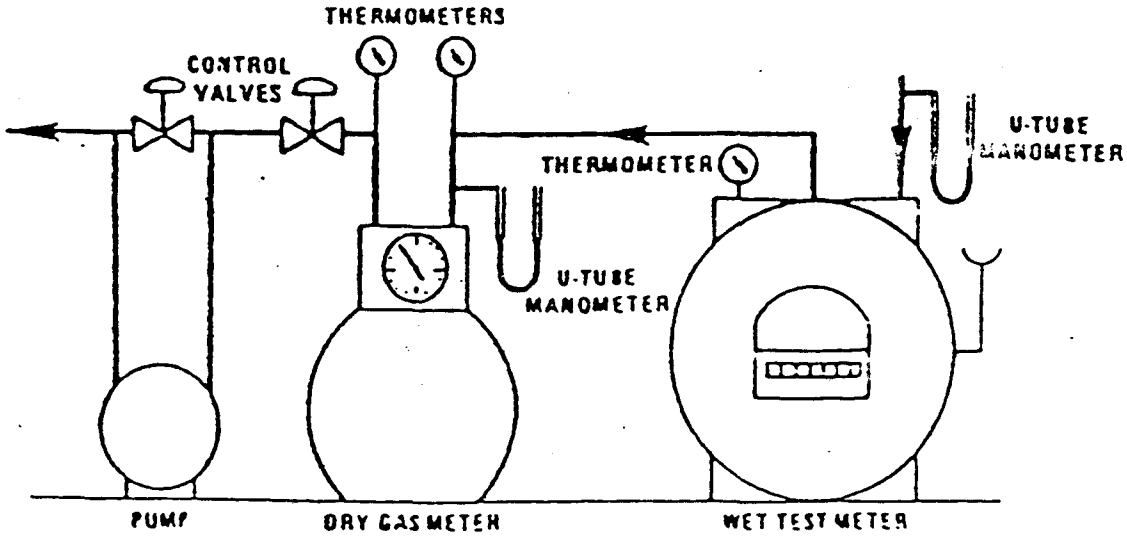
$$\frac{\text{INCREASE, g}}{1\ \text{g/ml}} = \text{VOLUME WATER, ml}$$

ESS

ENVIRONMENTAL
SOURCE SAMPLERS



Meter box calibration set-up.



Equipment arrangement for dry-gas meter calibration

ESS

ENVIRONMENTAL SOURCE SAMPLERS

ANALYTICAL DATA

Plant Apco Molded Plastics

Date 1/5/90

Run No. 3

Filter No. 501

Amount liquid lost during transport 0

Acetone blank volume, ml 200

Acetone wash volume, ml 340

Acetone blank concentration, mg/g (equation 5-4) 0.0

Acetone wash blank, mg (equation 5-5) 0.0

CONTAINER NUMBER	WEIGHT OF PARTICULATE COLLECTED, mg		
	FINAL WEIGHT	TARE WEIGHT	WEIGHT GAIN
1	0.3702	0.3422	0.0280
2	81.1161	81.1111	0.0050
TOTAL			0.0330
		Less acetone blank	0.0000
		Weight of particulate matter	0.0330

	VOLUME OF LIQUID WATER COLLECTED		
	IMPINGER VOLUME, ml.	SILICA GEL WEIGHT, g	
FINAL	444	275.5	
INITIAL	200	260.5	
LIQUID COLLECTED	244	15.0	
TOTAL VOLUME COLLECTED	259.0	g*	ml

* CONVERT WEIGHT OF WATER TO VOLUME BY DIVIDING TOTAL WEIGHT INCREASE BY DENSITY OF WATER (1g/ml).

$$\frac{\text{INCREASE, g}}{1\ \text{g/ml}} = \text{VOLUME WATER, ml}$$

WATERLOO DUSTRIES
WA[redacted]OO, [redacted] P[redacted]

[illegible] 67[illegible] VENDOR NUMBER AMR0130 VENDOR The Valspar Corporation MATERIAL Red Bake Enamel

