CLOSURE CERTIFICATION

FORMER WASTE MANAGEMENT AREAS

International Paper Facility

Longview, Washington

Submitted to

Washington Department of Ecology

and

U.S. Environmental Protection Agency

Region X

Prepared for

International Paper

Dallas, Texas

Prepared By

James L. Grant and Associates, Inc.

Englewood, Colorado

May 11, 1990

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

May 15, 1990

Mr. Mike Rundlett
Regional Manager
Washington Department of Ecology
7272 Cleanwater Lane (LU-11)
Olympia, WA 98504

Subject: Closure Certification for the Former Waste Management Areas
International Paper Facility - Longview, Washington

Dear Mr. Rundlett:

I, John A. Duncan, a Registered Professional Engineer and Registered Professional Land Surveyor in the State of Washington, certify that I, or my representative, reviewed the following closure activities performed at the former waste management impoundments at the International Paper Facility in Longview, Washington. These activities included the installation of all fill materials, the placement of the High Density Polyethylene (HDPE) liner, the seeding of the entire site, and the erection of a perimeter fence.

I certify that these activities were performed in accordance with the "Closure Plan and Post-Closure Plan for the Treated Wood Products Plant, Longview, Washington" (Closure Plan). This Closure Plan was submitted to the Washington State Department of Ecology and the U.S. Environmental Protection Agency Region X, by International Paper on July 16, 1986, and was subsequently approved by your agency.

Minor field changes modifying the Closure Plan specification and procedures were approved in the field by me in consideration of health and safe work practices. The modified procedures were the equivalent of those presented in the Closure Plan. These minor deviations are explained in my letters, as documented in the attached report. Documentation supporting that the closure activities were performed in accordance with the Closure Plan is presented in the attached report.

Sincerely,

GIBBS & OLSON, INC.

By John A. Duncan
John A. Duncan, Gibbs & Olson, Inc.
Registered Professional Engineer
Registered Professional Land Surveyor
Date: May 15, 1990

Attachment
JD/sv
File: 375.13

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

INTERNATIONAL PAPER COMPANY
TREATED WOOD PRODUCTS IMPOUNDMENT CLOSURE PLAN CERTIFICATION
AT
INTERNATIONAL PAPER COMPANY FACILITY
LONGVIEW, WASHINGTON

I, JOHN A. DUNCAN, a Registered Professional Engineer and Registered Professional Land Surveyor in the State of Washington, certify that I, or my representative, reviewed the installation of all fill materials, the placement of the High Density Polyethylene (HDPE) Liner, the seeding of the entire site, and the erection of a perimeter fence.

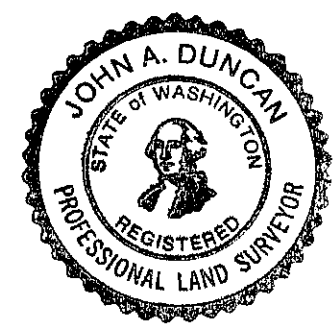
All installations conformed with the Closure Plan and Post-Closure Plan for Dangerous Waste Impoundments, as submitted to Washington State Department of Ecology and the U.S. Environmental Protection Agency Region X, by International Paper Company on July 16, 1986, and as documented in the attached report.

GIBBS & OLSON, INC.

By John A. Duncan
John A. Duncan, P.E., L.S.
Gibbs & Olson, Inc.

Date: May 15, 1990

Attachment



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International Paper Facility
Longview, Washington

Submitted to

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810352: 5-11-90

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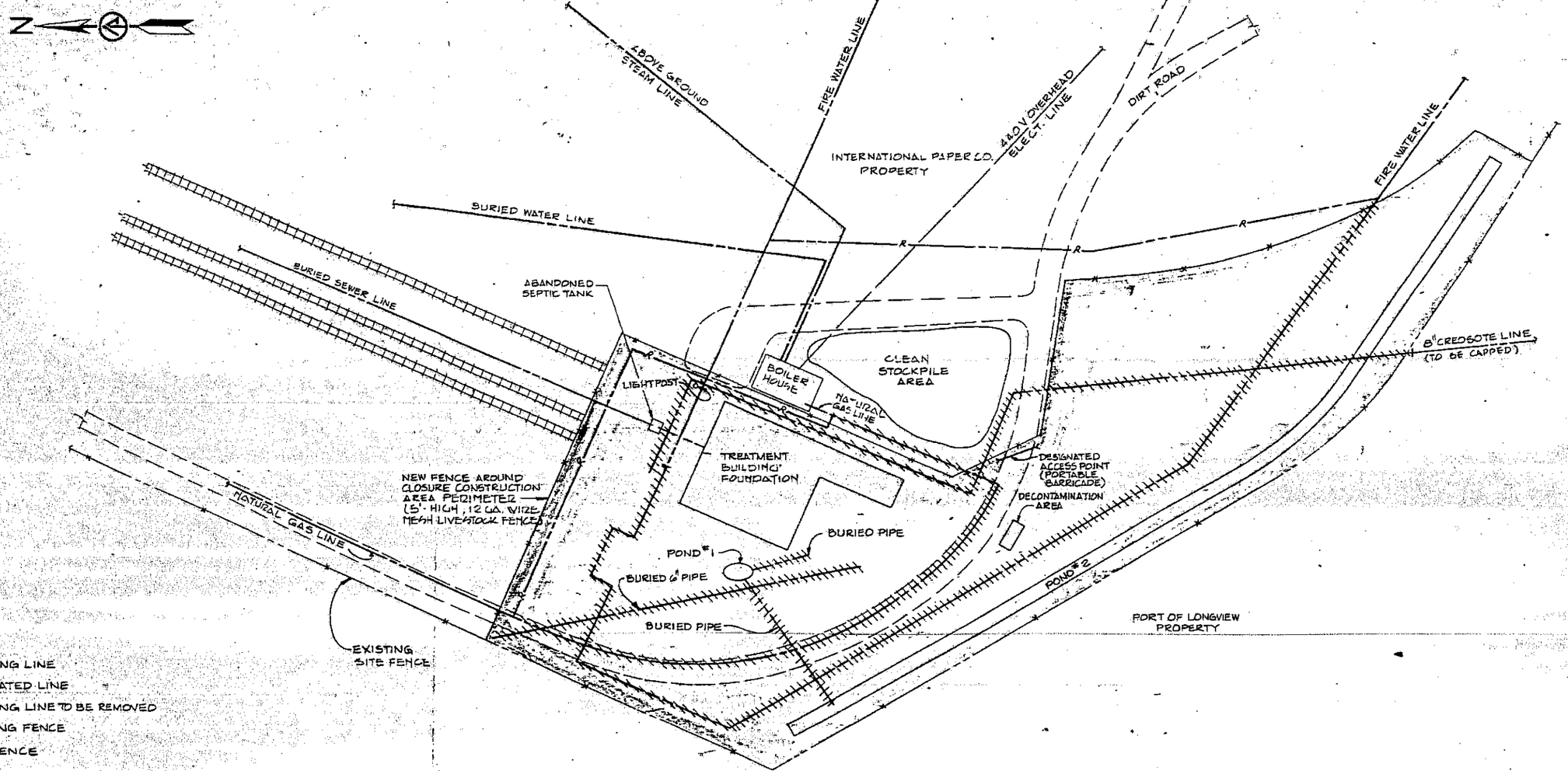
TABLE OF CONTENTS

LIST OF FIGURES

1. INTRODUCTION

This report describes the closure activities conducted at the former waste management areas at the International Paper facility in Longview, Washington. This report also provides the Certification of Closure for these waste management areas as required by 40 CFR 265.115. Documentation supporting the certification, consisting of letters, laboratory and field test results, and photographs are included in this report. The closure of the waste management areas was conducted in accordance with the "Closure Plan and Post-Closure Plan for the Treated Wood Products Plant, Longview, Washington" (Closure Plan). This Closure Plan was prepared by International Paper and is dated July 16, 1986. The Washington Department of Ecology granted tentative approval of the Closure plan on June 19, 1986. Revisions to the plan were made by International Paper on October 3, 1896. The plan was fully approved by the WDOE on April 14, 1987. Closure procedures are presented in Appendix A.

A map of the Longview closure construction area is shown in Figure 1.1. The locations of the former waste management areas are shown on this Figure as ponds #1 and #2.



LEGEND:

- EXISTING LINE
- —R— RELOCATED LINE
- EXISTING LINE TO BE REMOVED
- EXISTING FENCE
- NEW FENCE
- CLOSURE CONSTRUCTION AREA

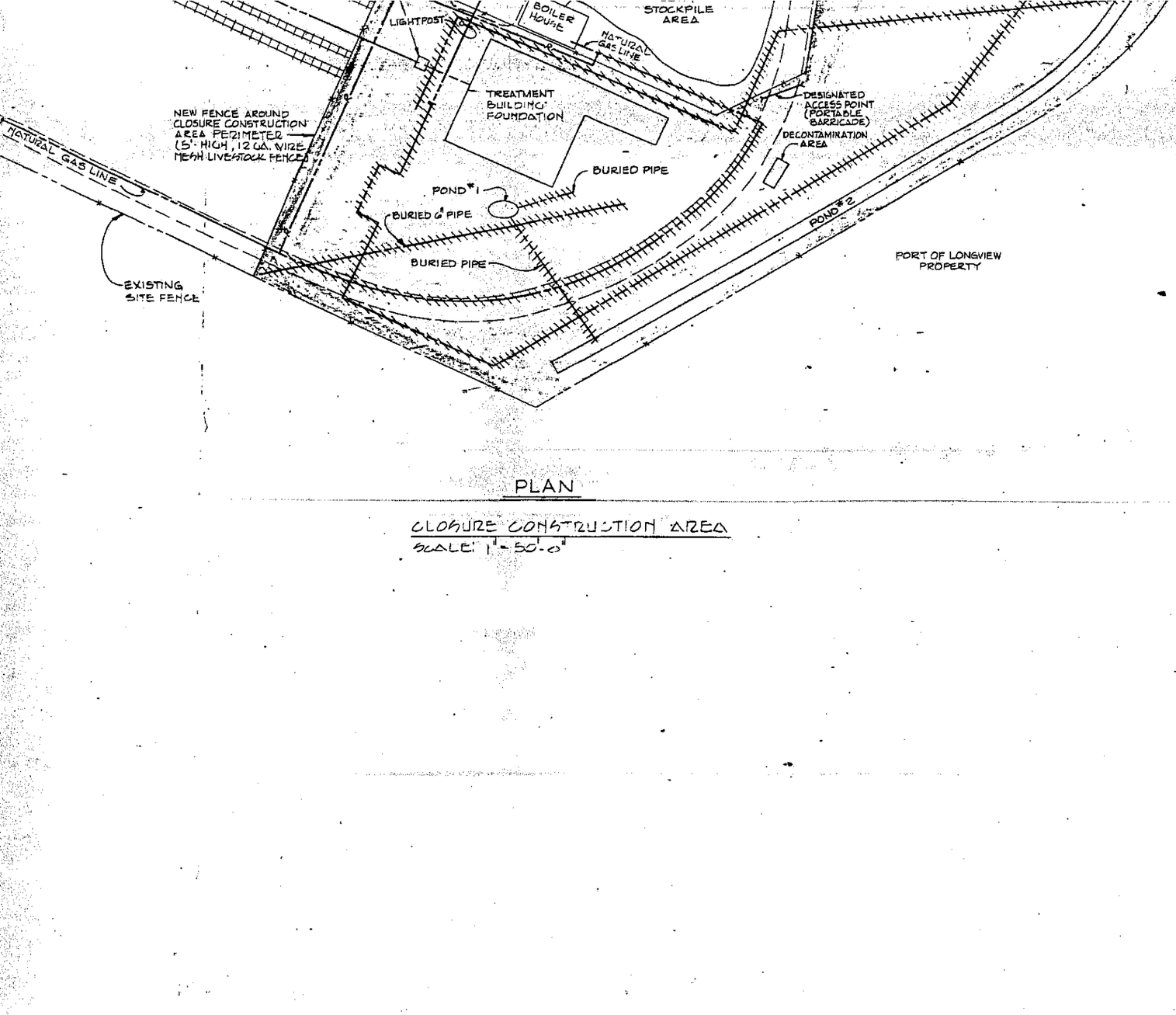
NOTE:

THE CLOSURE CONSTRUCTION AREA INCLUDES THE SOLID WASTE MANAGEMENT UNIT (CREOSOTE WORK TANK AREA) WHICH IS BEING COVERED CONCURRENT WITH THE DANGEROUS WASTE MANAGEMENT AREA.

PLAN

CLOSURE CONSTRUCTION AREA

SCALE: 1"=50'-0"



PLAN

CLOSURE CONSTRUCTION AREA

SCALE: 1"=50'-0"

FIGURE 1.1

CLOSURE CONSTRUCTION AREA

NO.	DATE	BY	DESCRIPTION
0	11-8-85	TDK	ISSUED FOR CLOSURE PLAN

REVISIONS

D.E. PROJECT NO. 3901

INTERNATIONAL PAPER COMPANY
ENGINEERING SERVICES — DESIGN ENGINEERING
LONGVIEW TREATED WOOD PRODUCTS

ACTIVITY I
SITE PREPARATION

SCALE			DRAWING NO.
AS NOTED	DRN.	J.E.F. 10-2-85	0001-LV-13
	CKD.	TDK 10-23-85	
	APP.		

2. PRE-CLOSURE ACTIVITIES

Prior to closure of the former waste management areas, a number of pre-closure activities were conducted. These activities consisted of the following:

- o waste inventory reduction,
- o impoundment backfill after inventory reduction,
- o removal of underground piping in the closure construction area, and
- o replacement of wells LL-02.05 and LL-02.32 and the vertical extension of wells LL-02.17 and LL-02.64.

The pre-closure activities are discussed in the following sections.

2.1 Waste Inventory Reduction

Excavation and removal of all EPA hazardous and WDOE dangerous wastes (hazardous and dangerous wastes) from the waste management areas was conducted in May, 1985. These wastes were disposed of in the Chem Security Systems, Inc. (CSSI) TSD facility near Arlington, Oregon. This was accomplished as part of a 1985 site waste inventory reduction program conducted for the entire facility.

The wastes were excavated using standard excavation equipment (i.e., backhoe, front-end loader, bulldozer) and transported by trucks to the CSSI TSD facility for disposal. The wastes were transported by Crosby and Overton, Inc. Photographs of the equipment and the excavation process are included as Photographs 1 through 5 in Appendix B.

Appendix C contains the uniform hazardous waste manifest forms documenting the transport of the wastes to the CSSI facility. The manifest forms indicate a total of 1056.8 cubic yards of hazardous waste solids (K001 sludges containing creosote and pentachlorophenol) were removed from the waste management areas. The forms document the waste removal from the waste management areas as occurring between May 2 and May 10, 1985.

Soil samples were obtained from the waste management impoundments after the 1985 waste removal. A total of five samples were submitted to the University Hygienic Laboratory for analyses for pentachlorophenol and creosote constituents. The concentrations of the constituents present in the soil ranged from below

detection limits to 312 milligrams per kilograms (mg/kg). The test results confirmed that all extremely hazardous wastes were removed from the waste management areas. The test results are presented in Appendix C.

The need for an equipment decontamination station, such as the station presented in the Closure Plan, was eliminated during field operations. All hazardous liquid was pumped from the impoundments prior to the excavation. The excavation was then performed with only one backhoe within the impoundments. The backhoe loaded haul trucks which were not allowed to enter the impoundments. The trucks drove over large plastic sheets. Drainage from the plastic sheets was directed back to the impoundments, where it was solidified with lime. This material was later excavated and taken to the CSSI TSD facility for disposal. The plastic sheets also were taken to the CSSI TSD facility for disposal. The backhoe was cleaned at the equipment station. Waste water and soil from the cleaning were collected and taken to the CSSI TSD facility.

2.2 Impoundment Backfill

The second pre-closure activity involved the backfilling of the impoundments after the 1985 inventory reduction. In October 1986, the two waste management area impoundments were backfilled. After the inventory reduction waste excavation, the first impoundment ranged in depth from 1 ft. to over 8 ft. This impoundment was backfilled with a gray, fine to medium sand which was compacted to at least 95 percent of the material's Standard Proctor Dry Density (ASTM D-698). The second impoundment was about 5 ft. deep after excavation and also was backfilled with the gray, fine to medium sand. The backfill in impoundment 2 also was compacted to greater than 95 percent of its Standard Proctor Dry Density.

International Paper contracted Gibbs and Olson, an independent registered professional engineering firm, to supervise the impoundment backfill, as shown by the attached letter from International Paper to Gibbs and Olson, dated August 20, 1986. This letter also is included in Appendix D.

The backfilling and compaction operation were observed by a representative of L. R. Squier Associates, Inc., a geotechnical engineer, and by Mr. Neil Alongi of Gibbs and Olson, Inc. The backfilling and compaction observations and test results are discussed in a letter from Mr. Olson of L. R. Squier to Mr. Alongi. This letter of documentation is included in Appendix D. The L. R. Squier letter was provided to James L. Grant and Associates by Mr. John Duncan of Gibbs and Olson. Mr. Duncan summarized the 1986 backfill operations in a cover letter and

referenced several photographs documenting the backfill work. Several of these photographs are included in Photographs 6 through 10 in Appendix B.

2.3 Piping Removal

Piping which transferred hazardous materials was removed from the closure construction area by International Paper as a pre-closure activity. The piping was removed during the waste inventory reduction excavation process. The removed piping was cleaned and then shipped for disposal to the CSSI TSD facility in Arlington, Oregon. The fire line and the natural gas line did not transfer hazardous materials and where therefore capped and left in place. No active pipes were left in place. The piping locations are shown on the closure construction area map in Figure 1.1.

The removal and cleaning of the piping was verified by the WDOE during the Dangerous Waste (DW) Compliance Evaluation Inspection on August 21, 1986.

2.4 Monitoring Well Replacement and Extension

Monitoring wells of cluster group 2, including LU-02.05, LL-02.17, LL-02.32 and LL-02.64 are located within the waste management areas. To accommodate the proposed cover thickness, the above ground portion of wells LL-02.17 and LL-02.64 were extended by about 2 feet. Because of questionable well completion details, International Paper chose to abandon and replace wells LU-02.05 and LL-02.32 at the same time. The datum elevations of the replacement wells were set about 2 feet higher than the original wells.

The well abandonment, replacement well installation and existing well extensions were performed by James L. Grant and Associates, Inc. (JLGA) between September 12 and 14, 1989.

The wells were abandoned in accordance with State statute WAC 173-160-415 "Abandonment of Wells". Abandonment was accomplished by pulling the inner casing and well screen, augering to the termination depth of the borings with larger diameter augers to remove remaining casing and annular seal, and backfilling the borings with a high-solids bentonite grout. Well abandonment forms were submitted to the Washington Department of Ecology by Kring Drilling Company, Inc.

The surface casings at wells LL-02.17 and LL-02.64 were extended by:

- filling the annular space between the PVC well casing and steel protective casing with sand,
- cutting the hinged, locking cover off,
- attaching additional PVC via a slip coupling secured with small, stainless steel screws, and
- welding an additional length of protective casing to cover the extended PVC well casing.

The replacement wells were drilled adjacent to the abandoned original wells. Each well was installed according to WDOE procedures. A 3-foot long slotted screen was installed in well LL-02.05. A 10-foot long slotted screen was installed in well LL-02.32. The annular seal at each wells consists of a silica sand pack, a sodium bentonite pellet seal, and a portland cement/sodium bentonite pellet seal. The replacement wells were installed to the same depth as the original wells.

The well abandonment and replacement well installation was discussed in the "Fourth Quarter and 1989 Annual Report, Ground-Water Quality Assessment Program" prepared by JLGA and dated February 22, 1990. This report was previously submitted to the WDOE. The "Resource Protection Well Reports" were submitted to the State by Kring Drilling Company, Inc., the drilling subcontractor for the well replacement and abandonment. Monitoring well records for the replacement wells LL-02.05R and LL-02.32R are included in Appendix E.

3. CLOSURE ACTIVITIES

Closure of the waste management areas began in October, 1989 and was completed in March, 1990. Closure activities consisted of the following:

- construction of an engineered cover consisting of native soils, volcanic ash, high density polyethylene, and topsoil;
- grading of all areas in accordance with the engineered cover and site drainage system;
- construction of a waste management area perimeter security fence;
- seeding of the waste management area; and
- performance of engineering, procurement, and construction monitoring activities and certification of closure to verify closure implementation in accordance with closure plans and specifications.

The closure steps are discussed in detail in the following sections of this Closure Certification Report.

Because some dangerous waste constituents remained in the impoundment subsoils after the inventory reduction, International Paper closed the waste management areas in accordance with regulation 40 CFR Subpart G and 265.310. The residual waste constituents remaining in the impoundments are in the subsoils. These soils were stabilized to a bearing capacity sufficient to support the final engineered cover as indicated by the compaction efforts and test results discussed in the L. R. Squier letter of 1986. This letter is included in Appendix E.

International Paper contracted Gibbs and Olson, Inc. of Longview, Washington, to supervise and certify the closure activities. Gibbs and Olson is a registered professional engineering firm. International Paper contracted Gundle Lining Systems, Inc. of Houston, Texas to supply and install the polyethylene component of the closure cover. Local contractors performed the remaining closure activities.

3.1 Cover Installation

The engineered cover installed at the Longview facility was designed to comply with the requirements for the closure of surface impoundments as required by WAC 173-303-650(6)(a)(ii).

The engineered cover has as its primary component a 40-mil thick High-Density Polyethylene (HDPE) barrier. The HDPE will function to eliminate percolation of precipitation through the closed impoundments. During installation, the HDPE was keyed into the upper silt layer located in the facility's subsurface soils. The silt layer was identified in the field by changes in the color and properties of the soils and was found at depths about 4 to 10 feet below the surface. By keying the liner into the silt layer, migration of the remaining dangerous waste constituents within the waste management area will be minimized.

The characteristics of the cover for the waste management areas were described in the Closure Plan in response to regulation 40 CFR 265.310(c)(5)). In general, the cover consists of a 40 mil high density polyethylene (HDPE) sheet covered by six inches of sand for drainage and two feet of native topsoil to support the growth of native grasses.

The engineered cover was constructed by placement of the following components over the waste management area encompassing impoundments 1 and 2 and the intervening area between the ponds.

- Native soil or volcanic ash fill and a 3-inch volcanic ash layer for the cover subgrade.
- 40 - mil high-density polyethylene
- 6 inch layer of sand for drainage
- 2 foot layer of native topsoil

The cover components were installed between October, 1989 and January, 1990. A map showing the engineered cover extent and the cover details is presented as Figure 3.1.

The following list describes the adherence to the cover and HDPE specifications during the closure proceedings and references the certification documentation pertaining to each specification. The HDPE engineering specifications are included in Appendix F, Item 1. The documentation referenced is included as Items 2 to 14 in Appendix F. Photographs 11 through 30 in Appendix B document the cover installation.

ADHERENCE TO HDPE LINER SPECIFICATIONS

I. General

No documentation required.

II. Site Preparation

A.1. to A.4.

No documentation required.

A.5.

Certification letter, signed by Mr. David Herreth of Gundle, is presented in Item 2. The subgrade was tested for compaction by Professional Service Industries, Inc. The test results are presented in Item 3 of Appendix F.

III. Materials

A.1.a.

The HDPE materials were manufactured by Gundle. The resin materials were manufactured by the Phillips 66 Company. Laboratory testing certification for all properties identified in section A, except environmental stress crack resistance, was performed by Gundle. This certification is presented in Item 4, Appendix F. Environmental stress crack resistance testing was performed by Phillips 66. The results of this testing are included in the Phillips 66 Company certification sent to Gundle. This certification is presented in Item 5, Appendix F.

The installed HDPE conforms to the original specifications with the exception of tensile strength at yield. The HDPE supplied does, however, conform to the minimum tensile strength at yield specified by Gundle for its products. The HDPE materials accepted at the site by Mr. John Duncan, representing International Paper, had an average tensile strength at yield of 2666 psi. The Gundle specification for tensile strength at yield is 2375 psi (40 mil) and 2333 psi (60 mil). Mr. John Duncan, professional engineer, discussed the tensile strength property and the specification in a letter dated March 12, 1990. In this letter, Mr, Duncan outlines several reasons as to why the HDPE installed, although below specification with respect to tensile strength, is acceptable for this closure application at the Longview facility. This letter is included as Item 6, Appendix F.

A.1.b.

Certification of the percentage of carbon black present in the HDPE is included in the Gundle laboratory quality assurance certification in Item 4, Appendix F. The percentage of carbon black was greater than 2 percent in all tests.

B. to I.

No documentation required.

IV. Installation

A.

As-built drawings prepared by Gundle are presented in Item 7, Appendix F.

B.

No documentation required.

C.

A certification letter that field welds have a seam strength of a minimum of 100 percent of the tensile strength of the parent material, signed by Mr. David Herreth of Gundle, is presented in Item 8, Appendix F.

V. Quality Assurance

A.1.

Gundle specified that the resin used in the HDPE manufacture be supplied by the Phillips 66 Company. Quality assurance on the resin was provided to Gundle by the Phillips 66 Company. The quality assurance documentation is presented in Item 5, Appendix F.

A.2.

The environmental stress crack resistances, reported by the Phillips 66 Company to Gundle, exceeded 1000 hours as specified.

A.3.

The resin supplied by the Phillips 66 Company conformed to the manufacturer's specifications. The Phillips 66 Company certification is presented in Item 5, Appendix F.

B.1. to B.2.

No documentation required. Information included in Gundle laboratory quality assurance certificates in Item 4, Appendix F.

B.3.a.

The HDPE thickness was measured by Gundle. The sheet thicknesses were within 0.004 inches of the specified thickness.

B.3.b.

Physical tests on the HDPE materials were conducted daily. These test results are presented in Item 4, Appendix F.

B.3.c.

The percentage of carbon black in the HDPE was was determined daily. These test results are presented in Items 4 and 5, Appendix F.

B.3.d. to B.3.e.

The label documentation, identifying the HDPE roll serial number, date of manufacture, resin type and lot number, roll dimensions, and roll weight, was to be attached to materials delivered in the field. These charts and labels are not available. The charts and labels were checked in the field prior to acceptance of the materials by International Paper. The serial number of each roll was recorded on the daily reports prepared by Gundle. These reports are presented in Item 9, Appendix F.

C.1.

No documentation required.

C.2.a.

No documentation required.

C.2.b.

All welds attained their maximum strength within six hours as certified by Mr. John Duncan in his letter dated February 7, 1990. This letter is presented in Item 10, Appendix F. Pull tests were performed at the site. This testing was observed and certified by Mr. John Duncan in his February 12th letter. A remnant test strip from a pull test is presented, along with a discussion of the test procedure, in Item 11, Appendix F.

Destructive weld testing, performed in the laboratory, was conducted by Gundle. The testing results are presented in Item 12, Appendix F.

C.2.c.1.

The visual inspection of welds was performed and certified by Mr. John Duncan. This documentation is included in Item 10, Appendix F.

C.2.c.2.

All welds were vacuum tested in the field rather than scanned by an ultrasonic transducer. Vacuum testing is the equivalent of ultrasonic transducer scanning. The testing method substitution was approved by Mr. John Duncan, as discussed in his March 12, 1990 letter. This letter is presented in Item 12, Appendix F. Vacuum testing documentation is included in the daily reports and the vacuum test report provided by Gundle. The daily reports are presented in Item 9, Appendix F. The vacuum test reports are presented in Item 14, Appendix F. Welds which required repairs are noted on the daily logs. The vacuum test report from Gundle notes repairs required and reinspection dates. All repaired areas were reinspected and the welds were deemed acceptable by Gundle.

Certification that all weld strengths exceeded the strength of the parent material and are acceptable as defined by the specifications, was provided by Mr. David Herreth of Gundle. This certification is presented in Item 8, Appendix F.

C.2.c.3.

The testing documentation and certifications referenced were compiled in part by Gundle, the manufacturer's representative.

C.3.a.

A test report has been complied by Gundle and consists of the Gundle Quality Assurance Certificates, the Phillips 66 Company resin certifications, a Gundle weld quality control test report, vacuum test report, pre-weld qualification, and daily progress reports.

C.3.b.

The resin specified by Gundle was furnished. Testing certification is attached. The HDPE material and installation were accepted by Mr. John Duncan, registered professional engineer, and by Mr. Jay Amin, representative of Interna-

tional Paper, the owner.