CHASING ORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
TIAL VISCOSITY FORD CUP @ 77°F	HAND SPRAY	STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
50" to 60" GHT PER GALLON	Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
8.52 to 8.82		9	6.0	38.3	250°F	270°F
AL SOLIDS % WEIGHT		11	7.33	31.4	260°F	280°F
9.4 ± 1.0%		13	8.66	26.6	270°F	290°F
UME SOLIDS %	ELECTROSTATIC TURBO BELLS	15	10.0	23.0	290°F	310°F
37.5 ± 1.0%	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	17	11.33	20.3	300°F	320°F
4.39		19	12.66	18.2	300°F	320°F
CIL HARDNESS IMUM HB 1.0 ± .1 ED 12' @ 310°F**	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	21	14.0	16.4	310°F	330°F
		23	15.33	15.0	310°F	330°F
		25	16.66	13.8	310°F	330°F
		27	18.0	12.8	310°F	330°F
		29	19.33	11.9	315°F	335°F
ERAGE AT 1 MIL 0 sq. ft.		31	20.66	11.1	320°F	340°F
		33	22.0	10.5	320°F	340°F
SS 60° 3 to 89 @ 0.9 mil		35	23.33	9.9	325°F	340°F

[illegible]: OPTIMUM DRY FILM THICKNESS DESIRED - 0.9 mil

SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, [illegible]

te: January 18, 1990 POLARITY: 0.5 to 1.0 Megohm

THE VALSPAR CORPORATION

PRODUCT DATA SHEETS

for

WATERLOO INDUSTRIES

WATERLOO, IOWA

January 17, 1990

paint specs.

. B 2550 VENDOR NUMBER 8AM0505 VENDOR The Valspar Corporation MATERIAL Dawn Gray Hammer Bake Enamel

RCHASING FORMATION	LINE #3 REDUCER - RATIO
ITIAL VISCOSITY FORD CUP @ 77°F 50" to 60"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-100.
IGHT PER GALLON 7.86 to 8.16	
TAL SOLIDS % WEIGHT 41.7 ± 1.0%	
LUME SOLIDS % 34.2 ± 1.0%	ELECTROSTATIC TURBO BELLS Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100.
C 4.66	
RCIL HARDNESS NIMUM HB 1.0 ± .1 RED 12' @ 310°F**	Above reducers will vary depending on weather conditions and Heat of parts. Hand spray to part Xylol. Electrostatic spray to part Xylol to part D-150.
VERAGE AT 1 MIL 347 sq. ft.	
SS 60° 30 minimum @ 0.8 mil	

CURING INFORMATION

STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
7	4.66	49.4	250°F	270°F
9	6.0	38.3	250°F	270°F
11	7.33	31.4	260°F	280°F
13	8.66	26.6	270°F	290°F
15	10.0	23.0	290°F	310°F
17	11.33	20.3	300°F	320°F
19	12.66	18.2	300°F	320°F
21	14.0	16.4	310°F	330°F
23	15.33	15.0	310°F	330°F
25	16.66	13.8	310°F	330°F
27	18.0	12.8	310°F	330°F
29	19.33	11.9	315°F	335°F
31	20.66	11.1	320°F	340°F
33	22.0	10.5	320°F	340°F
35	23.33	9.9	325°F	340°F

OPTIMUM DRY FILM THICKNESS DESIRED -0.8 mil

SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 3

January 17, 1990 POLARITY: 1.0 to 2.0 Megoh

WATERLOO, I PLANT

VENDOR NUMBER AM69218 VENDOR The Valspar Corporation MATERIAL Black Semi-Gloss Bake Enamel

CHASING ORMATION	LINE # 3 REDUCER - RATIO
TIAL VISCOSITY FORD CUP @ 77°F 5" to 55"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.
GHT PER GALLON .90 to 9.20	
AL SOLIDS % WEIGHT 7.0 ± 1.0%	
URE SOLIDS % 3.5 ± 1.0%	ELECTROSTATIC TURBO BELLS Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.
.79	
CIL HARDNESS THUM HB 1.0 ± .1 ED 12' @ 310°F**	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.
ERAGE AT 1 MIL 34 sq. ft.	
SS 60° 0 to 50 @ 1.0 mil	