3.2 Seeding of Topsoil Layer

The final component of the cover consists of a topsoil layer seeded with a mixture recommended by the U.S. Department of Soil Conservation Service. In Section 265.310(a)(2) of the 1986 Closure Plan, the application rate for seeding was set at 21 pounds per acre for the seed mixture. The actual application rate used in the 1990 seeding was about 75 pounds of seed mix per acre. The seeding and fertilizing was performed by American Landscape Maintenance of Kelso, Washington. The work was completed according to the material specifications and methods listed in their proposal to Gibbs and Olson, dated November 13, 1989. This proposal is presented in Appendix G. The seeded cover is shown in Photographs 28 and 29 of Appendix B.

The topsoil cover was sloped and graded to prevent ponding on top of the HDPE membrane and allow for drainage away from the closed impoundments.

3.3 Fencing

In accordance with regulation 40 CFR 265.14(c), access to the closed waste management areas will be limited. The unauthorized entry of persons or livestock into the closed former waste management area is prohibited by a facility security fence and main entrance gate which is manned by a guard 24 hours a day. To provide additional security, a 5-foot high, 11 gauge chain link fence was placed along the perimeter of the waste management area. Specifications for the fence are given in Appendix H, a proposal submitted to Gibbs and Olson by Evergreen State Fence Co. Evergreen completed the fence installation, according to these specifications, on January 29, 1990.

In the 1986 Closure Plan, International Paper states that it will install a 5-foot high, 12 gauge livestock fence. It should be noted that 11 gauge fence is stronger than 12 gauge fence. This deviation from the Closure Plan specifications should not hinder the fence from performing as required.

According to Mr. Jay Amin of International Paper, the fence has warning signs which are legible at a distance of 25 feet and have the legend "Danger - Unauthorized Personnel Keep Out". The fence is shown in Photograph 30 in Appendix B.

In addition to the closed waste management area perimeter fence, the entire International Paper facility is surrounded by a fence. Access to the facility is limited to a gate which is guarded 24 hours a day.

NOTE:
SHADED AREAS IN PLAN DENOTE DANGEROUS WASTE MANAGEMENT AREA

NEW WASTE MANAGEMENT AREA SECURITY FENCE

SOLID WASTE MANAGEMENT UNIT

AIR RELIEF VENT (TYP.) SEE DETAIL-"1"

BOILER HOUSE

TREATMENT BLDG. FOUNDATION

GATE

V-DITCH

EXIST. SITE PERIMETER FENCE

SITE PERIMETER DITCH

N

PLAN
WASTE MANAGEMENT AREA
SCALE: 1"=50'-0"

NEW SECURITY FENCE (5'-HIGH, 12-GA. WIRE MESH LIVESTOCK FENCE)

GRASS COVER

2'-6" (COVER)

SECTION (B)
SCALE 1"=30'-0" HORIZ.
1"=10'-0" VERT.

LINE V-DITCH WITH RIP-RAP OVER HDP COVER, SAND LAYER, AND UP INTO TOPSOIL.

GRASS COVER

TOPSOIL

SAND LAYER

40-MIL HDP COVER

3" ASH BEDDING

DETAIL "2"
TYPICAL V-DITCH
N.T.S.

263'-0"(±)

IN EACH NEW V-DITCH PROVIDE RIP-RAP OVER HDP COVER. SEE DETAIL "2"

AIR RELIEF VENT

GRASS COVER

V-DITCH (3:1 SLOPE) TYP.

EXIST. SITE FENCE

NEW SECURITY FENCE (5'-HIGH, 12-GA. WIRE MESH LIVESTOCK FENCE)

NEW ROAD

2'-0" (COVER)

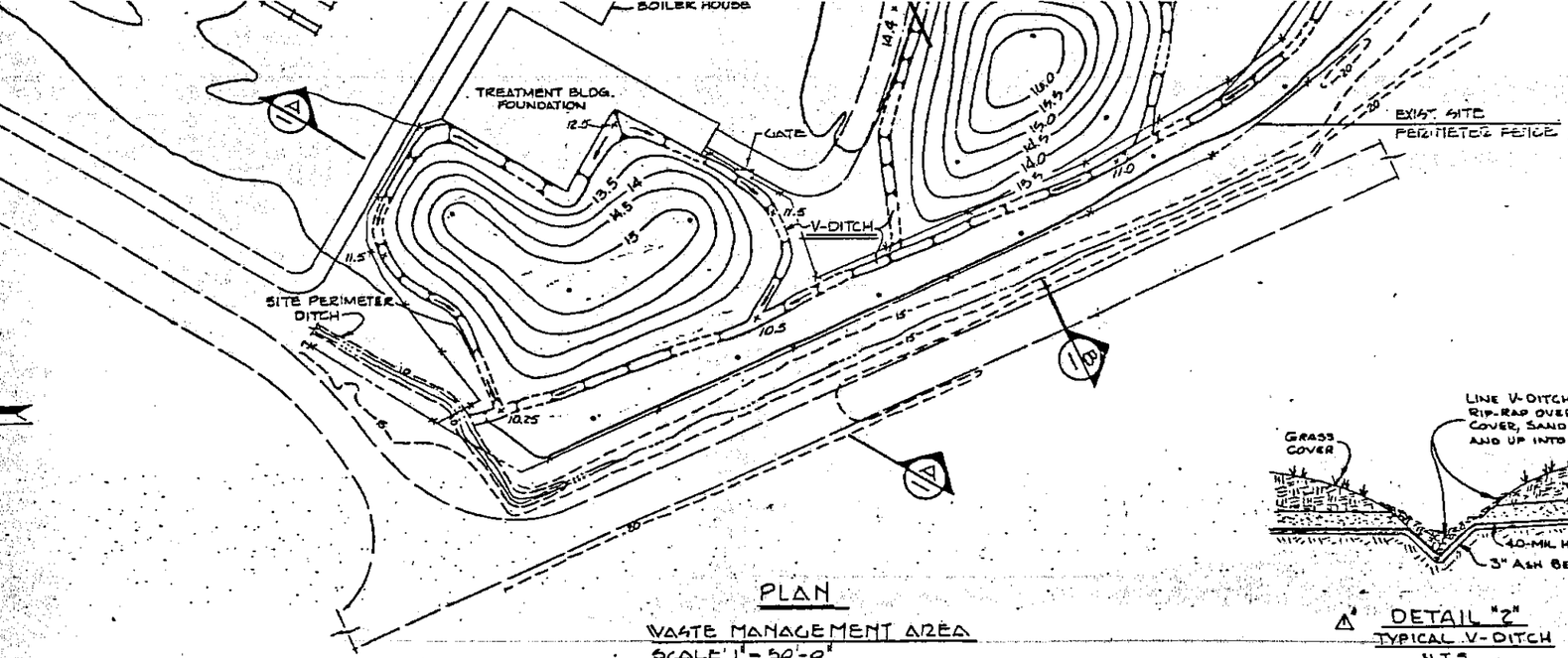
2'ϕ POLYETHYLENE AIR RELIEF VENT

GRASS COVER

TOPSOIL

2'-0"

2'-6" COVER



PLAN

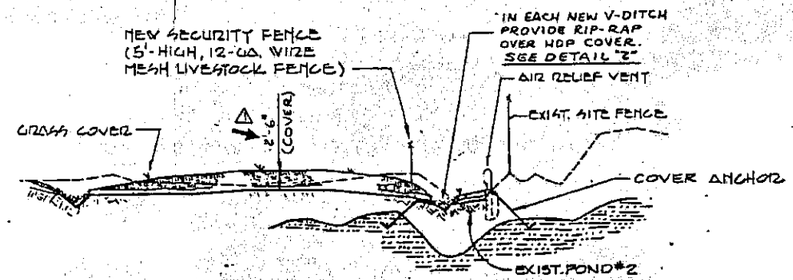
WASTE MANAGEMENT AREA

SCALE: 1" = 50'-0"

A DETAIL "2"

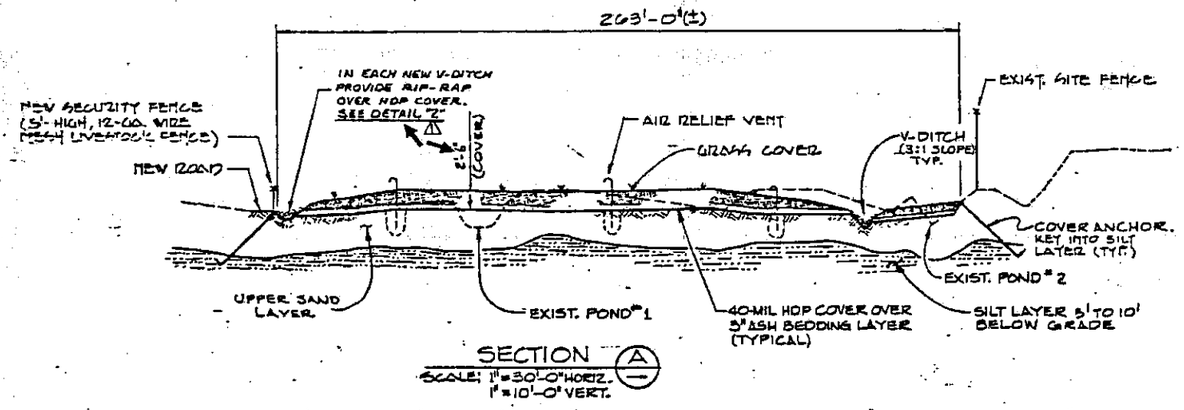
TYPICAL V-DITCH

N.T.S.



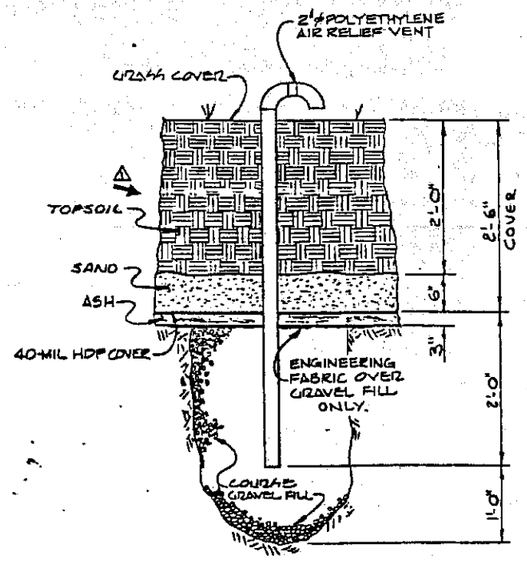
SECTION B

SCALE: 1"=30'-0" HORIZ. 1"=10'-0" VERT.



SECTION A

SCALE: 1"=30'-0" HORIZ. 1"=10'-0" VERT.



DETAIL-"1"

SCALE: 1"=1'-0"

(TYPICAL 14 PLACES)

LEGEND:

- EXIST. ROAD
- NEW ROAD
- EXIST./CONTOUR
- NEW CONTOUR

FIGURE 3.1

ENGINEERED COVER

NO.	DATE	BY	DESCRIPTION
1	10-1-86	WKR	REV. COVER, ADD V-DITCH DET. & CONT
0	11-8-85	KDD	ISSUED FOR CLOSURE PLAN

REVISIONS

D.E. PROJECT NO. (3901) 0114 D

INTERNATIONAL PAPER COMPANY

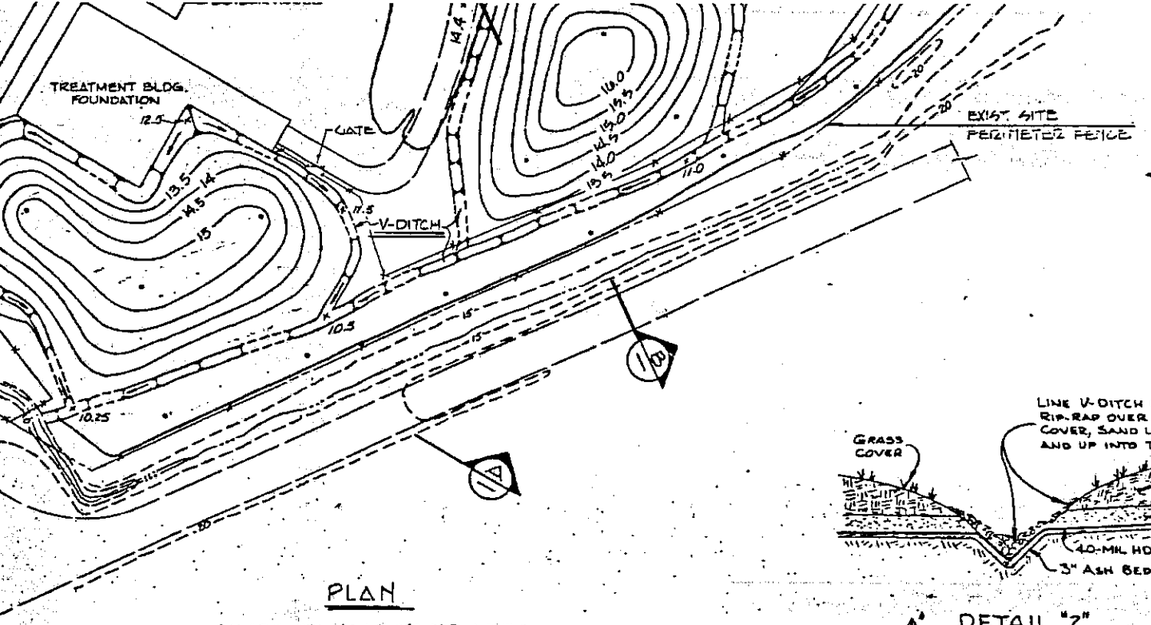
ENGINEERING SERVICES — DESIGN ENGINEERING

LONGVIEW TREATED WOOD PRODUCTS

DANGEROUS WASTE IMPOUNDMENTS CLOSURE PLA

ENGINEERED COVER

SCALE				DRAWING NO.
AS NOTED	DES.	J.B.F.	9-12-85	0006-LV-
	CHK.	K.D.D.	9-17-85	
	APP.	[illegible]	10/24/85	



PLAN

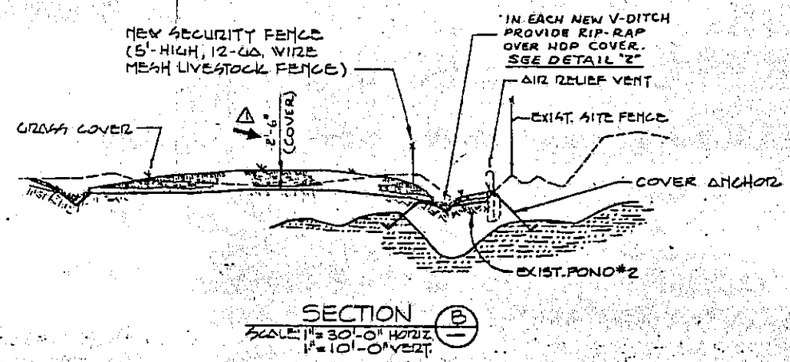
WASTE MANAGEMENT AREA

SCALE: 1" = 50'-0"

△A DETAIL "2"

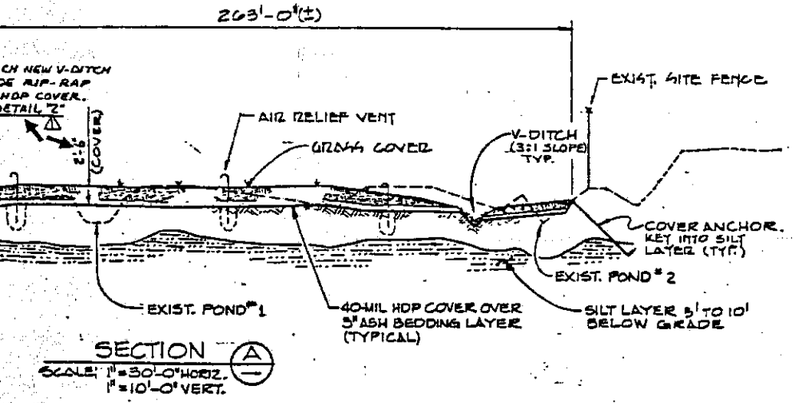
TYPICAL V-DITCH

N.T.S.



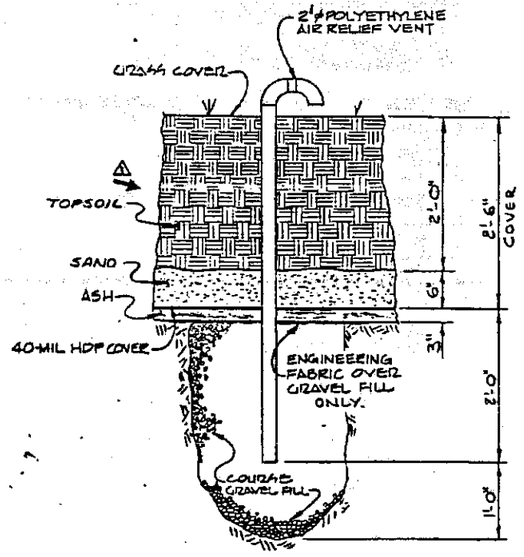
SECTION (B)

SCALE: 1" = 30'-0" HORIZ. 1" = 10'-0" VERT.



SECTION (A)

SCALE: 1" = 30'-0" HORIZ. 1" = 10'-0" VERT.



△1 DETAIL-"1"

SCALE: 1" = 1'-0"

(TYPICAL 14 PLACES)

LEGEND:

- EXIST. ROAD
- NEW ROAD
- EXIST. CONTOUR
- NEW CONTOUR

FIGURE 3.1

ENGINEERED COVER

NO.	DATE	BY	DESCRIPTION
1	10-1-86	WKR	REV. COVER, ADD V-DITCH DET. & CONTOURS
0	11-8-85	KPD	ISSUED FOR CLOSURE PLAN

REVISIONS

O.E. PROJECT NO. (3901) 0114 D

INTERNATIONAL PAPER COMPANY

ENGINEERING SERVICES — DESIGN ENGINEERING

LONGVIEW TREATED WOOD PRODUCTS

DANGEROUS WASTE IMPOUNDMENTS CLOSURE PLAN ENGINEERED COVER

SCALE: AS NOTED	DES.	J.B.F.	9-12-85
	CKD.	W.D.D.	9-17-85
	APP.	[illegible]	10/24/85

DRAWING NO. 0006-LV-13

10-1-86
Rev. 1
(6) Prints - R.E.S. West
(1) Print - Envir. (WKR)

DRAWING NUMBER 6-LV-13

PROJ. 0114

4. POST-CLOSURE ACTIVITIES

4.1 Notice to Local Land Authority

The survey plat required by regulation 40 CFR section 265.119 will be submitted separately from this report. The survey plat was prepared and certified by Mr. John Duncan of Gibbs and Olson, Inc. of Longview, Washington. Mr. Duncan is a professional land surveyor and professional engineer in the State of Washington.

4.2 Notice in Deed to Property

The notation on the deed to the facility, as required by regulation 40 CFR 265.120, will be completed by International Paper. A copy of this notation will be submitted separately from this report.

The property deed notation will state that the land has been used to manage dangerous waste and its use is restricted under regulation 40 CFR 265.117(c). The deed also will contain a notation restricting, through a title encumbrance, any activities that are likely to result in damage to the cover, monitoring system, site drainage, or security fence as approved in the plan. Prohibited activities will include, but will not be limited to, excavation and grading other than that required for maintenance. A copy of this notation will be submitted to WDOE within 45 days after closure certification.

4.3 Post-Closure Maintenance

Following certification of closure, the only maintenance required at the closed waste management areas will be the quarterly inspection and repairs to the cover (minor erosion, settling, and removal of deleterious vegetation), ground-water monitoring wells, site drainage system, and the security fence. International Paper will comply with the post-closure requirements and schedules included in the "Closure Plan and Post-Closure Plan for the Treated Wood products Plant, Longview, Washington". This plan was prepared by International Paper and is dated July 16, 1986. The plan was revised on October 3, 1986.

APPENDIX A

CLOSURE PROCEDURES

CLOSURE PROCEDURES

The Closure Plan for the Longview facility includes two basic components. These are: site preparation and construction of an impermeable engineered cover over the waste management area. Each of these basic closure components is described below.

I. Site Preparation (see attached Drawing 0007-LV-13).

The following activities will be conducted during the site preparation phase of the impoundment closure:

A. Establish limits of controlled access area along the construction perimeter and a portable barricade placed at the entrance. A construction fence will be erected according to IPCo Specification 629. Also, a clean stockpile area will be located for storage of fill and cover components, if necessary.

B. Construct an equipment clean-up station according to IPCo Specification Hazardous Impoundment Closure Decontamination Area. The cleaning station will be located near the point of egress. Cleaning will be accomplished using portable steam cleaning and/or hydroblasting equipment with detergent.

C. Removal and relocation, as specified on Drawing 0007-LV-13, of underground piping in accordance with standard construction practices. Excavated piping will be cleaned for off-site disposal.

D. Removal of wells LL-01.15, LS-01.05, LL-02.17, LU-02.05, LL-02.32, and LL-02.64. Wells are to be removed by drilling out casing and filling with bentonite cement mix. Drilling wastes are to be placed in impoundment bottoms or containers for off-site disposal.

II. Cover Construction

Construction of the engineered cover will proceed in the following order.

A. Construction of cover over the area of Pond 1, Pond 2, and the adjoining area between the ponds.

The area will be recontoured as indicated on Drawing 0006-LV-13. Sufficient clean soil from the recontoured area should be available to fill both ponds. However, if additional fill is required it will be procured according to the criteria in 265.310(a)(4) of this document.

All fill will be placed in eight to ten inch lifts then compacted to 90 percent of maximum density according to ASTM D-698 (Standard Proctor). Three inches of ash will be placed over the dirt fill for bedding for the high-density polyethylene (HDP) liner.

The HDP liner will be installed according to the specification in this section and according to the manufacturers requirements. The liner will be domed with a two to five percent slope to prevent ponding on the liner. Installation drawings will be submitted to WDOE after a contractor has been selected and before liner installation begins.

Six inches of washed, run-of-bank sand will be placed on top of the HDP liner to serve as a drainage layer. The top layer of the cover will be two feet of native topsoil. This layer will be seeded according to IPCo Specification 607 and according to the attached recommendations from the Soil Conservation Service in Kelso, Washington.

B. Closure Certification.

The certification engineer will verify that closure activities are performed in accordance with the construction standards established on the following table. This table summarizes tasks and verification tests to be performed, standards to be imposed, anticipated test frequencies, and standardized test methodology, where appropriate.

As-built drawings will be submitted to WDOE following closure certification.

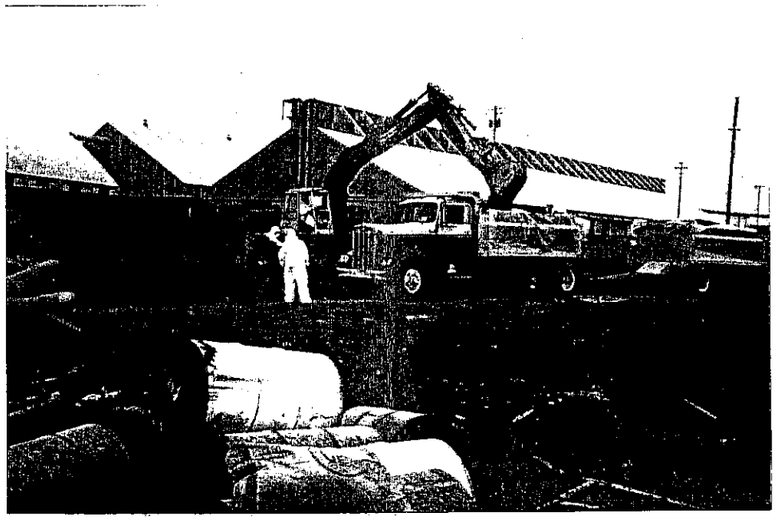
MAJOR ASPECTS OF TESTING AND VERIFICATION PROGRAM

Activity	Inspection Item	Verification	Frequency	Specification
Field Testing (Density Control)	Native Soils	Compaction Control	1/200 yd^2	±90% SPMDD) + 2% OMC ±85% SPMDD) ± 3% OMC
Surveys	All excavation, construction and grading operations	Control of line and grade of construction	Regularly during field operation	3rd order survey accuracy
Resident Field Engineer's Observations	All closure activities	Documentation of compliance with plan and specification	Daily	Standard engineering practice
Field Testing (hand auger)	HDP Cover Components	Verification of cover component thickness	1/500 yd^2	Thickness specification of ± 10%
Field Testing (Visual and Ultrasonic)	HDP Seams	Verification of proper seal	Each Seam	No tunnels or holidays
Field Testing (HDP Pull Test)	HDP Seams	Verification of seam strength	Each Seam	Weld must be as strong as material
Field Testing (Soil Mech. Properties)	Off-site soils (Fill material under liner)	Std. Proctor Permeability Plasticity index Part. size dist. Plate load bearing capacity	Once per borrow area	≥85% at optimal moisture $\geq 10^{-7}$ 0-35 0-15% gravel) 85-100% sand & fines To be determined

APPENDIX B

PHOTOGRAPHS OF CLOSURE ACTIVITIES

1



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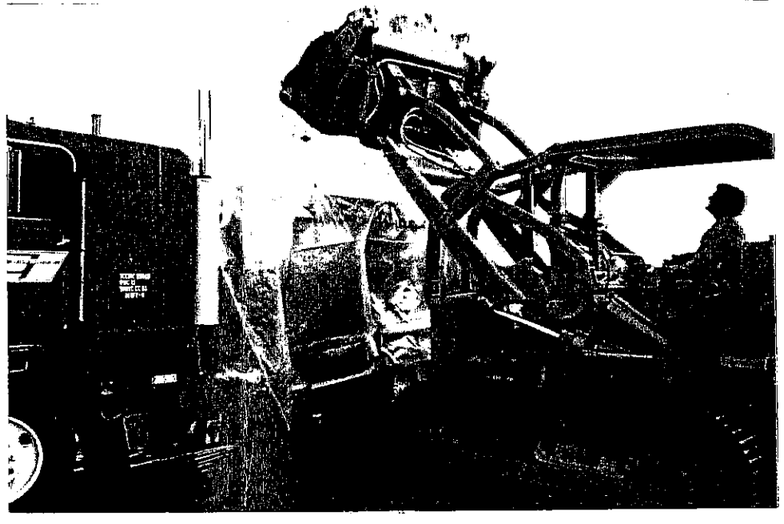

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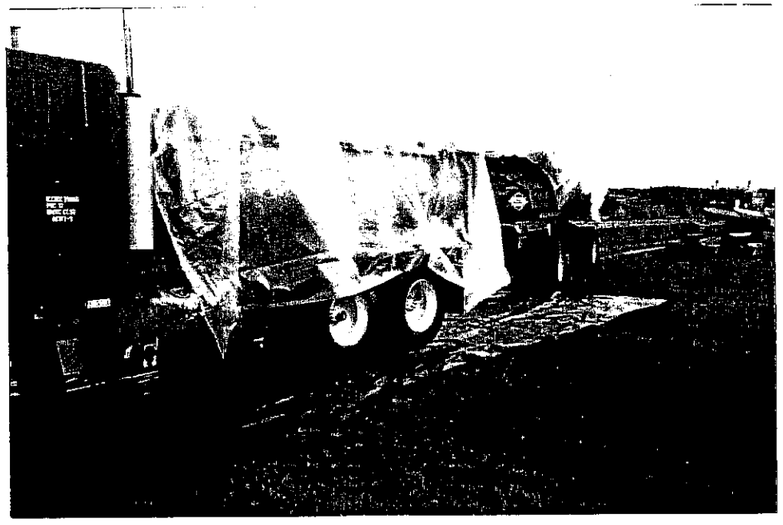

4

5

DESCRIPTION OF PHOTOGRAPHS

1. Excavation of dangerous and hazardous soils.
2. Excavation of soils and placement into haul trucks.
3. Placement of soils into lined haul truck.
4. Haul truck driving over ground surface covered to prevent spread of contamination.
5. Decontamination of haul truck.

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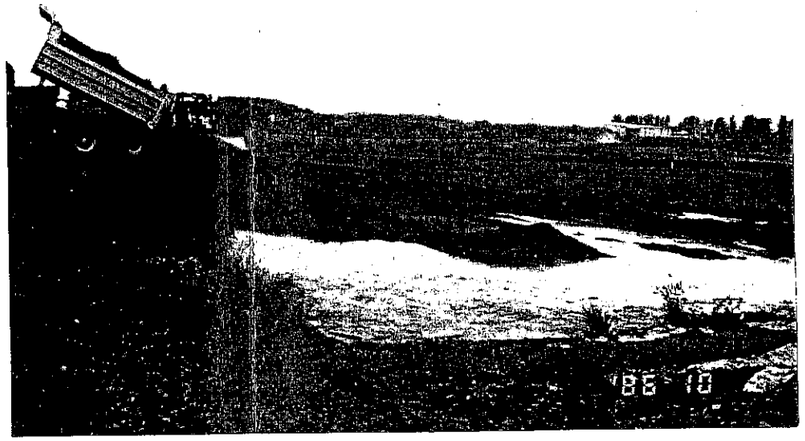
geotechnical engineering • management • computer science
ENGLEWOOD, COLORADO

PHOTOGRAPHS OF CLOSURE ACTIVITIES
INTERNATIONAL PAPER FACILITY
LONGVIEW, WASHINGTON

6

7



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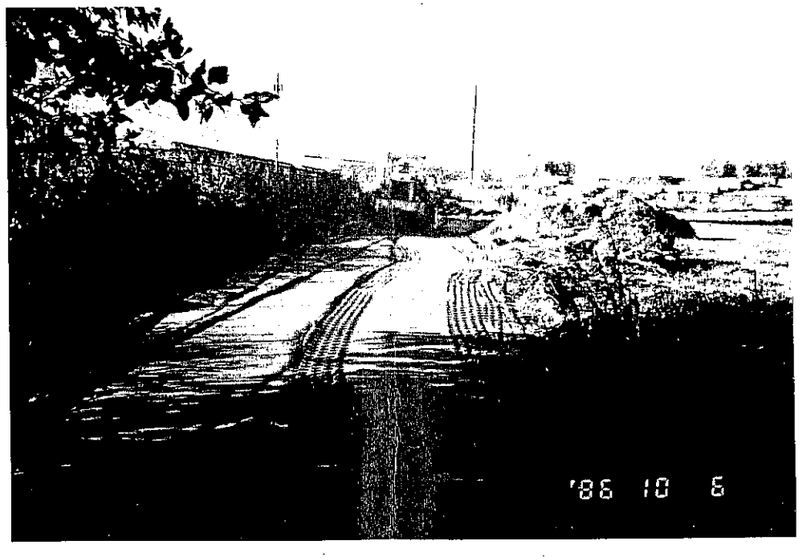

10

DESCRIPTION OF PHOTOGRAPHS

6. Waste management area (pond 1) prior to closure.

7. Waste management area (pond 2) prior to closure.

8. Backfill placement in waste management area (pond 1).

9. Backfill placement and compaction at waste management area (pond 1).

10. Backfill compaction at waste management area (pond 2).

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PHOTOGRAPHS OF CLOSURE ACTIVITIES
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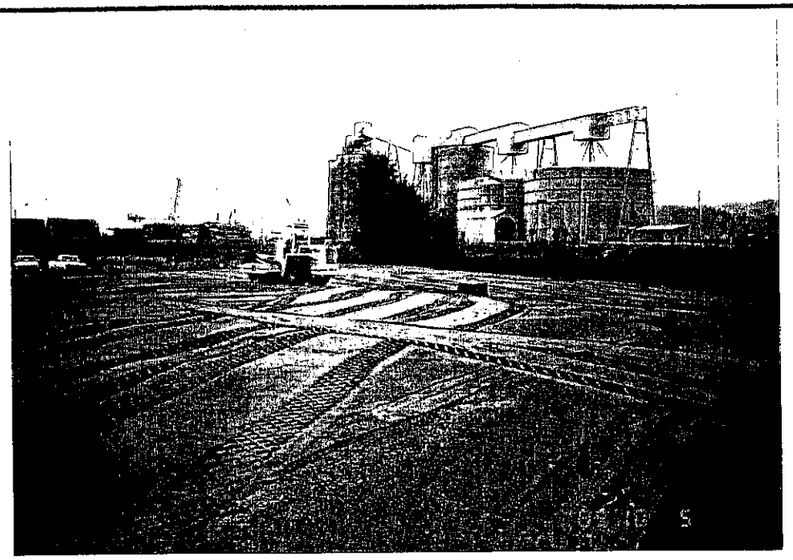
LONGVIEW, WASHINGTON



11

12

13

14

15

DESCRIPTION OF PHOTOGRAPHS

11. Preparation of base for HDPE liner. Roller used for compaction is shown.

12. Preparation of base for HDPE liner. Water application shown in background.

13. Compaction testing of base using a nuclear density gauge.

14. HDPE anchor trench.

15. HDPE anchor trench.

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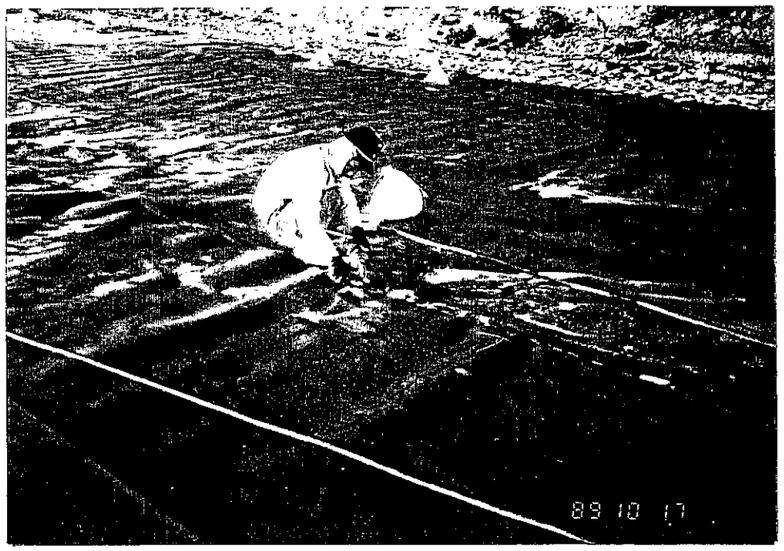
PHOTOGRAPHS OF CLOSURE ACTIVITIES
INTERNATIONAL PAPER FACILITY
LONGVIEW, WASHINGTON



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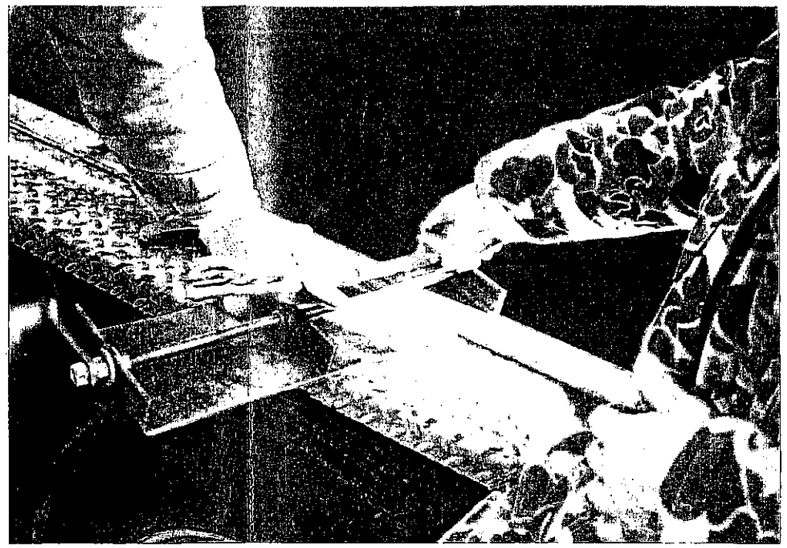

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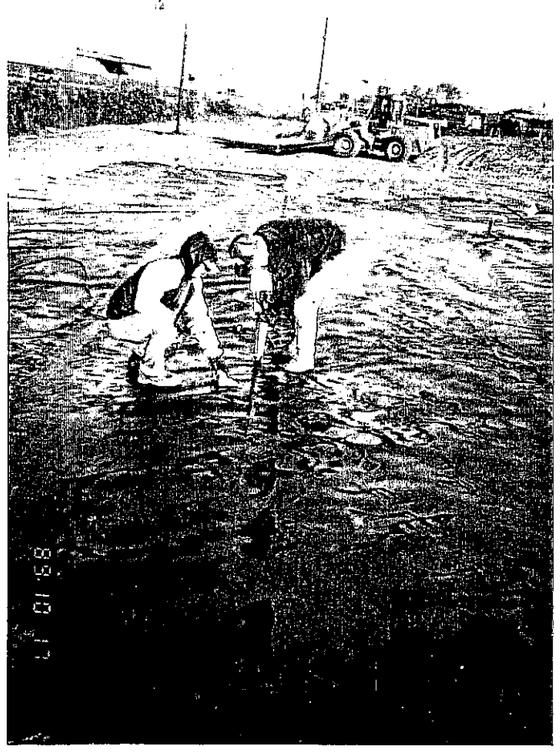

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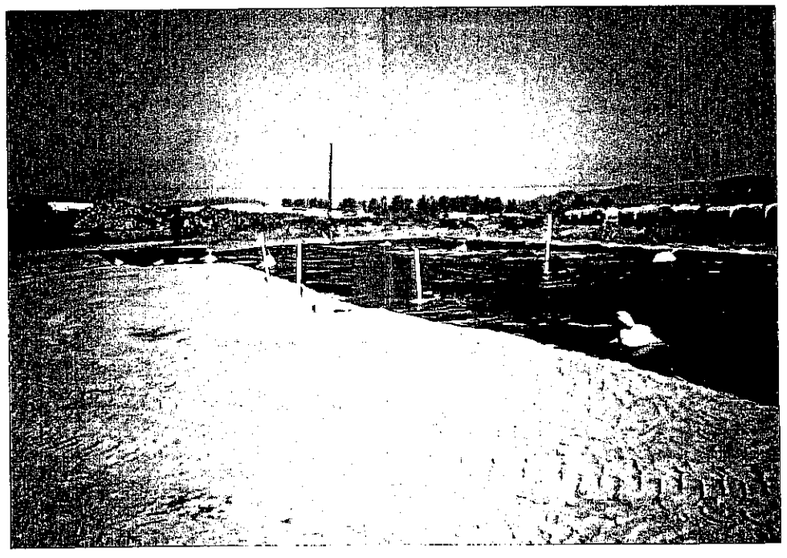

20

DESCRIPTION OF PHOTOGRAPHS

16. Cleaning at seam in preparation for welding.

17. Extrusion welding of HDPE sheets.

18. Field tensile test being performed on sample weld.

19. Extrusion welding of HDPE sheets.

20. Monitoring well and pipe extensions through the HDPE sheets.

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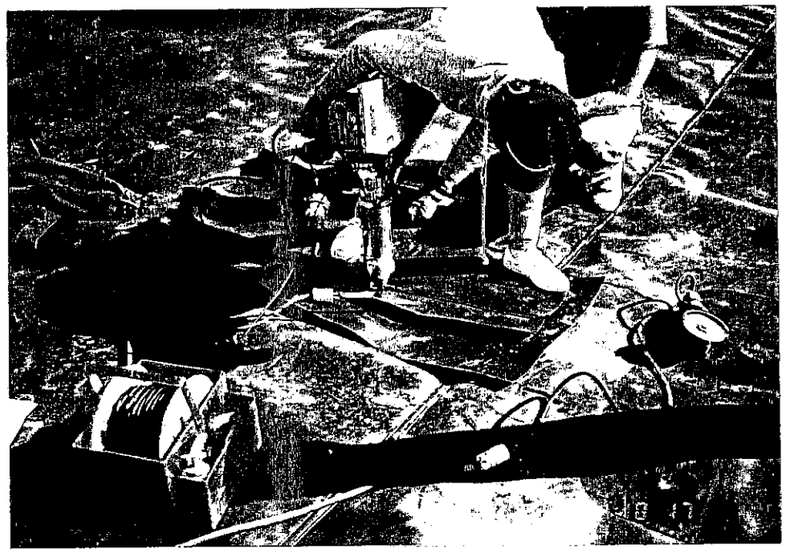
PHOTOGRAPHS OF CLOSURE ACTIVITIES
INTERNATIONAL PAPER FACILITY
LONGVIEW, WASHINGTON

21



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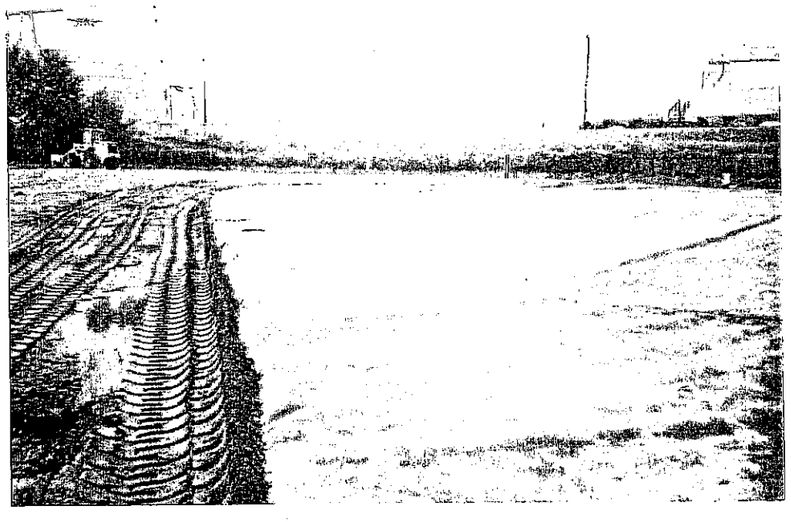

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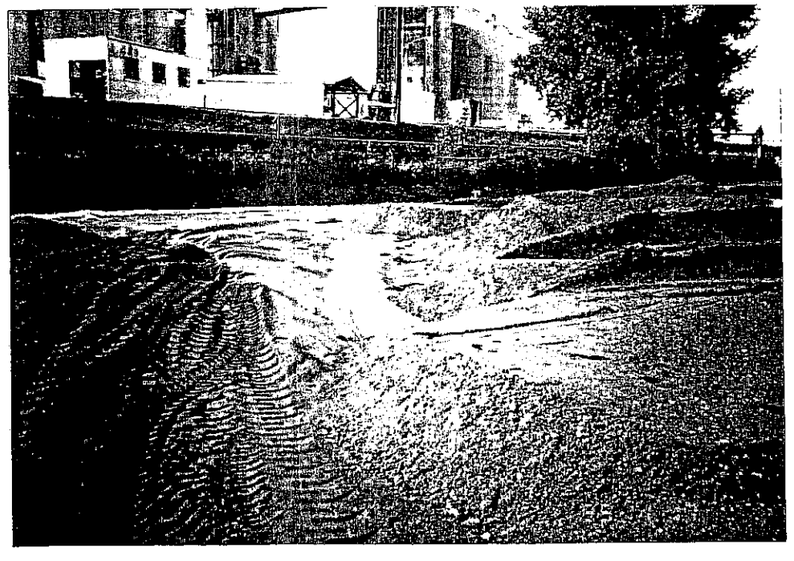

25

DESCRIPTION OF PHOTOGRAPHS

21. Repair of HDPE damaged during placement of cover.

22. Preparation of HDPE boot for pipe extension.

23. Boot placed around pipe extension.

24. Backfill placement in anchor trench.

25. Placement of soil layer over HDPE sheets.

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PHOTOGRAPHS OF CLOSURE ACTIVITIES
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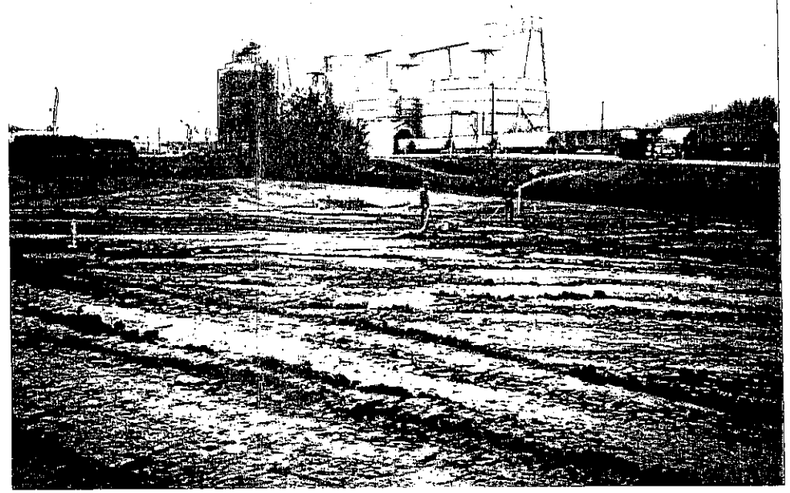
26

27



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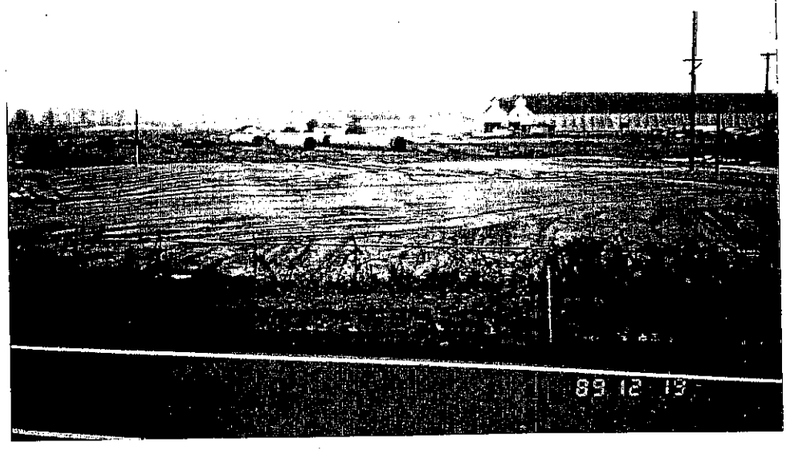

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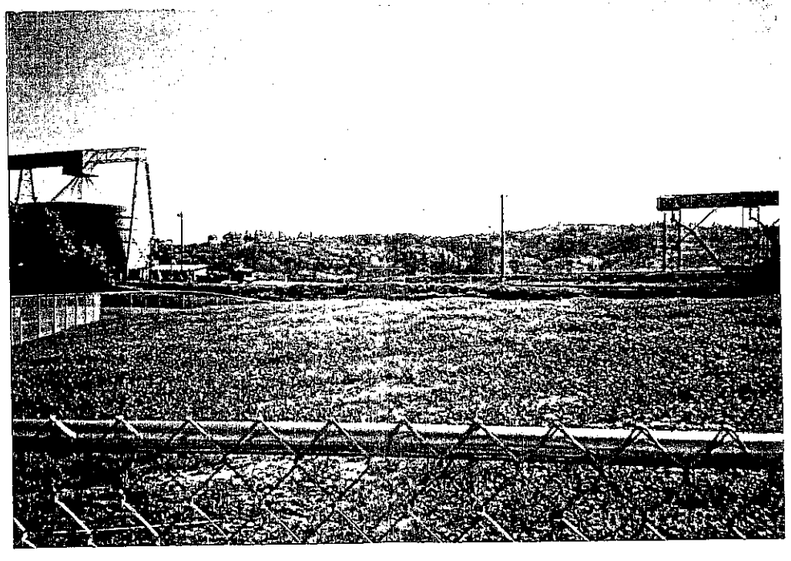

30

DESCRIPTION OF PHOTOGRAPHS

26. Placement of soil layer over HDPE sheets.

27. Monitoring well and pipe extensions through HDPE and soil layer.

28. Seeding of soil layer.

29. View of area after seeding completed.

30. View of area after perimeter fence placement.

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PHOTOGRAPHS OF CLOSURE ACTIVITIES
INTERNATIONAL PAPER FACILITY
LONGVIEW, WASHINGTON

APPENDIX C

WASTE INVENTORY REDUCTION DOCUMENTATION

CHEM-SECURITY SYSTEMS, INC. 73212 NATIONAL RESPONSE CENTER 1-800-424-8802
OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD.0.1.0.7.4.9.5.1.7 — Manifest Document No.
2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, P.O. 304 573, LONGVIEW WA, 10 INTERNATIONAL WAY
4. Generator's Phone (206) 423 2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc — 6. US EPA ID Number: ORD 0 5 0 9 7 3 4 3 7 — C. State Transporter's ID — D. Transporter's Phone 283-1152
7. Transporter 2 Company Name — 8. US EPA ID Number — E. State Transporter's ID — F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.** **Star Route** **Arlington, Oregon 97812** — 10. US EPA ID Number: ORD 089 452 353 — G. State Facility's ID — H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/ State Waste No.
a. HAZARDOUS WASTE SOLID NOS. (CREOSOTE & PENTACHLOROPHENOL) NA 9177	68 (BT) 1	DT	53940 64446	LB (BT)	F001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a.
b. Contaminated Soils Containing
c.
d. Creosote - Coal Pentachlorophenol

K. Handling Codes for Wastes Listed Above — CU. YD. 31.68

AREA	S	D	Q	PR	LBS / GAL
T10	12	R	H	4	LBS 53940

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)** E13922 D-81
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: J A C AMIN — Signature — Date: Month 05 Day 31 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: ROBERT C RED — Signature — Date: Month 05 Day 31 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month . Day . Year .

19. Discrepancy Indication Space: Wt. sent is 1620 less than that manifested. Truck # is in "container #" section. I called Joyce Johnson who called generator — John Mooley. He approved manifest chgs. (BT)

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: NANCY A. PROCTOR — Signature: Nancy A. Proctor — Date: Month 05 Day 31 Year 85

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - RETURN TO GENERATOR

7321

OREGON ACCIDENT RESPONSE CENTER

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 579 .10 - INTERNATIONAL WAY
LONG VIEW WASH

4. Generator's Phone (206) 432 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: ORD055097343?

C. State Transporter's ID

D. Transporter's Phone 283 4650

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9188	1	DT	DT51900	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote - coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above: WPS E13922 | Gls. | Qty. YD. 29.71

AREA	S	D	Q	PR	LBS 50590
T10	13	R	H	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. E13922
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C ATWIN | Signature | Date: Month 05 Day 05 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Maury Lambert | Signature | Date: Month 05 Day 05 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: NANCY A. PROCTOR | Signature: Nancy A. Proctor | Date: Month 10 Day 05 Year 85

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - RETURN TO GENERATOR

73214

OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 — Manifest Document No.
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, P.O. BOX 579 - 10 INTERNATIONAL WAY, LONGVIEW, WASH
4. Generator's Phone (206) 432-2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton INC
6. US EPA ID Number: WAD050973437
C. State Transporter's ID
D. Transporter's Phone 283-1150

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone 503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA9189	1 #4	DT	49540	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT.	CU. YD.
E13922		28.86

AREA	S	D	Q	PR	LBS / GAL
T10	12	R	I	4	LBS 49140

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a. E 13922
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: Jay C Amin — Signature: [signature] — Date: Month 5 Day 5 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MIKE ROBERTS — Signature: Mike Roberts — Date: Month 5 Day 5 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: NANCY A. Proctor — Signature: Nancy A. Proctor — Date: Month 05 Day 05 Year 85

GENERATOR / TRANSPORTER / FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC. 73209 NATIONAL R... OREGON ACCIDENT... 97031

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, PO BOX 597, 10 INTERNATIONAL WAY, LONGVIEW WASH

4. Generator's Phone (206) 432 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: WAD050973437 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.**, **Star Route**, **Arlington, Oregon 97812** | 10. US EPA ID Number: ORD 089 452 353 | G. State Facility's ID | H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	49.140	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Cresote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above: E13922 | CU. FT | CU. YD. 29.06 | AREA T10 | S 13 | D R | Q I | PR 4 | LBS 48700 | GAL

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)** E 13922
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 7 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Richard Henker | Signature | Date: Month 5 Day 5 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: NANCY A. PROCTOR | Signature | Date: Month 05 Day 05 Year 85

ORIGINAL - RETURN TO GENERATOR

7246

OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. Form designed for use on elite (12-pitch) typewriter.

Form Approved. OMB No. 2050-0039. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 0 7 4 9 5 1 7 — Manifest Document No.

2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONG VIEW WASH

A. State Manifest Document Number

B. State Generator's ID

4. Generator's Phone (206) 425-2440

5. Transporter 1 Company Name
Crosby & Overton Inc.

6. US EPA ID Number
WAD 0 5 0 9 3 4 5 7

C. State Transporter's ID

D. Transporter's Phone 283450

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number
ORD 089 452 353

G. State Facility's ID

H. Facility's Phone
503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1 (BT) 89	DT	44740	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above — CU. YD.
WPS E13922 — CU. YD. 25.21
AREA T-10 | S 14 | D R | Q I | PR 4 | LBS 44970 | GAL

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a. E13922 D-81
b.
c.
d. TRUCK # 89 (BT)

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN — Signature: J C Amin — Date: Month 5 Day 5 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: EUGENE GRIFFITH — Signature: Eugene Griffith — Date: Month 5 Day 5 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space — Truck # belongs in "Special Handling" instructions, not in "container" # "section". I called Joyce who called generator. John Motley approved manifest chg (BT)

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Paul Trullinger — Signature: Paul Trullinger — Date: Month 5 Day 6 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 73215 NATIONAL RESPONSE CENTER NO. OREGON ACCIDENT RESPONSE CENTER NO.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD01024957 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 512 (C INTERNATIONAL WAY
LONGVIEW, WASH
4. Generator's Phone (206) 423 2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Cross & Overton Inc | 6. US EPA ID Number: ORD050973437 | C. State Transporter's ID | D. Transporter's Phone 283 1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/L Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA9177		TDT	46.450	LBS	(T00)
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c.
d. Creosote Coal & Pentachlorophenol

Handling Codes for Wastes Listed Above: WP E13922 | CU YD 26.99

AREA	S	D	Q	PR	LBS 45950
T-10	12	R	I	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
E13922
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 15 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: TIM VANCE | Signature | Date: Month 5 Day 15 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: NANCY A. PROCTOR | Signature | Date: Month 5 Day 15 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC

73223

NATIONAL RESPONSE CENTER

OREGON ACCIDENT RESPONSE CENTER

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD091074951 7 — Manifest Document No.

2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONGVIEW WASH

4. Generator's Phone (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON INC — 6. US EPA ID Number: O.R.D.0.5.0.9.7.3.4.3.7

C. State Transporter's ID

D. Transporter's Phone 283-1150

7. Transporter 2 Company Name — 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	51510	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b. Creosote Coal & Pentachlorophenol
c.
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		31.08

AREA	S	D	Q	PR	LBS 51240 / GAL
T-D	12	R	I	4	

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
E 13922 D-81
a.
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: CLAY C AMIN — Signature — Date: Month 5 Day 6 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Richard Henker — Signature — Date: Month 5 Day 6 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Lloyd Pfullinger — Signature — Date: Month 5 Day 6 Year 85

ORIGINAL - RETURN TO GENERATOR

E13922

NATIONAL RE... OREGON ACCIDENT...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. O.R.D.0.1.0.7.2.4.5.1.7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 - 12 INTERNATIONAL WAY
LONG VIEW, WASH.