CURING INFORMATION

STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
7	4.66	49.4	250°F	270°F
9	6.0	38.3	250°F	270°F
11	7.33	31.4	260°F	280°F
13	8.66	26.6	270°F	290°F
15	10.0	23.0	290°F	310°F
17	11.33	20.3	300°F	320°F
19	12.66	18.2	300°F	320°F
21	14.0	16.4	310°F	330°F
23	15.33	15.0	310°F	330°F
25	16.66	13.8	310°F	330°F
27	18.0	12.8	310°F	330°F
29	19.33	11.9	315°F	335°F
31	20.66	11.1	320°F	340°F
33	22.0	10.5	320°F	340°F
35	23.33	9.9	325°F	340°F

ARKS: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

EE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

e: January 17, 1990 POLARITY: 0.4 to 1.0 Megohm

WATERLO[redacted] INDUSTRIES
WATERLOO, [redacted] A PLANT

[redacted] 4314 VENDOR NUMBER AM63565 VENDOR The Valspar Corporation MATERIAL Yellow Bake Enamel

PURCHASING INFORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
		STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
INITIAL VISCOSITY #4 FORD CUP @ 77°F 40" to 50"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
WEIGHT PER GALLON 9.91 to 10.21		9	6.0	38.3	250°F	270°F
TOTAL SOLIDS % BY WEIGHT 63.0 ± 1.0%		11	7.33	31.4	260°F	280°F
VOLUME SOLIDS % 43.5 ± 1.0%		13	8.66	26.6	270°F	290°F
VOC 3.73		15	10.0	23.0	290°F	310°F
PENCIL HARDNESS MINIMUM HB 1.0 ± .1 BAKED 12' @ 310°F**	ELECTROSTATIC TURBO BELLS Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	17	11.33	20.3	300°F	320°F
COVERAGE AT 1 MIL 696 sq. ft.	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	19	12.66	18.2	300°F	320°F
GLOSS 60° 90 minimum @ 1.0 mil		21	14.0	16.4	310°F	330°F
		23	15.33	15.0	310°F	330°F
		25	16.66	13.8	310°F	330°F
		27	18.0	12.8	310°F	330°F
		29	19.33	11.9	315°F	335°F
		31	20.66	11.1	320°F	340°F
		33	22.0	10.5	320°F	340°F
		35	23.33	9.9	325°F	340°F

NOTES: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

Date: January 18, 1990 POLARITY: 0.4 to 1.0 Megohm

WATERL INDUSTRIES
WATERLOO, WA PLANT

[illegible] 3041 VENDOR NUMBER AM97206 VENDOR The Valspar Corporation MATERIAL Cornwell Blue Bake Enamel

URCHASING NFORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
		STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
NITIAL VISCOSITY 4 FORD CUP @ 77°F	HAND SPRAY	7	4.66	49.4	250°F	270°F
50" to 60"	Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	9	6.0	38.3	250°F	270°F
EIGHT PER GALLON		11	7.33	31.4	260°F	280°F
9.03 to 9.33		13	8.66	26.6	270°F	290°F
OTAL SOLIDS % T WEIGHT		15	10.0	23.0	290°F	310°F
54.4 ± 1.0%		17	11.33	20.3	300°F	320°F
OLUME SOLIDS %	ELECTROSTATIC TURBO BELLS	19	12.66	18.2	300°F	320°F
42.1 ± 1.0%	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	21	14.0	16.4	310°F	330°F
OC 4.19		23	15.33	15.0	310°F	330°F
ENCIL HARDNESS	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	25	16.66	13.8	310°F	330°F
INIMUM HB 1.0 ± .1		27	18.0	12.8	310°F	330°F
AKED 12' @ 310°F **		29	19.33	11.9	315°F	335°F
OVERAGE AT 1 MIL 674 sq. ft.		31	20.66	11.1	320°F	340°F
LOSS 60°		33	22.0	10.5	320°F	340°F
90 minimum @ 1.0 mil		35	23.33	9.9	325°F	340°F