4. Generator's Phone (206) 414-3110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: O.R.D.0.5.0.9.7.3.4.5.7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	TNK	DOT 40.40 LB		
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above
E13922 | CU. FT | CU. YD. 25.3
AREA T-10 | S 15 | D R | Q I | PR 4 | LBS 472 | GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E 13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR

Printed/Typed Name: CLAY C AMIN | Signature | Date: Month 5 Day 6 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Maury Lambert | Signature | Date: Month 5 Day 6 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Ed Spitzer | Signature | Date: Month 5 Day 10 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 75 1329 OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD.0.1.0.7.4.9.5.1.7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER LONGVIEW
PO BOX 574 -10 INTERNATIONAL WAY
LONGVIEW WASH

4. Generator's Phone (206) 425 - 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Cascade & Columbia Inc | 6. US EPA ID Number: O.R.D.0.5.0.9.7.3.4.3.7 | C. State Transporter's ID | D. Transporter's Phone 283-4150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL RQ (1)	1	DT	49.8.70	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above
WPS E13922 | CU. FT | CU. YD. 31.25
AREA T-10 | S 16 | D R | Q H | PR 4 | LBS 48800 | GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 16 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LEONARD RIETAVK | Signature | Date: Month 5 Day 16 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: [illegible] | Signature | Date: Month 5 Day 16 Year 85

GENERATOR / TRANSPORTER / FACILITY

EPA Form 8700-22 (9-81)

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 73206 OREGON ACC...ENT RESPONSE CENTER (...)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
NONOVIEW WASH
4. Generator's Phone (206) 432 2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc | 6. US EPA ID Number: WRD050973437 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	DL	DT	49210	LBS	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated soils containing
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		25.61

AREA	S	D	Q	PR	LBS / GAL
F-10	S	R	H	4	48720

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: RAY C AMIN | Signature | Date: Month 5 Day 4 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Maury Lambert | Signature | Date: Month 5 Day 4 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Danielle Church | Signature | Date: Month 5 Day 4 Year 85

GENERATOR / TRANSPORTER / FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC. 73203 OREGON ACCENTRE

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 01074951?
Manifest Document No.
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL CAPSO COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONGVIEW, WASH
4. Generator's Phone (206) 423 2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name
Crosby & Overton INC.
6. US EPA ID Number
ORD 054973737
C. State Transporter's ID
D. Transporter's Phone 283-1150

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number
ORD 089 452 353
G. State Facility's ID
H. Facility's Phone
503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9172	1	DT	52270	LBS	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above

WPS					CU. FT.	CU. YD.
E13922						2520
AREA	S	D	Q	PR	LBS	
T-40	7	R	G	4	GAL	52270

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922
b.
c.
d. D-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 4 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Richard Hrubec	Richard Hrubec	5 4 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Danielle Clough	Danielle Clough	5 4 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC. 13205 NATIONAL RE... OREGON ACC...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAR01.0.7.49.5.12 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 579 - 10 INTERNATIONAL WAY
LONGVIEW - WASH

4. Generator's Phone (206) 432 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc | 6. US EPA ID Number: A.B.D.0.5.0.9.7.3.4.3.7 | C. State Transporter's ID | D. Transporter's Phone: 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone: 503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/L Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	42670		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c.
d. CREOSOTE · COAL & PENTACHLOROPHENOL

K. Handling Codes for Wastes Listed Above

WPS			CU. FT	CU. YD.
E13922				2650
AREA	S	D	Q	PR	LBS / GAL
T-08	R	G		A	29550

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a. E-13922
b.
c.
d. D-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: A V C AMIN | Signature | Date: Month 5 Day 4 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature: Mike Roberts | Date: Month 5 Day 4 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Danville Church | Signature: Danville Church | Date: Month 5 Day 14 Year 85

ORIGINAL - RETURN TO GENERATOR

1320

OREGON ACC...ENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WA.D.0.1.0.7.4.9.5.1.7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, P.O. BOX 579, LONG VIEW, WA. | 10 INTERNATIONAL WAY

4. Generator's Phone (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: D.R.D.0.5.0.9.7.3.4.3.7 | C. State Transporter's ID | D. Transporter's Phone 283-1156

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.** **Star Route** **Arlington, Oregon 97812** | 10. US EPA ID Number: ORD 089 452 353 | G. State Facility's ID | H. Facility's Phone **503-454-2643**

11. US DOT Description (*Including Proper Shipping Name, Hazard Class, and ID Number*)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/ I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PHENTACHLOROPHENOL NA9177	~~88~~	DT	51280 ~~62917~~		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		28.75

AREA	S	D	Q	PR	LBS / GAL
T-10	7	R	G	4	51280 LBS

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. E-13922
c.
d. D-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 4 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
ROBERT CRTO		5 4 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space: Wt. sent is 17% less than that manifested. Truck #1 in Section for container #. I called Goyet, who called Generator - John Morley. He approved Manifest over. (BT)

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Danielle Clauch	Danielle Clauch	5 4 85

GENERATOR | TRANSPORTER | FACILITY

EPA Form 8700-22 (9-84)

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 25 73239 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE CENTER

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 1 0 7 4 9 5 1 7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, P.O. BOX 579, LONGVIEW, WASH (10 INTERNATIONAL WAY)

4. Generator's Phone (206) 442-3110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: CAD 0 5 0 9 7 3 4 3 7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.**, **Star Route**, **Arlington, Oregon 97812** | 10. US EPA ID Number: ORD 089 452 353 | G. State Facility's ID | H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE, SOLID, NOS (CREOSOTE & PENTACHLOROPHENOL) NA 9177	1	DT	50.9.90	LB	K001
b.					
c.					
d.					

GENERATOR

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soil containing
b. Creosote Coal & Pentachlorophenol
c.
d.

K. Handling Codes for Wastes Listed Above
WPS E13922 | CU. FT | CU. YD. 28.9
AREA T-10 | S 5 | D R | Q C | PR 4 | LBS 509 | GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922
b. D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 7 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: LEONARD RIETDIJK | Signature | Date: Month 5 Day 7 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Barb Trullinger | Signature | Date: Month 5 Day 7 Year 85

ORIGINAL - RETURN TO GENERATOR

A B 73238 OREGON ACCIDENT

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 1 0 7 4 9 5 1 7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO. BOX 579 10 INTERNATIONAL WAY
LONGVIEW WASH
4. Generator's Phone (206) 423-2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Cosby & Clinton Inc | 6. US EPA ID Number: O R D 0 5 2 9 7 3 4 3 1 | C. State Transporter's ID | D. Transporter's Phone 2851150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: **ORD 089 452 353**

G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9187	1	DT	48270	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a.
b. Contaminated Soils Containing
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above: WDS E13922 | CU. FT | CU. YD. 23.0

AREA	S	D	Q	PR	LBS 47[illegible]
T-10	5	R	D	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E 13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR

Printed/Typed Name	Signature	Date Month	Day	Year
JAY C AMIN	JCAmin	5	7	85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Richard Henker	Richard Henker	5	7	85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month	Day	Year
Barb Shullinger	Barb Shullinger	5	7	85

ORIGINAL - RETURN TO GENERATOR

13228 OREGON ACCIDENT

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 1 0 7 4 9 5 1 7 — Manifest Document No. — 2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 5TT - 10 INTERNATIONAL WAY
LONGVIEW, WASH

4. Generator's Phone (206) 423-3110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Cosby-Overton Inc. — 6. US EPA ID Number: O R D 0 5 0 9 7 3 4 3 7 — C. State Transporter's ID — D. Transporter's Phone 285-4150

7. Transporter 2 Company Name — 8. US EPA ID Number — E. State Transporter's ID — F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/ I. Waste No.
a. HAZARDOUS WASTE SOLID NOS (CREOSOTE & PENTACHLOROPHENOL) NA 9177	1	TV	48.65	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soil Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above: WPS E13922 — CU. FT — CO. YD. 34.4 — AREA T-10 — S 8 — D R — Q I — PR 4 — LBS 4930 — GAL

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a. E-13922 — D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN — Signature — Date: Month 5 Day 6 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: TIM VANCE — Signature — Date: Month 5 Day 6 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Earl Sullinger — Signature — Date: Month 5 Day 6 Year 85

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC.

1399

OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12 pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 7-31-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. ORD 107495173	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY P.O. BOX 574 ATTN: INTERNATIONAL COPY LONGVIEW, WASH.

4. Generator's Phone: (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Cascade Disposal Inc

6. US EPA ID Number: ORD 057734737

C. State Transporter's ID

D. Transporter's Phone: 283-1150

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.** **Star Route** **Arlington, Oregon 97812**

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone: **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/ Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9189	4	DT	0.3840	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soil Containing
b.
c.
d. CREOSOTE COAL & PENTACHLOROPHENOL

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		21.39

AREA	S	D	Q	PR	LBS
HO	7	R	I	4	94420

GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E-13922
b.
c.
d. D-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 6 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Dan Rust DSR	Daniel E Rustling	5 6 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Daniel E Rustling		

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Danelle Clough	Danelle Clough	5 6 85

GENERATOR

TRANSPORTER

FACILITY

EPA Form 8700-22 (9-82)

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 73227 NATIONAL RI ONS OREGON ACCIDENT

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 1 0 7 4 6 5 1 7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 - IP INTERNATIONAL LAND
LONGVIEW WASH
4. Generator's Phone (206) 423-2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc. | 6. US EPA ID Number: CAD 0 5 0 9 7 3 4 3 7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS -CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	6.1.7.20	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminate Soil Containing
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above: E13922 | U. Y. 35.2

AREA	S	D	Q	PR	LBS
T-10	8	R	H	4	523 GAL

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a. E 13922 D-81
b.
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 6 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
ROBERT C REED		5 6 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Barb Sullinger	Barb Sullinger	5 6 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 68 13241 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE CENTER

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD041074637 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, P.O. BOX 579, 10 INTERNATIONAL WAY, LONGVIEW WASH

4. Generator's Phone (206) 432 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc | 6. US EPA ID Number: WAD05079543 7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address: **Chem-Security Systems, Inc.** Star Route, Arlington, Oregon 97812 | 10. US EPA ID Number: ORD 089 452 353 | G. State Facility's ID | H. Facility's Phone 503-454-2643

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	51.8.00	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentrachlorophenol
d.

K. Handling Codes for Wastes Listed Above: WPS E 13922 | CU. FT | CB. YD. 28.2 | AREA T-10 | S 14 | D R | Q I | PR 4 | LBS 51180 | GAL

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a. E 13922
b. D-81
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature: J C Amin | Date: Month 6 Day 7 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: ROBERT C RED | Signature: Robert C Red | Date: Month 6 Day 7 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Bud Swillinger | Signature: Bud Swillinger | Date: Month 5 Day 7 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC 873251 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE SYSTEM

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 0 7 4 9 5 3 7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
4. Generator's Phone (206) 692-2100 LONGVIEW WA

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc | 6. US EPA ID Number: OR D 0 5 0 7 9 3 4 3 7 | C. State Transporter's ID | D. Transporter's Phone 283-1650

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	51.440	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above: E13922 | CU. YD. 27.1
AREA T-10 | S 16 | D R | Q J | PR 4 | LBS 50K | GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922
b. D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: J.C. AMIN | Signature | Date: Month 5 Day 8 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ROBERT C RED | Signature | Date: Month 5 Day 8 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: Bart Trullinger | Signature | Date: Month 5 Day 8 Year 85

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC. #7 73260 NATIONAL RE... OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD.0.7.4.9.5.1.7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 379 10 INTERNATIONAL WAY
LONGVIEW WASH
4. Generator's Phone (206) 423-2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Chem-Security Systems Inc. | 6. US EPA ID Number: ORD.0.5.0.7.9.3.4.3.7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: **ORD 089 452 353**

G. State Facility's ID
H. Facility's Phone: **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE COAL & PENTACHLOROPHENOL NA 9177	1	DT	50.01	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above
WPS E13922 | CU. FT | CU. YD. 29.55
AREA T-10 | S 14 | D R | Q G | PR A | LBS 495 | GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E 13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 7 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
TIM WALKER		5 7 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Barb Trallinger		5 9 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. NATIONAL RESPONSE CENTER OREGON ACCIDENT REPORTING SYSTEM

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 0 1 0 7 4 9 5 1 7 — Manifest Document No. 73250
2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579
LONGVIEW WASH
4. Generator's Phone (206) 423 2MC

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton Inc — 6. US EPA ID Number: ORD 0 0 5 0 7 5 3 4 3 7 — C. State Transporter's ID — D. Transporter's Phone 283 4150
7. Transporter 2 Company Name — 8. US EPA ID Number — E. State Transporter's ID — F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	48,000	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c. Creosote Coal & Pentachlorophenol
d.

K. Handling Codes for Wastes Listed Above: E 13922 — CU. YD. 25.6

AREA	S	D	Q	PR	LBS / GAL
T-10	16	R	H	4	47[illegible]

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a. E 13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN — Signature — Date: Month 05 Day 7 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Wayne Lambert — Signature — Date: Month 05 Day 7 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month . Day . Year .

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bart Trullinger — Signature — Date: Month 5 Day 8 Year 85

GENERATOR / TRANSPORTER / FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. # 15272 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE CENTER

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO Box 579 10 INTERNATIONAL HWY
4. Generator's Phone (206) 423-2110 LONGVIEW WASH

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Chem-Security Systems Inc | 6. US EPA ID Number: ORD050793457 | C. State Transporter's ID | D. Transporter's Phone 283-4450

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS (CREOSOTE & PENTACHLOROPHENOL) NA 9177	10	T	48000	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils Containing
b.
c.
d. Creosote Coal & Pentachlorophenol

K. Handling Codes for Wastes Listed Above
WPS E13922 | CU. FT | CU. YD. 30.0
AREA T-10 | S 5 | D R | Q G E | PR 4 | LBS 479 | GAL

15. Special Handling Instructions and Additional Information
Waste Profile Sheet Number(s)
a.
b. E 13922 D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 9 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Richard Hooker | Signature | Date: Month 5 Day 9 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bard Mullinger | Signature | Date: Month 5 Day 9 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC.

73274

NATIONAL RESPONSE CENTER
OREGON ACCIDENT RESPONSE SYSTEM

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No.

2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 574 10 INTERNATIONAL WAY
LONGVIEW, WASH

4. Generator's Phone (206) 425 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON INC

6. US EPA ID Number: ORD050793437

C. State Transporter's ID

D. Transporter's Phone: 283-1150

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone: **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/L Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	523.50	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above: E13922 | CU. YD. 29.2

AREA	S	D	Q	PR	LBS / GAL
T-10	16	R	I	4	514

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a. E 13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 9 Year 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: ROBERT C REED | Signature | Date: Month 5 Day 9 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Burk Trallinger | Signature | Date: Month 5 Day 9 Year 85

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 7327 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE SYSTEM

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD016749517 — Manifest Document No.
2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
4. Generator's Phone (206) 423-2410 LONGVIEW WASH

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone 283-1180

5. Transporter 1 Company Name: Crosby & Overton Inc — 6. US EPA ID Number: ORD050793437
7. Transporter 2 Company Name — 8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1	DT	49290	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE COAL PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above
WPS E13922 — CU. FT — CU. YD. 29.5
AREA T-10 11 — S R — D G — Q 4 — PR — LBS/GAL 474

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a.
b. E 13922 D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR — Printed/Typed Name: JAY C AMIN — Signature — Date: Month 5 Day 9 Year 85

TRANSPORTER
17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Maury Lambert — Signature — Date: Month 5 Day 9 Year 85
18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name — Signature — Date: Month . Day . Year .

FACILITY
19. Discrepancy Indication Space
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Barb Trallinger — Signature — Date: Month 5 Day 9 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC #V 73289 NATIONAL RESPONSE CENTER OREGON ACCIDENT RESPONSE CENTER

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
WAD 0 0 7 4 9 5 1 7			

3. Generator's Name and Mailing Address: INTERNATIONAL PAPER COMPANY, PO BOX 579, KALAMA INTERNATIONAL WASH, LONGVIEW WASH

4. Generator's Phone (206) 425 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton, Inc.

6. US EPA ID Number: O R D 0 5 0 7 9 3 4 3 7

C. State Transporter's ID

D. Transporter's Phone: 283-1150

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone: **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL UN 9177	1	DT	47,980	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a.
b. Contaminated Soils Containing
c.
d. Creosote Coal & Pentachlorophenol

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		268

AREA	S	D	Q	PR	LBS / GAL
T-10	10	R	H	4	4506 LBS

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a.
b. E 13922 D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 10 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Maury Lambert		5 10 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Barb Trullinger	Barb Trullinger	5 10 85

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 13890 NATIONAL R... SYSTEM
OREGON ACCIDENT RESPONSE CENTER ... REPORT

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. ORD 010 749 513 — Manifest Document No.
2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONGVIEW WASH

4. Generator's Phone (206) 432 2410

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton, Inc.
6. US EPA ID Number: ORD 050 793 457
C. State Transporter's ID
D. Transporter's Phone 283-1150

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS (CREOSOTE & PENTACHLOROPHENOL) NA9177	001	DT	50.850	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a.
b. Contaminated Soils Containing
c.
d. Creosote Coal & Pentachlorophenol

K. Handling Codes for Wastes Listed Above
WPS E13922 — CU. FT — CU. YD. 28.2
AREA T-10 — S 10 — D R — Q I — PR 4 — LBS 503 — GAL

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a.
b. E 13922 D-81
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR — Printed/Typed Name: JAY C AMIN — Signature — Date: Month 5 Day 10 Year 85

TRANSPORTER
17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: ROBERT C REED — Signature — Date: Month 5 Day 10 Year 85
18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name — Signature — Date

FACILITY
19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Barb Trattinger — Signature: Barb Trattinger — Date: Month 5 Day 10 Year 85

ORIGINAL - RETURN TO GENERATOR

73280

NATIONAL RE... OREGON ACCIDENT RESP...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
WADO10749517			

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 579 (C INTERNATIONAL WAY
4. Generator's Phone (206) 432 2110 LONGVIEW, WA

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON INC
6. US EPA ID Number: WRD050793437
C. State Transporter's ID
D. Transporter's Phone 2931150

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (*Including Proper Shipping Name, Hazard Class, and ID Number*)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL WASTE	1	DT	50.650	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminate Soils Containing
b.
c. Creosote Com & Pentrachlorophenol
d.

WDS Handling Codes for Wastes Listed Above: E13922
CU. YD. 29.91
AREA T-10 | S. 12 | D. A | Q. G | PR 4 | LBS 50360 | GAL.

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E13922 D-81
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN	JCAmin	5/10/85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Richard Hawker	Richard Hawker	5/10/85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
NANCY A. PROCTOR	Nancy A. Proctor	05 10 85

ORIGINAL - RETURN TO GENERATOR

73187

NATIONAL R... ONS...
OREGON ACC...ENT...

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.0.1.0.7.4.5.9.7.1 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 - 10 INTERNATIONAL WAY
4. Generator's Phone (214) 934-6215 LONGVIEW, WASH. 98632

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON INC | 6. US EPA ID Number: O.R.D.0.7.0.7.3.0.3.9.5 | C. State Transporter's ID | D. Transporter's Phone 503 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/L Waste No.
a. HM HAZARDOUS WASTE SOLID NOS CREOSOTE + PENTACHLOROPHENOL NA 9177	68/69	DRUM TK	81940 G. 28700 N. 53240 T.		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS COTAINING CREOSOTE-COAL TAR & PENTACHLOROPHENOL
b.
c.
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT	CU. YD.
E13922		26.33

AREA	S	D	Q	PR	LBS
TH	11	R	Q	4	52650 GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. N/A D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature | Date: Month 5 Day 2 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MIKE ROBERS CROSBY & OVERTON INC. | Signature | Date: Month 5 Day 2 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Danielle Clausen | Signature | Date: Month 5 Day 3 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC. 13184 NATIONAL R... OREGON ACCIDENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0404 Expires 7-31-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD.0.1.0.7.4.5.9.1.7	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address INTERNATIONAL PAPER COMPANY P.O. BOX 5791 / 10 INTERNATIONAL WAY LONGVIEW WASH 98632		A. State Manifest Document Number	
4. Generator's Phone (206) 423-2110		B. State Generator's ID	
5. Transporter 1 Company Name CROSBY & OVERTON INC.	6. US EPA ID Number 0.8.D.0.7.0.7.2.3.9.5	C. State Transporter's ID	D. Transporter's Phone 283 1150
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID	F. Transporter's Phone
9. Designated Facility Name and Site Address **Chem-Security Systems, Inc.** **Star Route** **Arlington, Oregon 97812**	10. US EPA ID Number ORD 089 452 353	G. State Facility's ID	H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	4 / 4A	DUMP TK	81750 G. 34010 N. 47.740 T		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING CREOSOTE –
b. COAL & PENTACHLOROPHENOL
c.
d.

K. Handling Codes for Wastes Listed Above

WPS	CU. FT.	CU. YD.
E13922		28.84

AREA	S	D	Q	PR	LBS / GAL
TH	YO	RQ		4	47540 GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. N/A
c.
d. D-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		5 2 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name: Crosby & Overton by MIKE ROBERTS	Signature: X Mike Roberts	Month 5 Day 2 Year 85
18. Transporter 2 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name	Signature	Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Darrell Clough	Darrell Clough	5 3 85

EPA Form 8700-22 (1-84)

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS INC

73188

NATIONAL R[illegible] ONSE CENTER
OREGON ACCIDENT RESPONSE CENTER [illegible]

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: W.A.D.0.1.0.7.4.9.5.1.7 | Manifest Document No.: | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 579 — 10 INTERNATIONAL WAY
LONGVIEW, WASH 98632
4. Generator's Phone (206) 423-2110

A. State Manifest Document Number:
B. State Generator's ID:

5. Transporter 1 Company Name: CROSBY & OVERTON INC | 6. US EPA ID Number: O.R.D.0.7.0.7.3.0.3.9.5
C. State Transporter's ID:
D. Transporter's Phone:

7. Transporter 2 Company Name: | 8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone: 503-285-5741

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID:
H. Facility's Phone: **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	4 4-A	DM TK	80610 G, 33340 T 47.270-N		
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a.
b. CONTAMINATED SOILS CONTAINING
c. CREOSOTE-COAL & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above: WPS E13922 | CU. FT | CU. YD. 24.76
AREA T7D | S 11 | D R | Q 9 | PR 4 | LBS 96,850 | GAL

15. Special Handling Instructions and Additional Information — **Waste Profile Sheet Number(s)**
a.
b. N/A — D-81
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: JAY C AMIN | Signature: [signature] | Date: Month 5 Day 2 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Crosby & Overton Inc by Maury Lumbert | Signature: [signature] | Date: Month 5 Day 7 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: | Signature: | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space
NO EPA WASTE #

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Darrell Clough | Signature: Darrell Clough | Date: Month 5 Day 13 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC.

NATIONAL RESPONSE CENTER
OREGON ACCIDENT RESPONSE CENTER

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
W.A.D.9.1.0.7.4.9.5.1.7			

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
PO BOX 579 — 10 INTERNATIONAL WAY
LONGVIEW, WASH

4. Generator's Phone (206) 423 - 2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name	6. US EPA ID Number	C. State Transporter's ID
GRESHAM TRANSFER INC	O.R.D.0.5.0.9.7.3.4.3.7	D. Transporter's Phone 503-289-5745
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID
		F. Transporter's Phone

9. Designated Facility Name and Site Address	10. US EPA ID Number	G. State Facility's ID
Chem-Security Systems, Inc. **Star Route** **Arlington, Oregon 97812**	ORD 089 452 353	H. Facility's Phone **503-454-2643**

11. US DOT Description (*Including Proper Shipping Name, Hazard Class, and ID Number*)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PHENTACHLOROPHENOL (TR) NA 9177	18-157 17-178	DM TK	84610 G 31180 TARE 53.430 NET		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. HAZARDOUS WASTE SOLIDS, CONTAMINATED
b. SOILS CONTAINING CREOSOTE - COAL &
c. PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above

WPS			CU. FT		CU. YD.
E13922					30.75
AREA	S.	D.	Q	PR	LBS 53190
F-10	10	R	9	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. N/A
c.
d. D-81

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		05 03 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
GA Schafer		5 3 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Darrell Clavin		5 31 85

GENERATOR

TRANSPORTER

FACILITY

EPA Form 8700-22 (9-83)

ORIGINAL - RETURN TO GENERATOR

73201

OREGON ACC...ENT RESPONSE ... PAGE 1 OF 2 PAGES

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.0.1.0.7.4.9.5.1.7 — Manifest Document No.

2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 - 10-INTERNATIONAL WAY
LONG VIEW. WASH

4. Generator's Phone (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: GRESHAM TRANSFER INC.

6. US EPA ID Number: O.R.D.0.5.0.9.0.3.4.3.7

C. State Transporter's ID

D. Transporter's Phone 503 289-5749

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PHENTACHLOROPHENOL NA 9177	18144	DUMP	90510 G		K001
	17145	TK	22180 N 59390 T		
b.			GJ,		
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b. CREOSOTE-COAL & PENTRACHLOROPHENOL
c.
d.

K. Handling Codes for Wastes Listed Above

WPS 922 pc E13299	CU. FT	CU. YD. 28.88

AREA	S	D	Q	PR	LBS 59180
T-10	8	R	9	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. N/A
c.
d. D-561

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date Month	Day	Year
JAY C AMIN		05	03	85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
JIM OSTRANDER		05	03	85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month	Day	Year
Danielle Clough		5	4	85

ORIGINAL - RETURN TO GENERATOR

T3149-40 OREGON ACC ENT RESPONSE CENTER 1-800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. U.A.D.0.1.0.7.4.9.5.1.7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 — 10 INTERNATIONAL WAY
LONGVIEW, WASH.
4. Generator's Phone (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: GRESHAM TRANSFER INC
6. US EPA ID Number: O.R.D.0.5.0.9.7.3.4.3.7
C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone 503-285-5749

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PHENTACHLORODHENOL NA 9177	18-455 17-156	DUMP TK	87110 GROSS 31210 NET 55900 TARE		K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. CREOSOTE-COAL & PENTRACHLORODHENOL
d.

K. Handling Codes for Wastes Listed Above

WPS				CU. FT	CU. YD.
E13922					27.51
AREA	S	D	Q	PR	LBS
HO	10	R	9	4	GAL 55770

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. N/A
c.
d. 0-81

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		05 02 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Bill Morrison		5 3 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space
NO EPA Waste #

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
Danelle Clouse		5 13 85

EPA Form 8700-22 (9-81)

ORIGINAL - RETURN TO GENERATOR

7213

OREGON ACCIDENT

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD010749517 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONGVIEW WASH
4. Generator's Phone (206) 432-2110

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON INC | 6. US EPA ID Number: ORD055097343
C. State Transporter's ID
D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812
10. US EPA ID Number: ORD 089 452 353
G. State Facility's ID
H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	#13	DT	49200	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated soils containing
b.
c. CREOSOTE COAL & PHENTACHLOROPHNOL
d.

K. Handling Codes for Wastes Listed Above: E13922 | L. GAL/YD. 28.18

AREA	S	D	Q	PR	LBS 49010
T10	12	R	H	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a. E 13922
b.
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

GENERATOR — Printed/Typed Name: JAY C AMIN | Signature | Date: Month 05 Day 05 Year 85

TRANSPORTER
17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Darryl Becker | Signature | Date: Month 05 Day 05 Year 85
18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY
19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: NANCY A. PROCTOR | Signature: Nancy A. Proctor | Date: Month 05 Day 05 Year 85

ORIGINAL - RETURN TO GENERATOR

CHEM-SECURITY SYSTEMS, INC.

13207

NATIONAL RESPONSE CENTER 800-424-8802

OREGON ACCIDENT RESPONSE CENTER 800-452-0311

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W A D 0 1 0 7 4 9 5 7 7 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
P.O. BOX 579 10 INTERNATIONAL WAY
LONGVIEW WASH

A. State Manifest Document Number

B. State Generator's ID

4. Generator's Phone (206) 423-2110

5. Transporter 1 Company Name: Crosby & Overton INC | 6. US EPA ID Number: O A D 0 5 0 9 7 3 4 3 7 | C. State Transporter's ID | D. Transporter's Phone 283-1150

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
Chem-Security Systems, Inc.
Star Route
Arlington, Oregon 97812

10. US EPA ID Number: ORD 089 452 353

G. State Facility's ID

H. Facility's Phone **503-454-2643**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a. HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1 25	DT	49660	LB	K001
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Contaminated Soils containing
b. Creosote Coal & Pentachlorophenol
c.
d.

K. Handling Codes for Wastes Listed Above: WDS E13922 | CU. YD. 29.65

AREA	S	D	Q	PR	LBS 49690
T10	14	R	H	4	GAL

15. Special Handling Instructions and Additional Information **Waste Profile Sheet Number(s)**
a.
b. E13922
c.
d.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: CLAY C AMIN | Signature | Date: Month 5 Day 5 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Leonard Rietdyk | Signature | Date: Month 5 Day 5 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: NANCY A. PROCTOR | Signature: Nancy A. Proctor | Date: Month 05 Day 10 Year 85

EPA Form 8700-22

ORIGINAL - RETURN TO GENERATOR

73208

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD01074951 7	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
INTERNATIONAL PAPER COMPANY
INTERNATIONAL WAY
P.O. BOX 579 - 10
LONGVIEW WASH

4. Generator's Phone (206) 423-2110

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Crosby & Overton INC	6. US EPA ID Number: 0.R0.0.5.0.9.7.3.4.3.2	C. State Transporter's ID D. Transporter's Phone 283 1150
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID F. Transporter's Phone
9. Designated Facility Name and Site Address: Chem-Security Systems, Inc. Star Route Arlington, Oregon 97812	10. US EPA ID Number: ORD 089 452 353	G. State Facility's ID H. Facility's Phone 503-454-2643

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	EPA/I. Waste No.
a.	HAZARDOUS WASTE SOLID NOS CREOSOTE & PENTACHLOROPHENOL NA 9177	1 83	DT	46850	LB	K001
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. CONTAMINATED SOILS CONTAINING
b.
c. Creosote Coal & PENTACHLOROPHENOL
d.

K. Handling Codes for Wastes Listed Above: E13922

L. Total Quantity: 2283 YD.

AREA	S	D	Q	PR	LBS / GAL
T10	13	R	I	4	46640

15. Special Handling Instructions and Additional Information — Waste Profile Sheet Number(s)
a.
b. E13922
c.
d.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
JAY C AMIN		05 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Alfred von Nydegger	Alfred von Nydegger	05 05 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
NANCY A. PROCTOR	Nancy A. Proctor	05 05 85

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL - RETURN TO GENERATOR

INTERNATIONAL PAPER COMPANY
P.O. BOX 809024, DALLAS, TEXAS 75380-9024

ENVIRONMENTAL SERVICES (WEST)

PHONE (214) 934-6000

June 4, 1986

Ms. Judy Belcher
Department of Ecology
Southwest Regional Office
7272 Cleanwater Lane, M.S. LU-11
Olympia, Washington 98504

Dear Ms. Belcher:

Enclosed you will find copies of the laboratory test results for soil samples taken from surface impoundments #1 and #2 after the inventory reduction of 1985. These test results confirm that all extremely hazardous and dangerous wastes have been removed from the regulated units.

I want to thank you for taking the time to meet with us last week at the site and for discussing your concerns with us. As you know, we are most interested in obtaining an approved closure plan for this site so that work can begin this summer on the closure. Five years have now passed since the first closure plan was prepared in May 1981. I am sure you will agree the time is ripe for the actual closure process to begin.

Please feel free to call me at (214) 934-4079 if you have any questions or comments on the closure plan so that we might resolve them as quickly as possible.

Sincerely,

Stephen Carter
Environmental Coordinator

SC:jk:4097E

Enclosure

cc: Clark Haberman, Mgr. DOE SW Reg. office - w/attach
George Hofer, EPA Reg. X - w/attach
Ted Wall, EPA Reg. X - w/attach

bcc: Jay Amin
David Critchfield
Howard Daniel
Bob Funkhouser
Jim Grant
Alan Lindsey
Dick Russell

UNIVERSITY HYGIENIC LABORATORY
Analytical Report

Client: International Paper Co., ATTN: H. Lienert
Client Address: 3101 International Drive, East
Mobile, AL 36606

Client Sample Identification: Pond #1 Composite Sample
Date Sample Collected: 09-25-85
Date Sample Received: 10-04-85

ANALYTICAL RESULTS

UHL Lab No. 507922

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)*
naphthalene	21	10
acenaphthene	56	10
fluorene	36	10
pentachlorophenol	ND	10
phenanthrene	74	10
methyl anthracenes	23	10
fluoranthene	58	10
pyrene	44	10
chrysene	ND	10

Analytical Method: EPA Method 8270

Analyst: C. Maw/K. Kline
Verified:
Date Reported: 10/16/85

ND = Below detection limit.
*Client specified quantitation limit.

F57/507922

UNIVERSITY HYGIENIC LABORATORY
Analytical Report

Client: International Paper Co., ATTN: H. Lienert
Client Address: 3101 International Drive, East
Mobile, AL 36606

Client Sample Identification: Pond #2 North End
Date Sample Collected: 09-25-85
Date Sample Received: 10-04-85

ANALYTICAL RESULTS

UHL Lab No. 507921

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)*
naphthalene	ND	10
acenaphthene	ND	10
fluorene	ND	10
pentachlorophenol	ND	10
phenanthrene	ND	10
methyl anthracenes	ND	10
fluoranthene	10	10
pyrene	ND	10
chrysene	ND	10

Analytical Method: EPA Method 8270

Analyst: C. Maw/K. Kline
Verified:
Date Reported: 10/16/85

ND = Below detection limit.
*Client specified quantitation limit.

F57/507921

UNIVERSITY HYGIENIC LABORATORY
Analytical Report

Client: International Paper Co., ATTN: H. Lienert
Client Address: 3101 International Drive, East
Mobile, AL 36606

Client Sample Identification: Pond #2 - 50 feet from north end
Date Sample Collected: 09-25-85
Date Sample Received: 10-04-85

ANALYTICAL RESULTS

UHL Lab No. 507920

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)*
naphthalene	ND	10
acenaphthene	ND	10
fluorene	ND	10
pentachlorophenol	ND	10
phenanthrene	ND	10
methyl anthracenes	ND	10
fluoranthene	ND	10
pyrene	ND	10
chrysene	ND	10

Analytical Method: EPA Method 8270

Analyst: C. Maw/K. Kline
Verified:
Date Reported: 10/15/85

ND = Below detection limit.
*Client specified quantitation limit.

F57/507920

UNIVERSITY HYGIENIC LABORATORY
Analytical Report

Client: International Paper Co., ATTN: H. Lienert
Client Address: 3101 International Drive, East
Mobile, AL 36606

Client Sample Identification: Pond #2 - 100 feet from north end
Date Sample Collected: 09-25-85
Date Sample Received: 10-04-85

ANALYTICAL RESULTS

UHL Lab No. 507919

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)*
naphthalene	ND	10
acenaphthene	ND	10
fluorene	ND	10
pentachlorophenol	ND	10
phenanthrene	ND	10
methyl anthracenes	ND	10
fluoranthene	37	10
pyrene	25	10
chrysene	11	10

Analytical Method: EPA Method 8270

Analyst: C. Maw/K. Kline
Verified:
Date Reported: 10/15/85

ND = Below detection limit.
*Client specified quantitation limit.

F57/507919

UNIVERSITY HYGIENIC LABORATORY
Analytical Report

Client: International Paper Co., ATTN: H. Lienert
Client Address: 3101 International Drive, East
Mobile, AL 36606

Client Sample Identification: Pond #2 - 150 feet from north end
Date Sample Collected: 09-25-85
Date Sample Received: 10-04-85

ANALYTICAL RESULTS

UHL Lab No. 507918-

Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)*
naphthalene	ND	10
acenaphthene	ND	10
fluorene	ND	10
pentachlorophenol	ND	10
phenanthrene	ND	10
methyl anthracenes	ND	10
fluoranthene	ND	10
pyrene	ND	10
chrysene	ND	10

Analytical Method: EPA Method 8270

Analyst: C. Maw/K. Kline
Verified:
Date Reported: 10/15/85

ND = Below detection limit.
*Client specified quantitation limit.

F57/507918

APPENDIX D

IMPOUNDMENT BACKFILL DOCUMENTATION

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

March 16, 1990

Noelle Sears
James L. Grant & Assocs., Inc.
8301 E. Prentice Ave., Suite 402
Englewood, CO 80111

Re: International Paper Facility Site Closure (Longview, Washington)

Dear Noelle:

This letter is to provide you with the follow up information on the October 1986 backfill, as discussed in our meeting of March 13, 1990, and as I outlined in our telephone conversation on March 16, 1990.

As previously discussed, there were two areas which required backfilling. Area no. 1 is shown in the pictures numbered 1 through 4. This was a pond-like area, as shown in picture no. 1. The fill (sand dredge spoils) was dumped into the hole, which forced the water out (picture no. 2). As a result of the extreme wet conditions, only the top two to three feet of ground could be compacted (picture no. 3). Picture no. 4 is the final product. Area no. 1 is called the "First Pit" in L.R. Squier's letter.

Area no. 2 ("Second Pit") was a trench 1,000'± long by approximately 5' wide. Picture no. 5 shows a portion of the trench. Pictures no. 6 and no. 7 show cat scalping and pushing backfill into trench. Picture no. 8 shows roller compacting fill back into place.

As shown on the photographs, all work was done on October 6, 1986. I am also enclosing a copy of L.R. Squier's letter received in this office on November 5, 1986, and a copy of L.R. Squier's compaction test curve. Lakeside Industries, a local construction contractor, did the backfilling work.

If you have any additional questions, please call me at 206/425-0991.

Sincerely,

GIBBS & OLSON, INC.

By John Duncan
John Duncan, L.S., P.E.

Enclosures
JD/sv
File: 375.13

L. R. SQUIER ASSOCIATES INC.
geotechnical consultants

4255 oak ridge road
p.o. box 1317

lake oswego, oregon 97034
tel. (503) 635-4419

November 4, 1986

Gibbs & Olson, Inc.
1405 17th Avenue, Suite 300
P.O. Box 400
Longview, Washington 98632

Attn: Mr. Neil Alongi

Re: Compaction Observations, International Paper Company Landfill Closure, Longview, Wahington

Dear Neil:

The closure of two trenches at the International Paper Company site in Longview, Washington, was observed by a geotechnical engineer on October 6, 1986. The first pit that was filled varied in depth from less than 1 foot to over 8 feet, and was partially filled to within 2 to 3 feet of the surface upon arrival of our representative at the site. The borrow material employed was a gray, fine to medium sand with gray silt and gravel which, when compacted in the laboratory, achieved a maximum dry density of 108 lbs./cu. ft. at an optimum moisture content of 15.5 percent. The material used in the field appeared to be somewhat cleaner than our laboratory sample and the compaction results indicated a lower optimum moisture content on the order of 6 to 10 percent.

In the first pit, three nuclear density tests were performed on the compacted sand fill at a depth of approximately one foot to 2 feet below final grade. Dry densities of 95.5 to 108.1 percent of the material's maximum standard dry density at 6.6 to 8.7 percent moisture content were observed. These in-place density tests indicated that the contractor was meeting the performance compaction specification of at least 95 percent of standard Proctor density (ASTM D698).

The second pit filled was a long narrow trench, which was up to 5 feet deep, when carefully stripped of soil and vegetation. Nuclear density tests were performed after the placement of about two 6-inch lifts of fill. Densities ranged from 90 to 92 percent of the material's maximum standard dry density at moisture contents of 11.3 to 17.3 percent. More fill at water contents varying from 6 to 9 percent was then placed to the same depth in other portions of the trench, but nuclear density tests indicated that the contractor still could not meet the compaction specification with the vibratory roller he was employing. It was our opinion that the subgrade was probably too soft to achieve proper compaction with the vibratory roller. Therefore, the contractor tried static compaction with the roller, and several more nuclear density tests were performed indicating that the contractor could achieve a compaction of 95.1 to 96.6 percent of the material's maximum standard dry density at moisture contents varying from 5.8 to 7.1 percent. The remainder of the trench was then backfilled and compacted using the static roller, and the first portion was allowed to dry and further compactive effort applied to it to bring it up to specifications.

We thank you for the opportunity to provide services on this project. If you have any questions please do not hesitate to call.

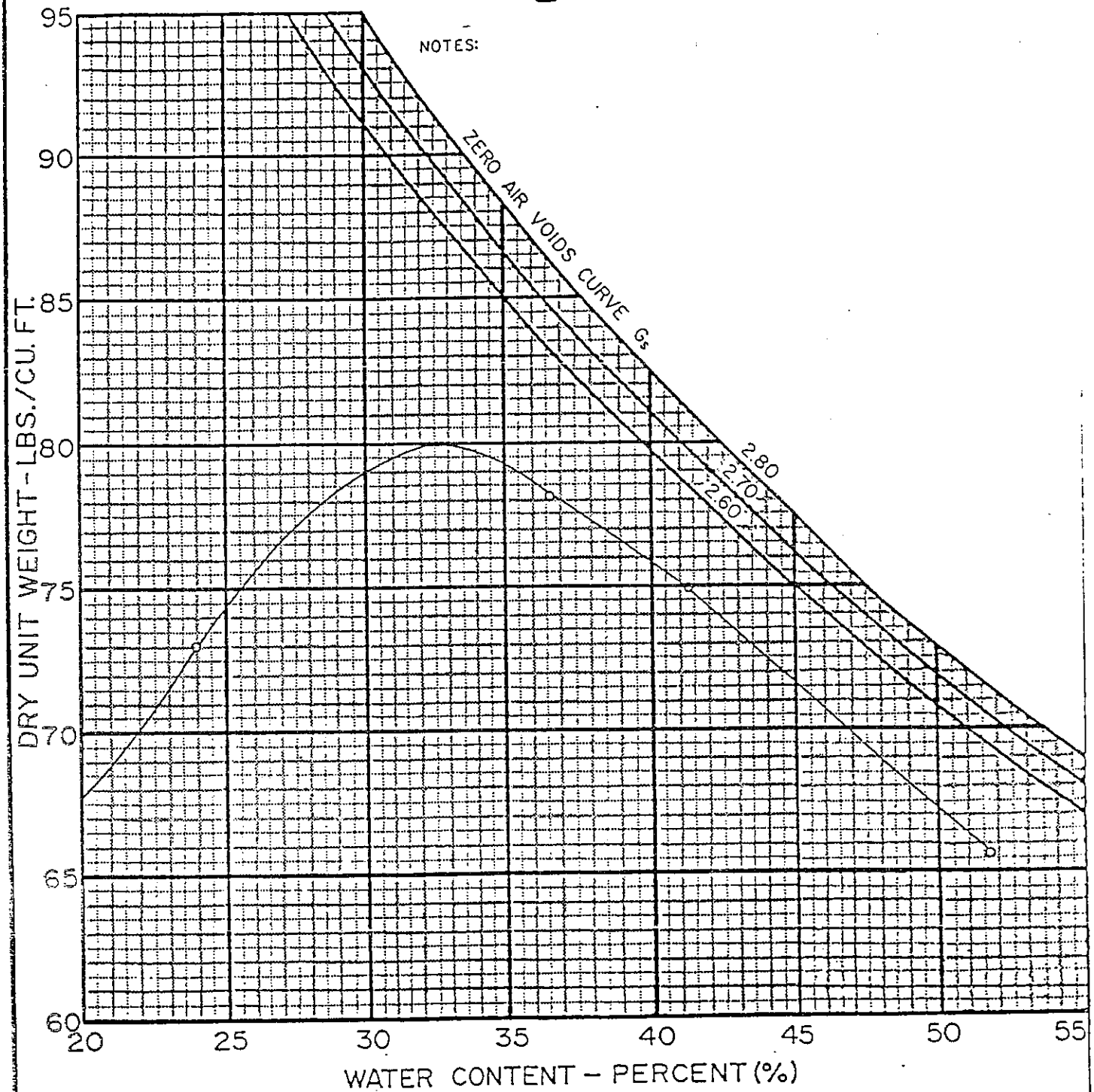
Very truly yours,
L. R. Squier Associates, Inc.

Gary K. Olson

by Gary K. Olson, P. E.
Senior Project Manager

GKO/LRS/es

■ STANDARD (AASHTO T99-61, ASTM D698-78)
□ MODIFIED (AASHTO T180-61, ASTM D1557-78)
□ OTHER



SUMMARY OF TEST

TEST SYMBOL	TEST PIT	SAMPLE	W(%) NATURAL	W(%) OPTIMUM	MAXIMUM DRY DENSITY LBS./CU FT	CLASSIFICATION OF MATERIAL
o	Borrow	Mat'l	41.2	32.5	80.0	Dark gray fine to medium SAND with some silt and gravel, numerous organics; moist to wet

COMPACTION TEST

SEPTEMBER, 1986 86082
L.R. SQUIER ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

FIGURE 1

INTERNATIONAL PAPER COMPANY
4 OAKS PLAZA, 6600 LBJ FREEWAY, 75240.
P.O. BOX 809024, DALLAS, TEXAS 75380-9024

PHONE (214) 934-6000

August 20, 1986

Mr. Neil Alongi
Gibbs & Olson, Inc.
1405 17th Avenue, Suite 300
Longview, Washington 98632

Dear Mr. Alongi:

As per our telephone conversation, enclosed is our Closure Plan.

Please concentrate on the backfill requirements as excavation was completed last year.

I will be in Longview on Tuesday, August 26. See you then.

Sincerely,

J. C. Amin

J. C. Amin

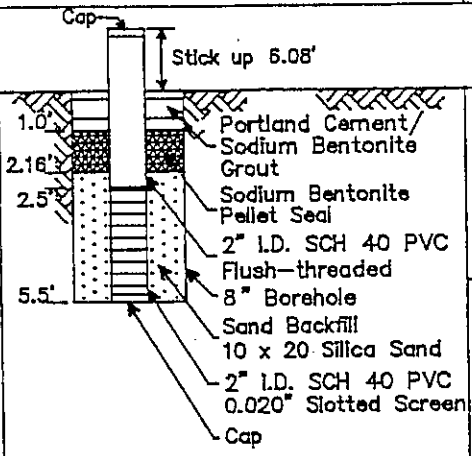
Enclosures

APPENDIX E

REPLACEMENT WELL RECORDS

ELEV. (Feet)	DEPTH (Feet)	Description	USC	Sample Interval	"N" Value	Odor HNU	Graphic Log
	0	Ground Surface					
	0	SAND	SP				
	2.5	Silty SAND	SM				
	5						
	5.5	B.T. @ 5.5'					
	10	NOTE: Graphic log and descriptions from adjacent well LL-02.32.					
	15						
	20						
	25						
	30						
	35						
	40						

Well Completion Detail



DEPTH (Feet): 0, 5, 10, 15, 20, 25, 30, 35, 40

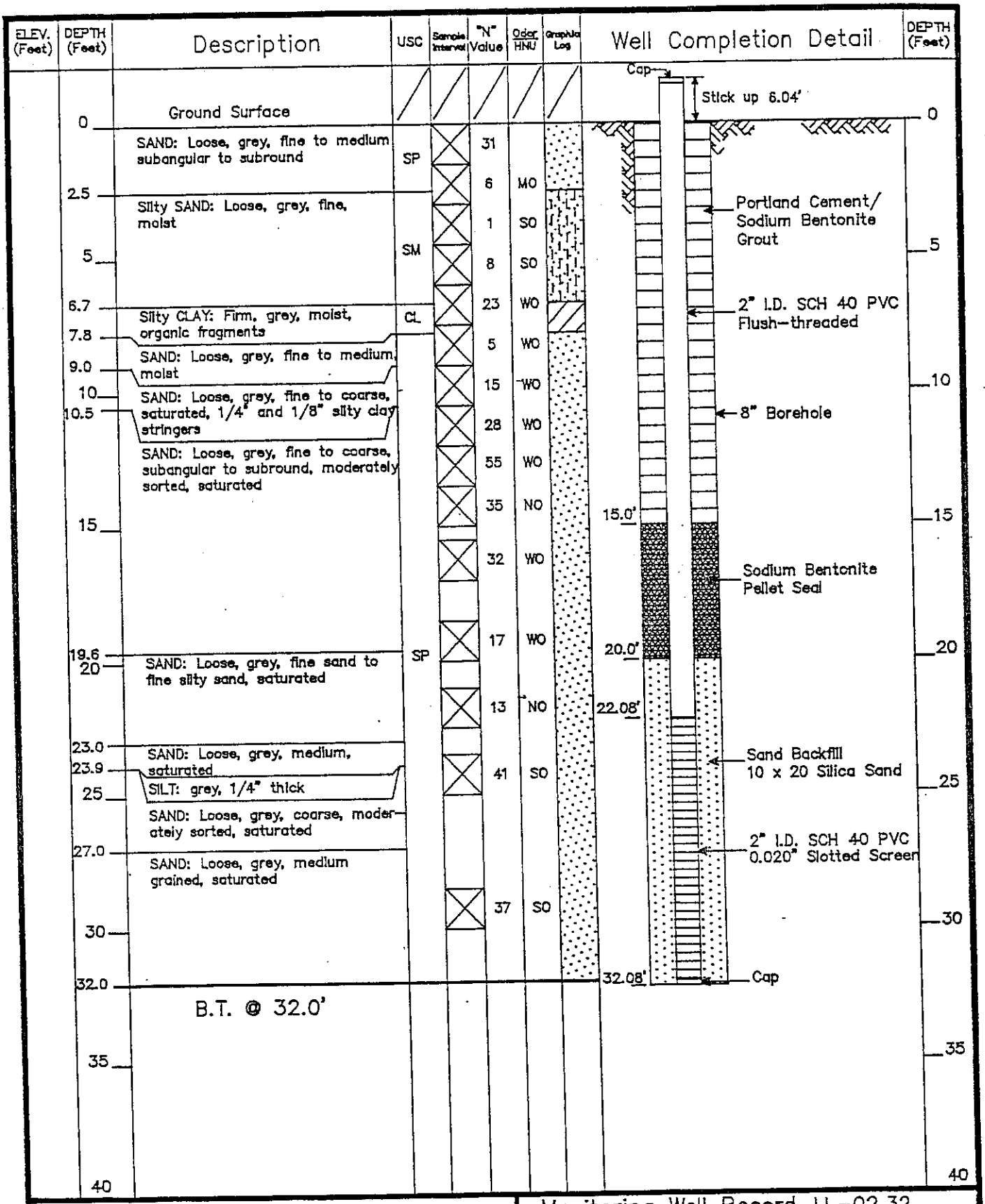
JAMES L. GRANT & ASSOCIATES

geotechnical engineering • management • computer science

DENVER, COLORADO

Monitoring Well Record LL-02.05

Location INTERNATIONAL PAPER - LONGVIEW, WA.
Coordinates
Drilled By Kring Drilling Method HSA
Logged By GAD Checked By SLW
Installation Date September 12, 1989



JAMES L. GRANT & ASSOCIATES

jlg

geotechnical engineering • management • computer science

DENVER, COLORADO

Monitoring Well Record LL-02.32

Location INTERNATIONAL PAPER - LONGVIEW, WA.

Coordinates

Drilled By Kring — Drilling Method HSA

Logged By GAD — Checked By SLW

Installation Date September 12, 1989 — Page 1 of 1

APPENDIX F

COVER INSTALLATION DOCUMENTATION

ITEM 1

HDPE ENGINEERING SPECIFICATIONS

The following pages contain the High Density Polyethylene Engineering Specifications for the Longview facility. These specifications were taken from Appendix E of the "Closure Plan and Post-Closure Plan for the Treated Wood Products Plant, Longview, Washington", dated July 16, 1986 and revised October 3, 1986.

HIGH DENSITY POLYETHYLENE ENGINEERING SPECIFICATIONS

I. General

A. This document contains the material and installation specifications for use of high density polyethylene (HDP) cover systems.

II. Site Preparation

A. Surfaces To Be Covered

1. Material - Earth, Clay, Sand

a. Free of debris or other hard objects sized as stated.

40-mil thick HDP - No broken stones or round stones within 3 inches or surfaces to be covered that will not pass through a 3/8 inch screen.

60-mil thick HDP - No broken stones or round stones within 3 inches of surfaces to be covered that will not pass through a 3/4 inch screen.

80-or 100-mil thick HDP - No broken stones or round stones within 3 inches of surfaces to be covered that will not pass through a 2 inch screen.

2. Compaction

a. 90% standard Proctor unless otherwise specified.

The HDP cover will bed itself better when the surfaces upon which it is placed are not compacted tightly because small stones which may be present in the top 3 inches of earth to be covered can be submerged into the ground more easily.

3. Anchor Trench

a. The anchor trench shall be excavated prior to the start of cover installation.

1. The length of anchor trench opened before liner placement shall be by the site engineer.

2. The near side of the trench shall never be less than 2 feet from the top of the HDP cover.

3. The depth of the trench shall be two feet minimum. Deeper trenches shall be required when combinations of these conditions exist.

   Slopes - 1½:1 and steeper
   Length of steep slope - 25 or more feet

b. The anchor trench shall be backfilled with granular material containing no stones larger than 2 inches in diameter or other hard or sharp objects. Frozen material shall not be used.

   1. The backfilling can be accomplished by plowing the earth back into the trench.

   2. The backfill material shall be compacted by making 4 passes or more with the rubber tires of a construction machine.

   3. Moisture content is not considered critical to backfilling.

4. Moisture Content

   a. No standing water, snow or excessive moisture shall be allowed.

5. Certification

   a. The manufacturer's representative shall certify in writing that the surface on which the membrane is to be installed is acceptable. No installation of the liner shall commence until this certification is furnished to and accepted by the Owner or his Agent.

III. MATERIALS

A. HDP shall conform to the requirement of material specification for HDP cover material.

   1. Quality

      a. The sheet shall be high-density polyethylene nominally 40, 60, 80, or 100 mils thick, as specified by the Owner or his Agent, except for pieces terminating against concrete surfaces. The pieces tied to concrete surfaces shall be at least 60 mils thick. The HDP shall conform to the following requirements.

PROPERTY	VALUE	TEST METHOD
Density	.938 to .952 gm/cm^n	ASTM D 1505-68
Melt Flow Index	0.15 to 0.25 dm/10 min.	ASTM D 1238-79 Condition E
Tensile Strength At Yield	2900 psi (average)	ASTM D 638-80 Type IV Sample, 2"/min.
Tensile Strength At Break	4000 psi (average)	ASTM D 638-80 Type IV Sample, 2"/min.
Elongation at Yield	10% (minimum)	ASTM D 638-80 Type IV Sample, 2"/min.
Elongation at Break	Greater than 500%	ASTM D 638-80 Type IV Sample, 2"/min.
Low Temperature Brittleness	Above 118°C, 50% failure	ASTM D 746-79
Environmental Stress Crack Resistance	No failure or initiation of stress cracks when tested for greater than 1000 hours.	ASTM D 1693-70 Condition C

b. The sheet shall contain not less than 2 percent carbon black as defined in ASTM D 1248, Section 3.1.2.3., Class C. No other compound ingredients shall be added to HDP resin.

B. Sponge Rubber

1. Type SC-42 medium, closed cell neoprene 2" x 1/4" strips; 1/2", 3/4", 1" diameter cords.

C. Neoprene Adhesive

1. Python No. 1062 contact adhesive.

D. Battens

1. #12 U.S. Gauge x 2" wide, low carbon hot rolled steel.

E. Anchor Bars

1. 3/16" minimum x 1½" wide, type 304 stainless steel.

F. Fasteners

1. 3/8" diameter size percussion driven alloy steel.

G. Plastic Cement

1. Wet-or dry-asphalt cement as manufactured by the Monsey Products Company.

H. Plastic Sealant

1. Silicone rubber, Type RTV-103, as manufactured by the General Electric Company.

I. HDP Pipe

1. Sizes 2" through 96", as required, Plastic Pipe Institute material designation PE 3408.

IV. INSTALLATION

A. Drawings

1. The manufacturer's representative shall submit for the Owner's approval field-erection drawings showing the liner panel layout with the proposed size and position of all factory extruded sheets and indicating the location of all field welds. Deviations from the liner panel drawing shall be explained to the Owner when requested.

B. Sheet Placement

1. HDP sheets shall be placed as directed by the Manufacturer's Representative on surfaces which have been prepared to conform with the Owner's specifications and found acceptable for covering.

2. The overlap between adjacent sheets shall be from 3 to 5½ inches.

C. Seaming Methods

1. All field welds shall have a seam strength of a minimum of 100 percent of the tensile strength of the parent material.

2. The weld area shall be free of all dirt, dust, moisture, or other foreign material.

a. The contact surface of the sheets shall be wiped with clean rags to remove any contamination.

3. Self-propelled fusion welders shall be used for welding the lapped seams between HDP sheets. Each welder is to be comprised of a U-frame air blower/heater assembly with a variable speed drive assembly.

   a. The welders are to use hot air to partially melt and then torsion spring pressure to clamp the semi-molten sheets together.

   b. The welders shall have controls for regulating the amount and temperature of the air used to heat adjacent surfaces of sheets to be fused and the machine's rate of travel along a seam.

4. Hand-held fusion or extrusion welders shall be used for welding pipe-to-pipe, sheet-to-pipe, sheet-to-sheet, and making repairs as directed by the Manufacturer's Representative.

   a. The fusion welders are to be comprised of a blower, heater, and hot air delivery nozzle.

   b. The extrusion welders are to have a preheater air nozzle and deliver a ribbon of molten HDP.

D. Authority to Proceed

1. Welding operators shall commence only upon the direction of the Manufacturer's Representative, considering meteorological conditions and other factors.

V. QUALITY ASSURANCE

A. Resin

1. The resin to be used shall be specified by the manufacturer.

2. Environmental stress crack resistance of the resin shall be greater than 1000 hours when tested in accordance with Specification ASTM D-1693.

3. The resin manufacturer shall certify that the density; melt index; elongation at yield, - at break; tensile strength at yield, - at break comply with the product specification.

B. Sheet Manufacture

1. Documentation for the resin shall be checked against the material as received.

2. If natural colored, the manufacturer shall add carbon black per Specification ASTM D-1248, Section 3.1.2.3, Class C.

3. The manufacturer's quality control program shall include these inspections and tests:

   a. Inspection for: appearance on both sides; manufacturing defects; thickness at 10 random locations across each sample strip.

      1. Thickness measured shall be within ± 0.006 inches of the average thickness of the strip.

         a. Acceptable sheet shall be no more than 0.004 inches less than the thickness specified.

   b. The tests shall be conducted on at least two randomly selected samples from each day's production and the results reported to the Owner.