EMARKS: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

*SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

ate: January 18, 1990 POLARITY: 0.4 to 1.0 Megohm

WATERLO[illegible]NDUSTRIES
W[illegible]RLO[illegible] [illegible]PLANT

[illegible] 6021 VENDOR NUMBER AM68201 VENDOR The Valspar Corporation MATERIAL Gray Metallic Bake Enamel

[illegible]RCHASING [illegible]FORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
[illegible]ITIAL VISCOSITY [illegible] FORD CUP @ 77°F	HAND SPRAY	STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
50" to 60"	Reduce to 20 seconds to 22 seconds #4 Ford Cup at 90°F with Toluol.	7	4.66	49.4	250°F	270°F
[illegible]IGHT PER GALLON		9	6.0	38.3	250°F	270°F
8.09 to 8.39		11	7.33	31.4	260°F	280°F
[illegible]TAL SOLIDS % WEIGHT	ELECTROSTATIC TURBO BELLS	13	8.66	26.6	270°F	290°F
45.5 ± 1.0%	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 3 parts Toluol and 1 part D-150.	15	10.0	23.0	290°F	310°F
[illegible]LUME SOLIDS %		17	11.33	20.3	300°F	320°F
37.0 ± 1.0%	Above reducer will vary depending on weather conditions and heat of parts.	19	12.66	18.2	300°F	320°F
[illegible]C		21	14.0	16.4	310°F	330°F
4.50	Hand spray from all Toluol to part Xylol and electrostatic spray from above to more D-150.	23	15.33	15.0	310°F	330°F
[illegible]NCIL HARDNESS		25	16.66	13.8	310°F	330°F
[illegible]NIMUM HB 1.0 ± .1		27	18.0	12.8	310°F	330°F
[illegible]KED 12' @ 310°F**	For uniform color and pattern, use low fluid pressure and high atomization pressure. With conventional hand guns, atomization pressure in excess of 50 P.S.I. may be necessary.	29	19.33	11.9	315°F	335°F
[illegible]VERAGE AT 1 MIL		31	20.66	11.1	320°F	340°F
592 sq. ft.		33	22.0	10.5	320°F	340°F
[illegible]OSS 60°		35	23.33	9.9	325°F	340°F
80 minimum @ 1.0 mil						

[illegible]ARKS: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

[illegible]SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

[illegible]te: January 18, 1990 POLARITY: 1.0 to 2.0 Megohm

WATERL[illegible] I[illegible]DUSTRIES
WATERLOO, [illegible]A PLANT

[illegible] H 4561 VENDOR NUMBER AMA0143 VENDOR The Valspar Corporation MATERIAL Charcoal Gray Bake Enamel

PURCHASING INFORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
		STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
INITIAL VISCOSITY #4 FORD CUP @ 77°F 50" to 60"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
WEIGHT PER GALLON 8.61 to 8.91		9	6.0	38.3	250°F	270°F
TOTAL SOLIDS % BY WEIGHT 49.9 ± 1.0%		11	7.33	31.4	260°F	280°F
		13	8.66	26.6	270°F	290°F
		15	10.0	23.0	290°F	310°F
VOLUME SOLIDS % 38.2 ± 1.0%	ELECTROSTATIC TURBO BELLS Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	17	11.33	20.3	300°F	320°F
		19	12.66	18.2	300°F	320°F
VOC 4.39		21	14.0	16.4	310°F	330°F
PENCIL HARDNESS MINIMUM HB 1.0 ± .1 BAKED 12' @ 310°F**	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	23	15.33	15.0	310°F	330°F
		25	16.66	13.8	310°F	330°F
		27	18.0	12.8	310°F	330°F
		29	19.33	11.9	315°F	335°F
COVERAGE AT 1 MIL 611 sq. ft.		31	20.66	11.1	320°F	340°F
GLOSS 60° 72 to 78 @ 0.9 mil		33	22.0	10.5	320°F	340°F
		35	23.33	9.9	325°F	340°F

REMARKS: OPTIMUM DRY FILM THICKNESS DESIRED - 0.9 mil

SEE HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 1, 1975

Date: January 18, 1990 POLARITY: 0.4 to 1.0 Megohm

WATERLC NDUSTRIES
[redacted]RLC[redacted] [redacted]ANT[redacted]