      1. Density per ASTM D 1505-68

      2. Melt index per ASTM D 1238-79

      3. Elongation at yield per ASTM D 638-80

      4. Elongation at break per ASTM D 638-80

      5. Tensile strength at yield per ASTM D 638-80

      6. Tensile strength at break per ASTM D 638-80

   c. Percent carbon black in a randomly selected sample taken from the production run shall be determined per the procedure of specification ASTM.

   d. A quality chart of each roll of sheet shall be prepared and a copy attached to the roll. Information plotted on the chart shall include the location and type of defect.

   e. A label containing at least the following information shall be attached to each roll of sheet when shipped:

      Serial Number
      Date of Manufacture
      Resin Type
      Resin Lot Number
      Roll Length
      Roll Width
      Roll Thickness
      Gross Weight
      Net Weight
      Inspected By

C. Installation Quality Control

1. Initial Inspection at Site

a. Rolls shall be inspected for physical damage during transport.

b. Documentation on label attached to each roll shall be inspected for completeness.

2. Welding

a. Manufacturer's Representative shall review the procedures to be used for welding every day.

b. Two samples, approximately 15 inches square, shall be cut out of each day's work.

1. The samples shall be randomly located, identified on the sheet layout drawing, serially numbered and dated.

a. All welds shall attain their full strength within six hours after they have been completed.

2. One dog bone shall be cut out of each sample and subjected to a pull test at the site.

a. The fixture used for making pull tests in the field shall be manually operated. It shall be strong enough to permit the operator to determine that the weld is at least as strong as either sheet.

c. Inspection

1. Each seam shall be inspected visually after the welding operations have been completed by the Owner's Representative.

a. Suspected discrepant areas shall be identified with a suitable contrasting marker.

2. The entire length of each weld seam adjacent to the exposed edge of the top sheet shall be scanned with a transducer connected to ultrasonic thickness measuring instrumentation.

a. Conduct the ultrasonic test on each machine made weld, after the instrumentation has been properly cabilbrated.

1. Discrepant areas located with the ultrasonic instrumentation shall be classified as tunnels or holidays. Tunnels shall be defined as imperfect welds which extend completely across the fusion joint. Holidays, or suspected holidays, shall not be repaired -- if the across-fused-joint dimension is equal to or less than one-half of its width.

2. The installation inspector shall mark, log and identify each type of repair to be made at a discrepant area.

3. The Owner shall have the right to reject any field made seam for cause. Cause shall be defined to include poor workmanship, defective welds, insufficient overlap.

    a. Any field seam rejected for such causes shall be repaired or replaced to the satisfaction of the Owner's Site Representative.

3. Reports and Certification

    a. The Manufacturer's Representative shall compile a test report.

    b. The Manufacturer's Representative shall certify that: The resin specified was furnished, the extruded sheet was manufactured to conform with contractural requirements; the installation has been completed to the satisfaction of the Owner or his Agent.

ITEM 2

Gundle Subgrade Certification Letter

Certification Of The HDP Liner
Installation At The
International Paper Facility
In
Longview, Washington

I, David Hecreth, certify that the surface on which the membrane was installed was acceptable as defined by the specifications for the liner installation which are attached.

David Hecreth
Signature
Gundle Lining Systems, Inc.

12-6-89
Date

I, David Hecreth, certify that the resin specified was furnished. The extruded sheet was manufactured to conform with contractural requirements, and the installation has been completed according to the specification. The test report is attached to this document.

David Hecreth
Signature
Gundle Lining Systems, Inc.

12-6-89
Date

ITEM 3

Soil Density Test Results

Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

GIBBS & OLSON, INC.
P.O. Box 400
Longview, Washington 98632

Project: International Paper
Waste Impoundment

Attention: John Duncan

Date: October 5, 1989

Report No.: 702-90165-002

TROXLER DENSITY TESTS
ASTM D 2922 & D 3017

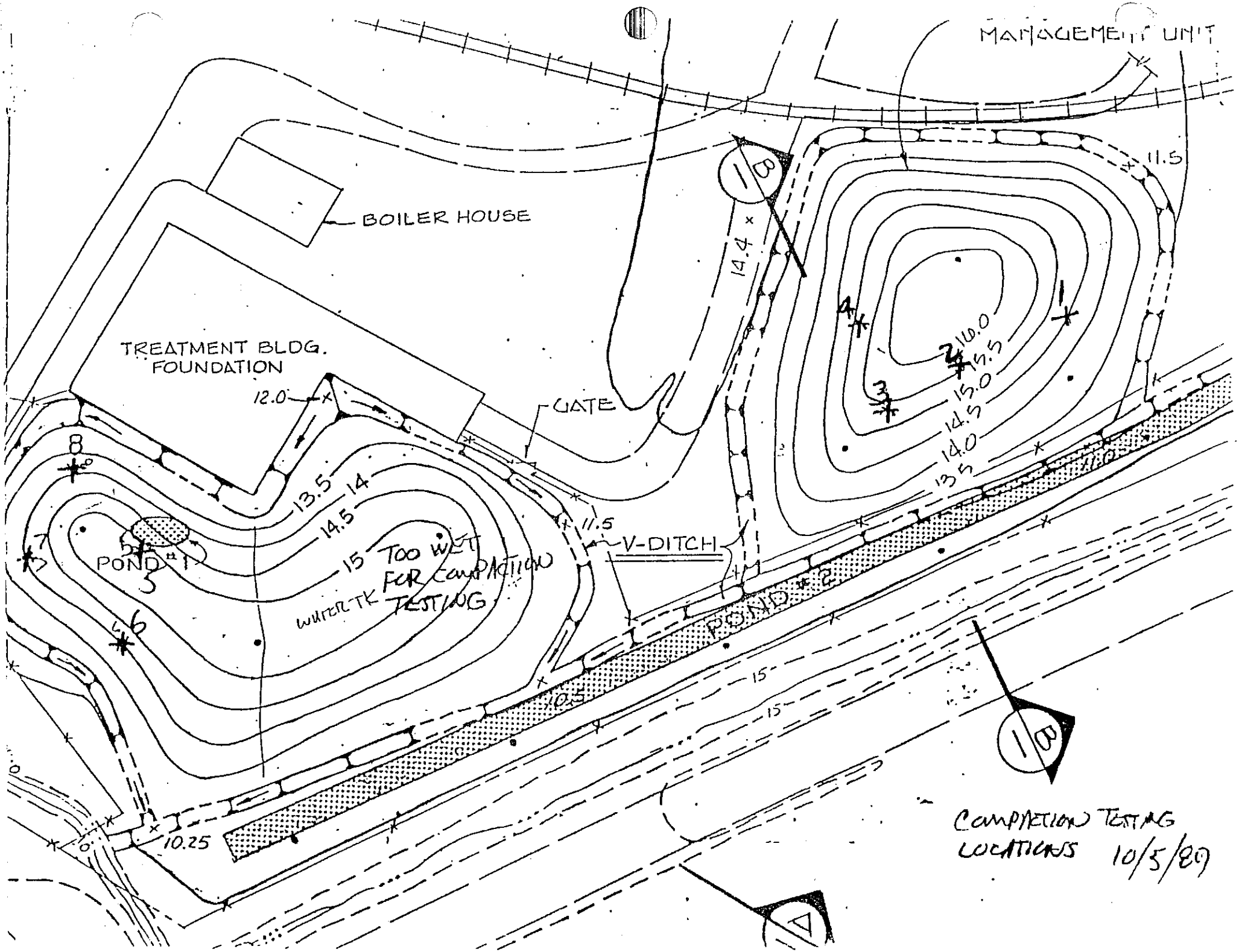
Tests taken on 10-05-89

Maximum Dry Density @ Optimum Moisture Content = 107.0 lbs/cu.ft.
Optimum Moisture Content = 16.0 %

Density Location	Moisture Content	Density Lbs/cu.ft.	AASHTO T 99 % Compaction
Locations were noted on map by Ron Hitt:			
1.	10.8	104.3	97.5
2.	8.1	101.9	95.2
3.	9.3	99.1	92.3
4.	9.0	101.2	94.6
5.	6.5	106.5	99.5
6.	8.5	99.5	92.9
7.	5.6	100.0	93.4
8.	7.2	99.2	92.7

Inspector: T. Allison

Respectfully submitted,
PROFESSIONAL SERVICE INDUSTRIES


MANAGEMENT UNIT
BOILER HOUSE
TREATMENT BLDG. FOUNDATION
GATE
12.0
13.5
14
14.5
15
TOO WET FOR COMPACTION TESTING
WATER TK
POND #1
11.5
V-DITCH
POND #2
14.4
11.5
10.0
14.5
15.0
14.5
14.0
13.5
15
15
10.25
1B
4A
COMPACTION TESTING LOCATIONS 10/5/89

Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

Gibbs & Olson, Inc.

MOISTURE DENSITY RELATIONSHIP TEST REPORT

Project	Report Date: 09-22-89	Report No.: 001	PTL Order No.: 702-90165
	Client Order No.: 375-13	Page: 01 of 01	Lab No.: 89451

Client
GIBBS & OLSON, INC.
P O Box 400
Longview, Washington 98632
Attention: John Duncan

Source of Sample:

Soil Description: Sand

Test Method: AASHTO T 99, Method A

Sample Submitted By: Client

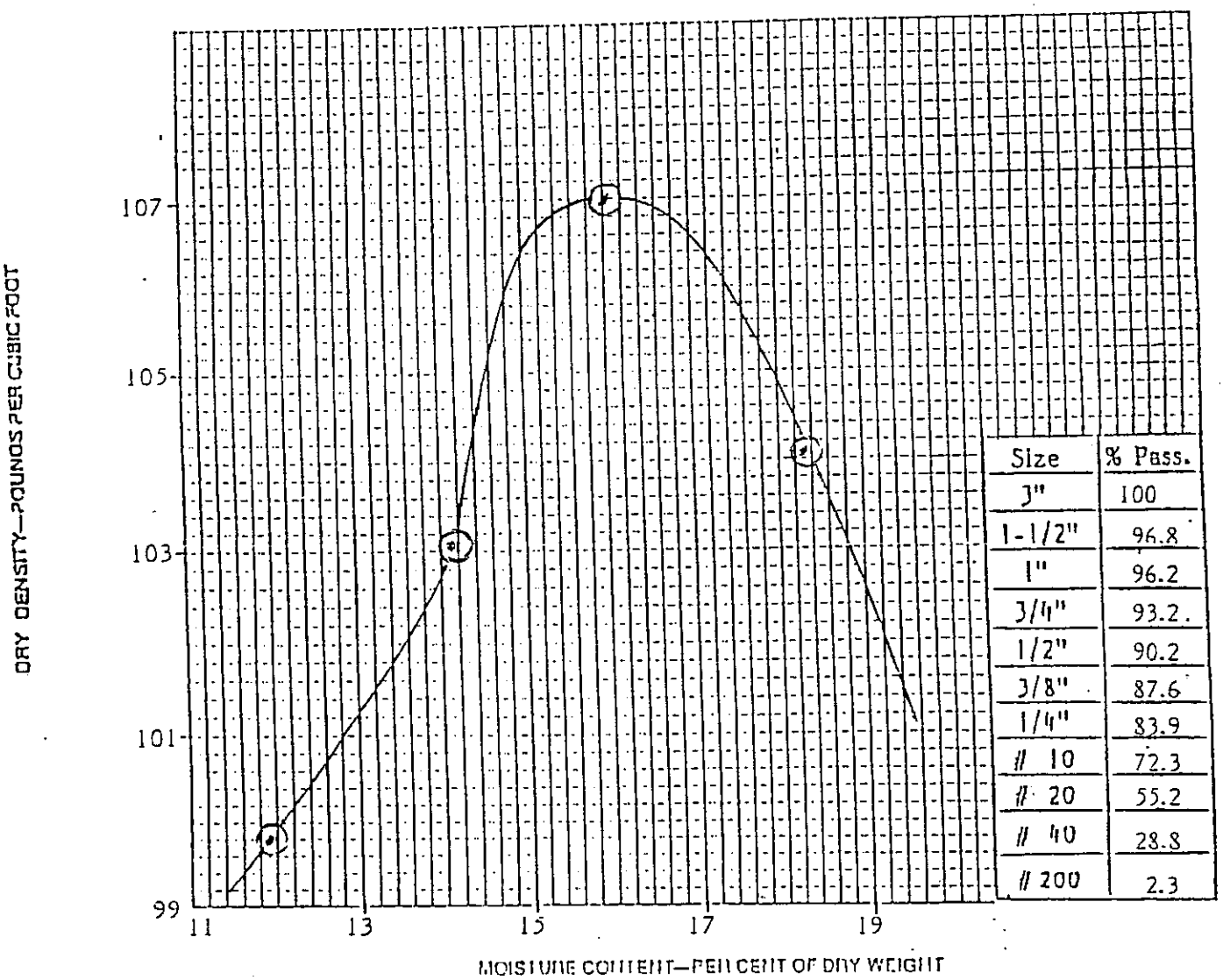
Date Sample Received: 09-22-89

Preparation Procedure: ☒ Moist ☐ Dry

Type of Hammer: ☐ Manual ☒ Mechanical

Max Lab Dry Density (lbs/cu ft): 107.0

Optimum Moisture (%): 16.0



Size	% Pass.
3"	100
1-1/2"	96.8
1"	96.2
3/4"	93.2
1/2"	90.2
3/8"	87.6
1/4"	83.9
# 10	72.3
# 20	55.2
# 40	28.8
# 200	2.3

12512 N E. Marx Street • Portland, OR 97230 • Phone: 503 254 6418

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

May 22, 1990

James L. Grant & Associates, Inc.
8301 E. Prentice Avenue
Suite 402
Englewood, CO 80111

ATTENTION: Noelle Sears

REFERENCE: International Paper Facility (Longview, Washington)
Drainage Sand Specifications

Dear Noelle:

Thank you for your call on May 22, 1990, requesting additional information about the sand fill material used on top of the HDP liner at the International Paper facility in Longview, Washington.

The material used was a river washed sand from a local dredge site. The sand material was tested (copy enclosed) and passed the State of Washington Standard Specifications (copy enclosed) for a sand drainage blanket. The State gradations differ slightly from the test gradations, but review of the actual test numbers shows compliance with the State's requirements.

This should help clarify any questions about what an excellent drainage material this sand actually is. If you have additional questions or concerns, please call me at 206/425-0991.

Sincerely,

GIBBS & OLSON, INC.

By John Duncan
John Duncan, L.S., P.E.

Enclosures

JD/sv
File: 375.13

1405 17TH AVENUE, SUITE 300 • P.O. BOX 400 • LONGVIEW, WA 98632 • (206) 425-0991

Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

Gibbs & Olson, Inc.

MOISTURE DENSITY RELATIONSHIP TEST REPORT

Project	Report Date: 09-22-89	Report No.: 001	PTL Order No.: 702-90165
	Client Order No.: 375-13	Page: 01 of 01	Lab No.: 89451

Client:
GIBBS & OLSON, INC.
P O Box 400
Longview, Washington 98632
Attention: John Duncan

Source of Sample:

Soil Description: Sand

Test Method: AASHTO T 99, Method A

Sample Submitted By: Client

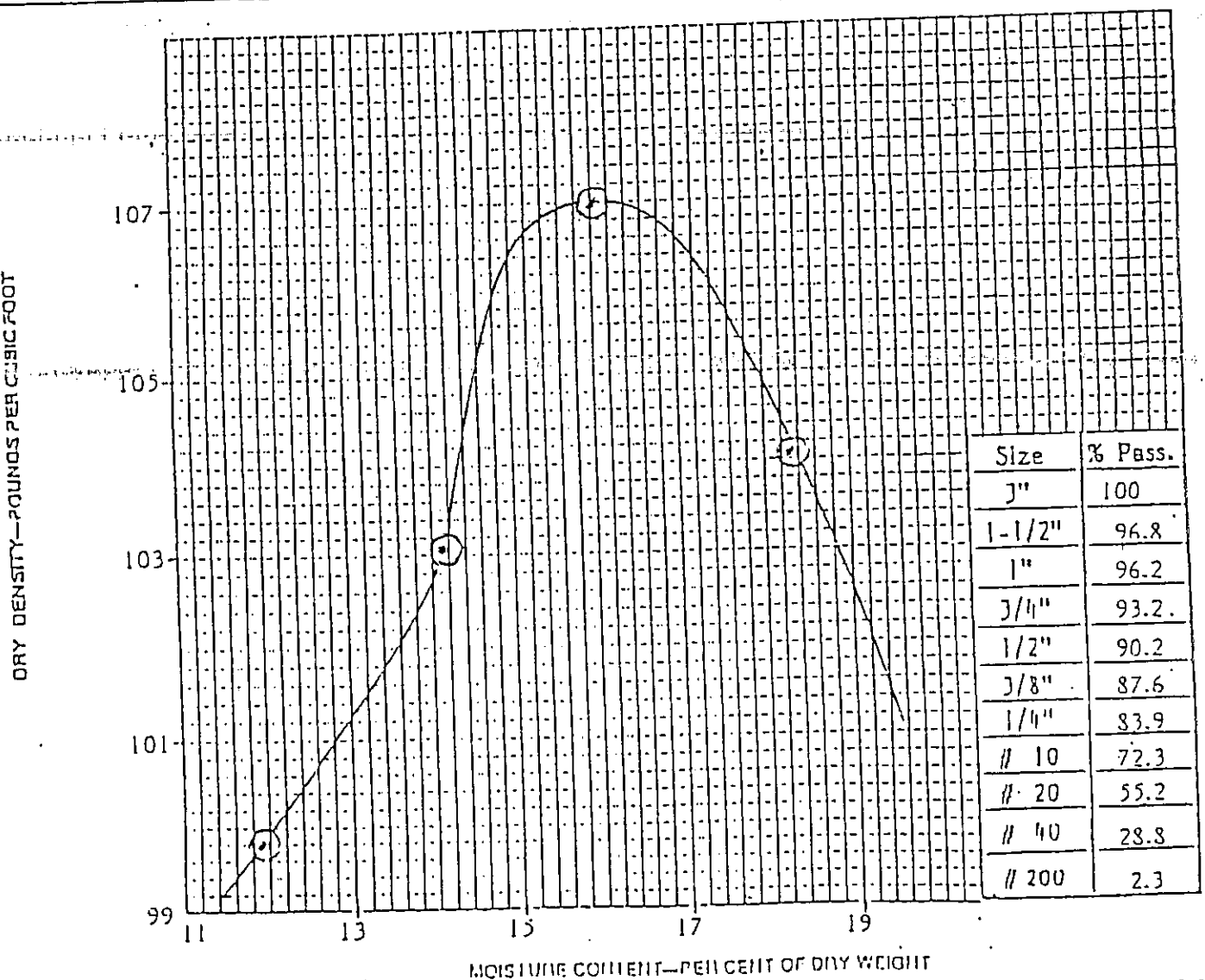
Date Sample Received: 09-22-89

Preparation Procedure: ☒ Moist ☐ Dry

Type of Hammer: ☐ Manual ☒ Mechanical

Max Lab Dry Density (lbs/cu ft): 107.0

Optimum Moisture (%): 16.0



Size	% Pass.
3"	100
1-1/2"	96.8
1"	96.2
3/4"	93.2
1/2"	90.2
3/8"	87.6
1/4"	83.9
# 10	72.3
# 20	55.2
# 40	28.8
# 200	2.3

1988 Standard Specifications

for Road, Bridge, and Municipal Construction

Washington State Department of Transportation

American Public Works Association
Washington State Chapter

9-03.13(1) Sand Drainage Blanket

Aggregate for the sand drainage blanket shall consist of granular material, free from wood, bark, or other extraneous material and shall meet the following requirements for grading:

Sieve Size	Percent Passing
2-1/2" square	90-100
1/4" square	30-100
The portion passing 1/4" shall meet the following requirements for grading:	
U.S. No. 10	50-100
U.S. No. 50	0-30
U.S. No. 100	0-7.0
U.S. No. 200	0-3.0

All percentages are by weight.

That portion of backfill for sand drains and sand drainage blanket retained on a 1/4 inch square sieve shall contain not more than 0.05 percent by weight of wood waste.

9-03.14 Gravel Borrow

Aggregate for gravel borrow shall consist of granular material, either naturally occurring or processed, and shall meet the following requirements for grading and quality:

Sieve Size	Percent Passing
1-1/4" square	100*
1/4" square	25 min.
U.S. No. 40	40 max.
U.S. No. 200	7.0 max.
Sand Equivalent	50 min.

All percentages are by weight.

*If requested by the Contractor, the sieve size may be increased with the approval of the Engineer if it is determined that larger size aggregate will be satisfactory for the specified backfilling or embankment construction.

9-03.15 Test Methods for Aggregates

The properties enumerated in these Specifications shall be determined in accordance with the following methods of test:

ITEM 4

Gundle Laboratory Results

Gundle

Quality Assurance Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 093089
ROLL # : 02001716

MANF. DATE : 09/30/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	40	D 1593
Carbon Black (%)	2- 3	2.7	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	111	D638
T.S. Break (ppi)	144	217	Type IV
Elong. Yield (%)	10	14	2 ipm
Elong. Break (%)	500	846	
Tear Resistance (lbs)	27	35	D 1004, Die C
Puncture Resistance (lbs)	47	80	FTMS No. 101C Method 2065

CERTIFIED BY:

R Crenwelge

Rodney Crenwelge
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : HDPE 060 MIL
BATCH # : 093089
ROLL # : 06001758

MANF. DATE : 09/30/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	60 +/- 10%	59	D 1593
Carbon Black (%)	2.0- 3.0	2.3	D 1603
Melt Index (g/10 min)	.3 max	.13	D 1238 E
Density (g/cm3)	.94	.948	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	126	154	D638
T.S. Break (ppi)	216	307	Type IV
Elong. Yield (%)	10	16	
Elong. Break (%)	500	903	2 ipm
Tear Resistance (lbs)	41	48	D 1004, Die C
Puncture Resistance (lbs)	72	100	FTMS No. 101C Method 2065

CERTIFIED BY:

R Crenwelge

Rodney Crenwelge
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 100289
ROLL # : 02001755

MANF. DATE : 10/02/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	39	D 1593
Carbon Black (%)	2.0- 3.0	2.5	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	109	D638
T.S. Break (ppi)	144	199	Type IV
Elong. Yield (%)	10	15	
Elong. Break (%)	500	832	2 ipm
Tear Resistance (lbs)	27	33	D 1004, Die C
Puncture Resistance (lbs)	47	85	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 100289
ROLL # : 02001753

MANF. DATE : 10/02/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	40	D 1593
Carbon Black (%)	2.0- 3.0	2.5	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	103	D638
T.S. Break (ppi)	144	199	Type IV
Elong. Yield (%)	10	15	
Elong. Break (%)	500	869	2 ipm
Tear Resistance (lbs)	27	34	D 1004, Die C
Puncture Resistance (lbs)	47	83	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 100189
ROLL # : 02001722

MANF. DATE : 10/01/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	43	D 1593
Carbon Black (%)	2.0- 3.0	2.4	D 1603
Melt Index (g/10 min)	.3 max	.11	D 1238 E
Density (g/cm3)	.94	.946	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	107	D638
T.S. Break (ppi)	144	230	Type IV
Elong. Yield (%)	10	15	
Elong. Break (%)	500	883	2 ipm
Tear Resistance (lbs)	27	34	D 1004, Die C
Puncture Resistance (lbs)	47	78	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Quality Control Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 093089
ROLL # : 02001717

MANF. DATE : 09/30/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	40	D 1593
Carbon Black (%)	2.0- 3.0	2.7	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.949	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	111	D638
T.S. Break (ppi)	144	217	Type IV
Elong. Yield (%)	10	14	
Elong. Break (%)	500	846	2 ipm
Tear Resistance (lbs)	27	35	D 1004, Die C
Puncture Resistance (lbs)	47	80	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Quality Assurance Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 100289
ROLL # : 02001754

MANF. DATE : 10/02/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	40	D 1593
Carbon Black (%)	2- 3	2.5	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	103	D638
T.S. Break (ppi)	144	199	Type IV
Elong. Yield (%)	10	15	2 ipm
Elong. Break (%)	500	869	
Tear Resistance (lbs)	27	34	D 1004, Die C
Puncture Resistance (lbs)	47	83	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

Gundle

Quality Assurance Certificate

MATERIAL : HDPE 040 MIL
BATCH # : 100289
ROLL # : 02001750

MANF. DATE : 10/02/1989
PROJECT NAME : INTERNATIONAL PAPER
PROJECT NUMBER : 8049
LOCATION : LONGVIEW WA

TEST PARAMETER	TYPICAL SPECIFICATIONS	TEST RESULTS	ASTM TEST METHOD
Thickness (mils)	40 +/- 10%	38	D 1593
Carbon Black (%)	2- 3	2.5	D 1603
Melt Index (g/10 min)	.3 max	.10	D 1238 E
Density (g/cm3)	.94	.947	D 1505 A
Tensile Properties:			
T.S. Yield (ppi)	86	104	D638
T.S. Break (ppi)	144	208	Type IV
Elong. Yield (%)	10	15	2 ipm
Elong. Break (%)	500	865	
Tear Resistance (lbs)	27	33	D 1004, Die C
Puncture Resistance (lbs)	47	82	FTMS No. 101C Method 2065

CERTIFIED BY:

Rodney Crenwelge
Lab Manager

ITEM 5

Phillips 66 Laboratory Results

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0752
BOX 752 PHONE: 713 475-2650

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

July 28, 1989

JHV# 7083-89

FAX: 713-675-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0394646
P.O. Number:	123402
Date shipped:	07/25/89
Package:	PSPX 9131
Quantity:	148150 lbs.
Melt Index:	.13 gm/10 min.
Density:	.937 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0752
BOX 702 PHONE: 713 475-3666

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

July 28, 1989

JHV# 7086-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0394605
P.O. Number:	SPG
Date shipped:	07/25/89
Package:	PSPX 9113
Quantity:	164500 lbs.
Melt Index:	.16 gm/10 min.
Density:	.939 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY
PASADENA TEXAS 77501-7750
BOX 750 P-ONE 713 475-3666

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

July 28, 1989

JHV# 7084-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0394628
P.O. Number:	123412
Date shipped:	07/25/89
Package:	PSPX 6834
Quantity:	153050 lbs.
Melt Index:	.13 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY

August 31, 1989

JHV# 8173-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HDM TR-400
Lot Number:	0395238
P.O. Number:	124229
Date shipped:	09/01/89
Package:	PSPX 6304
Quantity:	177450 lbs.
Melt Index:	.16 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0707
P.O. BOX 707 PHONE 713 475-5000
PHILLIPS PLASTICS CORPORATION
A Phillips Petroleum Company

July 28, 1989

JHV# 7088-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0294612
P.O. Number:	123412
Date shipped:	07/25/89
Package:	PSPX 8217
Quantity:	154850 lbs.
Melt Index:	.13 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0792
BOX 752 PHONE: 713 475-3666

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

April 10, 1989

JHV# 3320-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Mr. Steve Severson

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0392042
P.O. Number:	120644
Date Shipped:	04/07/89
Package:	PSPX 5999
Quantity:	186950 lbs.
Melt Index:	.12 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50:	>1000 hrs **
Low Temp. Brittleness: (ASTM D746)	<-180 degrees F **

Very truly yours,

PHILLIPS 66 COMPANY

J. H. Vaden
Quality Assurance Manager

* Reg. U.S. Pat. Off
** Nominal Value

PSN:JHV:ad

cc: QA-File-RC
D. E. Morgan

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0752
BOX 752 PHONE: 713 475-3000

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

August 28, 1989

JHV# 7975-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0393741
P.O. Number:	123412
Date shipped:	08/15/89
Package:	PSPX 5039
Quantity:	180000 lbs.
Melt Index:	0.150 gm/10 min.
Density:	0.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden/rcl

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY
PASADENA, TEXAS 77501-0792
BOX 792 PHONE: 713-475-3666

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

August 28, 1989

JHV# 7997-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0394795
P.O. Number:	123412
Date shipped:	08/25/89
Package:	PSPX 5968
Quantity:	150850 lbs.
Melt Index:	.14 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY

PASADENA TEXAS [illegible]
BOX [illegible] PHONE [illegible]

PHILLIPS PLASTICS RESINS
Houston Chemical Complex

August 31, 1989

JHV# 8173-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0395238
P.O. Number:	124229
Date shipped:	09/01/89
Package:	PSPX 6304
Quantity:	177450 lbs.
Melt Index:	.16 gm/10 min.
Density:	.938 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

PHILLIPS 66 COMPANY

PASADENA, TEXAS
PHILLIPS PLASTICS RESINS

August 31, 1989

JHV# 8172-89

FAX: 713-875-6010

Gundle Lining Systems Inc.
1340 East Richey Road
Houston, TX 77073

ATTN: Steve Severson / Ray McCurdy

This letter will certify that the Marlex* resin shown below, as supplied by Phillips 66 Company, conforms to our manufacturing specification.

Type:	HHM TR-400
Lot Number:	0395214
P.O. Number:	124229
Date shipped:	09/01/89
Package:	PSPX 5788
Quantity:	173550 lbs.
Melt Index:	.16 gm/10 min.
Density:	.936 gm/cc
ESCR, F/50, Cond. B:	>1000 hrs **
LT Brit. (ASTM D746):	<-180 degrees C **

J. H. Vaden
Quality Assurance Manager
PHILLIPS 66 COMPANY

JHV:PSN:ad

* Reg. U.S. Pat. Off.
** Nominal Value

cc: QA-File-RC
E. E. Fogle

ITEM 6

Tensile Strength Discussion

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

March 12, 1990

James L. Grant & Associates, Inc
8301 East Prentice Avenue, Suite 402
Englewood, Colorado 80111

Attention: Noelle Sears

Reference: International Paper Facility (Longview, WA) Tensile Strength Specifications

Dear Noelle:

Thank you for your letter of March 9, 1990, outlining the conversion of Gundle's tensile strength (T.S.) yield from units of pounds per inch (ppi) to pounds per square inch. As mentioned, I was unable to convert ppi to psi because I had no data on the roll thickness.

Review of the T.S. yield strength you supplied shows that it is 8% below specification. The lower T.S. yield is acceptable for the following reasons:

1. The original specifications are a minimum of 5 years old, and were not updated to current 1990 industry standards prior to the lining installation. Minor alterations in the Specifications have occurred as a result of updating the closure document to 1990 industry standards. The lower T.S. yield falls into this category.

2. As mentioned in your letter, all other Gundle testing certification met or exceeded specifications. The two critical factors to keeping water out, are "at break" and "elongation at break". These two test values exceed the specifications.

3. The linear is covered with 24 inches of soil and fill material with surface grass. The area is surrounded by fence with two locked gates limiting the access to only maintenance equipment, such as lawn mowing, fertilizing application, etc. This will ensure a load so small that the linear will experience no load exceeding a few hundred psi in the worst case. This gives a factor of safety on the order of 10.

1405 17TH AVENUE, SUITE 300 • P.O. BOX 400 • LONGVIEW, WA 98632 • (206) 425-0991

I have outlined the three reasons the T.S. at yield of 2666 psi (average) is both reasonable and acceptable to this application for the International Paper Longview, Washington facility.

If you have any additional concerns, questions or observation about this issue, please call.

Sincerely,

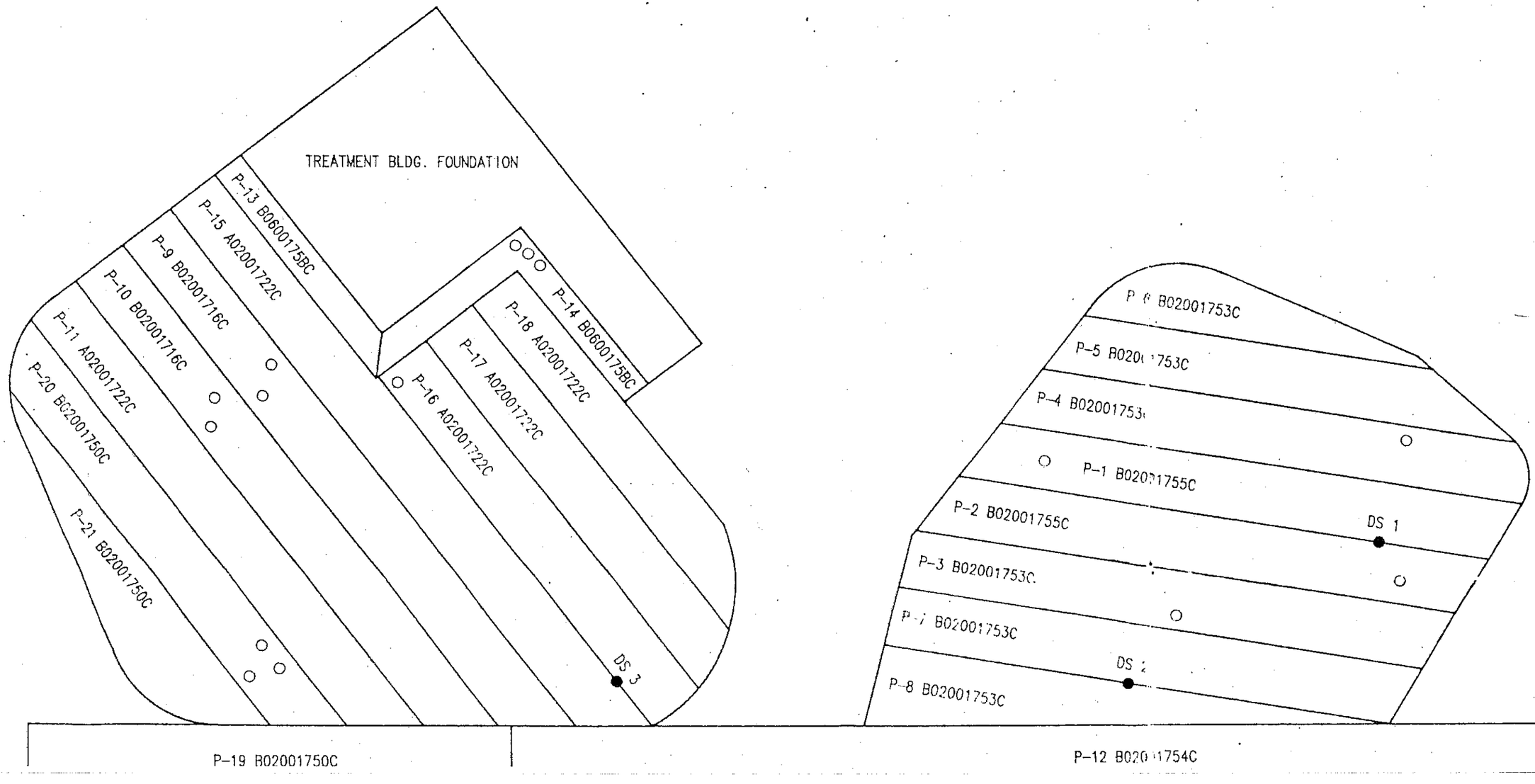
GIBBS & OLSON, INC.

By John A. Duncan

John A. Duncan, P.E., L.S.

ITEM 7

Gundle As-Built Drawing


TREATMENT BLDG. FOUNDATION
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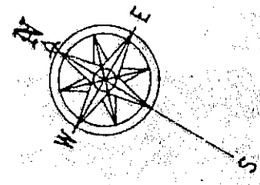
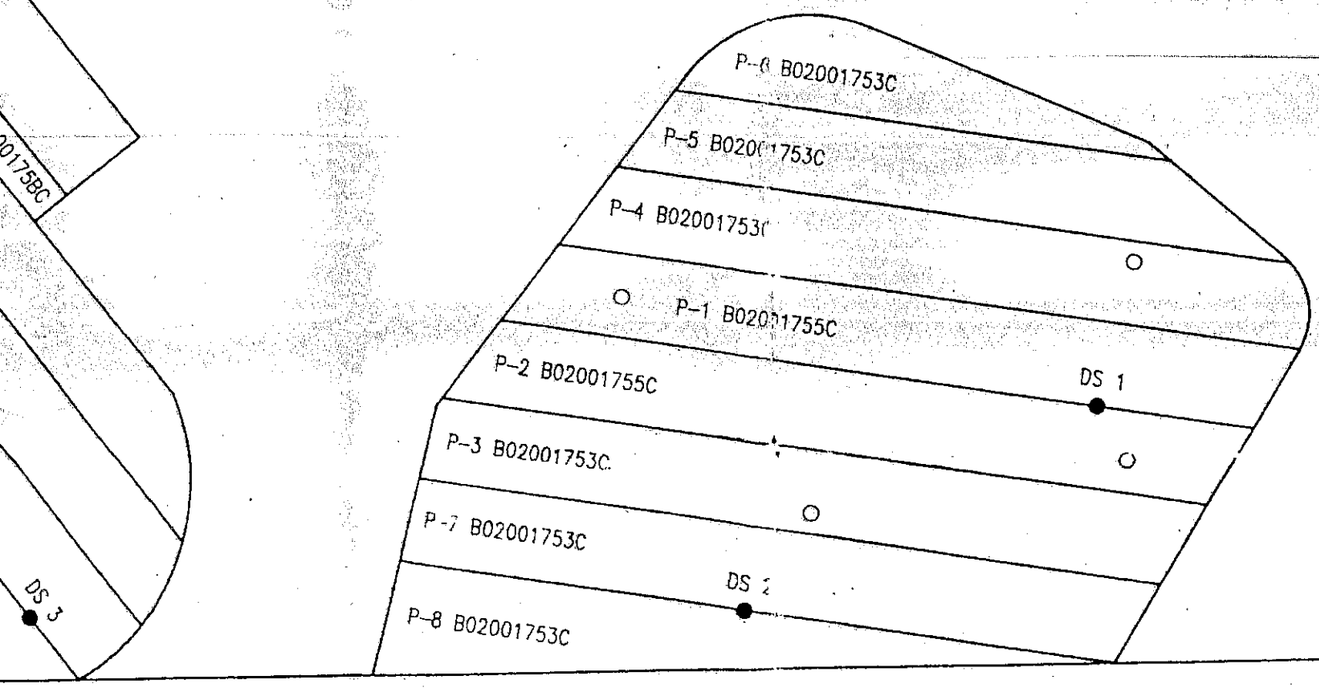
P-15 A02001722C
P-9 B02001716C
P-10 B02001716C
P-11 A02001722C
P-20 B02001750C
P-21 B02001750C
P-14 B0600175BC
P-16 A02001722C
P-17 A02001722C
P-18 A02001722C
DS 3
P-19 B02001750C
P-6 B02001753C
P-5 B02001753C
P-4 B02001753C
P-1 B02001755C
P-2 B02001755C
DS 1
P-3 B02001753C
P-7 B02001753C
DS 2
P-8 B02001753C
P-12 B02001754C


N
E
W
S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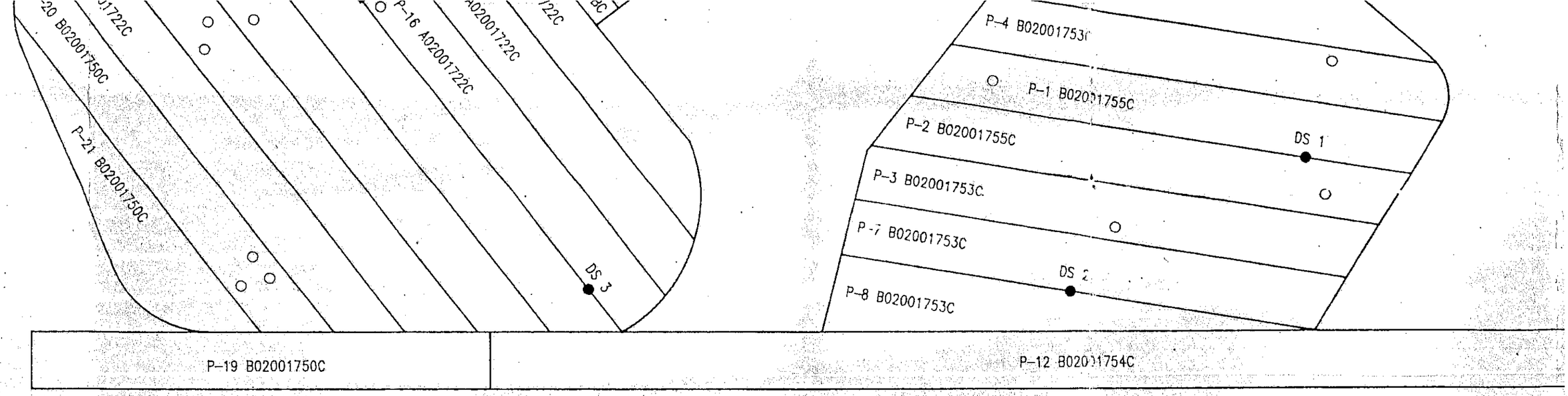
P-5 B02001753C
P-4 B02001753C
P-1 B02001755C
P-2 B02001755C
DS 1
P-3 B02001753C
P-7 B02001753C
DS 2
P-8 B02001753C
DS 3

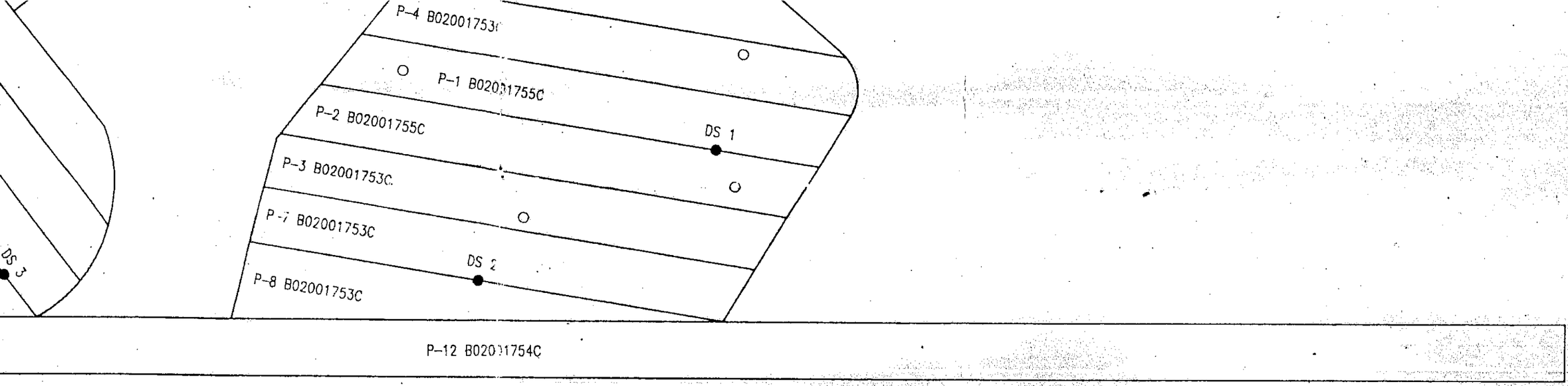


PLANVIEW

NOT TO SCALE

LEGEND

○	= TYP. PIPE PENETRATION Ø VARIES
●	= DESTRUCTIVE SAMPLE LOCATION
DS 1	= DESTRUCTIVE SAMPL I.D. No.
P-1	= PANEL I.D. No.
B02001755C	= ROLL I.D. No.



PLANVIEW
NOT TO SCALE

NOTE:
1. THIS AS-BUILT IS FOR Q.C. PURPOSES ONLY. DO NOT SCALE FOR AREA TAKE-OFF. FOR LAB SAMPLES ONLY.

DATE	REV	DESCRIPTION	APPR'D BY	BY

Gundle®
19103 GUNDLE ROAD
HOUSTON, TEXAS 77073

AS-BUILT DRAWING

OWNER
INTERNATIONAL PAPER
LONGVIEW, WA.

DATE 1-18-90
SCALE AS NOTED
DRAWING No 8049-F01 | BY DT
APPROVED BY DST | REV 0

ITEM 8

Gundle Weld Certification

Certification of the HDPE Welds and Seams
for the HDPE Liner Installation at the
International Paper Facility
in
Longview, Washington

I, David Herreth, certify that the HDPE liner seams are stronger than the original liner material and that the welds are acceptable as defined by the specifications for the liner installation, which are attached.

David Herreth proj. mgr. spapp.
Signature
Gundle Lining Systems, Inc.

2-6-90
Date

ITEM 9

Gundle Installation Daily Reports

JOHN COPY

Gundle®

SOLID WASTE MANAGEMENT
PROJECT: INTERNATIONAL PADS
LOCATION: LONGVIEW, WA.
DATE: 10-14-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 70 °F Min 44 °F Precip. 0 in. Wind: Vel 5 mph Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	2	21
Technicians	3	31.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
40 mil.	#1	B0200 17553C	305'				
" "	#2	" "	296'				
" "	#3	B0200 17553C	258'				
	TOTAL	Sq. feet =		18,898			

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
						1

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Setup Deploying Equip & Welding Equip. at L Trailer & Checked Out Guns #42 & #49 (OK) Filled Sand Bags, Started Deploying

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS: Howard Daniels Plant Personnel

SIGNED: [signature] Gundle Representative (WHITE) _____ Owner/Contractor (YELLOW) [signature] Inspector (PINK)

John Copy

Gundle®

PROJECT: International Paper G.
LOCATION: Longview, WA.
DATE: 10-15-89 P.F.# 2049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 61 °F Precip. 0 in. Wind: Vel 5-8 mph
Min 35 °F Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	2	21
Technicians	3	31.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
40 mil.	4	B02001 753C	221				
" "	5	" "	129.7				
" "	6	~~B02001 753C~~	87'	←		B0200 1217C	
" "	7	" "	321'				
		TOTAL SQ. FEET = 16,691					

WELDED yes

VACUUM TESTED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.	Sample No.'s	Tech.	Seam	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.
#2	Re-wec	#1	305'	0	305'	0					

OTHER PROGRESS: Deployed Four Panels of 40 mil & Linered seams & welded one seam Complete.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED:

Gundle Representative (WHITE) | Owner/Contractor (YELLOW) | Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview Wash.
DATE: 10-16-99 F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 60 °F Precip. NO in. Wind: Vel 3-5 mph
Min 33 °F Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	2	19
Technicians	3	28.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
40 mil	#8	~~B0209~~	342'	←		B0209	
						17170	
		TOTAL	SQ. FEET =	7524			

WELDED yes. VACUUM TESTED N/O

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s	Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.
#42	Bruce	#2	256'	0	256'	—					
	"	#3	240'	0	240'	—					
"	"	#4	116'	0	116'	—					
#79	Lee	#4	68'	0	68'	—					
"	"	#5	87'	0	87'	—					
			767 Feet.								

OTHER PROGRESS: Welded Four Seams & Deployed one Panel & Built 4 2" Boots.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS: Jay Amen.

SIGNED: _____ Gundle Representative (WHITE) _____ Owner/Contractor (YELLOW) _____ Inspector (PINK)

Gundle®

Sonia Wastewater

PROJECT: International Paper

LOCATION: Longview WA.

DATE: 10-17-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 65 °F Min 37 °F Precip. 0 in. Wind: Vel 2-5 mph Dir. (N) S (E) W

LABOR:	No.	Manhours
Supervisors	2	23
Technicians	3	34.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
40 mil	#9	B02001 7.C.	292'				
" "	#10	" "	293'				
" "	#11	A02001 7226	270'				
		TOTAL SQ. FEET =	18,810				

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.	Sample No.'s
#79	Lee	#6	321'	—	321'	0
"	" "	#7	121'	—	121'	—
#42	Pee-wee	#7	121'	—	121'	—

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.
		Finished Seam #7		

OTHER PROGRESS: Welded seams #6 & #7 on Mound #1 & Deployed three panels on Mound #2 & Finished one seam.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED: James Gundle
Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Harold Jones
Inspector (PINK)

Gundle®

PROJECT: ~~International Pipe~~
LOCATION: Longview, WA.
DATE: 10-18-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 66 °F Min 42 °F Precip. yes in. Wind: Vel 5-10 mph Dir. N (S) E W

LABOR:	No.	Manhours
Supervisors	2	10
Technicians	3	15
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
40 mil.	#12	B02001 T5HC	1044'				
		TOTAL	SQ. FEET =	14,168			

WELDED None

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED None

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Deployed Panel #12 on Land next to panel #1 & over in A. Trench & Sand Bag. Sand & Rained out @ 12:00 P.M.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED: Kenny Gundle
Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Inspector (PINK)

Gundle®

PROJECT: Intermediate Pond
LOCATION: Longview WA.
DATE: 10-19-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 76 °F Min 52 °F Precip. 0 in. Wind: Vel 5-8 mph Dir. N (S) (E) W

LABOR:	No.	Manhours
Supervisors	2	22
Technicians	3	33
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED yes

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
#9	Peewee	#8	65'	0	65'	
	11					
welded #	4					
X-seams,			96'	0	96'	
					161'	

VACUUM TESTED 0

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Run Liner into Pond Through & Built & Installed 4 2" Boots & one 8" Boot & welded Same, & welded 4 X-seams On Bottom of Pond

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED: James Gundle
Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Howard Daniels
Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview WA.
DATE: 10-20-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 66 °F Precip. yes. in. Wind: Vel 10 mph
Min 40 °F Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	2	19
Technicians	3	28.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
60 mil.	#13	B0600 175 BC	112'X	22'			
		TOTAL	SQ. FEET	2,464			
		ON WEST	SIDE OF	TREATMENT	BLG.		

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
#79	Reese	#8	44'	0	44'	

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: STARTED welding on Pond #1 on seam #8 & Both Guns getting HOT. Deployed one Panel of 60 mil. on West Side of Treatment Blg. & Installed 84' of Nop. & Stainless Steel

~~FIELD MEMOS/CHANGE ORDERS ISSUED~~: Batten Strip. Also Built 5 2" Boots.

SITE MEETINGS/VISITS:

SIGNED:

Gundle Representative (WHITE) | Owner/Contractor (YELLOW) | Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview, Wash.
DATE: 10-21-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 46 °F Min 32 °F Precip. Yes in. Wind: Vel 8-10 mph Dir. N (S) E W

LABOR:	No.	Manhours
Supervisors	2	8
Technicians	3	12
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length
60 mil.	#14	B0600 1750C	86'x22'				
		TOTAL	59. Feet =	1892			

WELDED None

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Deployed one Panel next to Transit Bldg. 86'x22' 60 mil. & started to install 1/4x2" stainless bolts. Step Rained out @ 1100 A.M.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED:

Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Inspector (PINK)

Gundle®

PROJECT: Ft Lewis Tactical Area
LOCATION: Longview WA.
DATE: 10-22- P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 66 °F Min 48 °F Precip. YES in. Wind: Vel 15-20 mph Dir. N S (E) W

LABOR:	No.	Manhours
Supervisors	2	10
Technicians	3	15
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
#19	Pete Wee	#6		1	2.5'	0
		made Repair. 15' From A. Thrush on EAST END.				

VACUUM TESTED YES.

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Rained out From 7:00 A.M. To 12:00 P.M., went To Job Site & Installed 48' of 1/4 X 2" STAINLESS STEEL BATTEN. & VAC. Tested 6 Seams on SOLID WASTE MANAGMENT MOUND

FIELD MEMOS/CHANGE ORDERS ISSUED: Rained out @ Sht. Pkg. 1 TO 10/23 OK

SITE MEETINGS/VISITS:

SIGNED:

Gundle Representative (WHITE) Owner/Contractor (YELLOW) Inspector (PINK)

Gundle®

PROJECT: International Bldg.
LOCATION: Longview, TX
DATE: 10-23- P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 57 °F Min 49 °F Precip. yes in. Wind: Vel 15-20 mph Dir. N (S) E W

LABOR:	No.	Manhours
Supervisors	2	4
Technicians	3	6
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: None Rained out all day.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED: Gundle Representative (WHITE) Owner/Contractor (YELLOW) Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview, WA.
DATE: 10-24-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 67 °F Min 44 °F Precip. None in. Wind: Vel 8-10 mph Dir. N (S) E W

LABOR:	No.	Manhours
Supervisors	2	23
Technicians	3	34.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length
40	#15	A0200 1722C	122'x22'
" "	#16	" "	80'x22'
" "	#17	" "	131'x22'
" "	#18	" "	87'x22'
" "	#19	1750# B0200	177'x22'
" "	#20	" "	82'x22'
" "	#21	" "	140'x22'

Type	Panel	Roll#	Length

TOTAL SQ. Feet = 18,024

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Finished Deploying on Mound #2 & Listening Seams.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

SIGNED:

Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview, Wa.
DATE: 10-25-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 57 °F Min ____ °F Precip. Little in. Wind: Vel 9 mph Dir. N (S) E W

LABOR:	No.	Manhours
Supervisors	1	11
Technicians	3	33
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED yes

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
#79	Peewee	#9	191'	0	191'	—
	Welded	223'	of X-seams		on	Mound #1

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Cleaned water off weld seams & welded #9 X-seams & also welded 191' on seam #9 on Mound #1

FIELD MEMOS/CHANGE ORDERS ISSUED: ____

SITE MEETINGS/VISITS: Jay Amen.

SIGNED: Gundle Representative (WHITE) ____ Owner/Contractor (YELLOW) Inspector (PINK)

Gundle®

PROJECT: Fatherhood Hwy 2
LOCATION: Longview WA.
DATE: 10-26-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 51 °F Min 43 °F Precip. Yes in. Wind: Vel 3 mph Dir. N (S) E (W)

LABOR:	No.	Manhours
Supervisors	1	8
Technicians	3	24
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED None

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED None

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: Leistered seams & Built #1 11"x4' Boot #1 12" x 4' Boot #1 6"x4' Boot & #1 2"x3' Boot Rained out (2) 12:00 P.M. & 4:00 P.M.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS: Howard Daniels

ISSUED:

Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview, WA.
DATE: 10-27-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 55 °F Min 40 °F Precip. LITTLE in. Wind: Vel 5-6 mph Dir. (N) S (E) W

LABOR:	No.	Manhours
Supervisors	1	9.5
Technicians	3	28.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s
#15	Peewee	#16	101'	0	101'	0
1'	''	X-SEAMS	100'	0	100'	0
19	Lee	#14	96'	0	96'	0

VACUUM TESTED Yes.

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.
X-SEAMS.				

OTHER PROGRESS: VAC. TESTED SEAM #8 & #4 X-SEAMS ON MORNING #1 WELDED SEAMS #16 & PART OF SEAM #14 & WELDED #3 BOOTS.

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

IED: Gundle Representative (WHITE) | Owner/Contractor (YELLOW) | Inspector (PINK)

Gundle®

PROJECT: International Pipe
LOCATION: Longview, WA.
DATE: 10-28-99 P.F.# 9049

DAILY PROGRESS REPORT

WEATHER: Temp. Max _____ °F Min _____ °F Precip. 0 in. Wind: Vel 8 mph Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	1	10.5
Technicians	3	31.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED Yes

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.	Sample No.'s
#15	Pee Wee	#9	77'	0	77'	Finished.
#5	" "	#10	141'	0	141'	
#19	Lee	#10	142'	0	142'	
#15	Pee Wee	#11	275'	0	275'	
" "	Pee Wee	#12	103'	0	103'	
#79	Lee	#13	180'	0	180'	
" "	Lee	#14	77'	0	77'	Finished.
#15	Pee Wee	#17	79'	0	79'	
#79	Lee	#18	105'	0	105'	
#79	" "	#19	50'	0	50'	

VACUUM TESTED No

Tech.	Seam	(Linear Feet) Seam Weld	Repairs	Total Lin. Ft.
welded one X-seam				22'

OTHER PROGRESS: Finished welding seams on Mound #2 & Welded #3 2" x 4' Boots & #1 8" x 4' 1500 Ti

FIELD MEMOS/CHANGE ORDERS ISSUED: _____

SITE MEETINGS/VISITS: _____

SIGNED: James Gundle
Gundle Representative (WHITE)

Owner/Contractor (YELLOW)

Inspector (PINK)

Gundle®

PROJECT: International Paper
LOCATION: Longview, WA.
DATE: 10-29-89 P.F.# 8049

DAILY PROGRESS REPORT

WEATHER: Temp. Max 49 °F Min 31 °F Precip. 0 in. Wind: Vel 6 mph Dir. (N) S E W

LABOR:	No.	Manhours
Supervisors	1	7.5
Technicians	3	22.5
Laborers		
Operators		
Other		

DEPLOYED:

Type	Panel	Roll#	Length	Type	Panel	Roll#	Length

WELDED

Gun#	Tech.	Seam#	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.	Sample No.'s

VACUUM TESTED

Tech.	Seam	(Linear Feet) Seam Weld	(Linear Feet) Repairs	Total Lin. Ft.