. H 6628 VENDOR NUMBER 8AM0502 VENDOR The Valspar Corporation MATERIAL Gray Bake Enamel

RCHASING FORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
ITIAL VISCOSITY FORD CUP @ 77°F	HAND SPRAY	STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	OVEN SETTING MAXIMUM
40" to 50"	Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
IGHT PER GALLON 9.09 to 9.39*		9	6.0	38.3	250°F	270°F
		11	7.33	31.4	260°F	280°F
TAL SOLIDS % WEIGHT 51.3 ± 1.0%*		13	8.66	26.6	270°F	290°F
		15	10.0	23.0	290°F	310°F
		17	11.33	20.3	300°F	320°F
LUME SOLIDS % 37.3 ± 1.0% *	ELECTROSTATIC TURBO BELLS	19	12.66	18.2	300°F	320°F
C 4.5*	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	21	14.0	16.4	310°F	330°F
		23	15.33	15.0	310°F	330°F
NCIL HARDNESS NIMUM HB 1.0± .1 KED 12' @ 310°F**	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	25	16.66	13.8	310°F	330°F
		27	18.0	12.8	310°F	330°F
		29	19.33	11.9	315°F	335°F
VERAGE AT 1 MIL 597 sq. ft.*		31	20.66	11.1	320°F	340°F
		33	22.0	10.5	320°F	340°F
OSS 60° 30 to 40 @ 1.0 mil		35	23.33	9.9	325°F	340°F

MARKS: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

* May vary if rework material is used.

EL HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

te: January 18, 1990 POLARITY: 0.4 to 1.0 Megohm*

WATERLOO INDUSTRIES
WATERLOO, IOWA PLANT

H 6029 VENDOR NUMBER AMA0167 VENDOR The Valspar Corporation MATERIAL Blitz Black Semi-Gloss Bake Enamel

RCHASING FORMATION	LINE #3 REDUCER - RATIO	CURING INFORMATION				
ITIAL VISCOSITY FORD CUP @ 77°F		STATIONS PER MINUTE	FEET PER MINUTE	MINUTES IN OVEN	OVEN SETTING MINIMUM	MAXIMUM
50" to 60"	HAND SPRAY Reduce to 24 seconds to 26 seconds #4 Ford Cup at 90°F with D-150.	7	4.66	49.4	250°F	270°F
IGHT PER GALLON		9	6.0	38.3	250°F	270°F
8.05 to 8.35		11	7.33	31.4	260°F	280°F
TAL SOLIDS % WEIGHT		13	8.66	26.6	270°F	290°F
36.1 ± 1.0%		15	10.0	23.0	290°F	310°F
		17	11.33	20.3	300°F	320°F
LUME SOLIDS %	ELECTROSTATIC TURBO BELLS	19	12.66	18.2	300°F	320°F
37.5 ± 1.0%	Reduce to 18 seconds to 20 seconds #4 Ford Cup at 90°F with 1 part D-100 and 1 part D-150.	21	14.0	16.4	310°F	330°F
C		23	15.33	15.0	310°F	330°F
.4		25	16.66	13.8	310°F	330°F
NCIL HARDNESS	Above reducers will vary depending on weather conditions and heat of parts. Hand spray to part D-100. Electrostatic spray all D-100 to all D-150.	27	18.0	12.8	310°F	330°F
IMUM HB 1.0 ± .1		29	19.33	11.9	315°F	335°F
ED 12' @ 310°F**		31	20.66	11.1	320°F	340°F
VERAGE AT 1 MIL 500 sq. ft.		33	22.0	10.5	320°F	340°F
OSS 60°		35	23.33	9.9	325°F	340°F
0 to 30 @ 1.0 mil						

OTES: OPTIMUM DRY FILM THICKNESS DESIRED - 1.0 mil

E HARDNESS AND ADHESION TEST FOR CURED PAINT FILM, MARCH 12, 1973

: January 18, 1990 POLARITY: 0.4 to 1.0 megohm