OTHER PROGRESS: VAC. TESTED ALL SEAMS ON MANDO #2 & POND #1 & LOADED OUT EQUIP TRAILER

FIELD MEMOS/CHANGE ORDERS ISSUED:

SITE MEETINGS/VISITS:

NED:

Gundle Representative (WHITE) | Owner/Contractor (YELLOW) | Inspector (PINK)

ITEM 10

Certification Letter By Mr. John Duncan

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

February 7, 1990

James L. Grant & Assoc., Inc.
8301 E. Prentice Avenue, Suite 402
Englewood, CO 80111

Attention: Noelle Sears

Re: Longview, Washington, Treated Wood Products Impoundment Closure

Dear Noelle:

The following written report is to document your facsimile transmittal of February 2, 1990, and our phone conversation of February 6, 1990. The report responds to the items specified with my initials on the February 2, 1990 transmittal and High Density Polyethlene Engineering Specifications.

If you have any questions about the response or feel that additional clarifications are necessary, please call.

Additionally, I am enclosing copies of the daily reports and Pre-weld Qualification sheets for your records. I look forward to meeting with you to finish up the final report.

Sincerely,

GIBBS & OLSON, INC.

By John Duncan
John Duncan, P.E., L.S.

Enclosures
cc: J. Amin
JD/sv
File: 375.13.10

GIBBS & OLSON, INC.

RESPONSES TO
HIGH DENSITY POLYETHLENE ENGINEERING SPECIFICATIONS

III. MATERIALS, G., 2. "One dog bone shall be cut out of each sample and subject to a pull test at the site."

The test procedures were periodically reviewed by me. Pictures and actual test samples were taken and are available upon request. In addition, I am enclosing a copy of Gundle's Pre-weld Qualification, which should cover each dog bone test. It appears that some of Gundle's Pre-weld Qualification sheets are missing. A review of the daily progress reports show dates when welding took place, but no corresponding Pre-weld Qualification sheet are shown. Daily reports show welding on both the 15th and 20th, but no Pre-qualification Report. Jim and Larry, Gundle's representatives on the site, both assured me that all tests were taken.

III MATERIALS, C. Inspection, 2., a.

I visually inspected the seams of entire liner. In addition to this visual observation, onsite testing as outlined above was performed. Gundle performed vacuum testing on all seams (see reported dated 10/29/89) and reported them as good. No discrepant were found.

III MATERIALS, 3. Report and Certifications, a. & b.

These items refer to a report by manufacturer's representative. I am neither a representative of the manufacturer nor qualified to technically review the materials which Gundle provided. As International Paper's representative, I observed that the materials were delivered to the site, and appeared to meet all the manufacture's specifications.

IV. INSTALLATION, C. Seaming Methods, 1

I witnessed testing of the dog bone sections as outlined above. This testing demonstrated that each weld in tension, had in excess of 100% of the strength of the original material.

V. QUALITY ASSURANCE, B. Sheet Manufacture, 3., d.& e.

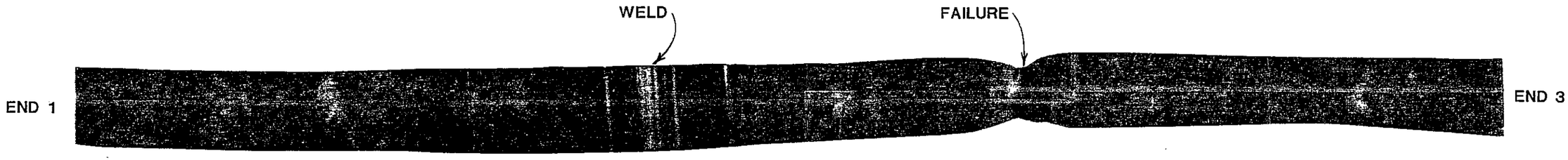
The items listed here appear to be information supplied by Gundle. Gundle provided no such information to me.

V. QUALITY ASSURANCE, C. Installation Quality Control, 2. Welding, b., 1., a.

I observed that all welds attained their maximum strength within minutes upon completion. This was demonstrated by the pull tests being performed within minutes of the successful welding of the two pieces together.

ITEM 11

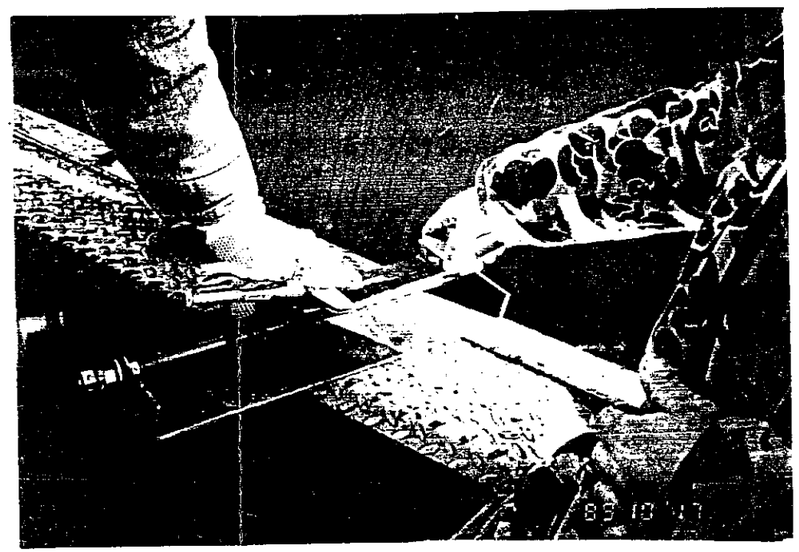
Results of Field Pull Test



SHEET A

SHEET B

OVERLAP OF SHEET A



EXPLANATION OF FIELD TENSILE TEST

Sheets A and B were welded together using an extrusion welding process. A portion of Sheet A was placed underneath Sheet B, providing an overlapped area at the seam of the two sheets. The extrusion weld was placed at the edge of Sheet B, were it contacted Sheet A. For each day of welding, a sample weld sheet was prepared. An approximately one-inch thick piece was cut from the sample weld sheet for tensile strength testing on-site. The materials shown above are remnants from the testing.

Initially, the sample piece was placed in a vise so that Sheet A was under tension. (Ends 1 and 2 clamped in vise). The tensile forces were gradually increased until failure occurred. In the sample piece shown above, Sheet A was torn in half and the weld was undamaged. These results indicate that the weld was stronger than the parent material in Sheet A. For the second step of the tensile test, the sample piece was placed in a vise so that Sheet A, Sheet B, and the weld were under tension. (Ends 1 and 3 clamped in vise). The tensile forces were gradually increased until failure occurred. In the sample piece shown above, Sheet B failed and the weld was undamaged. These results also indicate that the weld was stronger than the parent materials in Sheets A and B.

JAMES L. GRANT & ASSOCIATES
geotechnical engineering • management • computer science
ENGLEWOOD, COLORADO

EXAMPLE OF FIELD TENSILE TEST

ITEM 12

Gundle Destructive Test Laboratory Results

Gundle

Laboratory Report # 7018

DATE: 01/19/90

SUBJECT:

Quality control testing of site welds from INTERNATIONAL PAPER
LONGVIEW WA
8049

Product type: HDPE 040 MIL

TEST METHOD:

[ASTM D638 Type IV dumb-bells were used for peel and shear testing of the welds.]

TEST RESULTS: (FTB = Film Tearing Bond)

Seam/Sample	Result Type	Peel Stress, ppi	Max Shear Stress, ppi
3/3	FTB	72	122
1/DS-1	FTB	94	123
4/DS-2	FTB	86	125

CONCLUSION:
All welds passed.

CERTIFIED BY:

R Crenwelge

Rodney Crenwelge
Lab Manager

ITEM 13

Weld Testing Procedure Discussion

GIBBS & OLSON, INC.
ENGINEERS PLANNERS SURVEYORS

March 12, 1990

James L. Grant & Associates, Inc
8301 East Prentice Avenue, Suite 402
Englewood, Colorado 80111

Attention: Noelle Sears

Reference: International Paper Facility (Longview, WA)
Weld Inspection

Dear Noelle:

Thank you for your letter dated March 9, 1990, requesting clarification of the high density polyethylene (HDPE) linear welded seam test methods.

As outlined in the specifications, a combination of various test methods are used to insure that all seams are of excellent quality and devoid of discrepancies tunnels or holidays. Test methods fall into two categories as listed below:

1. Spot Checks
   A. Spot test of each welding machine three times a day
   B. Onsite pull test of sample welding sections
   C. Test pieces (samples) from each days work sent to a lab for verification testing

2. Field Testing All Seams Upon Completion
   A. Visually reviewing all welds
   B. Field Testing all welds by means of:
      1. Ultrasonic testing, or
      2. Vacuum testing

The Specification recommended field test procedure for the Longview Washington site was 2.,B.,1. - "Fielding Testing all welds by Ultrasonic". The ultrasonic method consists of calibrating a transducer unit to measure the thickness of each acceptable weld and measuring each and every weld by passing the properly calibrated transducer over all welds. The Gundle representative reviewed the ultrasonic test method. He was concerned that welds which will pass the test for thickness, still have potential for tunnels or voids in the seams. Test method No. 2.,B.,2 for the complete lining system is "vacuum testing of all seams". The vacuum method will not measure seam thickness, but it does insure that no tunnels or voids exist, guaranteeing an impermeable linear. The goal at the Longview site is to create an impermeable layer

which surface water can not penetrate. I selected vacuum testing as the best method for achieving the desired goal. The reasons outlined above (substituting the vacuum testing for the ultrasonic testing) is actually an improvement over the original specification.

If you have any additional concerns or questions about this issue, please call me at 206/425-0991.

Sincerely,

GIBBS & OLSON, INC.

By John A. Duncan
John A. Duncan, P.E., L.S.

ITEM 14

Gundle Vacuum Test Reports

Gundle

LOCATION: Longview, WA
DATE: 10-15-89 P.F.# 8049
MATERIAL: 40 mil.

PRE-WELD QUALIFICATION

Welder # #42
Welded by: Pee-wee
Time: 12:30 P.M.
Temp. – 210 - 235

Welder # #42 10-16-89
Welded by: Pee-wee
Time: 8:30 A.M.
Temp – 210 - 235

Welder # #79 10-16-89
Welded by: Lee
Time: 3:00 P.M.
Temp – 210 - 230

Welder # #42
Welded by: Pee-wee
Time: 8:00 A.M.
10-17-89
Temp. – 210 - 235

Welder #
Welded by:
Time:

10-19-89
Welder # #79
Welded by: Pee-wee
Time: 12:30 P.M.
Temp – 215 – 240

Welder # #79 10-21-89
Welded by: Lee
Time: 1:30 P.M.
Temp. 220 – 240

Welder # #42 10-25-89
Welded by: Pee-wee
Time: 1:00 P.M.
Temp. 215 – 235

Welder # 15 Temp. – 215 – 240
Welded by: Pee-wee
Time: 1:00 P.M.
10-27-89

Welder # #79
Welded by: Lee
Time: 1:00 P.M.
Temp. 215 – 245

James Cirulla
Gundle Representative

Harold Dixon
Inspector

Gundle

LOCATION: Lake Wise Tank

DATE: 10-22-89 P.F.# 8049

VACUUM TEST REPORT

Seam #	Date Inspected	# of Repairs	Location of Repairs	Date Repaired	Date Re-Inspected	Comments
#1	10-22-89	—				All weld OIC
#2	" "	—				" "
#3	" "	—				" "
#4	" "	—				" "
#5	" "	—				" "
#6	" "	1	15' From A. Thierch on EAST End.	10-22-89	10-22-89	" "
#7	10-27-89	0				" "
#8	" "	0				" "
#9	10-29-89	1	33' From A. Thierch on # North End.	10-29-89	10-29-89	" "
#10	" "	0				" "
#11	" "	0				" "
#12	" "	0				" "
#13	" "	0				" "
#14	" "	2	AT T-Joint.	10-29-89	10-29-89	
#15	" "	0				
#16	" "	0				
#17	" "	0				
#18	" "	0				
#19	" "	0				

Quality Control Supervisor

Gundle

LOCATION: Longview, WA.
DATE: 10-28-89 P.F.# 8049
MATERIAL: 40

PRE-WELD QUALIFICATION

Welder # #15
Welded by: Lee-Wee
Time: 8:30 A.M.
Temp - 215-240

Welder # #79
Welded by: Lee
Time: 9:00 A.M.
Temp - 220-245

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

Welder # _____
Welded by: _____
Time: _____

James Courville
Gundle Representative

Inspector

APPENDIX G

SEEDING DOCUMENTATION

AMERICAN LANDSCAPE
MAINTENANCE
P.O. Box 1061
Kelso, WA 98626
423-1881

NOVEMBER 13, 1989

JOHN DUNCAN
GIBBS & OLSON INC.
1405 17TH AVENUE
LONGVIEW, WA. 98632

RE: HYDROSEEDING at INTERNATIONAL PAPER

I have talked with U.S. Dept. of Soil Conservation Service. Their recommendation (see attached) is in my opinion, the best seed mixture for INTERNATIONAL PAPER'S particular situation.

Along with the seed I recommend:

[1] 2,000 LB of SILVA FIBRE MULCH per acre.

[2] 300 LB of PAREX 14-19-19 STARTER FERTILIZER per acre.

[3] 300 LB of CALPRIL LIME per acre.

The above rates are standard and will insure good seed germination, followed by a thick stand of plants (grasses and clover.)

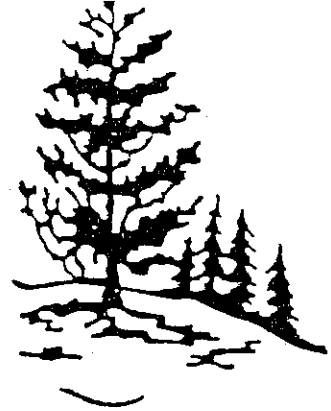
I have also spoken with our local Co-operative Extension Agent, JOE CROFT. He approved the recommendations. We spoke over the phone and I have sent him a complete letter for his records.

Sincerely,

DWAIN BUCK

DB/as
Enc:

AMERICAN LANDSCAPE
MAINTENANCE
P.O. Box 1061
Kelso, WA 98626
423-1881



NOVEMBER 13, 1989

GIBBS & OLSON INC.
ATTN: JOHN DUNCAN
1405 17TH AVENUE
LONGVIEW, WA. 98632

RE: BID to HYDROSEED at INTERNATIONAL PAPER
(APPROXIMATELY 3 ACRES)

A. MATERIAL RATES PER ACRE:

[1] 75 LB. SEED MIX
[2] 300 LB. PAREX 14-19-19 W/IBDU
[3] 300 LB. CALPRIL LIME
[4] 2000 LB. SILVA FIBRE MULCH

B. AREA WILL BE SEEDED BY DRAGGING HOSE OVER THE TARGET AREA.

[Our equipment will not drive on the area to be seeded.]

PRICE PER ACRE: $975.00

This price does not include SPRING or FALL application of fertilizer, which I highly recommend.

BID SUBMITTED BY : DWAIN BUCK
C/O AMERICAN LANDSCAPE MAINTENENACE
PO BOX 1061
KELSO, WA. 98626
(206) 423-1881

LATE-SEASON NITROGEN FERTILIZATION

John R. Street, Ph.D., Associate Professor, Ohio State University

It has been pointed out that heavy nitrogen fertilization during the spring and summer is undesirable for cool-season turfgrasses. Nitrogen fertilization has proven beneficial during the late fall (late season) on cool-season turfgrasses (Powell, Blazer and Schmidt). Decreased disease, improved stress tolerance, and increased rhizome and root growth are among several of the claimed advantages to the "late-season" nitrogen fertilization program. The late-season program is based on differences in optimum temperatures that exist between (1) root-rhizome growth versus shoot growth and (2) photosynthesis versus respiration.

Shoot and root growth of cool-season turfgrasses occur most readily in the temperature ranges of 60-75°F and 50-65°F, respectively. Root growth of cool-season grasses will continue at soil temperatures close to freezing (Koski, 1983). Shoot growth will cease at higher temperatures than that for root growth. Late-season nitrogen fertilization capitalizes on this differential. Under late-season fertilization, nitrogen applications should be made when vertical shoot growth has stopped, but the turf leaves are still green to produce carbohydrates via photosynthesis. Air temperatures of 45-50°C are usually necessary for vertical shoot growth stoppage. *It is important to understand that since temperatures will be at a point causing stoppage of topgrowth, roots, rhizomes and stolons will capitalize on any applied nitrogen.* The carbohydrate produced will be more efficiently used for root, rhizome and stolon growth during the late fall and winter periods. It is critical that the nitrogen be applied prior to dormancy for maximum efficiency of applied nitrogen. Once the tissue has turned brown, photosynthesis will no longer occur. "Late-season" fertilization is not dormant fertilization.

During late fall, photosynthesis is higher than respiration for cool-season grasses. With green tissue, photosynthesis will occur readily at low temperatures. The high net photosynthesis during late season leads to maximum carbohydrate production and carbohydrate storage for reserves. The positive carbohydrate balance favors root and rhizome growth over topgrowth since air temperatures are well below that considered optimum for shoot growth.

Nitrogen applications during the late season if timed properly will extend the greening of the turf later into the fall and winter. Spring green-up will normally occur earlier. The green turf is photosynthetically active favoring a positive carbohydrate balance. Late-season nitrogen fertilization increases the "green growing" period of the turfgrass plant later into the fall and earlier in the spring. Physiologically, this is a positive agronomic practice.

The most efficient nitrogen fertilizers for use in late-season fertilization programs are those independent of temperature for nitrogen release. Soil temperatures and microbial activity are low at this time of the year resulting in less efficiency from methylene urea and other temperature-dependent fertilizers. Urea and IBDU are fertilizers that are independent of temperature for nitrogen release and, therefore, make for excellent late-season nitrogen sources. IBDU, having a slow-release characteristic, will not cause surge growth even if misapplied (e.g. too early) in the late-season program. Nitrogen is a key component of turfgrass fertilization programs. It has an influence on both the morphology and physiology of the turf plant. High quality turf exhibiting acceptable green color and density requires periodic applications of nitrogen. Nitrogen, however, is frequently referred to as the "TNT" of turfgrass fertilizations programs. It can be just as detrimental as beneficial if it is mismanaged. Physiologically, the turf manager must maintain a good carbohydrate reserve. Proper timing and rate of application are important in successful long-term programs. Always remember: greener is not always better. A happy medium must be reached between agronomics and aesthetics.

par ex
PROFESSIONAL PRODUCTS

VIGORO INDUSTRIES, INC.
PROFESSIONAL
PRODUCTS DIVISION
P.O. Box 512 • Winter Haven, Florida
33882-0512

TECHNICAL DATA

Par Ex® Professional Products has compiled this technical data sheet to describle our product and its characteristics, to assist the user in determining the actual usage for maximum turf response.

PAR EX 14-19-19 w/IBDU®

SPECIAL STARTER/HYDROSEED MIX

GUARANTEED ANALYSIS

TOTAL NITROGEN (N)..... 14.00%

- 4.67% Ammoniacal Nitrogen
- 0.93% Urea Nitrogen
- 8.40% Water Insoluble Nitrogen

AVAILABLE PHOSPHORIC ACID (P_2O_5)..... 19.00%

SOLUBLE POTASH (K_2O)..... 19.00%

Derived from isobutylidene diurea, ammoniated phosphates, triple super-phosphate, and muriated potash.

Potential acidity 800 lbs., Calcium Carbonate equivalent per ton.

WHAT IS LI[illegible]?

Lime is the term used for crushed limestone. The limestone is mined as rock and is crushed mechanically to varying degrees of fineness. In most cases, lime is comprised primarily of calcium carbonate ($CaCO_3$), also called calcite. Some limestones may contain relatively high (5-12 percent) amounts of magnesium carbonate ($MgCO_3$) as well as $CaCO_3$. These materials are called dolomites. Dolomite should only be used in situations where soil analysis has shown a definite need for magnesium.

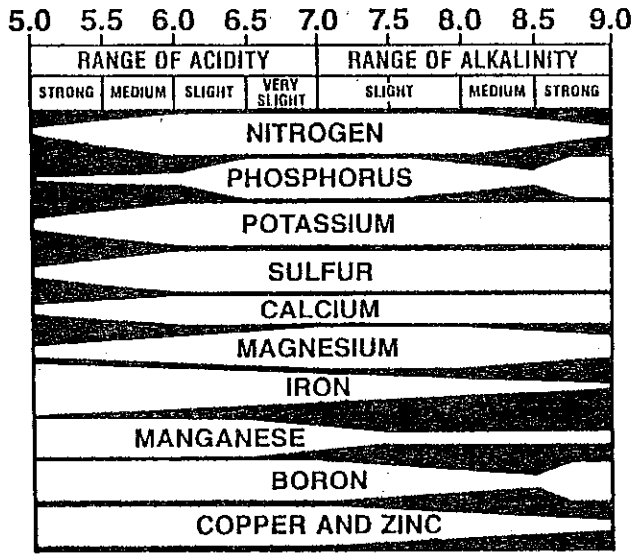
WHY IS LIME NEEDED IN AGRICULTURE?

Soils most generally become acidic (acid) as a result of organic matter decomposition and/or by the addition of ammoniacal (NH_4) nitrogen fertilizers. The hydrogen ions produced by these processes displace calcium, magnesium, and potassium from the surfaces of the soil particles. These free salts are then leached from the upper regions of the soil profile by water moving downward through the soil. As the concentration of hydrogen ions in the soil increases, the soil acidity increases. Soil acidity is expressed as soil pH; the lower the soil pH, the greater the soil acidity.

As soils become more acid, the availability of nutrients essential for crop plant growth changes dramatically. Phosphorus is maximally available at soil pH 6.5. Decreasing soil pH to 5.5 reduces available phosphorus to 50 percent. Available molybdenum is markedly reduced. Calcium availability may be severely restricted from some crops. Copper, iron, boron, and zinc become more available at lower soil pH values. At pH values below 5.5, available manganese and aluminum may build to toxic levels. The bacteria which convert ammonium nitrogen to nitrate form can function best at soil pH values above 6.0. Decreasing soil pH diminishes activity of these beneficial bacteria. Lower soil pH values will also suppress the activity of nitrogen-fixing bacteria living in symbiosis with legumes. Many disease-causing fungi are more active in soils with lower pH values.

The addition of lime to soil to improve fertility has been practiced since the time of the Roman Empire. However, Edmund Ruffin, a Virginia farmer-scientist from 1824 to 1845, may have been the first person to apply lime to the soil specifically to correct a condition, which he said was soil acidity.

The addition of lime adds calcium, a needed nutrient, to the soil. High concentration of hydrogen ion, the cause of low soil pH, is reduced and forms soil water. The raised pH also reduces excess soluble manganese, iron, and aluminum. As soil pH is raised, both native and applied phosphorus become more available for use by crop plants. The addition of lime makes potassium more efficient in plant nutrition. Lime on acid soils increases available molybdenum. Lime increases the rate of breakdown of soil organic matter, thus releasing available nitrogen into the plant root zone.



HOW IS LIME NEED DETERMINED?

Only a soil test can determine the amount of lime needed to neutralize soil acidity. The standard soil pH test will only indicate whether or not lime may be needed, but **not how much** lime is needed. Therefore, the soil test must include a **lime requirement test** to determine the needed quantity of lime.

Many state and commercial soil testing laboratories can determine the lime requirement of a soil. Soil pH value alone is not sufficient. A clay soil can require as much as three times the amount of lime as a sandy soil with the same pH.

Don't guess. Soil test!

WHAT IS CALPRIL?

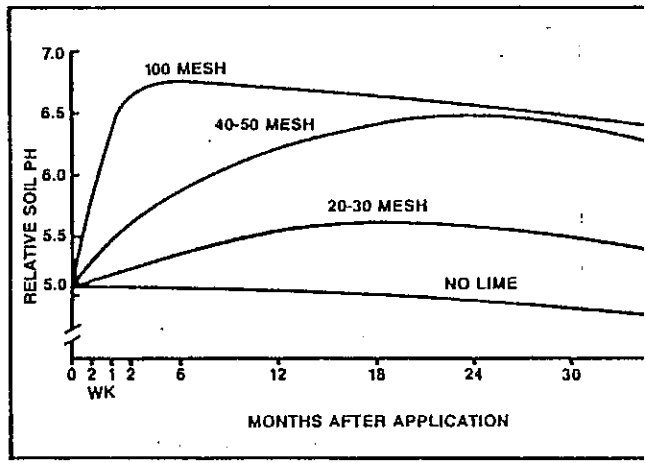
CALPRIL is made of limestone crushed to a very fine powder (100% will pass a 30-mesh screen; 65% will pass a 100-mesh screen; and, more than 35% will pass a 325-mesh screen) which is then constituted into spherical prills held together with a bonding agent. These prills are then sized to a maximum of 4-mesh (0.187 inch diameter) and a minimum of 20-mesh (0.0331-inch diameter).

CALPRIL is not hygroscopic; however, in storage it must be protected from wetting.

The binding agent used to make CALPRIL is highly water soluble. Consequently, as soon as CALPRIL prills come into contact with water, disintegration of the prill begins, and the many small particles which comprise the prill are released into the surrounding soil water medium and the reaction to correct soil pH begins.

WHAT ARE THE ADVANTAGES OF CALPRIL OVER COMMON AG LIME?

CALPRIL has several advantages over common ground ag limestone. Because CALPRIL is actually very finely ground limestone, it reacts very quickly to effect soil pH changes in weeks, rather than months or years as is the case with common agricultural lime. As shown in the figure below, fineness of the individual limestone particle determines how rapidly a soil pH change is brought about.



In those states which have lime laws, the physical guarantee requirements of agricultural lime may be roughly averaged to: 85 percent of the lime particles must pass through a 15-mesh sieve and 30 percent must pass through a 100-mesh sieve.

The important feature to remember is that when particle diameters of a given volume or weight to limestone is reduced, surface area is greatly increased. Thus, by crushing a 20-mesh particle into 325-mesh particles, the surface area is increased

United States Department of Agriculture
Soil Conservation Service
1708 Allen Street
Kelso, Wa. 98626

July 11, 1986

W.K. Robertson
International Paper Co.
P.O. Box 160707
Mobile, Alabama 36616

Re: The restoration of the yard site in Longview, Wa.

Recommended seeding mixture:

15 lbs. of creeping red fescue
3 lbs. of "Durar" hard fescue
3 lbs. of white dutch clover

Harrow the site about three times to get a ½ to 1 inch fine surface. Use a broadcast seeder and broadcast evenly making two passes at right angles to each other. Harrow the field lightly after seeding.

With sprinkle irrigation available try to have the area seeded by September 15. and then lightly water 2 to 3 times a week until the grass comes up. Then water lightly at least once a week until the end of October. By then the rain should be frequent enough to carry it through.

Place 2½ feet of fill material over plastic liner. Fill material should be made up of ½ dredge spoil and ½ silt loam or silty clay loam. Ostrander Rock and Construction Company 6150 Ocean Beach Highway, Longview, Wa. 98632 Ph (206) 636-4430 currently has a lot of overburden which would be ideal to mix with the dredge spoil for the fill material. You can mix the two materials adequately by dumping one load of each and moving it onto the site with a dozer. This should adequately take care of the site.

Sincerely,

Duane Scott
District Conservationist

APPENDIX H

FENCING DOCUMENTATION

Proposal

EVERGREEN STATE FENCE CO.

8905 N.E. 39th Ave.
VANCOUVER, WASHINGTON 98665
(206) 254-2407

PROPOSAL SUBMITTED TO	PHONE	DATE
Gibbs & Olson, Inc.	425-0991	12-14-1989
STREET	**JOB NAME**	
P.O. Box 400		
CITY, STATE AND ZIP CODE	**JOB LOCATION**	
Longview, Washington 98632	International Paper Plant	
ARCHITECT / **DATE OF PLANS**		**JOB PHONE**

We hereby submit specifications and estimates for:

For Installation of approximately (1200') of (5') Chain Link Fence, (2) 10' Double Drive Gates, at International Paper Plant, Longview, Washington, per conversation.

SPECIFICATIONS:
2 3/8" Ends & Corners (STK)
1 7/8" Line Posts (STK)
1 3/8" Top Rail
7 Gage Bottom Tension Wire
11 Gage Chain Link
All Posts set (24") in Concrete
NOTE!! Line Posts to have Barb Bases for future Barbwire.

Footage price based on (1200') @ $3.40 per foot	$4,080.00
(2) 10' Double Drive Gates @ $120.00 each	$ 240.00
	$4,320.00
Tax	$ 328.32
Total	$4,648.32

NOTE! WORK TO BE DONE IN JANUARY 1990

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

Four Thousand Six Hundred Forty Eight Dollars and .32¢--- dollars ($ $4,648.32).

Payment to be made as follows:

(30) Days after Completeion of job!

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Authorized Signature Roger Manning

Note: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature _____

Signature _____

Date of Acceptance: _____